

**A MORPHOGENIC AND LAMINATED SYSTEM
EXPLANATION OF POSITION-PRACTICE SYSTEMS AND
PROFESSIONAL DEVELOPMENT TRAINING IN MAINSTREAMING
EDUCATION FOR SUSTAINABLE DEVELOPMENT
IN AFRICAN UNIVERSITIES**

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ABSTRACT

This research focuses on Education for Sustainable Development (ESD) in Higher Education Institutions (HEIs), particularly in Africa. It explores the roles and practices of these institutions, especially their professionals, in the Anthropocene era where increasing concern for contemporary environmental and sustainability issues and risks emerge. The study presents a longitudinal case study of institutions and participants of the Swedish/African/Asian International Training Programme (ITP) on ESD in Higher Education (HE), who are mostly university educators. This thesis however focuses on African ITP participants only. At a macro level, the research sought to examine how African university educators have contributed to the United Nations Decade of Education for Sustainable Development (UNDESD) through their participation in the ITP (which is a change oriented professional development training programme on ESD) and the associated ESD ‘change projects’. The change projects are ITP participants’ direct attempts to mainstream environment and sustainability issues, concerns, and concepts into core university functions and practices: teaching, research, community engagement, and management operations and policy engagement. At a meso level the study sought insight into how educators in national institutions were supported by sub-regional and regional initiatives, institutions and organisations, including the Mainstreaming of Environment and Sustainability in African (MESA) Universities Partnership programme, especially an initiative supported by the Southern African Development Community Regional Environmental Education Programme to provide (limited) seed funding to three southern African universities to establish what are known as ‘MESA Chairs’, with dedicated time and support for MESA activities in their universities .

At a micro level, this research sought to investigate how the position-practice systems and the ITP shape (enable or constrain) effective ESD mainstreaming in higher education, and how the morphogenetic approach and laminated system can be used to understand and explain these dynamics and their relations with meso and macro level engagements. The research sought to understand these dynamics through empirical investigations using survey questionnaires, interviews, document analysis and field visits. The research is constituted as theoretical, conceptual, methodological and analytical exploration using a singular and nested case study research approach, underlaboured by a critical realist ontology, and drawing on a social learning epistemology and social realist morphogenetic interpretive lens. In particular, ontological depth was sought via critical realist laminated system explanation. See Chapter Two for details.

This study was carried out in three phases. Phase one encapsulates the investigation of all ITP ESD in higher education alumni who were Asian and African participants from the inception of the ITP to its completion, over a six-year period (2008-2013). This included 280 academics from Asia and Africa in 35 countries in Asia and Africa from 106 institutions in Asia and Africa with their 139 change projects. The outcome of phase one of the research is only included in this thesis as an appendix (see Appendix 3; Agbedahin & Lotz-Sisitka, 2015). However, this phase provided

and formed the foundational data that was expanded in phases two and three for the purpose of this study. Phase two of this research concentrated on a less broad population of research participants comprising only all African ITP alumni, from all regions in Africa. The overall data collection and analysis included 162 academics in 23 African countries from 66 institutions with their 81 change projects. The aim was to investigate and provide a morphogenetic explanation of their change projects and how the relationship between participants' positions and practices (and that of others) may influence ESD mainstreaming in universities. The outcome of this phase two investigation is presented in Chapter Four. In phase three, (nested) case studies of Swaziland, Zambia, and Botswana (in the southern Africa region), which included all the ESD ITP HE participants therein and the three corresponding EE/ESD MESA Chairs, were developed. The population sample in this phase three therefore contained 20 academics, from six institutions with their nine change projects. This phase was characterised by field trips to these countries and in-depth data collection and analysis in order to investigate and deepen the morphogenetic explanations of their change projects and how the relationship between participants' positions and practices (and that of others) have indeed influenced the ESD mainstreaming in universities. The outcome of this phase three research is presented in Chapters Five, Six and Seven.

The final Chapter Eight of this thesis focuses on the seven scalar laminated system perspective and reflections on this research and discussion of these perspectives for supporting the mainstreaming of ESD in African higher education institutions and more specifically in the three case countries and respective institutions presented in Chapters Five, Six, and Seven. The seven scalar laminated system is presented in relation to the position-practice system, and draws on morphogenetic social realist and social learning theory to provide perspective on the actual change processes. Chapter Eight also includes a discussion on social learning and its implication for ESD mainstreaming, and provides recommendations for further research.

The outcome of the theoretical exploration underpinning this study provided a potential model for understanding ESD learning and change processes that are facilitated by professional development training programmes in the context of ESD in HE. This study also provides a model for appraising educational changes in time and in space, especially in relation to ESD, or the types of changes that can be brought about by professional development interventions such as those provided by the ITP and how they can be tracked, monitored and documented. For the field of professional or academic development in higher education, this research highlights the significance of the relationship between position-practice systems, professional development interventions and institutional transformation. For the field of ESD in higher education, this study shows the need for in-depth consideration of the position-practice system and sphere of influence of change agents and related stakeholders in and around their institutions in the design and development of professional development programmes. It further sheds light on the laminated system of factors that contextually constrain and/or enable effective ESD mainstreaming at individual, collective, institutional, national, regional and global levels.

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DEDICATION

To God the Father, Son and the Holy Spirit!

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LIST OF ACRONYMS AND ABBREVIATIONS

AAU	African Association of Universities
ADEA	African Association for the Development of Education in Africa
CBU	Copperbelt University
CEPs	Cultural Emergent Properties
EEASA	Environmental Education Association of Southern Africa
ELRC	Environmental Learning Research Centre
ESD	Education for Sustainable Development
GUNI	Global University Network for Innovation
GUPES	Global Universities Partnership for Environment and Sustainability
HE	Higher Education
HEIs	Higher Education Institutions
HESI	Higher Education Sustainability Initiative
IPCC	Intergovernmental Panel on Climate Change
ITP	International Training Programme
KCoE	Kasama College of Education
MESA	Mainstreaming Environment and Sustainability in African Universities
NIPA	National Institute of Public Administration (Zambia)
PEPs	Personal Emergent Properties
SADC REEP	Southern African Development Community Regional Environmental Education Programme
SARUA	Southern African Regional Universities Association
SD	Sustainable Development
SEPs	Structural Emergent Properties
Sida	Swedish International Development Cooperation Agency
UB	University of Botswana
UNDESD	United Nations Decade on Education for Sustainable Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNISWA	University of Swaziland
UNU	United Nations University
UNZA	University of Zambia
USAT	Unit-based Sustainability Assessment Tool
WESSA	Wildlife and Environment Society of South Africa
WSSD	World Summit on Sustainable Development

CHAPTER ONE

EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION

Education for Sustainable Development (ESD) is about shaping a better tomorrow for all – and it must start today. The vision of the Decade of ESD is “a world where everybody has the opportunity to benefit from education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation.”
(UNESCO 2014, p. 6, 14)

1.1 INTRODUCTION

This chapter focuses on the context of the research and presents an outline of the thesis. It begins with the history of Environmental Education (EE), Education for Sustainable Development (ESD), the United Nations Decade of Education for Sustainable Development (UNDESD) and other relevant key concepts. It also discusses the field of higher education and its link to development and ESD. The chapter describes the motivation and the significance of the study with a particular focus on the extension of ESD from the UNDESD to the global action programme and from current to the post 2015-education agenda. It also describes a focus on the mainstreaming of ESD and its various aspects. The thesis concentrates on Africa, its regions and the environmental and sustainable challenges that warrant effective ESD in higher education.

The chapter also describes various organisations with the vision of mainstreaming ESD in African universities. In addition, it introduces professionalism and professional development with a specific interest in change-oriented professional development training programmes on ESD. The impact of an International Training Programme (ITP) on ESD, which is the broad case study in this study, is introduced with its change projects and objectives, the construction of its curriculum in themes, and the five phases of the ITP curriculum.

Furthermore, the chapter describes the research goals, research questions, research focus, the research methodology as well as southern African case countries and the southern African region with its higher education systems. The chapter ends with a presentation of the structure of the thesis, a brief overview of theoretical frameworks, study limitations and a conclusion.

1.2 RESEARCH CONTEXT

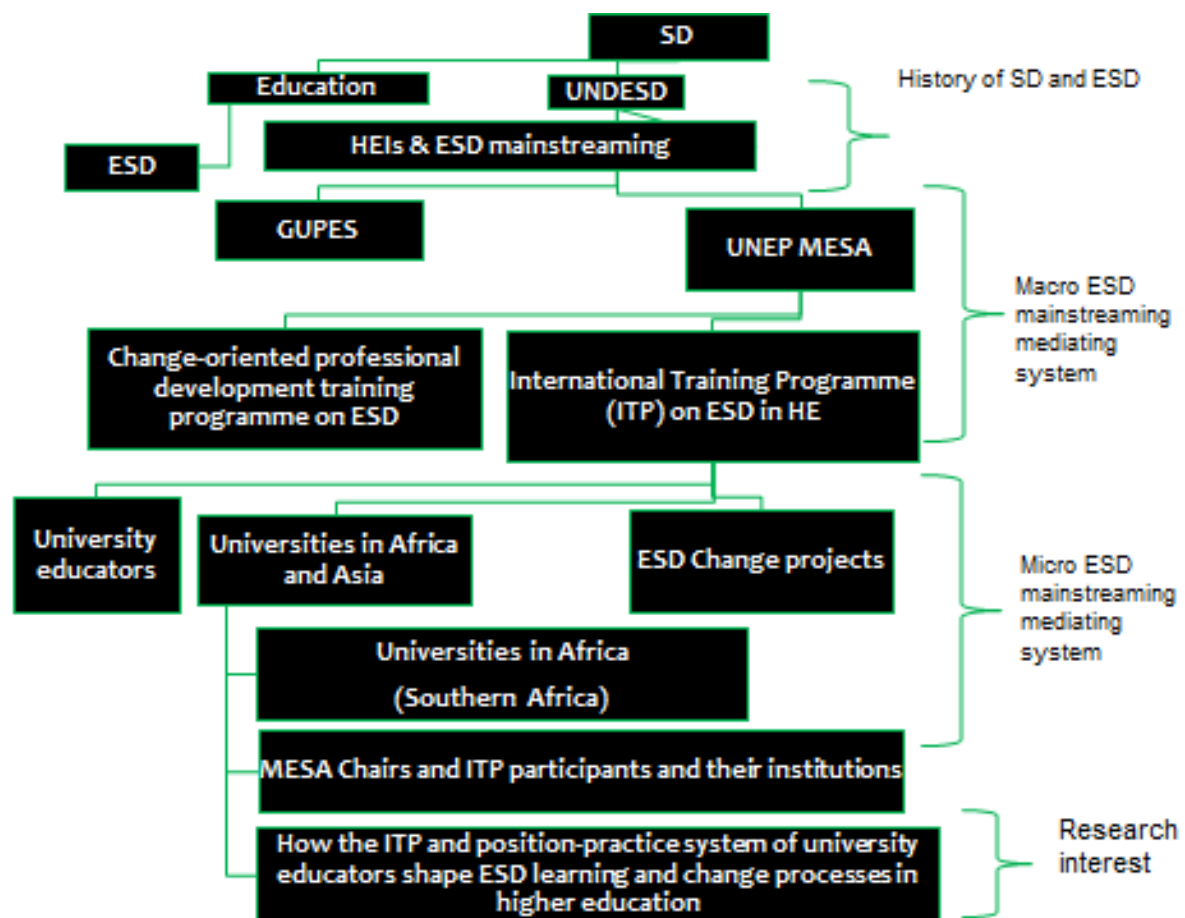


Figure 1.1: The research context

Figure 1.1 is a mind map of the research context and route leading to the research interest and research question. Briefly, it starts with the history of Sustainable Development (SD) and ESD, and includes a number of global and international programmes and processes that are supporting mainstreaming of ESD into Higher Education (HE). The ITP is the contextual example which supported institutions (involving participants from both Asia and Africa); educators from various ‘arms’ of the university (e.g. faculties, departments, centres etc.) participating in the ITP who are also involved in ESD change projects, and; at a regional level (southern Africa), a cluster of Mainstreaming Environment and Sustainability in African University (MESA) Chairs who have an ESD mandate with support from the Southern African Development Community Regional Environmental Education Programme (SADC REEP) for ESD mainstreaming activities. At this point, I propose that the ITP is a ‘macro point of contact and mediating system’ consisting of the position-practice system of the ITP programme sponsors, managers and facilitator who have played the role of linking people (university educators) to institutions and thereby linking these collectives to society, nations, continent and the world). I present the position-practice system of ITP participants themselves as a ‘micro point of contact and mediating system’ at an institutional, community and local level.

1.2.1 BRIEF HISTORY OF ENVIRONMENTAL EDUCATION

Social debate in relation to environmental management started in the 1960s. Environmental Education (EE) gained international recognition, and during the United Nations Conference on the Human Environment at Stockholm, Sweden in 1972, EE was particularly emphasised in 'recommendation 96', as a means to address the problem of human environment worldwide (United Nations Educational, Scientific, and Cultural Organisation [UNESCO], n.d; United Nations Environment Programme [UNEP], 2010). This event marked the beginning of the history of SD and ESD. During the International Environmental Education Conference in Belgrade, Yugoslavia in 1975, the aforementioned recommendation was addressed and participants at the United Nations Educational, Scientific, and Cultural Organization (UNESCO) workshop, proposed a global framework for EE, referred to as the Belgrade Charter (UNEP, 2010). The Charter's goal statement for environmental education has been generally accepted by professionals in the field. The Charter states that:

Environmental education, properly understood, should constitute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values. The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

(UNEP, 2010)

There was also a treaty on Environmental Education for Sustainable Societies and Global Responsibility at Rio de Janeiro in 1992, which highlighted 27 EE principles for equitable and sustainable societies. It was also Agenda 21, the main outcome of the Earth Summit at Rio that first officially proposed the concept of ESD into government policy frames.

1.2.2 BRIEF HISTORY OF SUSTAINABLE DEVELOPMENT

Sustainable Development (SD) has been present in various academic writings for hundreds of years (Waas, Hugé, Verbruggen & Wright, 2011). However the global or modern conceptualisation of SD emerged in the 1980s in response to the growing awareness of the need to balance social and economic development with environmental stewardship (Hattingh, 2002; UNESCO, 2002; UNESCO, 2005; Lotz-Sisitka, Gumede, Olvitt, & Pesanayi, 2006). The concept of SD rose to prominence through the 1987 Brundtland report of the World Commission on Environment and Development, referred to as *Our Common Future* (United Nations [UN], 1987; Fincham, Georg, & Nielsen, 2004; Lotz-Sisitka et al., 2006, UNESCO, 2014a UNESCO, 2014b). It was endorsed at the United Nations General Assembly in the same year. Education for SD is closely tied into the international discussions on SD, which have grown in scale and importance since the above report was produced, providing the first widely-used definition of SD (UN, 1987; UNESCO, 2005, UNESCO, 2014b).

The widely accepted definition of SD is the kind of “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (UN, 1987, p. 25; UNESCO, 2014a, p. 20). It “requires meeting the basic needs of all and extending to all the opportunity to fulfil their aspirations for a better life.” (UN, 1987, p. 25). The concept of SD has evolved over many decades, it continues to evolve, though it is contested, complex and multi-faceted. It has become more prominent with policy suggesting it be seriously pursued across continents and walks of life. The triple bottom line concepts of environment, economy and society separately were earlier the focus of discussions on SD and ESD. More recently discussions are emphasizing ‘strong sustainability’ in which society, economy and environment are seen as interacting in an interrelated, nested system (Hattingh, 2002, Southern African Regional Universities Association [SARUA], 2014a). The challenge of SD is enormous, complex, difficult and thus requires new partnerships with various stakeholders including the academic community, non-governmental organisations and other sectors (UNESCO, 2002). The partnership with the academic community is the focus of this study which implies and involves all university disciplines and structures (UNEP, 2008).

1.2.3 EDUCATION AND ESD

ESD also has a long history associated with the partnership between United Nations Environment Programme (UNEP) and UNESCO established in the early 1970s to strengthen Environmental Education internationally (UNEP, 2008). In 1992, at Rio de Janeiro, the United Nations Conference on Environment and Development, also known as the Earth Summit, acknowledged the role of education in SD in Chapter 36 of Agenda 21 (UNESCO, 2014a). The Chapter states that education is critical to achieving SD and calls for action to improve learning opportunities by responding to unsustainable practices and promoting the quality of life of all across the globe (United Nations, 1992; Tilbury, 2010; UNESCO, 2014). Agenda 21 further states three programme areas for the actualisation of the above objective including: (1) Reorienting of education towards SD; (2) Increasing public awareness; and (3) Promoting training (United Nations, 1992; UNESCO, 2014).

ESD, closely related to, and emerging through the influence of Environmental Education internationally, is a dynamic concept that incorporates a new vision of the kind of education that seeks to empower people of all ages to take up the responsibility of creating a sustainable future (UNESCO, 2002; UNESCO, 2014a). The 2002 Johannesburg World Summit on SD promoted and recommended ESD as a key concept in its implementation plan (Lotz-Sisitka et al., 2006; UNEP, 2008; UNESCO, 2014a). There has been considerable emphasis by the World Summit on SD’s implementation plan, highlighting the critical role education plays in SD. The World Summit on SD Plan of Implementation suggested that, in order to promote education as a key agent for change, there is need to integrate SD concepts, actions and principles into all levels of education (World Summit on Sustainable Development [WSSD], 2002). It thus depicts ESD as a part of what Popkewitz (2000) called a ‘salvation narrative’ in educational reform initiatives (Lotz-Sisitka & Raven, 2004).

1.2.4 THE UNITED NATIONS DECADE OF ESD

In 2005, the United Nations Decade of ESD (UNDESD) was launched to enhance the role of education in promoting SD (UNESCO, 2005, 2014a, 2014b). In the same year, the United Nations General Assembly declared 2005-2014 the Decade of Education for Sustainable Development which was adopted through Resolution 57/254 (UNESCO, 2005). The overall goal of the UNDESD was to integrate the principles, values and practices of SD into all aspects of education and learning; to encourage changes in knowledge, values and attitudes with the vision of enabling a more sustainable and just society for all (UNESCO, 2005, 2014a, 2014b). Concerning the integration of the concept of SD, which is the mainstreaming of ESD, the Stakeholder Forum has recently presented three possible approaches, namely: (1) A systemic, holistic, systems-based approach where cross-cutting, horizontal themes are used over an approach based on traditional and vertical siloes. A systems-based approach reflects the true complexity of the interconnected world in which we live; (2) The balancing of the three dimensions of SD (economic, social and environmental) within goals, target sets and individual targets; (3) The use of explicit interlinkages between themes to highlight and reinforce the interconnections between themes, and break down vertical siloes (Cutter, Osborn, Romano, & Ullah, 2015, p. 3).

Cutter et al. (2015) explained that, of the three listed approaches to the integration of SD, the first type of integration (a systems-based approach) is difficult to attain both in theory and practice. They argued that this is the reason why the recent SD Goals (UN, 2014) are not structured; hence, the second approach (balancing of the three dimensions of SD) and the third (the use of explicit interlinkages between themes) are the most feasible. However, in my opinion and in relation to this study, these three approaches can be used in higher education depending on who is undertaking the integration or mainstreaming; how it is being done; with whom the project is implemented. These factors will also determine the dynamics of mainstreaming, hence the essence of the question this research is trying to answer, that is, how a position-practice system and professional development training can shape effective ESD mainstreaming.

What exactly is ESD?

ESD allows every human being to acquire the knowledge, skills, attitudes, and values necessary to shape a sustainable future. ESD means including key sustainable development issues into teaching and learning; for example, climate change, food security, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption, resource efficiency. ESD also requires participatory teaching and learning methods that motivate and empower learners (and teachers themselves) to change their behaviour and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining better future scenarios and making decisions in a collaborative way as well as requires far-reaching changes in the way education is currently practised.

(UNESCO, 2014)¹

¹ <http://www.unesco.org/new/en/unesco-world-conference-on-esd-2014/resources/what-is-esd/>

What are the vital characteristics of ESD?

ESD is based on the principles and values that underlie sustainable development; it deals with the well-being of all three realms of sustainability – environment, society and economy; it promotes lifelong learning; it is locally relevant and culturally appropriate; it is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences; it engages formal, non-formal and informal education; it accommodates the evolving nature of the concept of sustainability; it addresses content, taking into account context, global issues and local priorities; it builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, adaptable workforce and quality of life; it is interdisciplinary: no one discipline can claim ESD as its own, but all disciplines can contribute to ESD; and it uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills ... ESD deals with the “complex amalgamation of issues relevant to environment, society and economy [and] prepares people to cope with and find solutions to problems that threaten the sustainability of the planet.

(UNESCO, 2007, pp. 6-7)

What are the dimensions of ESD and how can it be achieved?

ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while ensuring the respect for cultural diversity. ESD is about lifelong learning, and an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. The purpose of ESD is achieved by transforming society through the following dimensions:

Dimension 1: Learning content: Integrating critical issues, such as climate change, biodiversity, disaster risk reduction, and sustainable consumption and production, into the curriculum.

Dimension 2: Pedagogy and learning environments: Designing teaching and learning in an interactive, learner-centred way that enables exploratory, action oriented and transformative learning. Rethinking learning environments – physical as well as virtual and online – to inspire learners to act for sustainability.

Dimension 3: Learning outcomes: Stimulating learning and promoting core competencies, such as critical and systemic thinking, collaborative decision-making, and taking responsibility for present and future generations.

Dimension 4: Societal transformation: Empowering learners of any age, in any education setting, to transform themselves and the society they live in. By enabling a transition to greener economies and societies. – Equipping learners with skills for ‘green jobs’. – Motivating people to adopt sustainable lifestyles. By empowering people to be ‘global citizens’ who engage and assume active roles, both locally and globally, to face and to resolve global challenges and ultimately to become proactive contributors to creating a more just, peaceful, tolerant, inclusive, secure and sustainable world.

(UNESCO, 2014b, p. 12)

The above features, characteristics and dimension of achieving ESD have been addressed by the ITP (International Training Programme, see Section 1.6 for details). University academics have

enrolled and have been admitted to gain the needed capacity in order to achieve the purpose of ESD. Exploring the role and influence of the individual participants and colleagues in terms of their positions and practices in and beyond their institutions in the successful mainstreaming of ESD, is the whole focus of this study.

1.3 HIGHER EDUCATION (HE)

The field of HE is increasingly being seen as an object of discussion rather than as an object of study as theorised by Bourdieu (Maton, 2005). Maton argued that although HE is in itself an object of study, paradoxically it is “one of the most discussed but least analysed objects of study in HE” (2005, p. 688). Bourdieu’s ‘field’ approach or framework sheds light on the need to conceptualise HE as a distinct object of study, which is a social structure that is irreducible to other social fields of practice or even its own constituent parts, but should be seen as a field which possesses its own distinctive powers and properties (Maton, 2005). One of the prevalent and, more often than not, controversial discussions about HE is its role in society. Unsurprisingly, given HE’s mandate after several hundreds of years of existence, there has not been a conspicuous consensus as to what exactly a university is or what its aims should be (McKenna, 2013).

McKenna (2013) compiled some of the divergent arguments that have been made and questions asked with regard to the aims of HE: (1) HE of necessity should be dynamic enough to reinvent itself in order to be able to address and adjust to its contemporary concerns and contexts. This is because HE institutions differ from country to country and according to types of institution. (2) In HE, there should exist certain conventional core aims that will proffer a unified HE project that is achievable. This means the difference in the relationship between the state and HE and difference in the public conception of the university should be addressed or else they will impinge on these core aims. (3) Universities can and should be many things and they should concurrently attend to multiple aims. Questions regarding the roles of HE have also been asked and presented by McKenna (2013) including (1) Is university education meant for the elite or the masses? (2) Are universities aiding social development or economic growth? (3) Are universities meant for private good or for public good?

Fincham et al. (2004, pp. 19-10) highlighted four overarching functions that universities perform, namely (1) an important ideological apparatus, (2) a mechanism for selecting and socialising society’s elite, (3) a generator of new knowledge, and (4) a disseminator of the produced knowledge to various members of society through different educational programmes. The World Conference on HE offers a 21st century vision and action for change and development of HE. It itemises the mission and functions of HE which consist of educating, training and undertaking research; playing ethical autonomy, responsibility and anticipatory functions; harnessing equity of access; enhancing participation and promoting the role of women; and developing innovative educational approaches that propel critical thinking and creativity amongst others (UNESCO, 1998). Playing these various roles while doing research, teaching and community engagement is

contributing to SD. University education is important in the shaping of future decision makers in government, industries, associations, and other key sectors of the world economy (Fincham et al., 2004). The presentation of these various opinions about HE imply an urgent need to re-conceptualise the current roles of HE in the context of current human development debates, especially those relating to climate change and its implications for development (SARUA, 2014a).

In his 2013 book entitled *Imagining the University*, Ronald Barnett interrogated and examined the range of ideas and debates going on around the world on what it is for a university to be a university; the impoverished debate concerning entrepreneurial universities has dominated. Barnett argued for imaginative and better ideas that take cognisance of the existing deep and underlying structures in universities, which are both critical and optimistic. One of his ideas related to this study's interest of imagining the university is that of the ecological university. He argued that an ecological university is a feasible utopia for the university that has the capacity to continuously re-imagine itself. International and national policies and declarations (UNEP, 2010) challenge universities to bring about a commendable and sustainable society, social change, justice and equity.

Nevertheless, the effectiveness of university professionals depends on factors inter alia, openness to learn, reflexivity, desire for improvement and change, exposure to new forms of learning, ability to try out new strategies, methods and practices for all round work efficacy. Hence, the efficacy of professional development training programmes (like the International Training Programme, see Section 1.6 for details) to enhance the capacity of university professionals to ensure better performance and outcomes in the short and long term in their institutions, societies and world at large. This study was also inspired by how much time, effort, energy, logistics goes into the commencement, running and conclusion of professional or teacher development training programmes. Some of these programmes take place over days, weeks, months, and the ITP is a rare example of a comprehensive one-year long programme involving participants from both Africa and Asia having to travel within and between continents for capacity development in ESD. The questions I was thereafter faced with were: What exactly has gone into the success of this programme? What exactly has been achieved after the programme? How can the course activities be monitored, traced, appraised and the resultant outcome explored? Should this programme continue to be sponsored and organised, year after year without in-depth empirical monitoring and proof of its essence and impact vis-à-vis the objectives?² Beyond the intervention of professional or academic development programmes like the ITP is the need for critical and strategic engagement with the position and practice system of these educators and colleagues in the move towards learning, change, transformation and SD. This study seeks to shed light on the efficacy of these dynamics in inherent disciplinary and administrative structure and operations of HE.

² There were annual reports but there has been no longitudinal study.

1.3.1 HIGHER EDUCATION AND DEVELOPMENT

Universities have complex roles to play and need to meet national and regional development requirements (SARUA, 2014a). The consequence of aligning HE to business needs has been criticised for undervaluing its intrinsic and critical role (Galbraith, 1967, in Dunn, 2011, p. 85). The need for universities to participate more in the globalisation of the knowledge economy in recent years, has brought much attention to the relationship that exists between HE and economic development (SARUA, 2014a). The possibility of HE enabling countries to raise economic growth and increase participation in the knowledge-based economy through its dual role of teaching and research is widely understood (Pillay, 2011; SARUA, 2014a).

Apart from the role of African HE in knowledge production through teaching and research, the South African economist Pundy Pillay has argued that universities in Africa have played a stronger role in education and training (Pillay, 2011; SARUA, 2014a). This argument was based on the studies she conducted on three systems that successfully link HE to development, in an effort to distil lessons for Africa. She explained that the stronger role HE has played in education and training can be accrued to the ‘human capital’ model and state-university relations in the post-independence formation of African universities i.e. graduates they provide for growth and development –responding directly to the post-independent state’s developmental objectives and needs (Pillay, 2011; SARUA, 2014a).

Under this model, the role and capacity of HE institutions in research and innovation is far less than their role in education and training. Factors responsible for this include inter alia: (1) The “influence of earlier structural adjustment programmes that reduced spending on Higher Education” since many universities in Africa were established in post-independence states; (2) “Rapid expansion of student numbers due to a generally inadequate overall system of provisioning of Higher Education facilities and institutions and the links that exist between inadequate access to good quality schooling” (SARUA, 2014a, p. 98).

Other interesting key findings from Pillay’s surveys of Finland, South Korea and North Carolina in the US included:³

The needs to build higher education on a solid foundation of high quality and equitable schooling, for higher participation rates with institutional differentiation, and for strong state steering. Other possible implications for African policy-makers flowing from the case studies are the imperatives to link economic and education planning, enable different roles for public and private higher education, connect higher education to regional development, build strong cooperation and networks, and be responsive to labour-market demands.

(SARUA, 2014a, p. 98)

³ <http://chet.org.za/books/linking-higher-education-and-economic-development>

The opinion that all the objectives of HE should be oriented towards economic or marketing pursuit only, and not giving adequate or balanced attention to other dimensions, has been widely critiqued. Although development is craved for and long overdue in Africa, (economic) development being inclusive of other forms of developmental issues should be duly considered as equally important as social development (e.g. social justice, equality), environmental development (e.g. responding appropriately to climate change) (SARUA, 2014a). Therefore, I concur with Singh (2001) who called for re-inserting the ‘public good’ into the transformation of HE and not economic development alone. Similarly, according to SARUA (2014a, p. 100), the “analysis of university roles in responding to the socially constituted moral commitments embedded in development initiatives, such as the Millennium Development Goals, suggests that more could be done in universities within the framework of their mission and responsibility of contributing to the public good”.

1.3.2 MOTIVATION AND SIGNIFICANCE OF THE STUDY: HE AND THE UNDESD

From the foregoing section on the nexus between higher education and development, it is interesting and pertinent to investigate more deeply the practices of HE institutions in contributing to the recently concluded United Nations Decade on ESD (2005-2014). The United Nations Decade of ESD (UNDESD) which was launched in 2005 to enhance the role of education (HE) in promoting SD has been said to have “generated many success stories to be scaled up” (UNESCO, 2014b, p. 9). More so, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) which has been designated the lead agency for the Decade has played this major role “along with its partners, in bringing about the key achievements of the Decade” (UNESCO, 2014b, p. 9). Furthermore, this mandate of the DESD has been said to have “energized a vast number of stakeholders – across Member States, UN agencies, the education sector, the private sector and civil society – to work in partnership to reorient education systems towards SD” (UNESCO, 2014a, p. 9). A key partner to this acclaimed success is HE as well as the ITP because:

ESD also applies to all levels of education and occurs in a wide range of settings whether in a formal, non-formal or informal context – from schooling to vocational education and workplace training, higher education, adult learning and public awareness education – as integral components of learning throughout life.

(UNESCO, 2014a, p. 20)

What exactly have these partners done? (for example, HE and the International Training Programme on ESD, see Section 1.6 for details) What actually are these success stories in the context of HE in Africa? This research explores ways in which they have (or have not) contributed to the Decade as well as other international commitments and declarations relevant to ESD (UNESCO, 2014b, p. 10) for the actualisation of the principles and value of Sustainable Development and ESD in Africa. Bringing about change in human beings and especially systems like HE is very challenging. The need to change curriculum, to change and implement policies, to

change management and other practices towards sustainability in HE has become a topical issue. For example, the Rio+20 Treaty Principles, Commitments and Actions on HE suggest that universities should “be transformative”, and accordingly, “higher education must transform itself” (Rio +20 Treaty, 2012). The Treaty recognises that this expected transformation is a ‘challenge’, and that this principle (#1) is perhaps the most important of all of the Treaty Principles.

Principle #1: To be transformative, higher education must transform itself. To fulfil expectations in relation to sustainable development, higher education has to face the challenge of transforming itself. This principle is perhaps the most important.

(Rio +20 Treaty, 2012, p. 4)

It is therefore important to explore how university educators (supposed change agents) have faced and are facing the challenge of surmounting complicated internal structures and regulations that are in place to control activities and thus limit the pace of intended change implementation in their institutions. The ‘how’ of sustainability in any context, especially HE is very critical but amazingly less shown and propagated. This research investigates and shows how transformation occurs in institutions, specifically after professional development. To buttress this point, Lotz-Sisitka, Agbedahin, Hlengwa and Neeser (2015, p. 2) argued that:

In all of the change and transformation discourse associated with the move towards more sustainable universities and societies, is the fact that very little is said about *how* such changes occur, beyond numerous case study examples which model specific changes in specific contexts. What appears to be lacking is a process of systematically theorising change, and developing praxis oriented **models of change** that can be used to fast-track and support ongoing transformation of higher education programmes and practices. (emphasis in original)

Furthermore, the final UNDESD Global Monitoring and Evaluation Report has been published to provide an assessment of progress towards embedding ESD into education systems and states for example that “ESD has spread across all levels and areas of education ... ESD is being integrated into formal education ... ESD is galvanizing pedagogical innovation ...” (UNESCO, 2014a, p. 9). How exactly did this happen? What were the pre-existing institutional conditions? How were the obvious challenges surmounted? What were the driving and inhibiting forces and factors? What were the mechanisms and processes involved? Was it a smooth sailing experience? What were the experiences of university educators in changing the status quo? To emphasise the significance of this point, Lotz-Sisitka et al. (2015, pp. 4-5) proposed that:

... all agents in Higher Education Institutions have capacity to mobilise social networks and social processes to bring about change, if supported to do so in professional learning environments. Such changes need to be conceptualised in relation to structural constraints that are real and that exist, as well as and in dialectical relation to visions and possibilities for change.

1.4 AFRICA

Africa is the second largest continent after Asia (UNEP, 2013). It is characterised by diversity, beauty, a rich culture and natural resources; all these assets make it a strategic region for global (sustainable) development opportunities (UNEP, 2008). In the world economy, Africa holds a marginal position and thus most African countries operate lower than the human development index (UNEP, 2008; GUNI in Lotz-Sisitka, 2011). The majority of the population of the continents in Africa still lack safe drinking water, with Sub-Saharan Africa accounting for almost a third of the 884 million people who have no access worldwide (UNEP, 2013, p. 20). Africa suffers from substantial land degradation, with severe consequences for agricultural production, human health and nutrition due to inappropriate land use practices (UNEP, 2013). Africa is highly vulnerable to the impact of climate change although it contributes the least of the greenhouse gases in the atmosphere (UNEP, 2008; UNEP, 2013) and other threats to the natural environment including over-exploitation of resources, deforestation, water quality issues, poverty, food insecurity, drought, deterioration of marine and coastal ecosystems (GUNI in Lotz-Sisitka, 2011, UNEP 2013).

The Fourth Assessment of the Inter-Governmental Panel on Climate Change (IPCC) has provided evidence that “Africa is warming faster than the global average and it is likely to warm by an average 3°C to 4°C in this century” (UNEP, 2013, p. 4). It is therefore the continent that has been found to be one of the most vulnerable to climate change (SARUA, 2014a). Although Africa has a relatively small carbon footprint compared to other continents of the world, its populations are (and will be) severely affected by Extreme Weather Events (EWEs). This unfortunate situation is compounded by the reality that Africa has simply limited coping mechanisms and safety nets to deal with the attendant consequences. In some areas in Africa, warming (increasing average temperatures and changing weather patterns/conditions) is likely to result more seriously in reduced crop yields, livestock productivity, water scarcity, loss of biodiversity, EWEs such as droughts and floods (UNEP 2013, p. 4). These all have dire consequences on SD, human life, animal and plant health.

According to the executive summary of the latest fourth assessment of the IPCC:

- There is evidence of warming over land regions across Africa, consistent with anthropogenic climate change, has increased
- Mean annual temperature rise over Africa, relative to the late 20th century mean annual temperature, is likely to exceed 2°C in the Special Report on Emissions Scenarios (SRES) A1B and A2 scenarios by the end of this century
- A reduction in precipitation is likely over Northern Africa and the southwestern parts of South Africa by the end of the 21st century under the SRES A1B and A2 scenarios
- African ecosystems are already being affected by climate change, and future impacts are expected to be substantial
- Climate change will amplify existing stress on water availability in Africa

- Climate change will interact with non-climate drivers and stressors to exacerbate vulnerability of agricultural systems, particularly in semi-arid areas
- Progress has been achieved in managing risks to food production from current climate variability and near-term climate change but these will not be sufficient to address long-term impacts of climate change
- Climate change may increase the burden of a range of climate-relevant health outcomes ... Climate change is a multiplier of existing health vulnerabilities, including insufficient access to safe water and improved sanitation, food insecurity, and limited access to health care and education
- In all regions of the continent, national governments are initiating governance systems for adaptation and responding to climate change, but evolving institutional frameworks cannot yet effectively coordinate the range of adaptation initiatives being implemented
- Conservation agriculture provides a viable means for strengthening resilience in agroecosystems and livelihoods that also advance adaptation goals
- Despite implementation limitations, Africa's adaptation experiences nonetheless highlight valuable lessons for enhancing and scaling up the adaptation response, including principles for good practice and integrated approaches to adaptation
- Strengthened interlinkages between adaptation and development pathways and a focus on building resilience would help to counter the current adaptation deficit and reduce future maladaptation risks
- Growing understanding of the multiple interlinked constraints on increasing adaptive capacity is beginning to indicate potential limits to adaptation in Africa
- There is increased evidence of the significant financial resources, technological support, and investment in institutional and capacity development needed to address climate risk, build adaptive capacity, and implement robust adaptation strategies
- Climate change and climate variability have the potential to exacerbate or multiply existing threats to human security including food, health, and economic insecurity, all being of particular concern for Africa
- A wide range of data and research gaps constrain decision making in processes to reduce vulnerability, build resilience, and plan and implement adaptation strategies at different levels in Africa
- Of nine climate-related key regional risks identified for Africa, eight pose medium or higher risk even with highly adapted systems, while only one key risk assessed can be potentially reduced with high adaptation to below a medium risk level, for the end of the 21st century under 2°C global mean temperature increase above preindustrial levels.
(IPCC, 2014b, pp. 1202-1203)

The vulnerability of Africa is obviously aggravated by the high dependence of its large populations on its natural resources, hence the greater impact on the livelihood, income, food and nutrition insecurity for marginalised communities. This also makes climate change a considerable health and economic challenge for the continent (UNEP, 2013). I refer to health in this thesis because of its importance to change agents and their capacity to implement change projects and mainstream ESD effectively in HE. Without good health, the admirable position and practice of any academic will be futile and unsustainable. Hence, considerable response to the ESD mandate is indirectly assuring some level of local, national and global health security for humanity. The following are examples of interlinkages between climate change impacts and health vulnerabilities in Africa's sub-regions, which are, of course, linked to socio-ecological issues and risks.

North Africa

(1) Rising sea level leads to salt intrusion, flooding and destruction of human settlements and water stress; (2) Over-abstraction of scarcer water leads to deteriorating water quality and higher incidences of water borne diseases; (3) Unpredictable weather conditions lower food yields and quality; (4) Depleted fish stocks lower food security and household incomes; (5) Temperature rises affect the health of vulnerable populations e.g. children, the sick and elderly (Boko et al., 2007; UNEP, 2013).

West Africa

(1) Higher frequency of Extreme Weather Events (EWEs) results in increased mortality and morbidity; (2) Prolonged dry spells threaten food and nutrition security and access to medicinal herbs; (3) Warmer temperatures encourage the spread of weather-sensitive diseases e.g. malaria, meningitis, dengue fever and parasites like hookworms and ascaris; (4) More frequent EWEs increase the vulnerability of HIV/AIDS affected persons (Boko et al., 2007; UNEP, 2013).

Eastern Africa

(1) Rising number of EWEs leads to severe food shortages and malnutrition and higher morbidity and mortality; (2) Warmer ambient temperatures extend weather-sensitive diseases e.g. malaria and Rift Valley Fever to previously disease-free zones such as the highlands of Ethiopia, Kenya, Rwanda and Tanzania; (3) Frequent flooding favours the spread of waterborne diseases e.g. cholera, Rift Valley Fever and parasitic infections; (4) Severer drought leads to conflicts over scarcer natural resources e.g. water, forests and pastures (Boko et al., 2007; UNEP, 2013).

Central Africa

(1) Frequent occurrence of EWEs increases human injuries from collapsing buildings and infrastructure, landslides and heat waves; (2) Intensified flooding increases incidences of waterborne diseases e.g. cholera and typhoid; (3) Warmer temperatures lead to the proliferation of disease vectors e.g. ticks, mosquitoes and rodents while scarcer resources lead to increased human wildlife contact and increased exposure to zoonotic diseases such as Ebola; (4) Unpredictable weather patterns disrupt food and livestock production (Boko et al., 2007; UNEP, 2013).

Southern Africa

(1) Water stress leads to land degradation and lower food and livestock yields; (2) Frequent occurrence of EWEs increases human injuries from collapsing buildings and infrastructure, landslides and heat waves; (3) Intensified flooding increases incidences of waterborne diseases e.g. cholera, typhoid and schistosomiasis; (4) More frequent EWEs increase the vulnerability of HIV/AIDS affected persons (Boko et al., 2007; UNEP, 2013).

Western Indian Ocean Islands

(1) Sea level rises disproportionately which affects Small Island Developing States SIDS such as Seychelles and Mauritius; (2) Salt water intrusion leads to freshwater scarcity; (3) Higher temperatures lead to reduced fisheries and marine biodiversity and the concomitant erosion of medicinal value; (4) Intensified flooding increases incidences of water-borne diseases e.g. cholera, typhoid and schistosomiasis; (5) Higher frequency of EWEs, particularly floods, leads to inundation and erosion of coastal areas, human injuries and loss of life (Boko et al., 2007; UNEP, 2013).

1.4.1 AFRICA, ESD AND HIGHER EDUCATION IN AFRICA

There were only a handful of universities in Africa before 1960, the colonial period, where the ‘university college’ model was in operation (Africa Watch, in Lotz-Sisitka, 2011). Hence most universities in Africa came into being after national independence with the main purpose of servicing states (UNEP, 2008; Lotz-Sisitka, 2011). The African Union (AU) has 54 member states and these countries house well over 900 different HE institutions today, employing approximately 150 000 academics serving about five million students in an enterprise that is estimated at \$5 billion (UNEP, 2008; Waswala, Pradhan, & Ayombi, 2015). This reality shows the rapid growth in HE in Africa in the past 60 years. What happens in universities across Africa is widely affected by issues related to inherent social ecological factors, number of institutions in each country, presence or absence of war, national government, environmental issues, political stability or instability, and the availability and management of funds and other resources, inter alia. Despite the above contextual challenges, there is a broadly acknowledged perception that universities must play a role in development and particularly SD as it also associated with a wider re-orientation of society. The ‘turbulent times’ Africa has gone through have had great impacts on African universities (Lotz-Sisitka, 2011). One of the challenges Africa therefore has is that of sustainably managing her rich and surplus natural resources and overcoming the aforementioned threats to development, environmental management and social well-being (ibid.).

One of the major thrusts of ESD stated in the United Nations Implementation Scheme for the UNDES is to re-orient education at all levels – including all HEIs (UNEP, 2008; UNEP, 2010; GUNI, 2012). HE institutions are therefore considered significant role players in the effective implementation of ESD as they are key knowledge producers and potential change agents in society (Fincham et al., 2004; Lotz-Sisitka & Hlengwa, 2012b). With regard to addressing SD, clearly, universities have the responsibility of undertaking quality research, teaching and learning for SD and also of leading by example by practising what is taught and learnt (both staff and students). Mbegnouga (2009) challenged universities in Africa not to be professors of environmentally protective theories while at the same time engaging in practices that contribute to environmental degradation.

The complex nature of contemporary environmental and sustainability issues poses complex epistemological and ontological challenges for HE (Lotz-Sisitka & Lupele, 2006); hence effective

strategies to overcome these challenges are needed. Bourdieu (2003) posited that for academics to succeed in the face of the increasing complex epistemological and ontological environment, they need to engage with these issues critically and proactively. Nicolaides (2006, p. 415) described sustainability in HE as “a positive movement towards environmental accountability and social and environmental responsibility”. He argued that universities should be engaged in the business of researching issues related to sustainability, as well as advancing the knowledge needed to significantly add value to the achievement of a sustainable environment in the long run.

David Orr, in a workshop titled *The University in a Black Swan World*⁴ argued for a re-definition of the role of HE in the revitalisation of local economies, the elimination of carbon emissions, the restoration of local food supplies, and the creation of a new, sustainable base for economic and community development. Re-defining the role of HE in the pursuit of SD will require approaches beyond single disciplines, hence the concepts of multidisciplinary, inter-disciplinary and trans-disciplinary become inevitable. Disciplinary oriented education has been argued to challenge the attainment of ESD and suggestions have been made to universities to look beyond individual disciplinary borders or faculties in order to complement and supplement individual disciplinary activities on ESD (van Dam-Mieras, 2006; Gabatshwane & Kabita, 2013; SARUA, 2014a). There have been specific calls for much more than disciplinary knowledge in individuals and for competencies in addition (van Dam-Mieras, 2006; SARUA, 2014a). Competences that “look further than the borders of the own field of specialization or culture, to work together with people of different beliefs, to communicate (orally, in writing and via new media), and to reflect on their own personal dedication, involvement and performance” (van Dam-Mieras, 2006, p. 15).

Several international declarations have been produced to encourage HE to strengthen their contributions to a sustainable future. Notable among these international conferences and initiatives emphasising the role of HE in the quest for SD are the Stockholm Declaration in 1972, Tbilisi Declaration in 1977, Talloires Declaration in 1990, Halifax Declaration in 1991, Agenda 21 in 1992, Kyoto Declaration in 1993, Thessaloniki Declaration in 1997, World Conference on HE in 1998, MESA Conference in 2004, Ahmedabad Declaration in 2007, Bonn Declaration in 2009 and Rio+20 in 2012 (UNEP, 2010). Most recent is the World Conference on ESD in Japan in 2014; its Aichi-Nagoya Declaration on Education for Sustainable Development has urged higher education and other concerned stakeholders to:

Engage in collaborative and transformative knowledge production, dissemination and utilization, and promotion of innovation across sectoral and disciplinary boundaries at the science-policy-ESD practice interface to enrich decision-making and capacity building for sustainable development with emphasis on involving and respecting youth as key stakeholders.

(UNESCO, 2014c, p. 2)

⁴<http://www.mcgill.ca/sustainability/channels/event/mcgill-net-positive-presents-david-orr-university-black-swan-world-233997>

Apart from recommendations, commitments to action towards SD have been made by various stakeholders, including universities. An example is the voluntary commitment and partnership initiative in 2013 by stakeholders at the Rio+20 Earth Summit, who made renewed commitments to the goals of SD stated in *The Future We Want* document emerging from this conference (United Nations Department of Economic and Social Affairs [UNDESA], 2013). Of interest to this study is that of the many thematic areas of the above commitments, ‘education’ emerged on top of the list with 328 commitments which were mainly the result of universities making such commitments via the HE Sustainability Initiative (HESI) (UNDESA, 2013). The HE Conference at the World conference on ESD in 2014 also stressed a commitment to ESD.

The above-mentioned international declarations are evidence of the ability and mandate of HE to influence government, policy, practice, schools, industry, non-governmental organisations, states and communities through their core functions. Institutional structures cannot transform themselves, it is the individuals in those institutional contexts that do the transformation or reproduction of the structural practices using their positions-practices systems. It is therefore essential to focus more on the individuals who could contribute to changes, according to their sphere of influence in HE and other related institutions. Who exactly can do what? How? To what extent can a particular person enable and influence ESD? What particular individuals and groups of individuals in HE can do exactly what, why and how? All these are questions that this study tries to answer.

1.4.2 ESD MAINSTREAMING IN HIGHER EDUCATION

Mainstreaming involves the systematic integration of environment and sustainability concerns into a wide range of disciplines, faculties, programmes and courses in universities, as well as the integration of these concerns into university policies, management practices and student initiatives (UNEP, 2008). Mainstreaming incorporates the three core functions of universities which are teaching, research and community engagement; it is value-based, and involves transformative learning processes and new ways of thinking; it is change-oriented (at the individual, institutional and societal levels); it is participatory, deliberative, accommodating and flexible hence it cannot be prescriptive (ibid.).

ESD mainstreaming is both a learning process and a change process. The occurrence of effective ESD learning processes can contribute to educational quality and relevance of universities. Lupele and Lotz-Sisitka (2012) presented four propositions to enable the understanding of how ESD learning processes may contribute to educational quality in Sub-Saharan Africa. These propositions were presented as a framework for further research with interesting empirical case studies to elucidate each point as presented in the table that follows (Table 1.1).

Table 1.1: ESD propositions

Proposition 1	ESD enables ‘learning as connection’
Proposition 2	ESD involves critical thinking, action competence, agency and developing capabilities
Proposition 3	ESD learning processes help to make education relevant
Proposition 4	It is possible to improve education quality through ESD learning processes

Since ESD mainstreaming is a process-based emergent learning and change process, appropriate assessment of the learning and change becomes crucial. The assessment of sustainability in universities can be done with the use of a Unit-Based Sustainability Assessment Tool that was developed for use in the HE ITP in Africa (Togo & Lotz-Sisitka, 2009). This development sought to complement the UNEP-MESA Programmes for Universities in Africa materials and was part of the broader UNEP MESA initiative aimed at resourcing African universities to mainstream environment and sustainability into their core functions in order to encourage a more systematic approach to mainstreaming. This tool has been made assessable to ITP participants for use. They have used it to audit the ESD status of their departments, faculties or institutions before, during and after their change project. This has been particularly useful in detecting areas that need intervention as well as progress made by educators to establish a more collective orientation to the change processes.

1.4.3 ESD: FROM THE UNDESD TO THE GLOBAL ACTION PROGRAMME

The United Nations Decade on ESD has come to an end and therefore formally closed in 2014. The Global Action Plan popularly known as the GAP or Roadmap has been launched to contribute to the achievement of the vision put forward by the UNDESD. The GAP on ESD as follow-up to the UNDESD after 2014 is endorsed by UNESCO member states through the adoption of 37 C/Resolution 12. The Programme aims to scale up past and current action in ESD in order to accelerate overall progress towards SD (UNESCO, 2014b). It is a key important contribution to the global post-2015 development agenda (ibid.). UNESCO, as the lead agency of the Decade, has developed this Global Action Programme on ESD based on broad consultations and input from a wide range of stakeholders and the Programme was endorsed by the same organisation’s General Conference in 2013. The Global Action Programme on ESD was then launched in November 2014 at the World Conference on ESD in Aichi-Nagoya in Japan.

The overarching goal of the GAP is to generate and scale up action at all levels and in all areas of education and learning in order to accelerate progress towards SD (UNESCO, 2014a; UNESCO, 2014b). A two-fold approach is deployed by the Global Action Plan to multiply and to scale up ESD action: (1) integrating SD into education, and (2) integrating education into SD. Consistent with this global strategic approach are the two main objectives of the Global Action Plan, namely (1) “to reorient education and learning so that everyone has the opportunity to acquire the

knowledge, skills, values and attitudes that empower them to contribute to SD”, and (2) “to strengthen education and learning in all agendas, programmes and activities that promote SD” (UNESCO, 2014b, p. 14). These two objectives can be achieved by higher education (although not single-handedly) through teaching, research, management and community engagement. Higher education can achieve these objectives inter alia by reflecting and achieving the real essence of education (for public good) and by building the capacity of academics through academic development training, thereby empowering students.

There are five major priority areas in the GAP; these are: “1. Advancing policy, 2. Transforming learning and training environments, 3. Building capacities of educators and trainers, 4. Empowering and mobilizing youth, 5. Accelerating sustainable solutions at local level” (UNESCO 2014b, p. 15). It is important to highlight that all these five priority areas are related and relevant to this research, especially in terms of the change projects of the ITP participants being researched. However priority 3 (building capacities of educators and trainers) is most directly applicable. This implies increasing the capacities of educators and trainers to deliver ESD more effectively. In relation to this research, it mandates the training and exposure of university educators to methods, approaches, and strategies that can help them to effectively and contextually deliver ESD related knowledge and practice to students. This entails the deliberate and contextual delivery of ESD to pre-service and in-service teachers in higher education and TVET agencies through educational responses to local SD related problems.

Although educators and trainers are influential change agents, there is a need for them to be supported with the necessary skill, knowledge, strategy, value, required motivation and commitment to educationally respond to SD. Consequently, educators and trainers can be supported to integrate or mainstream ESD in their teaching, research and community engagement during professional development training programmes on ESD mainstreaming like the ITP. This type of training engages educators from various disciplines and faculties in higher education.

1.4.4 ESD IN THE POST-2015 EDUCATION AGENDA

Education is the most powerful transformative force and rethinking the purpose of education, how learning is organised and education as a public good are recent global clarion calls (UNESCO, 2015). UNESCO (2015) has asked “What education do we need for the 21st century? What is the purpose of education in the current context of societal transformation? How should learning be organized?” It is important to reflect on the real purpose of education and the kind of education and learning that is needed for the 21st century in the current context of societal transformation. There is a post-2015 agenda and there are proposed targets for that agenda. The Muscat Agreement, adopted at the Global Education For All Meeting in 2014, and the proposal for Sustainable Development Goals (SDGs), developed by the Open Working Group of the UN General Assembly on SDGs, include ESD in the proposed targets for the post-2015 agenda. The international community has proposed this new set of SD goals that are action-oriented, global in nature and universally applicable (UNESCO, 2014b; United Nations, 2014; Open Working

Group, 2014; Cutter et al. 2015). The Global Action Plan is intended to be a “concrete, tangible contribution to the post-2015 agenda”. The implementation of the Global Action Plan is therefore intended to be aligned with the implementation of the post-2015 agenda. The set of SDGs have been negotiated and launched by the UN Member States on the global post-2015 agenda with goal 4 focussing on education and the Global Action Plan (United Nations, 2014). The SDG goal 4 is meant to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” while SDG goal 4 sub-section 4.7 states “by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles...” (Open Working Group, 2014).

Some of the SDGs that higher education can contribute to and achieve through the appropriate training of educators and trainers include: Goal 6 – Ensure availability and sustainable management of water and sanitation for all; Goal 7 – Ensure access to affordable, reliable, sustainable and modern energy for all; Goal 12 – Ensure sustainable consumption and production patterns; Goal 13 – Take urgent action to combat climate change and its impacts; Goal 14 – Conserve and sustainably use the oceans, seas and marine resources for SD; Goal 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss (United Nations, 2014; Open Working Group, 2014; Cutter et al., 2015).

The Stakeholder Forum, which serves as a hub for the vision and engagement of global civil society stakeholders, has recently concluded and published a paper after an in-depth analysis of the SDGs and their integration⁵ (Cutter et al., 2015). They did this by critically analysing the nexus and balance between three main dimensions of sustainability development which are economic, social and environmental within the SDGs framework (ibid.). This analysis has been useful in comprehending quite intensively, the importance and ways of working with the SDGs effectively at various levels especially higher education. The perspective developed in this review provides an up-to-date contextualisation of the dimensions of sustainable development embedded in ESD that educators have to engage with and respond to in higher education. It also forms a platform for critical policy engagement with the SDGs at global, regional, national, and local levels. Doing research on ESD and surfacing diverse experiential dynamics and dimensions of its mainstreaming in HE (involving both the structure and the agent) as key stakeholders and partners in the past UNDES, and the post-2015 global agenda, is indispensable to effective upscaling of ESD.

1.4.5 PROACTIVELY TAPPING THE POTENTIAL IN AFRICAN HIGHER EDUCATION TO SOLVE AFRICAN PROBLEMS

I am convinced that Africa is a well of untapped resources flowing around Africans, irrespective of their age, status, educational qualification, discipline, race or clan. The African Union

⁵ The study was commissioned by the German Council for Sustainable Development.

Commission (2015, pp. 2-6) has stipulated, “Africa has the capability to realise her full potential in development, culture and peace and to establish flourishing, inclusive and prosperous societies”. This African-based potential material and human capital can be appropriately developed and invested in to experience a better Africa by inter alia investing in capacity building through professional development of teachers and trainers in HE, and investing in research and innovation across disciplines and institutions in Africa to produce local solutions to local problems (SARUA, 2014a). Such strategic investment has the potential to instigate action towards ‘The Africa We Want’ characterised by the transformable and sustainable social, political, economic development of its citizens, institutions, leaders, communities and societies. Central to this study are some the 2063 aspirations for Africa:

A prosperous Africa based on inclusive growth and sustainable development ... An Africa whose development is people-driven, relying on the potential of African people ... [that] Africa’s human capital will be fully developed as its most precious resource, through sustained investments based on universal early childhood development and basic education, and sustained investments in higher education, science, technology, research and innovation ... [that] Africa shall address the global challenge of climate change by ... drawing upon skills of diverse disciplines with adequate ... capacity building ... to ensure implementation of actions ... [Africa will] have capable institutions and transformative leadership in place at all levels ... [that] Africa will be a continent where the institutions are at the service of its people. Citizens will actively participate in the social, economic and political development and management.

(African Union Commission, 2015, pp. 2-6)

1.4.6 ORGANISATIONS MAINSTREAMING ESD IN AFRICAN UNIVERSITIES⁶

At global and regional levels, various programmes and initiatives are currently supporting university engagement with SD. The mainstreaming of ESD and actualising the broader objective of the UNDESD (which has ended) have been addressed by bodies such as the Global Universities Partnership on Environment and Sustainability (GUPES) Programme which emerged from the collaboration between UNEP and the African Association of Universities (AAU), Mainstreaming Environment and Sustainability in African Universities Partnership Programme (MESA), and the African Teacher Education Network on Education for Sustainable Development (AFRITEIS).

The Global Universities Network for Innovation has recently also given attention to universities and SD and published a 2011 report entitled *Higher Education in the World 4: Higher Education's Commitment to Sustainability, from understanding to action*. The publication carries in-depth analyses of universities and their response to sustainability concerns (including climate change) from all continents including Africa. The African Association of Universities hosted a special discussion on sustainability at their 12th Annual General Conference in 2009. The African

⁶ SARUA (2014a, p. 98).

Association for the Development of Education in Africa (ADEA) also gave attention to the relationship that exists between universities and SD. A key message from the ADEA Triennale in 2012 is that “Africans must have control over the means and resources needed for the continent’s SD”. This depends on regional co-operation and the building of South-South partnerships, in addition to more traditional South-North partnerships.

The Global University Network for Innovation (**GUNI**) is an international network created in 1999 by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations University (UNU) and the Universitat Politècnica de Catalunya - BarcelonaTech (UPC), after UNESCO's World Conference on HE (WCHE) in 1998, to give continuity to mainstreaming innovations and to facilitate the implementation of its main decisions.⁷ The Higher Education Sustainability Initiative (**HESI**) Rio+20 was initiated in 2012 by a group of UN partners as a spontaneous initiative for HEIs since they educate current and future decision makers and have the capacity to play the role of building a more sustainable society and environment (UNDESA, 2013). By June 2013, 272 institutions from 47 countries had made a commitment to the HESI, which includes mainstreaming SD in their curriculum and reporting on their endeavours (ibid.).

GUPES is one of the leading programmes of the Environmental Education and Training Unit (EETU) of the United Nations Environment Programme (UNEP).⁸ Their programmes, projects, initiatives and activities are organised around three pillars, namely education, training and networking with a specific focus on HE.

MESA is an initiative by UNEP to support the UNDESD in responding to environment, SD and climate change challenges in Africa. This programme, initiated by partner organisations in 2004, offers excellent opportunities to African universities and other HEIs, thereby enhancing their relevance as potential agents of change in society and the continent at large (UNEP, 2008). This potential in the MESA programme to facilitate change and re-orientate universities lies in its interest in contributing to the revitalising of HE in Africa. By 2014, the MESA platform had a membership of over 85 universities in Africa in 30 countries including Angola, Botswana, Burundi, Cameroon, Congo, Cote d'Ivoire, Djibouti, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe (Waswala, Pradhan & Ayombi, 2015). See Appendix 1 for MESA countries and universities, and see Appendix 2 for MESA sub-regional partners / focal points.

⁷ <http://www.guninetwork.org/about-guni>

⁸ <http://www.unep.org/training/>

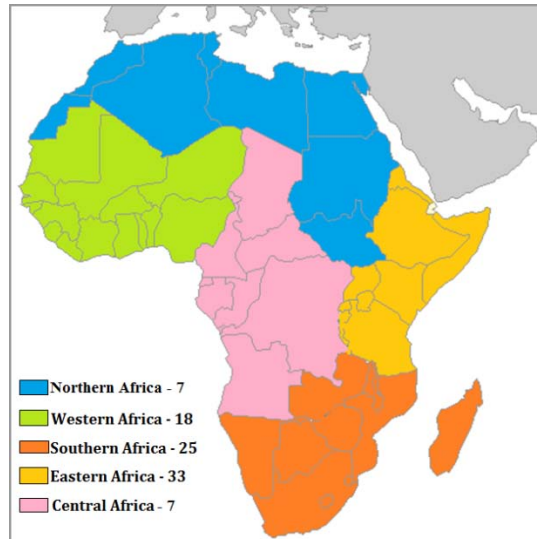


Figure 1.2: MESA sub-region member countries with statistics (March 2014)

However, as explained by UNEP (2008), the transformative and change-oriented agenda of MESA (and other bodies) is not without challenges, one of which can be summed up in the insufficient institutional support for university professionals to make the desired changes in their institutions. There is still a need to develop more effective systems approaches to mainstreaming environment and sustainability in African universities. This is because the MESA University Partnership still relies heavily on individuals that are committed to initiating and sustaining the changes they have made in their respective HEIs. Overcoming this challenge led to the development of Swedish International Development Cooperation Agency (Sida) sponsored ITP on ESD for HE, piloted in phase two of MESA University Partnership from 2008 onwards. This programme constitutes a change-oriented professional development model which enables participants (mostly university lecturers) to undertake university-based change projects and draw support, new knowledge exchange and North-South/South-South dialogue from the professional development experience of other professionals (NIRAS, 2015). It also allows for strengthened capacity building for individuals, as well as continuity and stronger institutional impact (UNEP, 2008).

MESA Chairs⁹

There are three MESA Chairs on Education for Sustainable Development supported by the SADC Regional Environmental Education Programme (REEP). The three recipient universities are the University of Botswana (UB), University of Swaziland (UNISWA) and University of Zambia (UNZA). The three universities were considered for their substantial contribution to the development of the MESA initiative, as well as their dedication to the implementation of UN Decade of Education for Sustainable Development (UNDESD) internally and in the SADC region. Financial support of US\$150 000.00 (€1 200 000.00) is shared equally by the three universities. The funding is intended to support activities aimed at the implementation of the UN

⁹ Source: UNISWA (2010)

Decade of Sustainable Education (UNDESD) through mainstreaming of environment and sustainability within university academic and non-academic programmes and activities. The University of Swaziland hosted the launch of the SADC-REEP MESA Chair and workshop. The work of an EE/ESD Chair in socio-ecological space is to:

Provide leadership for ... new knowledge, new approaches, new ethics, new networks, new materials, new systems, new community links, a new sense of motivation and relevance, AND new purpose and practice in education and learning ... to shift currently dominant epistemologies and institutional forms, enhance agency, resilience, adaptability and transformability, and sharpen the multi-disciplinary scientific and educational base needed to respond to the critical socio-ecological challenges of the 21st century.

(Lotz-Sisitka, 2010, p. 26)

1.5 CHANGE-ORIENTED PROFESSIONAL DEVELOPMENT TRAINING

1.5.1 PROFESSIONALISM AND PROFESSIONAL DEVELOPMENT

The aim of professionalism is to “improve practice and enhance accountability by creating means for ensuring that practitioners will be competent and committed” (Darling-Hammond, 2009, p. 49). The professional approach (unlike the bureaucratic, market or democratic approach to change) is aimed at investing in practitioners who are knowledgeable and have the capacity to make sound decisions that can shape education (Darling-Hammond, 2006). This approach is important and useful in developing reflexivity in HE institutions led change processes, and has been employed in the field of Environmental Education and ESD (Lotz-Sisitka & Hlengwa, 2012b). Lynton and Pareek (2000) argued that training of all employees is a very important aspect in the process of any organisational change and only in this way can awareness of any issue be developed in any organisation.

Investing in professional development of educators increases the expertise and quality of not only the educators but affects students’ achievement rate as well as institutional improvement (Darling-Hammond, 2009). There is an urgent need to increase human capacity and skills to improve development opportunities and respond to sustainability risks in Africa (GUNI in Lotz-Sisitka, 2011). This need is evident in a UNEP *Foresight* publication which stated that the transformation of human capabilities to meet environmental challenges is the second most rated emerging environmental issue in the world in the 21st century (UNEP, 2012). There is no better time for critical attention to be directed towards investing in the development of academic professionals. Quinn and Vorster (2014, p. 1) entitled their opinion piece as “Isn’t it time to start thinking about ‘developing’ academic developers in a more systematic way?” They have challenged the often informal, ad hoc and unstructured induction processes for new academics in the field of HE. They argued that the drastically growing and changing field of HE demands an

increase in knowledge and competence of academics in order for them to be able to respond appropriately to and contribute to solving problems in modern HE.

It has also been argued that academic development now exists at the heart of many institutions and these developers have the capacity to positively shape teaching and learning at national and international levels (Boughey, 2007; Gibbs, 2013; McDonald & Stockley, 2008). In my opinion, SD is a local, national and global issue or problem that ought also to be integral to academic development in HE. However, the responsibility of, response and contribution to SD is not only for new academics but all academics, management and non-academic staff in HE. Hence, apart from the systematic academic induction course, Quinn and Vorster (2014) have directed our attention to the urgent need for the integration of ESD knowledge and capacity building in structuring institutional academic development. Based on this proposition, my question would be “Isn’t it time to start thinking the ‘development of ESD capacity’ in academic developers in a more systematic way?”

1.5.2 CHANGE-ORIENTED PROFESSIONAL DEVELOPMENT TRAINING AND APPROACHES IN HE AND ESD

Lotz-Sisitka in SAQA (2010) argued that SD is, in itself, a change-oriented learning process since no society (or sector of society for that matter) has yet been able to figure out how to develop sustainability. Training involves activities that are prearranged to impart information and/or instructions for the purpose of improving the beneficiary’s performance or to help him or her attain an essential level of knowledge or skill (Fien, 2012, cited in UNESCO, 2014a). According to Lotz-Sisitka et al. (2015), the ITP in ESD-HE programme, has, since its inception, drawn on a change-oriented learning approach to professional learning and institutional development first developed at Rhodes University in the early 1990s for guiding Environmental Education professional development programmes and later refined and expanded via the MESA ESD Innovations Programme (UNEP, 2006) and the ITP ESD-HE (NIRAS, 2015). Change-oriented (academic) professional development training on ESD in HE is envisaged in the development, planning and structure of the ITP. It takes cognisance of the changing societal context and emerging critical environmental and SD issues which are significant to university education in the 21st century (Lotz-Sisitka & Hlengwa, 2012b). It also recognises the impact that generational unsustainable practices have on disciplines, the knowledge structure and pedagogical process; and how universities are going to be able to engage with consequent challenges (ibid.). The ITP on ESD in HE therefore functions in the heart of the above concerns with its change-oriented learning approach.

Drawing on Lotz-Sisitka et al. (2015), this approach to learning and change is situated, emergent and reflexive, and its efficacy goes beyond the achievement of individual cognition and transcends to the facilitation and emergence of change in the work contexts of the participants

and even beyond. The programme is based on a reflexive professional development model that supports both individual and institutional change-oriented learning overtime. It uses a situated learning pedagogy that invites and mandates participants to identify a self-driven change initiative in their institutions, and to work with other colleagues to bring about changes in those institutions proactively.

Professional development for ESD in higher education is an important international focus and this research contributes perspectives from Africa which is not commonplace. According to the editors of a recent book 'Leading Practice Publication: Professional development of university educators on Education for Sustainable Development in European countries', this publication "is the result of nearly two years [2013-2015]of work on the European project University Educators for Sustainable Development (UE4SD) building on the knowledge and experience of 53 partners from 33 countries active in the area of Education for Sustainable Development (ESD) at European higher education institutions (HEIs)" (UE4SD, 2015, p. 10). The aim is to share a work in higher education professional development and ESD in Europe as well as "provide an overview of the best practice examples of professional development opportunities for European university educators in the area of ESD; and to inspire the reader to engage in supporting further developments in this field (ibid.). My research explores the case of the ITP in higher education, which is a professional development training programme meant for African (and Asian) university educators. The thesis focuses on *African* educators and their institutions, with a particular interest in the impact of the position-practice system in the learning and change process.

1.6 THE INTERNATIONAL TRAINING PROGRAMME ON ESD

1.6.1 THE ITP ON ESD IN HIGHER EDUCATION

This study explores the ITP which focuses on ESD academic professional development for university educators and encourages them to self-select and work on an institutional 'ESD Change Project' while participating in the year-long programme, using a reflexive professional development model. The ITP on ESD in HE was one of the major projects sponsored by the Swedish International Development Cooperation Agency (Sida) in supporting United Nations' calling for Decade of ESD, 2005-2014. The Swedish Government-sponsored ITP on ESD in HE is a partnership project, involving the UNEP, NIRAS, MESA, and universities in Africa, Asia and Sweden.

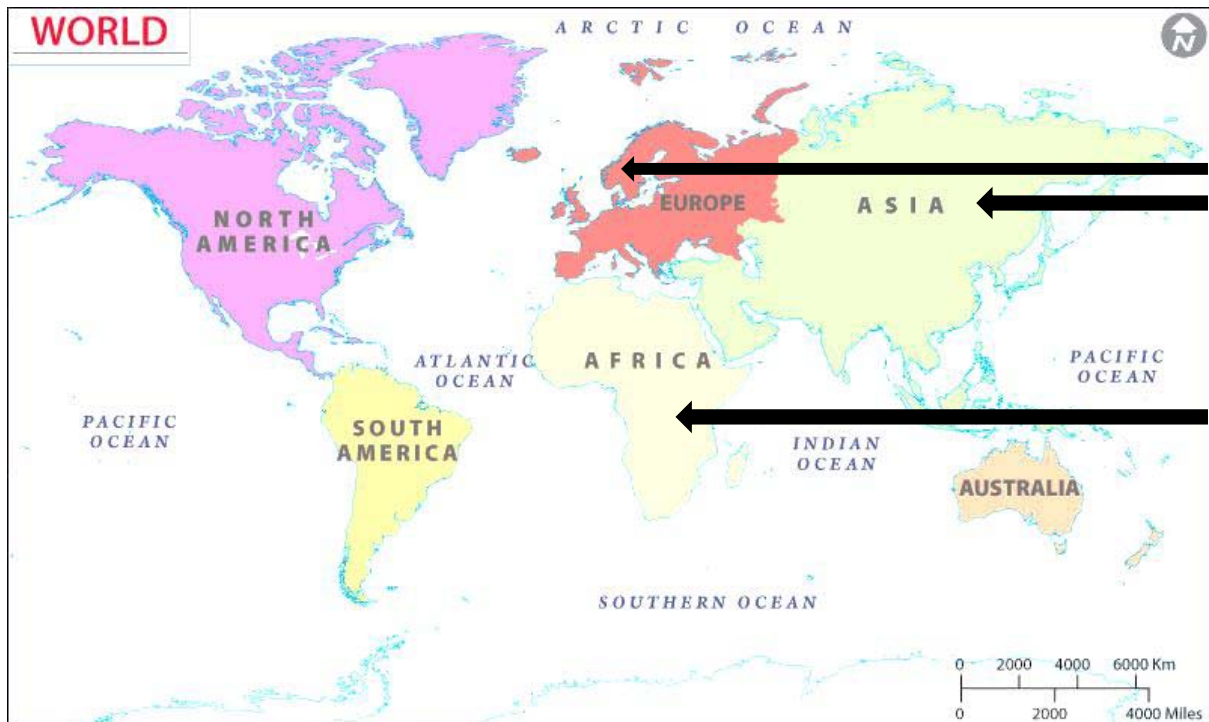


Figure 1.3: Map of the world¹⁰, with emphasis on Africa, Asia and Sweden, the sites in which the ITP physically took place

The development and implementation of the programme since 2008 has been a collaborative effort between Ramboll Natura AB (later changed to NIRAS) in Sweden, UNEP, the SADC Regional EE Programme and the Wildlife and Environment Society of South Africa (WESSA), Rhodes University, Strathmore University (Kenya), the Asian Institute of Technology (Thailand), Tongji University (China), Stockholm Resilience Centre, Uppsala University and Chalmers University. This collaboration enabled the programme to draw on perspectives and resources (people, places and publications) from Sweden, southern Africa and Asia.

Ramboll Natura AB/NIRAS worked closely with Rhodes University (South Africa) and Obafemi Awolowo University (Nigeria), Stockholm Resilience Centre, Uppsala University and Chalmers University in Sweden played major roles in the development and implementation of the programme. Tongji University of China joined the ITP after a conference of Global University Partnership of Environment and Sustainability (GUPES) in November 2010 in Nairobi, the headquarters of the United Nations Environment Programme, and worked as a partner in the 2011, 2012 and 2013 programmes. This programme supports the United Nations Environment Programme initiative focussing on Mainstreaming Environment and Sustainability in African Universities (MESA). Thus the programme focussed initially on African universities and the first programme in 2008 involved African universities only.

¹⁰ <http://www.whereig.com/world-continents.html>

1.6.2 THE ITP CHANGE PROJECTS AND OBJECTIVES

The ITP is built around 'Projects for Change'. Its purpose is to enable participants to link the learning from the programme to their own work contexts. Participants were required to define, design and develop their own change projects based on needs, tasks and responsibilities in their daily work schedules. In the dialogue between the participants, their home institutions and the programme coordinators, there is a deepening of the understanding of the different dimensions of ESD, adaptation of recent experiences to the specific conditions in participants' institutions thereby sustaining the impact of the training beyond the individual participants and beyond the time of the training (UNEP, 2010).

The ITP has long-term and short-term objectives. The short-term objectives were meant to measure and analyse outputs and outcomes, through the concrete change project and its implementation process. They are as follows: to deepen understanding of the environmental, socio-cultural and economic dimensions of SD; to enhance the teaching, learning, research, community involvement and management of higher education institutions with regard to ESD, and; to build and strengthen networks in the field of ESD in higher education. The long-term objectives of the ITP were aimed at measuring and analysing the effects and impacts of the entire ITP. They are as follows: to contribute to poverty reduction and SD; to contribute to capacity development and change processes in participants' institutions and home countries; to contribute to strengthening methods, processes and monitoring to enable relevant quality education; to contribute to increasing the awareness of the importance of effective ESD in the higher education sector; to contribute to improved institutional infrastructure for ESD; and to contribute to the enhancement and sustainability of networks in the field of higher education (NIRAS, 2015).

1.6.3 CONSTRUCTION OF THE ITP ESD CURRICULUM IN THEMES

The ITP ESD curriculum was established on a central curriculum principle which is deliberative and dialogical, allowing for knowledge exchange and mutual dialogue between participants, programme facilitators, and enhances North-South dialogue (Lotz-Sisitka, 2008a). Participants are supported with conceptual capital and examples of best practices and are able to exchange experiences at international and regional levels through an international two-week programme in Sweden, and a regional two-week programme in Africa and in Asia. The ITP consists of a four theme curriculum framework: (1) change processes in institutional settings, (2) understanding SD, (3) ESD, (4) institutional frameworks (ibid.). These four themes are presented in the diagram below and elaborated later with their associated goals and implications:

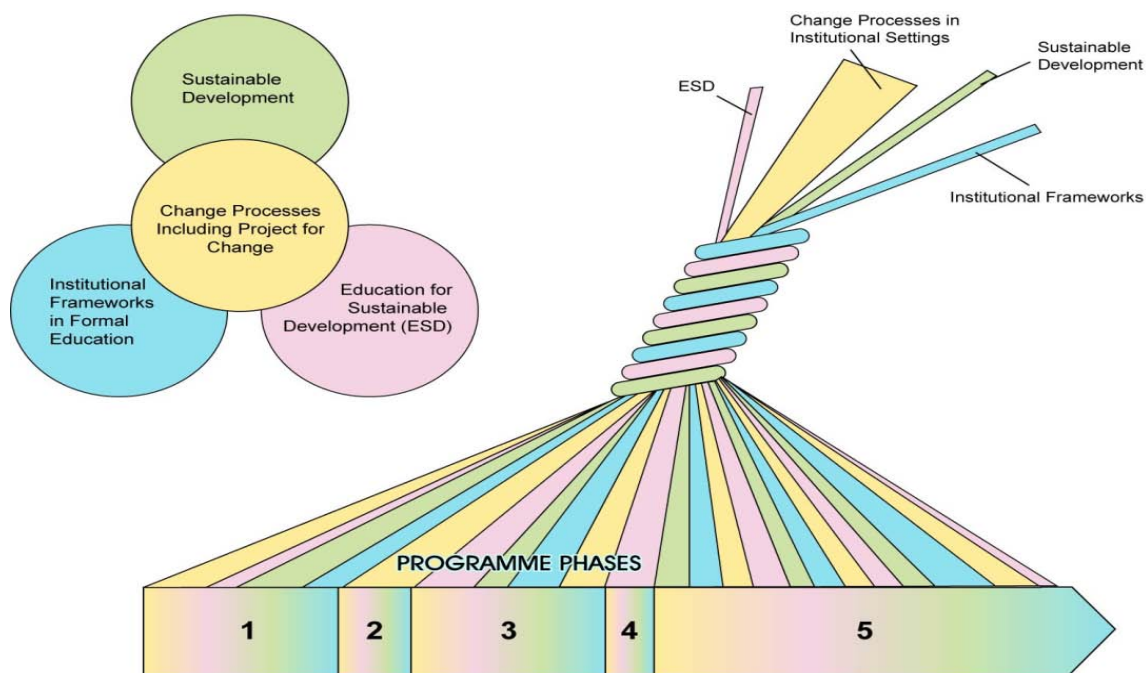


Figure 1.4: Integrated strands or 'rope' model depicting the relationship between the four modules during the five phases of the programme (ITP report, 2011)

Theme 1: Change Processes in Higher Education Institutional Settings

The goal of this theme is to enable participants to better conceptualise, understand and engage with change processes in their institutions (Salami, 2008). Under this theme the interest is in exploring the structure-agency relationship through questions such as: What structures contribute to / impede change processes? How do agents best interact with existing and new structures to bring about change and what does taking up such agency involve? Tools and strategies (e.g. planning, evaluation, dialogue, partnership networks etc.) that strengthen agency for change are emphasised through case studies, knowledge and experiences of these (Ramboll Natura AB, 2008).

Theme 2: Examining Sustainable Development

The goal of this theme is to enable participants to critically deliberate on the ecological, socio-political and economic dimensions of SD and consider implications for different fields of knowledge (MESA West and Central African Report, 2008). Here, interest is in the exploration of the historical roots and contemporary dynamics of SD from a critical vantage point, and its explanatory and practical relevance within different contexts, disciplines and time-space configurations, with special reference to recent scientific evidence of potential global climate change risks and responses (Ramboll Natura AB, 2008).

Theme 3: Higher Education Responses to Sustainable Development

The goal of this theme is to enable participants to conceptualise and implement teaching, research and community engagement processes in response to SD challenges (MESA West and Central

African Report, 2008). Here, the ITP facilitators engage with participants to explore transformative learning; ethics based epistemologies in learning; and socio-cultural approaches to learning within an ESD framework. To understand these, historical perspectives of the emergence of ESD, narratives and theories are deliberated on, and there is critical examination of various approaches to learning. Adult learning and learning processes in university settings (i.e. scholastic reasoning; practical reasoning etc.) are also explored for potential contributions to ESD thinking in university settings. Curriculum change orientations based on socio-cultural, participatory learning principles are also examined (Ramboll Natura AB, 2008).

Theme 4: Institutional Frameworks in Higher Education

The goal of this theme is to enable participants to identify needs for institutional support and opportunities for change within HE institutions (MESA West and Central African Report, 2008). This theme is centred on the exploration of histories of the university system, and contemporary institutional issues and practices that characterise universities and the educational and knowledge generating programmes they offer to society. The relationship between universities, society and social change are of particular interest, principally in this globalising world (Ramboll Natura AB, 2008). In designing the programme, the developers have tried to ensure the conceptual integration of these four modules. Thus rather than envisaging the modules as separate entities that will be dealt with one at a time, they noted that “we have worked with the notion of a woven rope that builds one coherent framework that is deepened and strengthened as we work through the programme” (Ramboll Natura AB, 2008; see Figure 1.4).

1.6.4 THE FIVE PHASES OF THE ITP CURRICULUM

The five phases of the curriculum of the ITP are presented in the diagram below and explained thereafter. This example uses the dates of the 2013-2014 ITP (UNEP, 2010).

5 Phases of the Programme

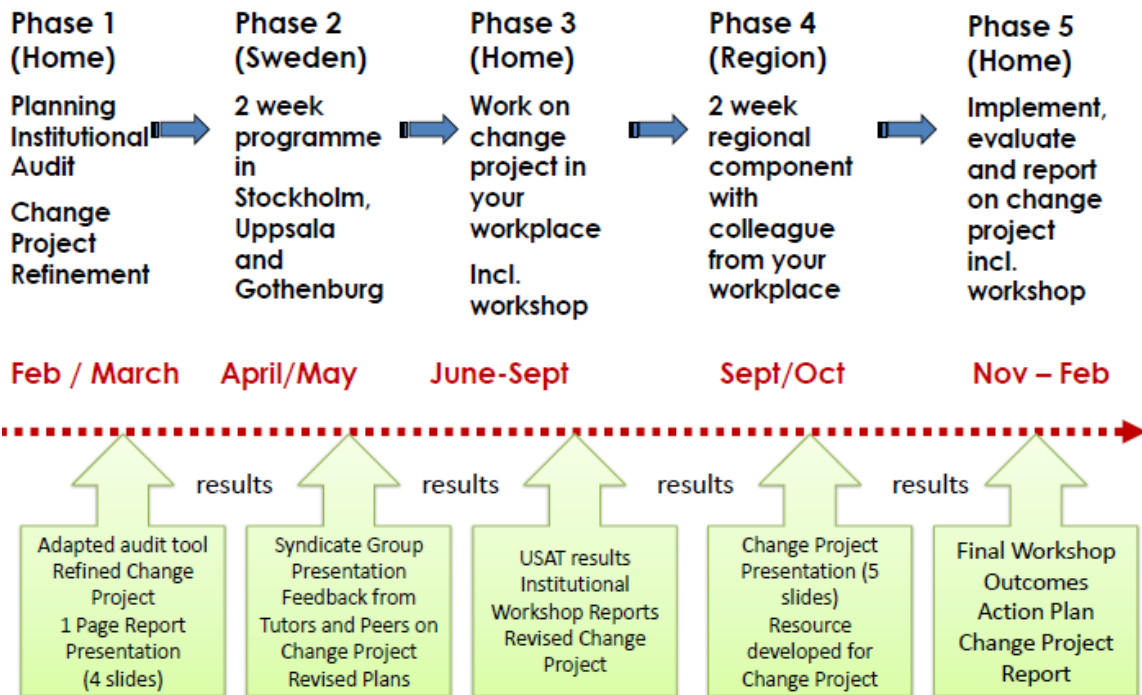


Figure 1.5: Change-oriented learning structure of the ITP ESD-HE in its five phases.

Source: Lotz-Sisitka et al. (2015)

Phase one indicates the selection of candidates (participants and co-participants) across Africa and Asia by means of an audit of the institutions of participants using the MESA Unit-based Sustainability Assessment Tool (USAT) (Togo & Lotz-Sisitka, 2009) and defining of a change project in the institutional context. Only participants from Asia and Africa were invited to participate in the programme. This phase also introduces to participants the programme design, orientation to the programme materials, including the Change Project Guidelines and the Unit-based Sustainability Assessment Tool. The focus in this phase is on the initial ESD change projects designs; the participants are expected to start the earlier activities within their institutions, and are contacted by email, Skype or phone calls for mentoring. The selection of participants was based on the following criteria: quality of change project proposal of applicants; political catalytic influence and potential for bringing about change; evidence of existing commitment to quality education and SD; country representivity (for example, in 2008 there were participants from 17 countries¹¹); gender representivity (for example, in 2008 there were 15 males and 11 females where 30 males and 21 females had applied); multi-disciplinarity and institutional programme mix (for example, policy change, national university commissions, university management, curriculum change at faculty level, etc.) (Ramboll Natura AB, 2008).

¹¹ Nigeria was overrepresented based on the very high number of quality applications from the country and the lack of appropriate applications from the rest of Central and West Africa.

In **phase two** participants are exposed to other university ESD practices and international exchange, and professional development presentation of change projects using the MESA toolkit.¹² Participants from Asia and Africa travel to Sweden, specifically the Stockholm Resilience Centre, Uppsala University and Chalmers University. This also marks the first training sessions held in Sweden with resource persons from Swedish universities, UNEP and other international organisations. Field trips are also arranged. These activities are aimed at letting participants present and work on their change projects appropriately. With the help of international expertise, individual mentor meetings, and peer reviews from other participants, the change projects may be substantially modified. Participants are also encouraged to engage in syndicate group work, enabling a stronger South-South dialogue.

In **phase three**, participants work on their change projects in their respective institutions, still using the MESA toolkit and developing contextually new practices. This phase, from June to October, is designed for the launch of the change projects. The participants work with the Unit-based Sustainability Assessment Tool (USAT) to further explore the change needs relevant to their initial ESD change project plan. Regional mentors from Rhodes University (for Africa) and Tongji University (for Asia) visit the participants' institutions while institutional seminars or relevant forums are organised. At the seminars, the participants present the change project to colleagues, students and other interested people. During the visits, the regional mentors not only witness the launch of the change projects, but also provide their own experience on ESD, observe the different situations of the participatory institutions and their home countries to better understand the participatory institutions and their change projects.

Phase four involves a regional exchange, presentation of change projects and production of materials to support change projects. This phase is the second training period offered by regional partners, Rhodes University (for Africa) and Tongji University (for Asia). Training courses were designed in a local and regional context with a slightly different focus for Africa and Asia, including issues on indigenous knowledge, climate change, urban SD, ESD curriculum innovation principles, green campus and several study visits, etc. Throughout this phase the participants work and communicate with co-participants, fellow participants, regional resource persons and mentors, as well as Swedish coordinators, to refine their change projects and make feasible plans for implementation, evaluation and reporting. The purpose of this phase is to further modify and improve the change projects.

In **phase five**, which is the last phase, participants must implement, evaluate and report on their Change Projects through institutional workshops and receive regional support. This last phase is a four to five months phase and includes change project implementation, reporting and a final institutional seminar. During this phase, participants are encouraged to consider the main outcomes of their change projects and the contributions of previous training to the project's

¹² The MESA Toolkit is UNEP's ESD Innovation Programmes for Universities in Africa working set of documents which can be accessed online from the UNEP website.

implementation. They are also requested to organise final institutional workshops (seminars) for evaluation and reflection on their change projects and to articulate future action plans and sustainability planning for their change projects. Final reports and posters on change projects are required from each participant.

1.7 RESEARCH GOALS, RESEARCH QUESTIONS, AND RESEARCH FOCUS

1.7.1 RESEARCH GOALS

This study aims:

1. To investigate the pre-ITP/MESA Chair positions and practices of the research participants. This is essential in order to discover qualifications and abilities prior to their participation in the ITP. This helped with investigating the difference or change that was experienced after a certain period of time.
2. To explore the ESD/SD related problematic institutional situations the ITP participants/MESA Chair proposed to change before their engagement with the ITP/take-up of MESA Chair appointment and why. This is necessary because it can be easier to identify and explore what is unsustainable rather than what is to be sustainable (Wals & van der Leij, 2007). Knowledge of this helped with understanding and tracking of the learning and change processes.
3. To find out more about the kind of support offered by the ITP in mediating the above institutional ESD related challenges in order to contextually provide opportunities for the change-oriented learning and practice in participating members and universities. The research also aimed to explore the short and long term professional learning value of the ESD ITP in HE (with its subsequent change projects) to provide insight into professional development of academics in universities within a change oriented learning framework. Furthermore, the goal of phase three in the research was to theoretically study and gain a holistic understanding of the ITP and the process and progress of its change projects , of change-oriented learning assumptions, as well as the quality and relevance of its change initiatives including emergent properties and powers that drive change in HE.
4. To investigate the post-ITP/MESA Chair positions and practices and how these perceptions of post-ITP/MESA Chair positions and practices shape the ESD learning and change processes in their institutions and vice versa. This involves understanding the generative mechanisms and emergent properties in relation to their positions and practices that have or are shaping the change process, acting as enablers and constraints to change, after the ITP intervention/mediation.

5. To probe the emergence of any agential elaboration (or reproduction) after participation in the ITP, to explore agential elaboration and associated implications and to discover what has changed in the participants in terms of personal development.

6. To explore possible existence of structural elaboration (or reproduction) after participation in the ITP. To find out the change-oriented practices that have emerged or are emerging from participants' institutions and their socio-ecological contexts, as a result of the ITP, its change projects, the MESA Chair initiative and the engaged position-practice system in various institutions and countries.

1.7.2 RESEARCH QUESTION

How do the position-practice system and the ITP shape (enable or constrain) effective ESD mainstreaming (ESD learning and change processes) in case countries and institutions and how can the morphogenetic approach and laminated system be used to understand and explain these dynamics?

1.7.3 RESEARCH SUB-QUESTIONS

1. What were the pre-ITP and pre-ESD MESA Chair positions and practices of participants and how do these pre-positions and practices shape the ESD learning and change processes in their institutions?
2. What institutional ESD related problems did the participants propose to address through their participation in the ITP/holding an ESD MESA Chair?
3. What kind of support have the ITP participants (and their respective institutions) received through their participation in the ITP/availability of a ESD MESA Chair in their institutions and country?
4. What are the post-ITP and post-ESD MESA Chair positions and practices and how do these perceptions of post-ITP and post-ESD MESA Chair positions and practices and the ITP shape the ESD learning and change processes in their institutions/countries/region/Africa?
5. Are there agential elaborations (or reproduction) after participation in the ITP? If so, what are they and what do they imply?
6. Are there structural elaborations (or reproduction) after participation in the ITP? If so, what are they and what do they imply?

1.8 OVERVIEW OF RESEARCH METHODOLOGY

As alluded to earlier, this study is structured and designed in three phases but only phases two and three are presented in this thesis. The table 1.2 presented below is a holistic description of the

composition, scope, statistics, and focus of the three phases of this study, as well as countries in the various regions in Africa that participated in the ITP.

Table 1.2: Presentation of the statistics of the ITP participating countries in Africa, their regions, institutions, educators and change projects

PHASE ONE	ITP TRACKING RESEARCH (AFRICA AND ASIA)								
PHASE TWO	MORPHOGENESIS OF CHANGE PROJECTS, POSITION AND PRACTICE OF ITP PARTICIPANTS (AFRICA)								
PHASE THREE	POSITION-PRACTICE SYSTEM, IN-DEPTH MORPHOGENETIC ANALYSIS & LAMINATED SYSTEM EXPLANATION (SOUTHERN AFRICA)								
	T O T A L	A S I A	A F R I C A	NORTH AFRICA	WEST AFRICA	CENTRAL AFRICA	EAST AFRICA	WESTERN INDIAN OCEAN ISLANDS	SOUTHERN AFRICA
Countries	3 5	1 2	2 3	Sudan Egypt Morocco	Liberia Nigeria Gambia Senegal	Cameroon	Kenya Uganda Ethiopia Rwanda	Madagascar Mauritius Seychelles	Malawi Namibia Tanzania Mozambique South Africa Swaziland Zambia Botswana
Higher Education Institutions	1 0 6	3 9 6	6 6	Sudan (1) Egypt (5) Morocco (3)	Liberia (2) Nigeria (5) Gambia (1) Senegal (1)	Cameroon (1)	Kenya (9) Uganda (6) Ethiopia (7) Rwanda (2)	Madagascar (1) Mauritius (1) Seychelles (1)	Malawi (1) Namibia (1) Tanzania (5) Mozambique (4) South Africa (3) Swaziland (1) Zambia (4) Botswana (1)
Participants	2 8 0	1 1 8	1 6 2	Sudan (2) Egypt (16) Morocco (6)	Liberia (4) Nigeria (14) Gambia (2) Senegal (2)	Cameroon (2)	Kenya (18) Uganda (12) Ethiopia (22) Rwanda (6)	Madagascar (2) Mauritius (2) Seychelles (2)	Malawi (2) Namibia (2) Tanzania (10) Mozambique (12) South Africa (6) Swaziland (2) Zambia (10) Botswana (6)
Change Projects	1 3 9	5 8	8 1	Sudan (1) Egypt (7) Morocco (3)	Liberia (2) Nigeria (7) Gambia (1) Senegal (1)	Cameroon (1)	Kenya (9) Uganda (6) Ethiopia (11) Rwanda (3)	Madagascar (1) Mauritius (1) Seychelles (1)	Malawi (1) Tanzania (5) Mozambique (6) Namibia (1) South Africa (3) Swaziland (1) Zambia (5) Botswana (3)

1.8.1 PHASE ONE RESEARCH

The outcome of phase one of the research is only included in this thesis as an appendix (see Appendix 3). This phase has formed the foundational data that was expanded in phase two and three for the purpose of this study. This phase one research process included an investigation of all ITP alumni who were Asian and African participants from the inception of the ITP to its completion, over a six-year period (2008–2013). This phase was particularly characterised by researching and reporting on these participants, their co-participants, their countries, their institutions, their ESD change project process, implementation progress as well as their impact in relation to the ITP objectives. This included 280 academics from Asia and Africa in 35 countries in Asia and Africa from 106 institutions in Asia and Africa with their 139 change projects. This enormous collection of data and analysis provided headway for the entire ITP research process as well as paved the way for a specific area of interest as a focus for the PhD. In phase one, an ITP alumni tracking system was developed (see Appendix 3).

1.8.2 PHASE TWO RESEARCH

Phase two of this research concentrated on a less broad population of research participants comprising only all African ITP alumni. The case studies comprise participants from the five main regions in Africa; North Africa, West Africa, Central Africa, East Africa, Southern Africa, and the Western Indian Ocean Islands. The aforementioned phase one research and its preliminary analysis paved the way for the phase two of this research, where it was noted that there is a relationship between participants' positions and practices when mainstreaming ESD in universities. The outcome of phase two research is presented in Chapter Four of this thesis.

1.8.3 PHASE THREE RESEARCH: SOUTHERN AFRICAN CASE COUNTRIES

The (nested) case studies for phase three come from three countries: Swaziland, Zambia, and Botswana. All the ESD ITP participants from these three countries and the three corresponding ESD/EE MESA Chairs were involved. More details of phase three are presented in Chapter Five, Chapter Six and Chapter Seven. Figure 1.6 that follows is a map showing the three countries in the southern African region.

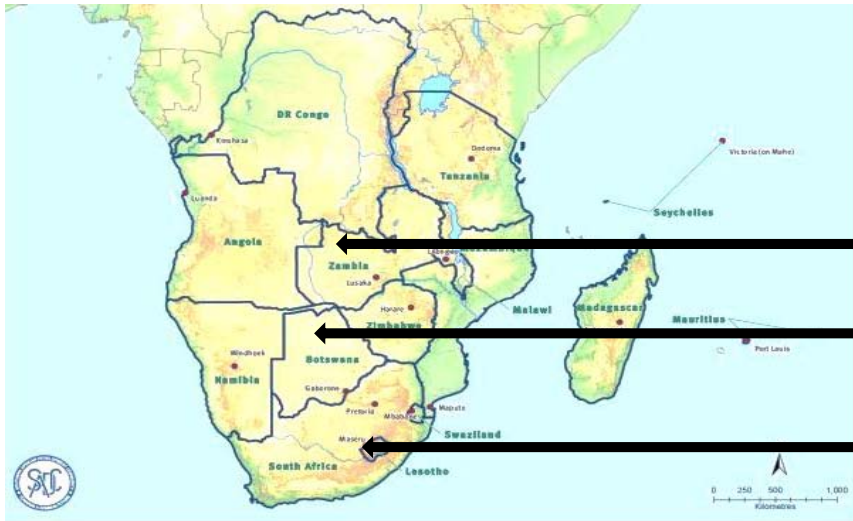


Figure 1.6: Map of SADC countries, with emphasis on the three case countries in phase three research¹³

1.8.3.1 Southern African Region of Africa

Among the countries in the world and in particular on the African continent, southern Africa is one of the regions that is most vulnerable to the impacts of climate change (SARUA, 2014a; 2014b). The southern African region’s high vulnerability to climate change is “a function of the severity of the projected physical climate impacts and this multi-stressor context, which heightens both exposure and sensitivity to the impacts” (SARUA, 2014b, p. 6). “Current climate variability and vulnerability to extreme events such as floods and droughts is high, and a range of existing stressors, including water availability, land degradation, desertification and loss of biodiversity constrain food security and development” (ibid.). The region’s reduced structural poverty is further challenged by health threats such as malaria and HIV/AIDS, as well as other aspects pertaining to institutions and governance (ibid.). Many of these interlinked regional livelihood related problems (often based on subsistence agriculture) and regional economies (often dependent on natural resources) will obviously be compounded by climate change (ibid.). (See Section 1.4)

The Southern African Development Community (SADC) is a regional economic community comprising 15 member states including Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. The Southern African Development Coordinating Conference, established on 1 April 1980 was the precursor of SADC. The Southern African Development Coordinating Conference was transformed into SADC on 17 August 1992 in Windhoek, Namibia where the SADC Treaty was adopted, redefining the basis of cooperation among member states from a loose association into a legally binding arrangement.¹⁴ SADC is

¹³ <http://www.sadc.int/about-sadc>

¹⁴ <http://www.sadc.int/about-sadc/overview/>

committed to regional integration and poverty eradication within southern Africa through economic development, peace and security (SADC, 2012).

The mission statement of the SADC¹⁵ is to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper co-operation and integration, good governance, and durable peace and security, so that the region emerges as a competitive and effective player in international relations and the world economy (SARUA, 2012a; SADC, 2012). The vision of SADC¹⁶ is to build a region in which there will be a high degree of harmonisation and rationalisation, to enable the pooling of resources to achieve collective self-reliance in order to improve the living standards of the people of the region (SADC, 2012). The main objectives of SADC¹⁷ are to achieve development, peace and security, and economic growth, to alleviate poverty, enhance the standard and quality of life of the peoples of southern Africa, and support the socially disadvantaged through regional integration, built on democratic principles and SD. Southern Africa has an outstanding wealth of experience with regard to responding to and addressing SD issues through education (Taylor, 2014). Among the many projects, programmes and networks active in this region is the SADC Regional Environmental Education Programme¹⁸ the Environmental Education Association of Southern Africa¹⁹ and the Eco-Schools programme²⁰.

1.8.3.2 Higher Education in the Southern African Development Community

The ‘harmonisation’ stated in the vision of the SADC is indeed exhibited in the operations of HE in the region as shown in the vibrant Southern African Regional Universities Association (SARUA). Sixty two universities in SADC are part of SARUA (SARUA, 2014b). With regard to advancing the principles and values of SD in the southern African region, SARUA has established a programme for Climate Change Capacity Development. The programme was endorsed by a majority of Vice Chancellors within SARUA’s public university members, (62 in December 2013) (SARUA, 2014a). It aims to promote, strengthen and increase research and innovation in HE, through extended inter-institutional partnership and capacity building initiatives across the academic sector throughout the SADC region (SARUA, 2014a).

The vision of the SARUA programme is to create a system of knowledge co-production that provides southern African researchers opportunities for capacity building and relevant, high quality knowledge production. The programme aims to significantly enhance the climate adaptive capacity and resilience²¹ of the SADC region through the development of a collaborative network of higher education

¹⁵ <http://www.sadc.int/about-sadc/overview/sadc-mission/>

¹⁶ <http://www.sadc.int/about-sadc/overview/sadc-vision/>

¹⁷ <http://www.sadc.int/about-sadc/overview/sadc-objectiv/>

¹⁸ SADC REEP, 2012 and 2013.

¹⁹ www.eeasa.org.

²⁰ wessa.org.za/what-we-do/eco-schools.htm

²¹ Resilience is defined as “the capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation” (IPCC, 2014c, p. 5).

institutions capable of pooling resources, maximising the value of its intellectual capital and attracting significant investment into the region.

(SARUA, 2014a, p. 52)

The Southern African Regional Universities Association's 2009 report points out that:

The notion of regional cooperation in higher education in Africa is not new. The earliest agreement was the 1981 Arusha Convention on the recognition of qualifications. The 1997 SADC Protocol on Education has sections devoted to cooperation in higher education and to research and development. The same goals are set by the 2007 African Union Harmonisation Policy for Higher Education. SARUA also has a history of supporting regional co-operation.

(SARUA, 2014b, p. 97)

In order to realise the United Nations Decade on ESD and the Millennium Development Goals, especially goal 7 of ensuring environmental sustainability, the SADC Treaty in Article 5(1) stresses the importance of sustainable utilisation of natural resources and effective protection of the environment, and invariably, the promotion of SD. This has led to the above-mentioned SADC REEP and associated support for ESD/EE MESA Chairs in southern Africa.

SADC²² has very low gross tertiary enrolment ratios, calculated as the proportion of 18 to 24 year-olds in post-secondary education. According to SARUA's 2009 research, most countries fall into the 2-4 percent range. Only Mauritius (16 percent in 2005) and South Africa (14 percent) have tertiary gross enrolment ratios of above 8 percent. This is a direct result of earlier structural adjustment policies that were designed to curb spending on higher education (SARUA, 2014a). Another factor influencing this is the fact that many universities in southern Africa are 'new' and were established only in the post-independence era. All these historical factors further shape the quality of education on offer in universities and the teaching: research balance in universities, which tends to be skewed on the whole towards teaching rather than research, as is shown by research output statistics. Research output is low and is a major challenge. South Africa produces 79 percent of research and its output of articles per million of the population is 119.3. Botswana follows at 85.5 but no other country has figures above 40 (SARUA, 2014a).

According to SARUA research published in 2009, SADC had 66 public universities, 119 publicly funded polytechnics or colleges and 178 private universities or colleges. Since 2009 these numbers have increased slightly, as has the original SARUA profile data of southern African universities. For example, in 2009 Botswana had one national university and it now has two; Malawi had two national universities, but with the recent changes to Bunda College of Agriculture, it now also has the Lilongwe University of Agriculture and Natural Resources (LUANAR; the old Bunda College of Agriculture) (SARUA, 2014a). This is indicative also of growth in the higher education sector in Southern Africa.

²² SARUA (2014a, pp. 95-96) is the source of information on SADC presented here.

South Africa has 23 of the public universities and 70 percent of overall enrolments in the region. Some countries have only one public university (Lesotho, Seychelles, Swaziland). In other countries, numbers range from two (Botswana, Mauritius, Namibia – includes the Polytechnic of Namibia currently transforming to the Namibia University of Science and Technology) to nine in Zimbabwe (SARUA, 2014a). Zambia and Malawi have three public universities, Democratic Republic of the Congo and Mozambique have four, Madagascar has six and Tanzania has eight (ibid.). Private higher education institutions outnumber public institutions in all SADC countries but most enrolments are in public institutions and 72 percent of students are in contact study. There are also a range of other higher education institutions such as Colleges of Agriculture and Colleges of Natural Resources. Many of these, however, are associated with the national universities and their key associated faculties (ibid.). For example, the Malawi College of Fisheries (an important government tertiary training institution for fisheries extension services) is associated with the Bunda College of Agriculture / now the Lilongwe University of Agriculture and Natural Resources for accreditation and quality assurance (ibid.).

In Botswana, Zambia, Lesotho and other countries, the universities design curricula for teacher education colleges, and also play a role in accreditation and quality assurance of the College curricula (SARUA, 2014a). This is a pattern across the SADC Region. Curriculum innovation at university level therefore, has a much wider impact than on teaching done in universities; there is an important knock-on effect across the wider education and training system (ibid.). Different countries have different impacts on the status of HE; this is evident when comparing, for example, the difference in gross domestic product and human development index of various countries in southern Africa (see Table 1.3 below). The 2012 SARUA profile of HE in southern Africa explained:

... with respect to per capita gross domestic product (GDP) world rankings, the region includes the Seychelles with a ranking of 38 at one end and the DRC ranked 183rd at the other end. Similarly, with the human development index (HDI) and the world HDI ranking, the region shows a wide distribution of human development performance. As for GDP world rankings, Seychelles leads the way with an HDI ranking of 52, closely followed by Mauritius (ranked 77th), while Zimbabwe is placed at 173, Mozambique at 184, and the DRC at 187. While South Africa performs relatively well on the GDP world rankings (78th), the country's performance on the HDI ranking is much lower (123rd) due to the persistently high levels of poverty and inequality within the country.

(SARUA, 2012a, p. 1)

Table 1.3: Gross domestic product per capita and human development index in SADC countries. Sources: *IMF (2011), **UNDP (2011) as cited in SARUA, 2012b

SADC countries	GDP per capita*	GDP per capita world ranking*	HDI**	HDI world ranking**
Angola	5 895	108	0.486	148
Botswana	16 030	55	0.633	118
DRC	348	183	0.286	187
Lesotho	1 960	150	0.450	160
Madagascar	934	173	0.480	151
Malawi	860	175	0.400	171
Mauritius	14 954	62	0.728	77
Mozambique	1 085	170	0.322	184
Namibia	7 363	99	0.625	120
Seychelles	24 726	38	0.773	52
South Africa	10 973	78	0.619	123
Swaziland	5 305	115	0.522	140
Tanzania	1 515	158	0.466	152
Zambia	1 611	156	0.430	164
Zimbabwe	487	181	0.376	173

1.9 STRUCTURE OF THIS THESIS

Table 1.4: Structure of the thesis

CHAPTERS	COMPOSITION
Chapter 1	Introduction and orientation to the context of the study
Chapter 2	Theoretical and conceptual framework of the study
Chapter 3	Research design and methodology
Chapter 4	Sub-regional presentation of all African ITP case study
Chapter 5	Southern African country case study 1 – Swaziland
Chapter 6	Southern African country case study 2 – Zambia
Chapter 7	Southern African country case study 3 – Botswana
Chapter 8	Laminated system perspectives: Implications for ESD mainstreaming in Africa

This thesis is structured and presented in eight chapters, as outlined in Table 1.4 above. Chapter One is the introduction and provides an orientation to the context of the study: ESD in African higher education in the light of educators' professional development and sphere of influence within their positions and practices. Chapter Two covers the theoretical and conceptual framework that informs this study. In Chapter Three, the research design, including the

methodology, data collection methods, data analysis, ethical and validity issues, are presented. Chapter Four contains a sub-regional presentation of African ITP participants' positions, general and ESD related practices and a brief account of morphogenesis of their change projects. Chapters Five, Six and Seven present the southern African case studies of Swaziland, Zambia and Botswana, respectively. Each of these chapters is an in-depth case that presents data in response to the six sub-questions of the research, using the morphogenic and the laminated system framework. The position-practice system analysis of the institutions in the case counties is also presented. Chapter Eight is the final chapter which discusses the laminated system perspective of the main research question, the ITP, position-practice system theory and provides a synthesis perspective on the study. The implications of the above for ESD mainstreaming in Africa and recommendations are made.

1.10 BRIEF OVERVIEW OF THEORETICAL FRAMEWORK

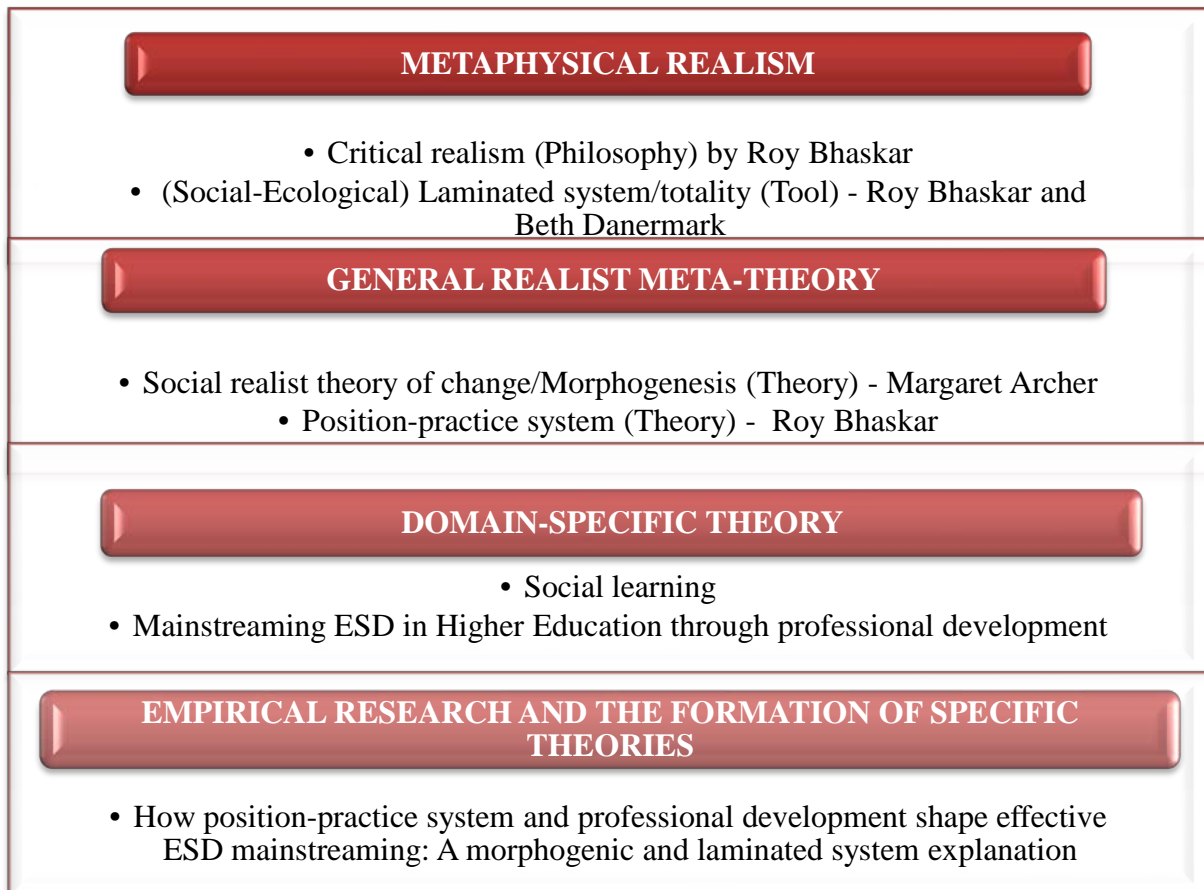


Figure 1.7: Levels of realist theorising adapted from Cruickshank (2003, p. 144)

Figure 1.7 above is a presentation of the levels of the theoretical framework employed in this research drawing on Cruickshank (2003, p. 144). Metaphysical realism theory in this study includes the critical realist philosophy of Roy Bhaskar (1979, 1989, 1998) and the associated

social-ecological laminated system or laminated totality propounded by Bhaskar and Danermark (2006). The realist metatheory used in the study includes the social realist theory of change by Margaret Archer and position-practice system theory outlined by Bhaskar (1979, 1989, 1998). Domain specific theory is social learning, mainstreaming education for SD, higher education and professional development (see Chapter Two).

1.11 STUDY LIMITATIONS

There are several limitations to this study which are outlined below:

1. This study started with an already existing large volume of data regarding the ITP, its inception, structure, progress and annual reports. Not all available data were needed for this study, hence the need to generate more applicable data. The tracking and monitoring of the ITP in order to develop a database (phase one research, see Appendix 3), began almost towards the end of the ITP. This was challenging because there was no pre-planned systematic monitoring of change projects within a longitudinal or cross programme framework at the start of the programme.

2. The use of a survey questionnaire, which is appropriate for reaching physically unreachable people, had its usual shortcomings including a lack of response, incomplete questionnaires, technical and technological hitches. Other strategies were developed to limit the effect of this challenge including sending several friendly reminder emails to participants; contacting and requesting missing data from past ITP facilitators and programme managers; and rigorous document analysis of all ITP reports from 2008 to 2013.

3. Chapter Four may be inaccurate regarding current status of participants and their change projects. This is because data collected, compiled, analysed and presented in this thesis regarding participants' institutions, titles, designations and positions only apply to the period this study was conducted and the thesis written (up till 2014). I acknowledge that some participants would have changed work places, gained higher academic qualifications as well as changed designations and positions. This is a characteristic of the dynamism of the concept of position-practice system and the morphogenesis methodology. I have also intentionally left out writing titles where I have no confirmation of the participant's title. Despite the above stated limitations, the best available information has been carefully consolidated, reviewed and verified in compiling the outcome of phase one of the research entitled "HESD ITP Change Project Tracking Document October 2014" (see Appendix 3), which helped to inform the writing of Chapter Four and other chapters.

4. The visa application process in order to go for field trips to Swaziland, Zambia and Botswana during phase three of the research as a west African was extremely challenging. Time and financial constraints prevented me from going to the three countries more than once. In addition, I was only given a single entry visa to all three countries.

1.12 ADDITIONAL MOTIVATION FOR THE STUDY

The sustained interest in this study is foregrounded and motivated by several interrelated factors as highlighted below. First is my educational background in the field of Special Needs Education, particularly the Education of the Hearing Impaired with experience in teaching this category of people at primary and secondary school levels. I have always been interested in teaching and investigating the outcome/impact of teaching and learning. After my B.Ed., I worked at the Ministry of Education, Oyo State in Nigeria and was involved in assisting the Director of Schools in the monitoring, evaluation and reporting on the state of affairs of the schools in the state. This again exposed me to several forms of support granted to schools and the expectation of the State with regard to visible outcomes of its investment at various levels.

The second source of motivation was the major shift I had to make, from my initial field of expertise (education of the hearing impaired) to environmental education involving major non-hearing impaired counterparts, an example of Harvard's (2014) 'unfamiliar territory'. My journey to this unfamiliar terrain of environmental education started with relocation from West Africa to Southern Africa, specifically to South Africa. In South Africa, I wanted to further my studies and was selected as a participant for the Rhodes University/SADC REEP two-month course in environmental education in 2010. As I was unable to study further in Special Needs Education at Rhodes, I considered this opportunity as a stepping stone to the field of environmental education.

In 2011, I began a full-time master's degree in Environmental Education at Rhodes University. The master's degree research involved academic and non-academic staff as well as students of Rhodes University. It was a study carried out to identify expansive learning opportunities to foster a more sustainable food economy within the food services sector of the institution. This research was interestingly an upscaling of the change project I undertook during the Rhodes University/SADC REEP two-month course on food waste in the university dining halls (Agbedahin, 2012a).

My master's research enlightened and broadened my understanding of how the behaviour, actions, practices and roles of university professionals and students are shaped by the repercussions of the past and current actions and practices of others. Furthermore, the actions and practices of either the past, or current university professionals, students and others greatly determines the current social milieu and thereby shapes the current and future actions and practices. This means if at least current practices are commendable and appropriate, the likelihood is for future actions and practices to be commendable and appropriate as well. The commencement of my PhD was my first encounter with the International Training Programme (ITP) on ESD in HE. The ITP therefore started four years before I became involved and ended a year after. What I found particularly fascinating and wanted to research further was the manner in which the power that lies in the hands, minds and practice of university professionals (ITP

participants) in influencing and shaping institutions, students and societies, was being and could be used..

There is also a recognised need to strengthen understanding of ESD learning and change processes in HE. Referring to learning processes, Lupele and Lotz-Sisitka (2012, p. 9) pointed out that “there are almost no comprehensive studies conducted to understand the existing ESD learning processes in an African educational context.” ESD is “poorly researched and weakly evidenced” and “there is a lack of meta-analysis studies or longitudinal research” (UNESCO, 2011, p. 9). The need to therefore provide data on actual ESD learning experiences and processes of change was evident. The 2011 UNESCO evaluation report on ESD learning processes undertaken by Tilbury further acknowledged how difficult it was “to access data on ESD processes and learning opportunities as these are rarely documented in sufficient detail in the literature” (p. 8). Although it was acknowledged that there are numerous sources of information regarding projects and their objectives and outcomes, it was recommended that “actual experiences rather than reviews of literature” are needed, and that “data collection tools are needed that are based on tightly-focused questions that will capture greater detail about learning processes and learning opportunities” (UNESCO, 2011, p. 8; Lupele & Lotz-Sisitka, 2012, p. 9). In short, it has been postulated recently that “the need for implementation of ESD processes is still far from being widely accepted on the HE level” (UE4SD, 2015, p. 24).

In line with the above stated need for actual ESD experiences and processes, and the inception of the ITP ESD in HE, it had been articulated that “there has been no study done on this in any depth as yet” (Lotz-Sisitka & Hlengwa, 2012b). Lotz-Sisitka and Raven (2004) proposed the need to develop in-depth exploration and understanding of [environmental] educational reform initiatives in southern Africa (and of course Africa and the world at large). To complement the importance for the latter, there has been an expressed need to explore and gain understanding of the ITP and its ESD change projects implementation process and progress (Lotz-Sisitka & Hlengwa, 2012b). In particular, there seemed to be a need to theoretically investigate the change-oriented learning assumptions of professional teacher development training programmes like the ITP (and by implication other ESD programmes) and to investigate the quality and relevance of the ITP change initiatives, that is, the implication of the emerging learning and change processes (personally, institutionally, nationally and internationally) (ibid.).

A recent 2015 UNESCO publication entitled *Rethinking education: Towards a global common good?* has argued for the potential of new digital technologies and the prediction that the teaching profession is doomed is no longer cogent. Thus, the teaching profession, especially when effectively practised, must still be recognised, considered and prioritised by government, policy makers, non governmental organisations (NGOs), stakeholders and all. Teachers and other educators particularly in HE remain key actors in the contribution of education to the full development of the individual and a new model of development which is for the common good.

One key strategy of making effective the teaching profession is professional development. However and unfortunately, UNESCO (2015, p. 54) further highlighted that certain trends have pointed to a process of “deprofessionalization of teachers”. Some of the trends identified include the inflow of unqualified teachers, partially because of the shortage of teachers for financial reasons and the casualisation of teachers through contract-teaching, predominantly in higher education. Other trends include encroachment within educational institutions, reduced autonomy of teachers and the destruction of the quality of the teaching profession *inter alia*.

In order to revitalise and reprofessionalise the teaching profession with respect to its role in the purpose of education, irrespective of the prevalent challenges, professional development must be taken more seriously. This is also because professional development can potentially breach the gap and help to address some of the inherent challenges. Therefore the rethink of the content and aim of teacher education and training has been advised because “teachers need to be trained to facilitate learning ... Teachers should be encouraged to continue learning and developing professionally” (UNESCO, 2015, p. 55). Hence professional development is one of the proposed solutions to meeting the challenges of the academic profession as well as trends that have deprofessionalised teachers and educators.

More so, this study illustratively sheds light on the importance of the concept of ‘position-practice system’ in this context related to change and transformation. It provides in-depth understanding of how the point of contact between social structure and human agency i.e. the position-practice mediating system is empirically transforming or reproducing social structure. This research also highlights the importance of tracing social ‘morphogenesis’. On the one hand, the investigation of the pre-ITP/MESA Chair positions and practices of research participants (agential conditioning) and the pre-existing context of their institution (structural conditioning) before participation in the ITP and, on the other hand, the post-ITP/MESA Chair positions and practice of research participants (agential elaboration) and the post ITP institutional context (structural elaboration) after participation in the ITP is significant to understanding change and transformational processes (see Chapters Five, Six and Seven). Researching what happened between the pre- and post- periods of times is even more significant in shedding light on internal and external factors or generative mechanisms that either enable or constrain ESD learning, change and transformation in a long run.

The respective pre- and post-ITP/MESA Chair positions and practices in relation to mainstreaming ESD and as a result of the ITP are useful in providing evidence of the importance and impact of the ITP and how the ITP may have contributed to the position-practice system of educators. This study also provides evidence of the synergistic relationship between professional development training programmes on ESD, the position-practice system of university professionals, and holistic insight about the ESD MESA Chairs and ESD mainstreaming in Africa. The failure or impossibility to investigate ESD change processes in time and in space

triggered a limitation such as the one experienced by the UNDESSED global monitoring and evaluation process. The final report stated:

It has been difficult to differentiate those policies, plans and activities that were developed specifically in response to the DESD, those that were already in place but have gathered momentum because of the existence of the DESD, and those that took place in parallel to the DESD but without direct or indirect relationship to the DESD itself. What is presented in this Final DESD Report includes the changes occurring during the 10-year period marked by the DESD, including parallel initiatives, and not just initiatives developed explicitly under the label of the DESD.

(UNDESSED, 2014a, p. 25).

1.13 CONCLUSION

In this chapter I have introduced and presented the research context, which focuses on ESD in HE through the professional development of university educators by their positions and practices. The chapter also presents a review of the research context and relevant concepts. A brief orientation to the environmental and sustainability issues and risks in the region of Africa has been presented. The ITP has been fully described in terms of its inception, essence, curriculum, phases and structure. An overview of research design and methodology including the research questions, focus and goals has been presented. Finally, I have presented the structure of this eight-chaptered thesis, a brief overview of theoretical framework, the limitations experienced in this study and the motivation for the study.

CHAPTER TWO

THEORETICAL FRAMEWORK

“No single theoretical proposition can be advanced ex nihilo, but involves climbing on the shoulders of prior theorists and confronting the existing corpus of knowledge.” Archer (1998, p. 198)

2.1 INTRODUCTION

There is a need to use appropriate theories to adequately investigate, understand and interpret social reality. According to Archer (1998, p. 198) “no single theoretical proposition can be advanced ex nihilo, but involves climbing on the shoulders of prior theorists and confronting the existing corpus of knowledge.” Therefore current theoretical ideas and contributions are built on and built from past theory, whether the ‘post-theorist’ openly and truthfully admits it or not. Although it has been portrayed that “the whole point of theoretical development is to improve the terms of reference of past theories” (Cruickshank, 2003, p. 152), my little experience with theories is that recent and even more ‘recent theories’ are developed over time in order to not simply improve the terms of reference of past theories, but rather to antagonise, reject, critique, or nullify ‘older theories’.

The choice, preference and selection of the theoretical perspective employed in this study has been prompted by the “greatest explanatory power” such theory has been able to offer me and this research process (Judd, 2003, p. 57). Responding to Andrew Collier’s question: “is it *practically* desirable that theories should be accepted or rejected on practical rather than theoretical grounds?” (1994, p.15 as cited in Judd, p.7), I would say ‘yes’ because a useful theory should be a practice-oriented theory.

In this study, I have not only climbed on the shoulders of past theorists but flown on the wings of many. I have drawn on a number of theoretical perspectives in this study. To present these theories within a coherent framework, I have drawn on Justin Cruickshank (2003, p. 144) who has provided a useful way of understanding and working with different levels of theories, particularly realist theorising in relation to empirical exploration. Since this study is informed by realist ontology and epistemology, I used the frame of metaphysical realism, general realist meta-theory, domain specific theory, and empirical research and formulation of specific practical theories as shown in Chapter One, Figure 1.7. The theoretical frame consisted of:

1. Metaphysical realism:

- Critical realism as a philosophy – after Roy Bhaskar (1979, 1989, 1998) – and its associated laminated system as an explanatory tool – after Roy Bhaskar and Beth Danermark (2006)
2. General realist meta-theory:
- Social realism: Realist social theory which is the morphogenetic approach and its associated morphogenetic cycle and analytical dualism as methodological and analytical tools – after Margaret Archer (1995, 1998)
 - Position-practice system as a theory and practice – after Roy Bhaskar (1979, 1989, 1998) and Margaret Archer (1998)
 - Motivational system and technostructure as theory and practice – after Galbraith (1958, 1967)
 - Position-takings as a theory and practice – after Pierre Bourdieu (1996) and Karl Maton (2004, 2005)
3. Domain specific theory:
- Social learning as a theory, methodology and practice – after David Tábara (2005)
 - Higher education as a theory, practice and field – after Pierre Bourdieu (1989, 1996) and Karl Maton (2004, 2005)
 - Change-oriented professional development in higher education as a theory and practice (Lotz, 1999; Lotz-Sisitka et al., 2015)
 - ESD mainstreaming as a theory and practice (UNEP, 2010)
4. Empirical research and formulation of specific practical theories for mainstreaming ESD in African universities:
- A nested/singular morphogenetic and laminated system cases of how position-practice system and professionalism in ESD shapes ESD mainstreaming in African universities

2.2 METAPHYSICAL REALISM

2.2.1 REALISM

Some very interesting dictionary synonyms for ‘realism’ include reality, practicality, level-headedness, pragmatism, saneness. The prominence of realism dates back to the late 1970s and the economic and social theoretical contribution of John Kenneth Galbraith in the late 60s have been linked to the basics of the 1970s realism by other theories (Dunn, 2011). Dunn argued that:

Although Galbraith (1967a) pre-dates realism’s emergence in the late 1970s, notable aspects of his contribution share the hallmarks of a realist approach; not least his concerns with ontology, his pluralistic and tailored method, his provisional and empirically grounded theory, which is marshalled to provide emancipatory critique.

(2011, p. 95)

Dunn therefore advised that “those seeking to develop a realist vision of the economy (and of course other aspects of life and fields such as Education, ESD) would be wise to further consider the economic and social theory of J. K. Galbraith” (2011, p. 95). It has been postulated that reality “can only be known, not shown, to exist” (Bhaskar, as cited in Sánchez, 1995, p. 37). Proper access and understanding of complex and dynamic reality, if carefully carried out, is possible (Dunn, 2011, p. 86 citing Lawson, 1997 and Hodgson, 2001). According to Prigogine and Stengers “whatever we call reality, it is revealed to us only through the active construction in which we participate” (as cited in Sánchez, 1995, p. 37). Hence, reality is complex, dynamic, subjective, revolving, highly context related and context dependent. What counts as reality to an individual or set of individuals may well be different from another.

2.2.2 REALISM: CRITICAL OR SOCIAL REALISM

There is considerable discussion around critical and social realism, with the ‘chief theorists’ and their respective ‘disciples’ either complementing knowledge produced or opposing it. Inherent in the realism discourse, be it critical or social realism, is the existence of the interplay between the popular entities known as ‘social structure’ and ‘human agency’. The concept of structure has its history back in the 17th and 18th centuries (Foucault, in Sewell, 1992). Structure is considered as a fundamental, most significant and elusive concept within the field of social science (Sewell, 1992). Social structure is a core aspect of social science which connotes parts of the society that are stable yet reproductive (Tàbara, 2005). Sewell problematised the generational use of the term as something that is static, impervious of human agency and which tends to make the actualisation of change awkward (1992). Porpora (1998, p. 339) provided a list of four different explanations of the concept of social structure:

- Patterns of aggregate behaviour that are stable over time;
- Lawlike regularities that govern the behaviour of social facts;
- Systems of human relationships among social positions; and
- Collective rules and resources that structure behaviour.

Bhaskar provided characteristics of social structure, namely: (1) they do not exist independently of the activities they rule; (2) they do not exist independently of the agents’ conceptions of what they are doing in their activity; (3) they may be only relatively enduring.

According to Dunn (2011, p. 86), Galbraith recognised that much of what is important in the understanding and explanation of social structure and processes is extremely context related. The resultant effects of the existence of structure on individuals are manifested in certain and different ways. These include “structured interests, resources, powers, constraints and predicaments that are built into each position by the web of relationships ... these comprise the material circumstances in which people must act and which motivate them to act in certain ways” (Porpora, 1998, p. 200). Social relations that exist in and between contexts and fields have independent causal properties and these relationships influence the rules guiding the action of

agents (Porpora, 1989; Lotz-Sisitka, 2005). It is worth highlighting at this point that it is the position of individuals (and the interaction between these individual positions) in a social structure that determines and propels how they act – giving rise to the status of social structure.

There is personal or individual agency and there is collective or group agency. Before going into the collective, it is important to understand individual agency. What is ‘agency’? What is professional agency and how can this be conceptualised especially in a work context? To address these integral questions, I drew on Eteläpelto, Vähäsantanen, Hökkä and Paloniemi (2013) who have done an intensive review of the concept of agency in the context of multidisciplinary professionalism. They responded to the above questions by trying to answer two research questions: (1) How have the ontological characteristics and manifestations of agents been understood? and (2) How have the relationships between the social and individual aspects of agency been understood? They examined previous studies in the field of education and social sciences, psychology and gender and discovered four major research traditions prominent in researching the concept of agency: (i) the social science tradition, (ii) the post-structural tradition, (iii) the socio-cultural approach, and (iv) the identity and life-course approach. They drew on Giddens' structuration theory and Archer's social theory of change (presenting their strengths and weaknesses) and argued for the conceptualisation of professional agency from a subject-centred socio-cultural perspective. This perspective takes individual agency and social context to be analytically separate, but mutually constitutive, and highly interdependent (Archer, 1995, 2003).

According to Giddens' theory of agency, the ontology and manifestation of agency is in the individuals' intentional and rational actions, viewed as having social consequences and temporality, with identities not addressed (Giddens, 1984; Eteläpelto et al., 2013). Regarding the relationships between the individual and the social context, they are seen as inseparable hence there is micro to macro analytical primacy from individual to social context (ibid.). According to Archer, agency is ontologically manifested in natural, practical and social reality, and constituted in discursive, practical, and embodied relations with the world (Archer, 2000, 2004; Eteläpelto et al., 2013). Agency involves personal identity and temporality is taken into account; hence, agentic action is considered as an intentional and goal directed process. To Archer, the relationship between the individual and the social context is analytically separable and it involves internal conversation and emotional elaboration which is considered as mediating processes between the individual and the social context. There is also acknowledgement of historically changing social circumstances (ibid.).

In Archer's (2000, 2003, 2004) *Being Human* definition of human agency in social theorising, she has vehemently criticised what she calls upwards, downwards and central *conflation* based on the notion that such scholastic *conflation* makes the recognition of the real emergent powers of persons (which is the foundation of human agency) impossible. She elucidated that downwards conflation refers to over-socialised theorising whereby persons are understood as no more than

‘society’s being’ (as being purely discursively formed, and consequently as having no real agency). On the contrary, ‘upwards conflation’ is referred to a form of methodological individualism that reduces society to the individual and thus denies emergent powers at the societal or cultural level (Archer, 2000, 2004; Eteläpelto et al., 2013).

Archer (2004, pp. 21-22) explained that in upward conflation there are “deficiencies involved in reducing structure (SEPs) and culture (CEPs) to aggregate properties, rather than emergent ones with their own causal powers”. Conversely, she explained that the notion of:

... ‘Society’s Being’ is a downward conflationary view in which ‘agency’ becomes an epiphenomenon of ‘structure’, whilst ‘Modernity’s Man’s a version of upwards conflation in which it is ‘structure’ which is the epiphenomenon of ‘agency’. To recapitulate, the human powers (PEPs) upon which structural (SEPs) and cultural (CEPs) powers impact, leading to the elaboration of ‘agents’ and ‘actors’, are those of the self and of personal identity (2004, p. 255). ... However, there is another and more compelling reason for introducing it. This is because there is a third form of conflation which does not endorse reductionism at all. There is Central conflation which is a reductionist, because it insists upon the inseparability of the ‘parts’ and the ‘people’. In other words, the fallacy of conflation does not depend upon epiphenomenalism, on rendering one level of social reality inert and thus reducible. Epiphenomenalism is not the only way in which the ‘parts’ or the ‘people’ are deprived of their emergent, autonomous and causally efficacious properties and powers, and that in consequence their interplay is denied. Any form of conflation has the same consequences. Hence, conflation is the more generic error and reductionism is merely a form of it, or rather two particular cases of it (Archer, 2004, p. 6).²³

Social structure and agency are therefore not the same phenomena operating in the same process (Bhaskar, 1979; Lawson, 1998; Danermark, Ekström, Jakobsen, & Karlsson 2002). Although there are ambiguities in working with the concept of structure and agency, finding ways of recognising and reconciling their roles is necessary for a successful theorising of the social world (Elder-Vass, 2011). The successful working with both concepts led me to Bhaskar’s argument on the duality of structure and the duality of human praxis:

Both society and human praxis must possess a *dual character*. Society is both the ever-present *condition* (material cause) and the continually reproduced *outcome* of human agency. And praxis is both work, that is, conscious *production*, and (normally unconscious) *reproduction* of the conditions of production, that is society. One could refer to the former as the *duality of structure*, and the latter as the *duality of praxis*.
(Bhaskar, 1979, pp. 37-38, italics in original)

Structural factors therefore require agential mediation in order to be influential (Archer, 1998). Archer stresses that “structure shapes the situations we confront and also the influential distribution of material and cultural resources with which we can strategically conduct this confrontation” (Archer, 1998, p. 199). From the 1970s, Bhaskar, Archer, Danermark and many other theorists have been known to be involved in a profound project of elucidating the

²³ Archer stated that “Bourdieu seeks to avoid both subjective idealism and objective materialism, only to end up in the ‘central conflation’ of subject and object” (2004, p. 172).

connection between structure and agency. According to Archer (1998), there is no society without people; the continuous activity that constitutes a lively society is fully dependent on agents that are present in that social space. She stated therefore that the “arguments about the continuity of activities must not be confused with the continuous nature of agency” (Archer, 1998, pp. 201-202).

In as much as social structure cannot be reduced to individuals, it is a prerequisite for the exhibition of actions from humans; in other words, social structure has the power to enable human actions but it also has the capacity to restrain human actions (Danermark et al., 2002). Bhaskar ascertained that “social structures always pre-exist human agency, but are reproduced or transformed only in virtue of it and in the course of ongoing social activity” (2010, p. 9). On the one hand, society provides the conditions necessary for intentional human action to thrive; on the other hand, such intentional human action also acts as a necessary condition for society to thrive (Bhaskar, 1979, 1989, 1998).

According to Judd (2003), social structures are activity-dependent, but the structures themselves are not reducible to the activity they enable and constrain. Social structures are also concept-dependent because their existence depends on the concepts the human agents in a particular context have of their activity. Social structures are space-time-dependent because they are socially created and sustained, hence they have a specific origin and development within a specific time and place (even though the origin cannot be located because it is produced by humans in past generations (Judd, 2003).

It has also been suggested that human agency should be understood as “dependent upon intentional causality or the causality of reasons” (Bhaskar, 2010, p. 9). Intentional causality of reasons here arguably can be considered the action or practice that goes along with or emanates from the position of human agency in a social context. The efficacy of the action that stems from the intentionality of human agents at a particular time and under particular conditions of interest or non-interest is of interest to this research. This reality buttresses Bhaskar’s comment that “human action is characterized by the striking phenomenon of intentionality” (1998, p. 38), highlighting the essential role of the intention of human agency in society.

According to Maton (2005), “the social structure of a field [like HE as argued by Bourdieu] is emergent from but irreducible to such constituent agents and their practices; the relational whole is more than the sum of its parts” (p. 689). Bhaskar (1979) explained that people and society are not dialectically related; hence they refer to two drastically different kinds of things that do not operate at the same moment or follow the same process. Lawson agreed and argued further that if human agency and social structure are different kinds of things then it is necessary to develop an understanding of their point of contact, particularly the point of contact that accounts for the individual acting for him or herself and yet consequently causing the social structure to be reproduced (Lawson, 1998, p. 129). He explained further that in order to conceptualise the point of contact between human agency and social structure, the nature of their social relations, which

are two distinguishable relations, namely external and internal, must be considered (Lawson, 1998, p. 129).

An external relation refers to related objects or aspects with neither of them being constituted by the relationship that exists between them e.g. coffee and milk, bread and butter (Lawson, 1998, p. 129). Two objects or aspects of a thing can be internally related if their relationship is because of the existence of other object or aspect e.g. tenant and landlord, employer and employee (Lawson, 1998, p. 129). The above description of internal and external relations that could exist between human agency and social structure is useful and these sets of relations could exist within human agents and social structures.

This is logical because internal relations can exist between human agents holding different social positions depending on the social context and reality. For example, different presidents in different countries and continents exist and they therefore exercise different rights, obligations, tasks, duties, powers based on their economy, system of government, resources, citizens, demography, and politics different from others – although they are all called presidents. Likewise and in relation to this research, university professionals (lecturers, doctors, professors, head of departments, deans, and chancellors) exercise different rights, powers, duties and obligations different from that of students and even their other colleagues. This means that the “relevant rights, tasks, powers, and so on exist independently of the particular individuals fulfilling these roles” (Lawson, 1998, p. 129).

2.2.2.1 Multiplicity of mechanisms in realism

In realism, concrete things, activities, practices or events that occur in open systems should, of necessity, be explicated “in terms of a multiplicity of mechanisms, potentially of radically different kinds ... [and] corresponding to different levels or aspects of reality” (Bhaskar & Danermark, 2006, p. 228; Næss, 2010, p. 78). Bhaskar & Danermark, (2006, p. 228) gave the example of the development and reproduction of disabilities as an event that should be explained in terms of the multiplicity of mechanism which occurred at various levels including “biological or neurological ... socio-economic ... [and] cultural levels”. While explaining the factors influencing climate change events and processes, Næss, (2010, p. 78) presented the “physical, biological, socio-economic, cultural and normative kinds of mechanisms, types of contexts and characteristic effects” as a possible multiplicity of mechanisms that can be understood. These multiplicity of mechanisms also occur “at several different levels of reality and possible orders of scale” (Bhaskar & Parker, 2010, p. ix), including emergent and including four-planar social reality (Bhaskar, 2010). Four-planar social reality is discussed below.

2.2.3 CRITICAL REALISM – HISTORY AND OVERVIEW²⁴

Critical realism is becoming a prominent philosophical approach and plays the role of an ontological underlabourer for many substantive theories in both natural and social sciences (Mutch, 2004). Critical realism, through its depth ontology, enables the acknowledgement, identification and separation of causal factors or mechanisms influencing empirical reality and opines that a phenomenon is historically embedded, hence knowledge is fallible (Bhaskar, 1998; Togo, 2009). Mutch stated that in the analysis of social life, the critical realism approach has an influence on the cognitive turn over other approaches (2004). Critical realism allows for the empirical investigation of causal powers or mechanisms, which actually exist at different levels, through its “maximal inclusiveness” and ability to “accommodate insights of other meta-theoretical positions while avoiding their drawbacks” (Bhaskar & Danermark, 2006, p. 280; Næss, 2010, p. 78).

2.2.4 CHARACTERISTICS, IMPORTANCE AND ADVANTAGES OF CRITICAL REALISM²⁵

The characteristics, importance and advantages of critical realism have been explained in three main dimensions, namely ontological (double inclusiveness), epistemological (heuristic suggestiveness and non-partiality) and methodological (its capacity to take agents from non-reductionism through essential complexity to necessary lamination). Danermark and Bhaskar (2006, p. 280) explained as follows:

Ontologically, critical realism is characterized by a double greater inclusiveness. It is maximally inclusive as to potentially causally relevant levels of reality ... it is ontologically least restrictive, allowing the exact nature of the determinations and their interactions to be empirically determined case by case. And it is maximally inclusive insofar as it can accommodate the insights of the other meta-theoretical positions while avoiding their drawbacks.

Epistemologically, critical realism indicates more clearly than the other positions the appropriate direction and context of explanatory research from the manifest phenomena to the mechanisms that produce them, in their complex co-determination. At the same time and largely in virtue of its clear concept of the movement of the scientific process, it is able to avoid the partiality of the other positions, which seize on one aspect (e.g. experience, interpretation) of the total research process to the exclusion of others.

Methodologically, critical realism is able to move beyond both reductionism and simple non- or anti-reductionism through ontological pluralism to ... a necessarily laminated system, that is, a system that refers essentially to several different levels of reality.

²⁴ *What is critical realism – Reclaiming reality* by Bhaskar (1989), providing the core argument of the origin of critical realism as presented in Chapter 1 of book entitled *Interdisciplinary and climate change: Transforming knowledge and practice for our global future* (Bhaskar, Frank, Hoyer, Næss, & Jenneth, 2010)

²⁵ How critical realism can help us in our research (Price, 2012)

2.2.5 CRITICAL REALIST METHODOLOGY, EPISTEMOLOGY AND ONTOLOGICAL ANALYSIS: EVOLUTION AND COMPONENT OF THE LAMINATED SYSTEM

The transformational model of social activity

Bhaskar presented a model for explaining social activity in terms of the interplay between social structure and human agency in what he called ‘The transformational model of social activity’ (1979, 1989, 1998). With time, this transformational model of social activity was further developed and presented in the concept of four-planar social being (Bhaskar, 2010) or the “social cube” (Bhaskar & Norrie, 1998, p. 566).

The four-planar social being

The concept of four-planar social being stipulates that all kinds of social events happen in at least four dimensions. The four dimensions of social events comprise the following:

1. Material transactions with nature;
2. Social interactions between humans;
3. Social structure proper; and
4. Stratification of the embodied personality (Bhaskar, 1993; Bhaskar & Norrie, 1998, p. 566; Bhaskar & Danermark, 2006, p. 289; Bhaskar, 2010, p. 9; Nunez, 2014, p. 35).

Bhaskar (2008, p. 241) explained that:

a four-planar conception of developing human nature in society, embedded in non-human but partially socialized nature, is composed of the stratification of the personality, material transactions with the physical world, inter-/ intra-personal relations and social relations sui generis defining the position-practice system in virtue of which more or less structurally sedimented institutions are causally efficacious (ultimately via past or present human agency which is intentional under some description).

Therefore it can be said that one way of elaborating complexity and understanding social events is to see that, at least practically and in principle, each of the above four social levels, may be set in the context of the concept of four-planar social being (Bhaskar, 1993; Bhaskar & Danermark, 2006). The proposition that all social events involve each of above four dimensions is to say that social events and social systems generally are ‘laminated’; hence it can be said that the explanations involving mechanisms at several or all of these levels are “laminated explanation” (Bhaskar & Danermark, 2006, p. 289; Næss, 2010, p. 79). The notion of four-planar social being has been explained to constitute the necessity of another concept, namely the laminated system. This is primarily because social events are systemic in nature in that the reference to any system at one or any level or four-planar social being will necessitate the compulsory involvement and reference to the others, even when it is not mentioned at all. Recent publications have also referred to four-planar social being as a laminated system (Price, 2014; Nunez, 2014).

The seven-scalar laminated system

The development of the four-planar social being to the further consideration of the laminated systems (Bhaskar & Danermark, 2006) was also efficacious because the understanding, analysis and applied explanation of each social level of a social event cannot be empirically situated and possible in the context of four-planar social being alone. The expansion is even more necessary because the laminated system takes cognisance of the existing hierarchy of scale of social events, which Bhaskar explained are “of more macroscopic or overlying and less macroscopic or underlying mechanisms” (2010, p. 9). The laminated system, which is otherwise known as the seven-scalar social being (Nunez, 2014), enables the possibility of social explanation at seven distinct levels of agency and collectivity that social life are concerned with or related to (Bhaskar & Danermark, 2006, p, 289; Bhaskar, 2010, p. 9). Among the four different kinds of laminated systems presented by Nunez (2014, p. 111), this is the (social) scalar laminated system which “emphasizes social relationism”.

The constitution of a laminated system therefore analytically enables the visibility and explanation of the obvious multiplicity and complexity stemming from each level, context and scale. The laminated system shows the “patterns of dependency and interdependency” of social realities (Bhaskar, 2010, p. 14). The following are the seven levels:

- (1) The planetary (or cosmological) level concerned with the planet (or cosmos) as a whole;
- (2) The mega level of the analysis of whole traditions and civilizations; and
- (3) The macro level orientated to the understanding of the functioning of whole societies or their regions, such as the Norwegian economy;
- (4) The meso level at which we are concerned with the relations between functional roles such as capitalist and worker or MP and citizen/ such as disabled worker and capitalist;
- (5) The micro level studied /small group analysis, for example, by ethnomethodologists and others;
- (6) The individual or biographical level;
- (7) The sub-individual psychological level.

(See also Bhaskar & Danermark, 2006, pp. 289-290; Bhaskar, 2010, pp. 9-10; Price, 2014, p. 64; Nunez, 2014, pp. 116-117; Price, 2015, p. 22).

2.2.6 APPLYING THE LAMINATED SYSTEM TO RESEARCH ON ESD

Social and natural issues are cross-cutting and multi-dimensional in nature, and sustainable developmental issues automatically are likewise. Natural issues and human involvement in the playing out of issues at their various levels of involvement are also connected, either directly or indirectly. Global and local problems and phenomena, as well as their corresponding proposed solutions, should be integrated in the light of their pre-existing interlinkages. Cutter et al. (2015, p. 12) advocated strongly that “interlinkages are a key aspect of integration”. There is recognition of this argument that development issues are fundamentally interconnected, and that “sustainable

approaches or solutions require full acknowledgement of the interlinkages between the social, economic and environmental dimensions [of sustainable development] and between different issues and sectors” (Cutter et al., 2015, p. 12). It has been advised that the acknowledgement of these inherent interlinkages be made ‘clear and explicit’ and that this approach can strengthen horizontal systems-based integration (Cutter et al., 2015, p. 12). SARUA (2014a) also reiterated that “the concept of sustainable development ... emphasises that everything in the world is connected through space, time and quality of life, and thus necessitates a systems approach to understanding and solving interlinked social, environmental and economic problems” (p. 56).

Furthermore, the 1987 World Council of Environment and Development publication *Our Common Future* has long established this need for integration of sustainable development related issues, advocating for the development of new methods of thinking and problem solving. It is stated that:

Failures to manage the environment and to sustain development threaten to overwhelm all countries. Environment and development are not separate challenges; they are inexorably linked. Development cannot subsist upon a deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the cost of environmental destruction. These problems cannot be treated separately by fragmented institutions and policies. They are linked in a complex system of cause and effect ... Thus economics and ecology must be completely integrated ... Economy is not just about the production of wealth, and ecology is not just about protection of nature; they are both equally relevant for improving the lot of humankind ... To successfully advance in solving global problems, we need to develop new methods of thinking, to elaborate new moral and value criteria, and, no doubt, new patterns of [human] behaviour [and human activity].

(United Nations, 1987, pp. 32-33)

There is therefore no sense and usefulness to separating existing and interrelated aspects of human and non-human existence, in research or other endeavours. It has proven futile over the last several decades. It seems important therefore that researchers, policy makers, sectors and stakeholders begin to engage with these complex issues being ‘appropriate thinking humans’ in the Anthropocene²⁶ (Certini & Scalenghe, 2014; Lotz-Sisitka & Ramsarup, 2015). This is basically because the lack of a holistic consideration of issues and turning a ‘blind eye’ to them reduces the possibility of appropriate and adequate social intervention to sustainability issues. Theoretically and philosophically, Bhaskar ‘confessed’ to examining social phenomena at

²⁶ The Anthropocene is a concept that explains an epoch, or a period of geological time. Human beings have flourished on this planet for roughly the past 190 thousand [190 000] years, which is a very short time in the Earth’s 4.5 billion year history. This human flourishing has occurred within a specific geological epoch called the Holocene in what Earth Scientists are describing as a “stable, accommodating environment” for human existence. However, in the last 60-80 years, humans, through their developmental activities, have started to alter the earth systems and how they function fundamentally, and it is this that scientists refer to when they use the term ‘Anthropocene’ (Certini & Scalenghe, 2014). We are no longer living within the boundaries of the earth systems as we found them. We are now living within rapidly changing earth systems that have been and continue to be profoundly altered by our actions. Source: Lotz-Sisitka & Ramsarup (pp. 4-5, 2015)

different existing levels and that his experience of using the concept of a laminated system “has enabled me [him] to avoid the error of reductionism” (Bhaskar, 2010, p. 8).

UNESCO (2014, p. 20) stated that sustainable development issues should be integrated into teaching and learning “because these issues are characterized by uncertainty, complexity and a high degree of systemic interconnection”. The recent SARUA (2014a) mapping study outcome has shown that “development issues such as water, agriculture and food security, energy security and urbanisation need to be conceptualised in a way that integrates their environmental, economic and social dimensions, including climate change responsiveness and resilience” (p. 100). The recognition and use of the laminated system is essential to the understanding of open social systems, especially those which exist within and between the confines of the university in the 21st century. Barnett argued that Bhaskar’s laminated framework can be employed to understand universities at different levels as well as imagine better possibilities of being a university (2013, p. 29).

Universities have their beings within underlying structures that exist at different levels; hence to gain a full understanding of universities requires imagining a university at the different levels of its being (Barnett, 2013). The different possibilities of examining and experiencing the university in the world have been linked to the different positions of the actors concerned therein (Barnett, 2013). This is very important to this research interested in investigating the practices and impact of the practices of university agents in the Anthropocene, who are engaged (or not engaged) in changing the status of universities; specifically with regard to sustainable development. Brown (2009, p. 24) drew on Bhaskar and Danermark (2006), as well as the World Health Organisation’s contribution, to explain learning environments as tiered or layered or laminar systems; this is a condition when learning is an emergent property with multiple and tiered determinants. This is useful in providing insight to learning about sustainable development. Brown argued that the “layered nature of the learning environment and emergent causal properties is also under theorized” (2004, p. 9).

Bhaskar and Danermark clarified that the acknowledgement of the existence of the seven laminated levels or dimensions of social events therefore “has to be consciously referred to in every social explanatory act. That is a matter for the pragmatics of explanation, given the focus of the particular explanatory inquiry” (2006, p. 289). It is therefore obvious that the existence of systems in laminated forms and the acknowledgement of this in empirical research, poses a complex problem of articulating the different levels in an explanation (Bhaskar, 2010). How then can the “distinctive contribution of the different levels be brought out and communicated in a coherent narrative?” Bhaskar asked; he provided two headways: (1) To trace the causal series as it actually happens, the diachronic pattern of causality; (2) To begin with the most basic or rooting or grounding (e.g. physical) level (2010, p. 12). Empirical application and communication with the laminated system of each country case study and holistic limited system of this research is presented in Chapter Eight, the final chapter.

2.3 GENERAL REALIST META-THEORY

2.3.1 REALIST SOCIAL THEORY

The principles of morphogenesis originated from Buckley's system theory (Zeuner, 1999). Archer (2010, p. 228) defined morphogenesis as "the complex interchanges that produce change in a system's given form, structure or state (morphostasis being the reverse), but it has an end-product, [which is] structural elaboration" (Archer, 1998, p. 195). Society has a distinct morphogenetic nature, which characterises its ability to change its form or shape; hence "social things are not immutable" (ibid.). The morphogenetic cycle provides "social realism with a *method* of explaining social structure over time in terms of the interplay between structure and agency – which can be used to generate practical social theories in particular domains" (Archer, 1998, p. 202).

There is an assertion within the morphogenetic perspective that structure and action operate over different time periods and this claim is based on two simple propositions: (1) structure necessarily pre-dates the actions which transform it, and (2) structural elaboration necessarily post-dates those actions (Archer, 1995; 1998). The morphogenetic theory of change is based on a dialectic of structure and agency, and helps avoid errors of central conflation, determinism and voluntarism²⁷ (Lotz-Sisitka et al., 2015). Here it is worth noting that Archer drew on Bhaskar's early work, especially the transformational model of social actions, to develop her theory of morphogenesis. The theory of morphogenesis is characterised by its three-part cycle which signifies and elucidates the importance of time in human activities in relation to society and their respective emergent properties, which can be analytically investigated through social interaction through analytical dualism (Mutch, 2004).

Unlike morphogenesis, the holism discourse conceptualises a linear movement from social conditioning to structural elaboration, while methodological individualists claim that action alone (social interaction) is necessary and sufficient for the explanation of structural elaboration. The morphogenetic perspective considers social interaction (agent activities) as playing a considerable role (but not singularly); it takes cognisance, however, of other causal mechanisms such as structural conditioning, time-span, and space (Archer, 1995). It was interesting to track how these were taken account of in this research. Professional development of agents at one point or another in an institution or organisation is certainly a causal mechanism on which this study hinges and which is explored. Of interest to this study was how the ITP took account of, and shaped the positions and practices of agents and how the above interrelation contributed to the shaping of the mainstreaming of ESD in HEIs. .

²⁷ Voluntarism refers to a theory of change which assumes that individuals on their own can bring about change, with no interference or influence from societal structures. Determinism on the other hand is a theory of change which suggests that it is only societal structures that influence agents to change, they have no individual will or capacity to bring about changes. Central conflation on the other hand, fails to separate the individual from structure, and it is therefore difficult to identify the agent's role in the change process, or how structures are either enabling or constraining their social action (Lotz-Sisitka et al., 2015).

2.3.2 ANALYTICAL DUALISM

Analytical dualism is one of Archer's key methodologies and has its roots in Lockwood's combination of conflict theory and general functionalism (Zeuner, 1999). In analytical dualism, there is a possibility of analytically distinguishing the cycles of structural conditioning from the cycle of social interaction and the cycle of structural elaboration (Archer, 1998) due to temporality (Archer, 1995). This methodology is made possible by focussing on emergent properties that one is interested in and that exist within the existing flow of activities (ibid.). The analytical history of emergence of the problematic properties under investigation, that is the pre-existing condition for the interaction (i.e. the frustration, condition or situation that research participants desired to change), marks the end point and whole point of examining any particular cycle (Archer, 1995, p. 91; Mutch, 2004).

2.3.3 PARTS OF THE MORPHOGENETIC CYCLE

Morphogenesis consists of a three-part cycle, which occurs over time (T) T¹, T², T³, and T⁴, namely (1) agential/structural conditioning; (2) social (cultural) interaction; and (3) agential/structural elaboration (Archer, 1995; 1998; 2010). Below (Figure 2.1) is the visual description:

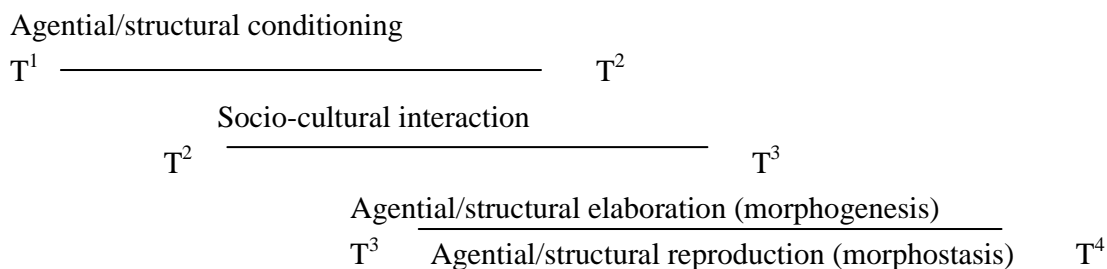


Figure 2.1: Archer's (1998) basic morphogenetic/static cycle with its three phases

2.3.3.1 Structural conditioning

Structural conditioning T¹: depicts the properties of systems that are emergent of past actions or the aggregate consequences of past actions by agents (Archer, 1995). This emergent consequence elaborates the structure over time and the elaboration also exerts a causal influence on subsequent interaction in the cycle (ibid.). Therefore the social interaction of agents in a system shapes the structure and also determines the situation in which other incoming agents will operate or inherit what has been constructed within the system (Archer, 1995; Mutch, 2004). Relating and applying the description of T¹ to this research context helps to understand the historicity of agential and structural conditioning in relation to the situated context of the institutions of participants before their participation in the ITP. It also characterises the pre-ITP positions and practices and how these have enabled or constrained ESD mainstreaming at T¹.

2.3.3.2 *Social/cultural interaction*

Social interaction T²-T³: is viewed as being “structurally conditioned but never structurally determined (since agents possess their own irreducible emergent powers)” referred to as Personal Emergent Power (Archer, 1995, p. 90). The experiences of human actors in a structure can either be frustrating or rewarding, depending on the social position actors occupy and this in turn influences the kind of interaction and action pattern they display i.e. practices (Archer, 1995). Their action patterns or practices therefore tend to either pursue structural change (morphogenesis) in an attempt to eradicate the frustrations or to defend structural stability/status quo (morphostasis) in order to retain existing interest and rewards (ibid.). The frustration faced in a work context is an example of what Bhaskar referred to as “obstacles at work” and explained that in the human sciences, these are “more powerful for being tied to definite interests in the position-practice system reproducing the existing social order” (Bhaskar, 1998, p. 175).

Empirical investigation and analysis at this Time T²-T³ need to be rather more discriminating depending on the nature of those participating in the social interaction (Mutch, 2004). This cycle encapsulates frustrations and rewards agents get in their work contexts that warrant social-cultural interaction with colleagues in their institutions. Interesting and research context related concepts that encapsulate the response to agents obstacles, frustrations as well as rewards and comfort at work include: ultimate concern, internal conversation, personal identity and social identity (Archer, 2003; Eteläpelto et al., 2013). Others are intention and intentionality (Bhaskar, 1998; Galbraith, 1967; Bourdieu, 1996); intentional causality or causality of reasons (Bhaskar, 2010); motive, motivation, motivational system and the technostructure (Galbraith, 1958, 1967); position-takings (Bourdieu, 1996; Maton, 2004, 2005).

At this point I will focus only on Archer’s contribution on ultimate concern, internal conversation, personal and social identity because these other researchers have been presented in other sections of this chapter. In earlier research (Agbedahin, 2012b, p. 105) I drew on Charon (2001, pp. 27-28) who identified five core building blocks forming symbolic interactionism. Two of these are “the role of social interaction [meaning that] social interaction is central to what interacting human beings do” and “the role of thinking [meaning that] human action, far from being limited only to the interaction between individuals, is also caused by the “interaction within the individual”. In that research, the writer then referred to the similarity between Charon’s ‘role of thinking’ and Archer’s (2003, p. 93) concept of ‘internal conversation’ where Archer highlighted that “courses of action are produced through the reflexive deliberations of agents who subjectively determine their practical projects in relation to their objective circumstances” (2003, p. 141). Internal conversation is central to the interplay between an individual and the society because personal identity emerges from an internal conversation which involves discerning, deliberation, and commitment to an individual’s concern about something (Archer, 2003; Eteläpelto et al., 2013). A person’s agentic action is an intentional and goal directed process that has relational autonomy in the person’s expression of the self (Archer, 2003; Eteläpelto et al., 2013).

2.3.3.3 Structural elaboration

Structural elaboration T⁴: According to Archer, this is viewed as “largely unintended consequence” that occurs as a result of the simultaneous modification of existing structural properties and the introduction of new properties by various social groups (Archer, 1995, p. 91). It is referred to as ‘unintended’ because of the involvement of various social groups and the possibility of concession and conflicts; which means that the consequential elaboration is often what no-one sought or wanted i.e. non-predictability of change in an open system (Archer, 1995, p. 91). However, this research is providing evidence of the possibility of ‘largely intended consequences’ of structural elaboration when change agents are aware of the constraints/frustrations of structural conditioning/agential conditioning and therefore participate in professional development training programmes in order to gain the necessary knowledge, capabilities and skill needed to overcome the frustrations they are faced with in their institutions, as provided by the ITP, with the intention of various institutional changes. However, no matter how intent on change the ITP and the agents may be, events in open systems cannot be pre-determined largely because of generative mechanisms that may play out, which can be seen or unseen, known or unknown.

This research explores this notion and sheds light on the enabling and inhibiting mechanisms with the ITP as a contextual example. Implementation of change projects is intended and the programme provides some support needed to bring about structural elaboration in time and in space intentionally. Although there is no guarantee that there will be structural elaboration, such changes (either eventually actualised in the short or long run) were intended in the professional development model, and are therefore worth researching. I concede that some unintended consequences may occur (which could be qualified as spinoffs); this may be positive or negative, in the process of instigating deliberate positive social structural changes. Tábara (2005, p. 16) also found that “indeed, unintended consequences and even structural constraints resulting from the aggregation of side effects of collective action can occur” in a social learning process.

2.4 POSITION-PRACTICE SYSTEM THEORY

Social structures exist, are exercised and are being continuously reproduced or transformed only by virtue of, in and by human agency (Bhaskar, 1979; 1989; 1998). Therefore in order to understand the continuous reproduction or transformation of social structures that exist and are exercised by virtue of human agency, Bhaskar postulated that we need a system of mediating concepts i.e. a system of concepts describing the ‘point of contact’ between human agency and social structures (1979, p. 51; 1998, p. 40). He explained that such a point of contact which links action to structure must both be sustained and be directly occupied by individuals. Bhaskar called the mediating system the ‘position-practice system’ (Bhaskar, 1998, p. 41; 1979, p. 51; 2008, p. 241²⁸).

²⁸ See also Lotz-Sisitka (2005), Lawson (1998), Kaidesoja (2007), Dunn (2011)

According to Bhaskar:

Social structures (a) be continually reproduced (or transformed) and (b) exist only in virtue of, and are exercised only in, human agency (in short, that they require active ‘functionaries’). Combining these desiderata, it is evident that we need a system of mediating concepts, encompassing both aspects of the duality of praxis, designating the ‘slots’, as it were, in the social structure into which active subjects must slip in order to reproduce it; that is, a system of concepts designating the ‘point of contact’ between human agency and social structures. Such a point, linking action to structure, must both endure and be immediately occupied by individuals. It is clear that the mediating system we need is that of the positions (places, functions, rules, tasks, duties, rights, etc.) occupied (filled, assumed, enacted, etc.) by individuals, and of the practices (activities, etc.) in which, in virtue of their occupancy of these positions (and vice versa), they engage. I shall call this mediating system the position-practice system. Now such positions and practices, if they are to be individuated at all, can only be done so relationally.

(1998, p. 44).

This is because arguably, position is integral to every form, kind or pattern of practice and every form, kind or pattern of practice is integral to position. This study therefore took cognisance of this intellectually significant but less explored argument and proposed to investigate the position-practice mediating system in the context of sustainable development, in the Higher Education level, particularly in Africa. This move is timely and essential to understanding the social reality of human agents in the Anthropocene in engaging strategically and productively with sustainable development through mainstreaming ESD in universities, thereby potentially transforming generational social structures.

While drawing on Bhaskar’s description of the position-practice system, Archer pointed out that “the distinction between positions and practices is crucial and it is by maintaining it [the distinction between positions and practices] and working on its implications [the implication of the distinction between positions and practices] that what is *sui generis* to society can be extracted” (Archer, 1998, p. 200). She explained further that positions of necessity must pre-date the practices they produce and that positions therefore should not be conflated with practices in a society. Therefore considering the university educators who are the research participants in this study, their “*positions* must predate the *practices* they engender: although activity is necessarily ceaseless for society to be, it is discontinuous in nature because changes in society’s structure [e.g. positions placed on agents] then condition practices in distinctively different ways” (Archer, 1998, p. 201). For example, a Dean of a Faculty, by virtue of his or her position, will engage in certain practices related to curriculum transformation; this may not be the same for a lecturer. Applying the above perspective to this study means that the positions occupied and practices that change agents (university educators) engage in are the mediating system between people and society and apparently between people and the environment, especially in an ESD context.

Position-practice systems are what realists technically refer to as structures and hierarchies that depicts sets of relations between hierarchical positions with common and associated practices (Dunn, 2011). A typical example is the existence of the clearly assigned roles of teachers/lecturers and pupils/students within a broader educational system: teachers/lecturers are staff employed to teach pupils/students, and pupils/students are basically admitted to learn from teachers/lecturers. These positions and associated roles and practices are entrenched and exhibited in a particular global, regional, national, local and institutional context that can be referred to as social structures. A position-practice system is a system of social relations involving a system of positions, with associated practices, obligations, and powers defined in relation to other such positions, and into which agents essentially slot (Lawson, 1998).

All systems and social structures, for example, education, the economy, the state, international organisations, banking, trade unions, and households, and so on assume social relations of this form (Lawson, 1998). It then means that every human being at one point or another occupies a position, which is either pleasant or unpleasant, in a short period of time or lengthy, convenient or inconvenient, willing or unwilling. These different non-static, dynamic and multiple positions come with certain functions, powers, rules, roles, influence, and responsibility that must of a necessity be carried out within the sphere or jurisdiction of the position. I like Bhaskar's explanation: "we are 'thrown' into a world of multiple and contradictory ideologies of bondage and legitimation, underpinned by irrealist category mistakes, and locked into a position-practice system, with its duties and responsibilities – be they of surveillance or of office cleaner – pre-legitimated for us" (Bhaskar, 2008, p. 343).

Furthermore, Archer (1998, p. 201) propounded that the ways that pattern social interaction [e.g. practice] are incomprehensible without reference to the conditional influences which are thus prior to the position [e.g. influence of professional development training programmes or key appointment], the resources associated with it, the interests vested in it, none of which can be captured by a seamless web of 'practices'. She explained further that:

A position has to exist prior to its occupancy and even if the same people become the incumbents of newly elaborated positions, the new set of internal relations into which they are then embroiled exert a *sui generis* conditional influence upon them – which is causally detectable precisely through their changed practices as agents and the elaboration of agency itself.

(Archer, 1998, p. 202)

Here is the justification for the in-depth investigation of the pre, mid and post positions and practices of research participants as well as 'agential conditioning' and agential elaboration in the third phase of this research.

Archer further drew on Thompson's critique of structuration theory which demonstrates that certain practices cannot even be appropriately recognised without reference to the occupancy of positions, which are themselves entrenched in wider structures; nor can "regular patterns of

action be explained as the coincidence of voluntarism, but are not explicable as being positionally conditioned” (Thompson, in Archer, 1998, p. 201). The current structuring of positions, roles, distributions and institutions is dependent on the activities of former agents; consequently the emergence of current properties and powers cannot necessarily be attributed to the practices of current agents (Archer, 1998). Although the current agents have the capacity to maintain and transform the structure (positions, roles, distributions and institutions) instead of creating it, their good intentions and actions are conditioned by the culture and structure they have inherited from the former agents’ activity (ibid.). Archer therefore asked “upon whose activities particular distributions, positions, roles and institutions themselves depend” (Archer, 1998, p. 201).

2.4.1 OTHER INTELLECTUAL CONTRIBUTIONS ALLUDING TO THE EFFICACY OF POSITION-PRACTICE SYSTEM THEORY

Bhaskar advocated that if positions and practices are to be individualised at all, this should be done relationally i.e. positions should be explored in relation to practices (1979; 1989; 1998). I therefore deem it appropriate to present a review of a few other theories that have made intellectual contributions to this effect and their relevance to this research. They are as follows:

John Kenneth Galbraith

Despite Galbraith’s extensive publications, his son James K. Galbraith expressed that his father is “today little known” among the famous economists, even though “in many cases they [famous economists after his father’s generation] struggle to reinvent his ideas” (Galbraith, 2011, p. xiii). Albeit, Stephen Dunn has recently comprehensively described and explored J. K. Galbraith’s “theoretical achievements into focus” in his book entitled *The economics of Kenneth Galbraith: Introduction, persuasion and rehabilitation* (Galbraith, 2011, p xiii). In this book, Galbraith’s work is presented accessibly to the contemporary reader (Galbraith, 2011, p xiii).

While exploring and documenting the thoughts and ideas of J. K. Galbraith, Dunn explained that Galbraith’s early work “analysed the underlying causal mechanisms, processes, and institutions that generate them” (Dunn, 2011, p. 85). Dunn advocated that Galbraith propounded that what was happening on the surface in institutions did not necessarily reflect what was going on underneath. He opined that:

Galbraith ... sought to move beyond appearances and look at underlying trends and processes. In doing so he developed an original analysis of the nature of modern society that considered emerging social trends and concerns, long before many of his fellow academics began to recognise and study that reality.

(Dunn, 2011, p. 85)

Dunn argued that:

In focusing on generative mechanisms, it is clear that Galbraith was practicing what realists refer to as explanatory social science. From a realist perspective Galbraith can be viewed as adopting an inferential logic consistent with the philosophical ontology

of depth realism and causal powers and mechanisms; and of offering a scientific ontology of the same character, in which a range of specific mechanisms can be identified.

(Dunn, 2011, p. 99).

Galbraith's work contains several examples of explanatory critique. For example, in his exposition of the conventional wisdom, Galbraith discussed how acceptable ideas get reproduced, particularly if they accord with the self-interest of agents; he claimed that the complexities (which have been developed over time) of the conventional wisdom are used as a means of defending it (1958, pp. 17-21; Dunn, p. 101). Galbraith (1958, p. 21) claimed that the articulation of the conventional wisdom is the "prerogative of academic, public or business position. Thus, any individual, on being elected president of a college or university, automatically wins the right to enunciate" the conventional wisdom (cited in Dunn, 2011, p. 101). In making this argument, Dunn propounded that "Galbraith again demonstrates his conception of the reproduction of social position-practice systems" (Dunn, 2011, p. 101).

Bhaskar and Archer's notion that intentionality is integral to realism because it is what demarcates agency from structure was also theorised by Galbraith (1967). Bhaskar and Archer put forward that "intentional human behaviour is caused, and ... it is always caused by reasons, and ... it is only because it is caused by reasons that it is properly characterized as intentional" (Bhaskar, 1998, p. 90; Archer 1995, p. 153). The concept of intentionality in human action or practice in a social context is synonymous with Galbraith's concept of motivation and the technostructure in his book *The New Industrial State* (1967, p. 149). He used these concepts when explaining that in a large and complex organisation (e.g. a mature organisation like an HEI) individuals "align themselves with its goals in response to diverse motives". He referred to the diverse motives (Bhaskar's intentional causality) displayed by individuals in an organisation or corporation as a 'motivational system' (ibid.). He explained further that this motivational system can be best understood if the conventional image of a mature corporate structure is abandoned. This conventional image of a mature corporate structure is usually in a geometric hierarchy, which stipulates that structural authority and power passes down from the top to the bottom. He elaborated this argument by explaining that:

At the summit, in a rectangular box, are the stockholders, the repository of ultimate power. Next come their representatives, the Board of Directors; then the executive officers or top management. Off to the sides are the counsel, auditors, public relations and other staff. From the top executives, the line of authority continues down through departments, divisions, plants, units and other subdivisions. It ends, un tactfully, at the bottom with the proletariat.

(Galbraith, 1967, p. 149)

This approach is commonly referred to as the 'top-down approach' and it is often employed in HE and is evident in the presentation of individual organograms. The figure below is a visual representation of the orthodox structural motivational system, depicting the top-down approach of government in organisations.

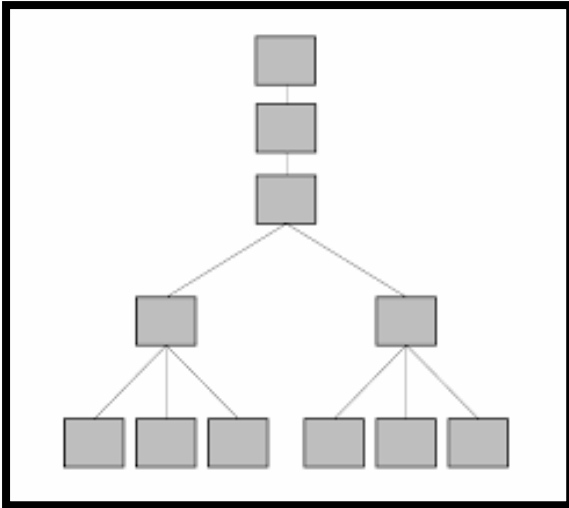


Figure 2.2: Example of geometric hierarchy that stipulates that authority passes down from the top

Relevant to this study and of interest in this body of knowledge is that this formal structure of command (the geometric hierarchy), which is the conventional image of organisation (the customary organisational chart or organogram) so common in Higher Education Institutions, has been problematised. Galbraith clearly pointed out that this image is “aggressively misleading” and hence should be abandoned (1967, p. 149). The image should be abandoned because the misleading effect will not only be experienced at the level of description but also at the level of analysis. He argued for a more intellectual reflection on the corporation or an organisation, its motivational system as well as the participants. This newly proposed way of thinking about and working intellectually will be somewhat like:

... a series of concentric circles. The band within each pairs of circles represents a group of participants with a different motivational system. In the more spacious bands at the outer reaches are the most numerous groups. Such in general is their motivational system that they are the most loosely attached. At the center is what is now called top management. Theirs is the firmest attachment. Between are the others. ... In the outermost circle in the mature corporation are the ordinary stockholders. This for all practical purposes is a pure pecuniary association. The typical stockholder does not identify with the goals of the enterprise; he [or she] does not expect to influence these goals. With this image in mind the motivational system of the various participants in the corporation can be more intelligently considered.

(Galbraith, 1967, pp. 149-150)

I present Figure 2.3 that follows as a visual representation of a more intellectual reflection of organisational motivational system congruent with this research context:

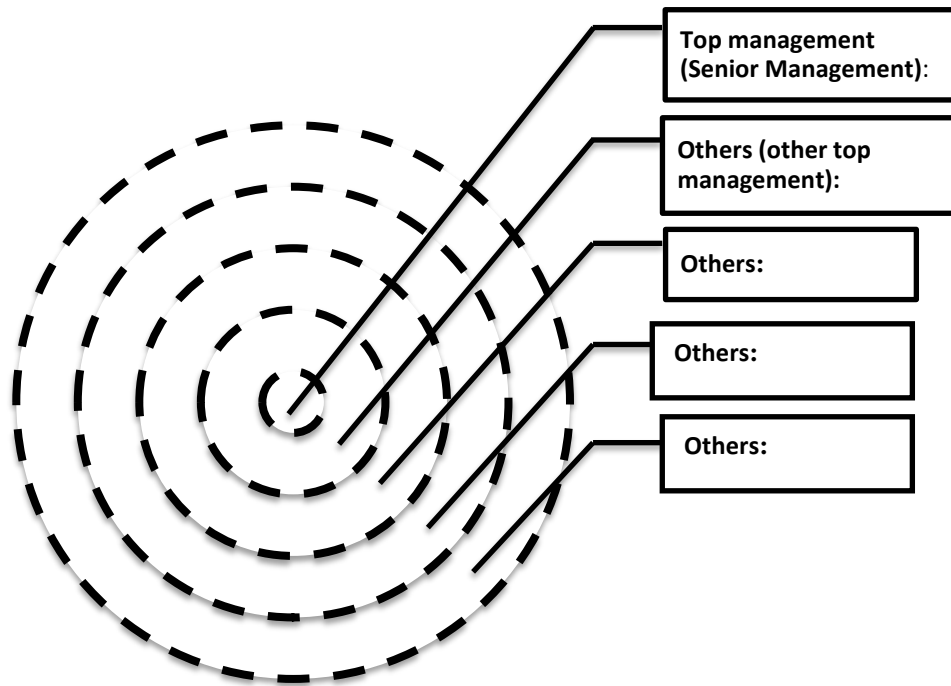


Figure 2.3: Example of a series of concentric circles depicting group of participants with different motivational system

The idea of series of concentric circles to represent and understand social structures was earlier theorised by sociologist Ernest Burgess in 1923.²⁹ Burgess developed the concentric zone model, also known as the Burgess model or the CCD model, which is one of the first theoretical models used to explain urban social structures. The Concentric Zone Model is a model of the internal structure of cities in which social groups are spatially arranged in a series of rings. The size of the rings may vary, but the order always remains the same. This model suggests that the social structure extends outwards from the central business district.³⁰

While focussing on the social structures and mechanisms, and the actions of agents within those structures that seek to transform and reproduce the modern corporation, Galbraith articulated an all-inclusive, socially rooted view of the knowledge process upon which corporate success is founded (Galbraith, 1967; Dunn, 2011). Galbraith used the concept of technostructure to describe an organisation in which all participate in group decision-making or the organisation which they form (1967, p. 71).

Technostructure is a collective and imperfectly defined entity; in a large corporation it embraces chairman, president, those vice presidents with important staff or departmental responsibility, occupants of other major staff positions and, perhaps, divisions or department heads not included above. It includes, however, only a small

²⁹ http://en.wikipedia.org/wiki/Concentric_zone_model accessed September 10, 2014

³⁰ http://www.lewishistoricalsociety.com/wiki/tiki-read_article.php?articleId=16 accessed September 10, 2014

proportion of those who, as participants, contribute information to group decisions. This latter group is very large; it extends from the most senior officials of the corporation to where it meets, at the outer perimeter, the white and blue collar workers whose function is to conform more or less mechanically to instruction or routine. It embraces all who bring specialized knowledge, talent or experience to group decision-making. This, not the management, is the guiding intelligence – the brain – of the enterprise. There is no name for all who participate in group decision-making or the organization which they form. I propose to call this organization the Technostructure.

Galbraith's focus on the technostructure is a unswerving challenge to the conventional wisdom in business organisations identified with entrepreneurship where an individual has "united ownership or control of capital with capacity for organizing the other factors of production and, in most contexts, with a further capacity for innovation" (Galbraith, 1967, pp. 70-71). Dunn claimed that "Galbraith developed an approach to social structure and hierarchies which is more broadly consistent with realist social theory ... [even though the] analysis of the technostructure and the modern corporation are perhaps the best examples of such structures in his theoretical contributions" (2011, p. 94).

Galbraith (1967) identified a class of business specialists that included management, accountants, lawyers, technicians, marketers, and engineers in what he referred to as the technostructure. By so doing, Dunn argued that "Galbraith focused on the social structures and mechanisms, and the actions of agents within those structures, that seek to transform and reproduce the modern corporation" (Dunn, 2011, p. 87). According to Galbraith (1967), it is obvious that the professionals within the modern institution or organisation (e.g. academic and non-academic university staff) are the "prime movers in reproducing and transforming institutional structures" (ibid.). Dunn stated conclusively that "as such Galbraith anticipates a central feature of the realist 'Transformation Model of Social Activity', developed principally by Bhaskar (1979) more generally and in economics by Lawson (1997, 2003)" (Dunn, 2011, p. 101).

Important to research is the fact that Galbraith's technostructure directs research attention away from the individual as the sole explanatory unit of analysis (individual agency) towards the management (collective agency) (Galbraith 1967; Dunn, 2011). Galbraith offered a "socialized view of 'practical' knowledge, which is transformed and reproduced through the decisions and planning rules and routines of modern corporation" (Hodgson, as cited in Dunn, 2011, p. 94). Although the intellectual idea behind the concept of position-practice system has been referenced back to Galbraith, he did not name the concept 'position-practice system' like Roy Bhaskar. The work of Galbraith is useful in this study which seeks to understand how the interplay between structure and agency (position-practice system) shapes ESD mainstreaming in the following ways:

1. It provides insight into structures in organisations that are propelled by motivational systems in the organisations through his concept of technostructure;

2. It provides a new way of looking at, analysing, explaining and presenting institutional structures and hierarchy of authority and power, not in the common geometric form but in a concentric circle, affording the ability to deeply understand agents in the sphere of influence;

3. Burgess (1923)³¹ is likewise relevant in shedding light on the reality of the playout of social structure, presenting the fact that the agents/structure occupying the greater positions are fewer, though more powerful and the lesser the position in the circles, the greater the number.

2.4.2 Bourdieu and Maton's contributions that resonate with position-practice system

One other theorist that presented ideas that resonate with the concept of position-practice system, especially in the context and realities in HE is Pierre Bourdieu who, according to Maton (2005), has remained committed to the analysis of education throughout his career. Although his intellectual ideas are concretely related to the ideas behind the concept of position-practice system, he did not refer to the concept of position-practice system as Roy Bhaskar did.

Bourdieu presented HE as a field which is a distinct object of study on its own. Bourdieu and Wacquant (1992, p. 97) defined a field as

A network, or a configuration, of objective relations between positions. These positions are objectively defined, in their existence and in the determinations they impose upon their occupants, agents or institutions, by their present and potential situation (*situs*) in the structure of the distribution of species of power (or capital) whose possession commands access to the specific profits that are at stake in the field, as well as by their objective relation to other positions (domination, subordination, homology, etc.).

On the one hand, a field is defined as “a configuration of positions comprising agents (individuals, groups or actors or institutions) struggling to maximize their positions” (Maton, 2005, p. 689). On the other hand, “agents are defined by their relational position within the field’s distribution of capital (resources conferring power or status) and from which they derive properties irreducible to intrinsic characteristic of the agents themselves” (Maton, 2005, p. 689). The structure of a field is therefore determined or given by relations between these positions, where such relations are not reducible to interaction (Bourdieu & Wacquant, 1992, p. 96; Maton, 2005, p. 689). In other words “each position is objectively defined by its objective relationship with other positions ... in the structure ... [and] the space of positions tends to govern the space of position-takings [according] to the specific “interest associated with different positions” in the field (Bourdieu, 1996, p. 231).

Bourdieu’s 1996 (pp. 231-234) work conceptualised HE in terms of “strategic ‘position takings’ that depend for their form on the meeting of an agent’s ‘habitus’ or dispositions with their relational position within the field”. According to Bourdieu, an agent’s relational position-takings reflect the agents’ relational position, through their position-takings (Maton, 2005, p. 690). Hence the field of position-takings mirrors the field of position. More so, through position-takings,

³¹ http://en.wikipedia.org/wiki/Concentric_zone_model accessed September 10, 2014

agents endeavour to both surge their capacity of capital and make the form of capital supporting their position the central measure of accomplishment within the field. ‘Struggles’, ‘fights’ and ‘lobbyings’ take place over acquiring as much capital as possible as well as over “which form of capital should be the Gold Standard” (Maton, 2005, p. 690). This discussion supports the argument that university professionals’ ‘struggle’ to participate in whatever is available that will boost their capital in the context of their habitus. This also partly explains the high number of applications that professional development training programmes receive, and the need to turn down many (even) qualified applicants, as in the case of the ITP.

Maton in his attempt to explore Bourdieu’s concept of field and the notion of autonomy (1989) which is currently less expounded, developed a framework to distinguish between positional autonomy and relational autonomy. I will refer only to positional autonomy in this thesis. He referred to positional autonomy as ‘the nature of relations between specific positions in the social dimension of a context or field and positions in other contexts’ (2005, p. 697). Maton gave the example of where positions are occupied by agents located solely within HE, the field exhibits stronger positional autonomy. He put forward that Bourdieu’s theoretical debate emphasised the way in which practices and ideas or specifically ‘position-takings’ shape the structure of a field, thus arguing against reductionism. Maton believed that Bourdieu’s concepts for analysing practice tended to reduce position-takings to epiphenomena of the play of positions within a field, hence the justification for the definition of positional autonomy which extends beyond positions in a field to other fields or context.

Of interest to the study in the above discussion is the positional autonomy that occurs not only in a particular field (e.g. HE), but specifically an institution within the field (e.g. Rhodes University) and even more specifically, the positional autonomy within a particular institution in terms of inherent sectors, faculties/disciplines, departments and even areas of interest or expertise of individual agents. The area of expertise thus is linked to the agent’s encounter with or participation in professional development to enhance capacity (e.g. the ITP) in a particular area (e.g. mainstreaming ESD in HE).

Regarding the structure of HE, Bourdieu (1989, p. 152) explained that HE in the French system is basically hierarchically structured by the opposition between agents that possess ‘scholastic capital’ i.e. intellectual renowned and scientific prestige and those that possess ‘academic capital’ i.e. institutional control over funding and appointments (Maton, 2005, p. 690). Hence the practice or demonstration of Bourdieu’s (1989, p. 45) “principles of hierarchization” in HE, based on what people have and do not have (and what constitutes having), which is heteronomous and autonomous, has long formed the basic principles between agents attempting to transform or reproduce the existing power relations in HE in order to maximise their position (Maton, 2005, p. 690).

Bourdieu (1989, pp. 36-37) used the concept of 'academic taxonomy' which he explained and further defined as

The taxonomy that expresses and structures academic perception practically is a neutralized and misrecognizable, in other words, euphemized, form of the dominant taxonomy. It is structured according to the hierarchy of qualities commonly attributed to members of the dominated classes ... to occupants of the middle ... positions, ... and to the dominant groups A system of principles of vision and division implemented at practical level, rests on an implicit definition of excellence that, by granting superiority to the qualities socially conferred upon those who are socially dominant, consecrates both their way of being and their state. It is in fact by means of this classification system that academic forms of classification establish the correspondence between social properties and academic positions, which are themselves hierarchized by level, establishment, discipline, and track, and in the case of teachers, by rank and the location of the establishment where they teach. This collection of agents into hierarchized academic positions constitutes in turn one of the primary mechanisms of the transformation of inherent capital into academic capital. But this mechanism can only function if the homology remains hidden and if the pairs of adjectives that in practice express and structure perception are the most socially neutral oppositions in the dominant taxonomy.

This contribution is useful to this study because it highlights the possibility of ESD being shaped by not only academic staff (lecturer) but likewise the practices of non-academic staff (such as administrators, librarians, residential operations divisions and other service delivery units).

2.4.3 Giddens, Stones, Cohen, Coad and Glyptis's contributions that resonate with position-practice system

Giddens (1984, p. 83) argued that social systems only exist in and through the existing and continuity of social practices by agents and their structural properties are best characterised as 'position-practice' relations. The position-practice perspective highlights the relation between the praxis of differently situated agents and the production and reproduction of social practices (Coad & Glyptis, 2014). These social practices which involved social interactions depend on the 'positioning' of the individuals in the time-space context of activities (Giddens, 1984, p. 89). Social positioning is concerned with the specification of the identity of individuals within a network of social relations; where the social relations are laden with certain obligations and prerogatives (Giddens, 1984). These social positions can be investigated and analysed not only at the level of an individual (who is able to occupy more than one social position), but at the level of the collective, where groups of individuals make up social systems (Giddens, 1984; Stones, 2005).

An individual can occupy or assume several social positions (with relevant social practices) but where these social positions and practices are in the context of an institution, becomes an institutionalised social practice (Coad & Glyptis, 2014). Cohen (1989) and Stones (2005) presented a diagrammatic illustration of the position-practice relations where circles are drawn to represent each and various social positions and double-headed arrows link one social position to the other, representing the social interaction between the positions. Coad and Glyptis (2014) used

the term ‘position-practice perspective’ (rather than a ‘position-practice system’) arguing that perspective comprises four interrelated elements namely praxis, positioning, capabilities and trust. They used this in a case study of a joint venture between companies who engaged in the production and shipment of oil and petroleum products and adapted the Cohen (1989) and Stones (2005) diagram to present a diagrammatic illustration of the position-practice relations they observed (p. 152).

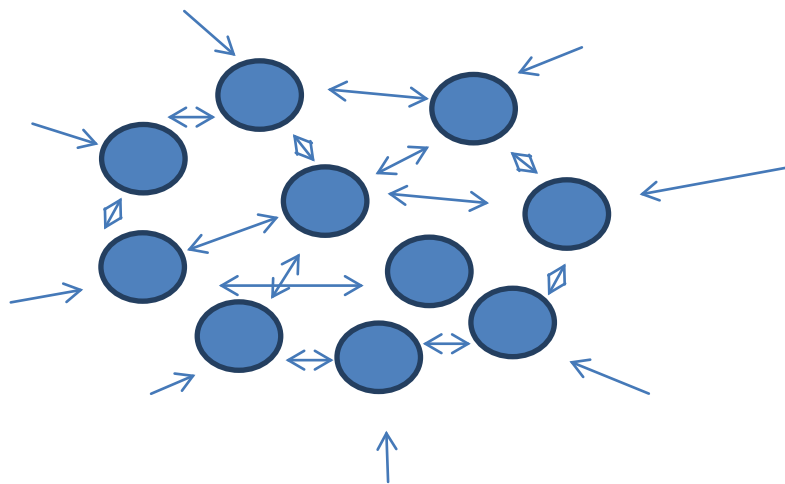


Figure 2.4: Illustration of the position-practice relations by Cohen (1989) and Stones (2005)

2.5 EMERGENCE

The concept of emergence has been developed and used by notable realist philosophers including Roy Bhaskar, Margaret Archer, Elder-Vass and Rom Harré to mention but few. It can be described as the properties or capabilities that a thing or an entity or whole possesses that are not possessed by its parts (Elder-Vass, 2005; 2011). Such properties are then called emergent properties and the concept of emergence in realism is quite different from the literal meaning of emergence which is the first appearance of a thing (ibid.). According to Bhaskar (1998, p. 59), in emergence “something new (entities, structures, totalities, concepts) emerges/is generated out of pre-existing material from which they could have been neither induced nor deduced.” Distinction is made between synchronic and diachronic emergence which depicts the existence of a relationship at a particular point in time between the properties of a whole and its parts and that which happens over time respectively (Bhaskar, 1979; Elder-Vass, 2005; 2011).

Price (2014) argued that the reason why people do what they do cannot be understood independently without due consideration of social structures (higher order level). She explained that this is why it is essential to study social structures as distinct entities in relation to people. Bhaskar explained that in critical realist research,

The conception of emergence gives rise to two characteristic models of superstructure (and accordingly hierarchy). On the first, the higher order level provides the boundary conditions for the lower order or more basic level (as, for example, economics provides the boundary conditions for the operation of the physical principles governing machines). On the second, the lower order or more basic level provides the conditions of possibility or framework for the emergent or higher order level, as, for example, ecology specifies the conditions of possibility of human material practices. Both models may be combined in creatively defining the hierarchy of levels in some laminated totality.

(2010, p. 12) See also Price (2014, p. 57)

According to Archer (1995, p. 90), emergence is a realist notion which suggests that the results of past actions have effects or “causal powers” on the rights of other actors, facilitating or constraining their actions because of the structural properties they have laid down. Bhaskar (2010) explained that the conception of emergence in critical realism produces two models of superstructure, namely the higher order level (which paves the way and provides the boundary conditions for the lower order level) and the lower order level (which paves the way for the emergence of the higher order level). Bhaskar argued that the difference between both levels can be clearly explained by tracing the causal sequence of activities just as it actually happened, beginning from the most basic level. This he called “the diachronic pattern of causality” (2010, p. 12).

Generally, when there is emergence, Bhaskar explained that “new beings (entities, structures, totalities, concepts) are generated out of pre-existing material from which they could have been neither induced nor deduced” (2008, p. 45). He referred to its occurrence and existence as a “quantum leap, or nodal line of ... the materialized imagination” (ibid). Indeed the conceptualisation and planning of mainstreaming ESD by the ITP facilitators and by university educators remains part of the imagination until the point at which it is materialised at the level of actual implementation and improved social practice. Emergent properties are “those entities which come into being through social combination ... they exist by virtue of interrelations ...” (Archer, 1998, p. 192). Structure and agency possess distinct generative emergent properties although they are interdependent and interrelated; hence they are not considered to be equally established and are analytically separable (Archer, 1995).

2.5.1 TYPES OF EMERGENT PROPERTIES

A variety of emergent properties exist in society, including Structural Emergent Properties (SEPs), Cultural Emergent Properties (CEPs) and Personal (or People’s) Emergent Properties (PEPs); which are relatively continuous, independent and irreducible to the other (Archer, 1995). In order to examine their interplay, the three powers are grouped into two: SEPs and CEPs are classified together and referred to as ‘parts’, PEPs are ‘people’ and there is convergence between the two sets of emergent powers (Archer, 1995). Structural emergent properties (SEPs) depend primarily on the availability of human and physical material resources i.e. internal relations that exist in the structure itself (Archer, 1995). SEPs refer to the material-economic conditions

(Cruickshank, 2003, p. 149; Archer, 1995). Cultural Emergent Properties (CEPs) refer to norms. These emergent properties may be referred to as the 'generic SEPs and CEPs' (Cruickshank, 2003, p. 149). Personal (or People's) Emergent Properties (PEPs) are exhibited through agential relations which have the capacity to have an impact on the capabilities of colleagues through their causal powers as well as their collective (i.e. their institution) and satisfy the agents' articulated interest (Archer, 1995).

2.5.2 POSITION-PRACTICE SYSTEM AND EMERGENT PROPERTIES

In order to secure the reality of relational concepts like positions and practices, the causal efficacy has to be demonstrated; that is, a 'causal criterion' needed to establish reality must be employed (ibid.; Bhaskar, 1998, p. 40). The mediation by the ITP (macro mediating system) and consequent participants (micro mediating system) are the causal criteria that this study is employing to investigate positions and practices and emergent properties and powers in the university lecturers when mainstreaming ESD. There are non-observable generative mechanisms which possess powers that may exist even if they are exercised unknowingly or not exercised at all (Archer, 1998; Bhaskar, 1998). The presence of such powers has 'variable outcomes' which occur as a result of various 'intervening contingencies' existing in an open system like universities (Archer, 1998, p. 190). Herewith, the intervention done by the ITP through the university educators is the intervening contingency this seeks to explicate and the emergent properties and powers being the variable outcomes of the positions and practices of university educators (exercised generative mechanisms). The activities of generative mechanisms are 'continuous and invariant' and this characteristic is as a result of their powers and properties that are relative; this is referred to as 'transfactuality of mechanisms' (Archer, 1998, p. 195). It is worth stating here that the concept of position and practice will not only be useful as conceptual and theoretical aspect of this study, but as an analytical framework as well.

2.5.3 LINKING LAMINATED SYSTEM TO EMERGENCE AND POSITION-PRACTICE SYSTEM

The result of the concept of emergence "may be internally complex and differentiated, consisting in a 'laminated' system, whose internal elements are necessarily 'bonded' in a multiplicity of structures (perhaps composed of their own structural hierarchies and sub-totalities)" (Bhaskar, 2008, pp. 46-47). The depth and stratification of the elements of the four-planar social being or the social cube and of course the laminated system is subject to and hence supposed to be considered and perceived in terms of "multiple and conflicting determinations and mediations" (Bhaskar & Norrie, 1998, p. 566; Bhaskar, 2008, p. 149). The 'multiple and conflicting determinations and mediations' also display "to a greater or lesser extent (more or less contradictory) intra-relationality and totality; more generally, as embodying all the moments of the concrete universal" (Bhaskar, 2008, p. 149). These 'multiple and conflicting determinations and mediation' should also be done in "a totalising conception which dialecticises existing realist

ideas such as the transformational model of social agency and the position-practice system” (Bhaskar & Norrie, 1998, p. 566).

2.6 DOMAIN SPECIFIC THEORY: SOCIAL LEARNING AND CHANGE

2.6.1 SOCIAL LEARNING

Sustainable development needs social learning (Wals, van der Hoeven, & Blanken, 2009). The notion of social learning (SL) is a little messy (Wals & Liej, 2007) and several authors have published different meanings and definitions, but it is generally considered as processes of learning and change involving individuals and social systems (Tábara, 2005). For example, Keen, Brown and Dyball (2005) described social learning as the collection and reflection that occurs among different individuals and groups as they work to improve the management of human and environmental interrelations.

Social learning takes cognisance of the contexts, relations, and connections with others as well as the material realities in particular settings and dismisses the popular assumption that awareness automatically leads to change in attitude and propels action (Agbedahin, 2012a). Wals (2007) noted that safe spaces are needed, where stakeholders can meet to deliberate, engage with contradictions, diversity of opinions, perspectives, and dissonances in social learning processes; this he postulated provides a good opportunity for social learning towards sustainability in the context of ESD.

Whenever or wherever social learning really occurs, there must be some sort of changes in the social structure of society (Tábara, 2005) and of course individuals involved. In researching sustainability learning for river basin management and planning in Europe, Tábara (2005) employed social learning in relation to public participation. He and his colleagues in the HarmoniCOP project used social learning as a general framework that understands social structural change as social learning. Tábara (2005) presented social learning as a concept and the analytical framework that entails reflexive relationship and interconnectedness that exist between agency, context, change and structure. The link between these four concepts is integral to this study and builds on (and resonates well with) the metaphysical and general realist theories already presented above.

Tábara designed a model which depicts social learning as an open-ended, reflexive and sequential process of structural change induced by agency (Tábara, 2005; Blackmore et al., 2011).

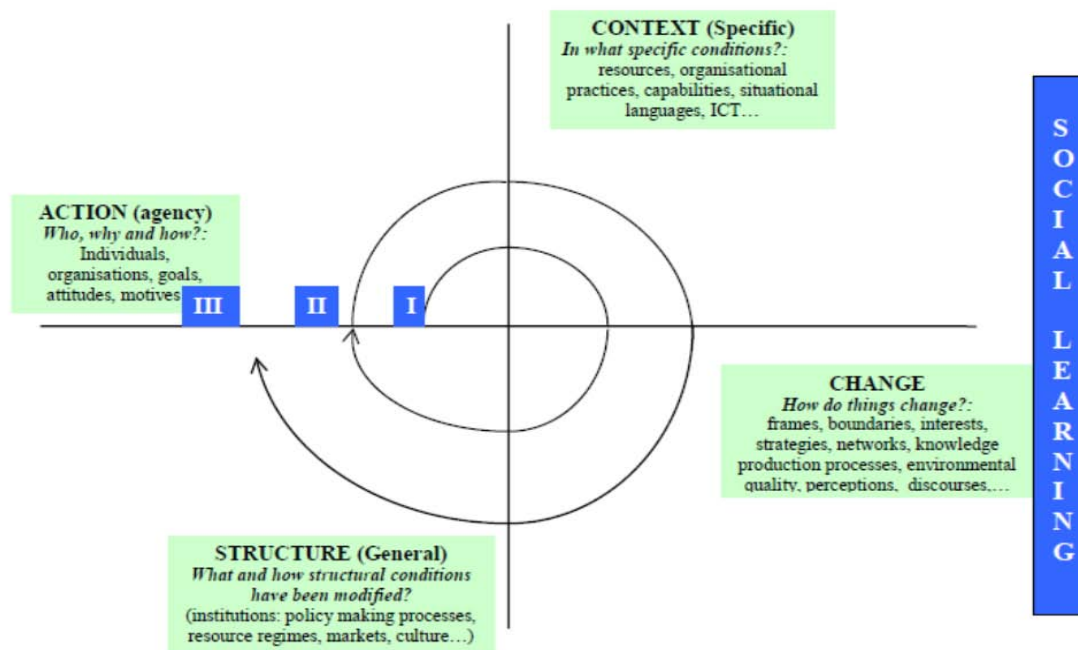


Figure 2.5: Tábara's (2005, p. 20) social learning as a sequential structural change induced by social action

Tábara (2005) argued that social learning occurs in different stages of the framework and is initiated by *actions* taken either by particular individuals or institutions when confronted with the conditions of particular *contexts*. This context or condition provides their initial conditions and resources (Archer's structural conditioning); then, if actions are successful (Archer's socio-cultural interaction), they may be able to *change* specific frames, boundaries, interests, strategies, networks, knowledge production processes, perceptions or discourses in the desired or expected manner (agential elaboration/morphogenesis tending towards the possibility of structural elaboration). He explained further that if those changes affect several different types of institutions in a desired collective way – e.g. improving ecological adaptation – then, social learning can be said to have occurred also at the *social structure*, the ultimate scale influencing local action at the individual level.

Action, context, change and structure in the above presented social learning framework are the different aspects that will be explored in this study because they are appropriate and applicable to the research interest and of course Archer's morphogenetic framework. Tábara (2005) further explained that it may be difficult to find examples of social learning and to assess whether a whole society learns or not on a particular issue; however, some social processes of change can be understood to be the product of social learning (product of social interaction). He elucidated that social learning occurs when societies succeed in creating new desired social conditions (elaboration) which are not only different but better than those of the past according to the organisations and actors who have participated in their creation (agential and structural conditioning). These change processes are usually the "result of an intricate mix of collective reflection, cultural innovation and purposive social action which materialise both in particular

rules and institutions as well as in individual manners, languages and attitudes” (Tábara, 2005, p. 22) (ITP intervention and resultant socio-cultural interaction and Change Project process and implementation).

This view of social learning resonates with the Bhaskar / Archer emphasis on the interplay between positions and practices, structure and agency, and the decoupling of these in analytical work to understand the actual changes and change processes that occur.

2.6.2 ESD LEARNING

ESD learning refers to “learning to ask critical questions; learning to clarify one’s own values; learning to envision more positive and sustainable futures; learning to think systemically; learning to respond through applied learning; and, learning to explore the dialectic between tradition and innovation” (UNESCO, 2011, p. 8; UNESCO, 2014a, p. 20). This research is interested in learning; individual and collective ESD learning. Learning in context (situated learning) and learning to do and be/learning by doing (change-oriented learning). Situated learning is referred to as “situated social practice” by Jean Lave, (1991, p. 67). Lave explained that the theory “emphasizes the relational interdependency of agents and the world, activity, meaning, cognition, learning, and knowing”. Central to this study is knowing what can be obtained in the process of attempting to bring about change in the ‘convenient’ status quo, irrespective of the constraints, after learning opportunities (like the ITP) have been provided and the technical know-how to go about it is given (to the ITP participants).

Learning as individual and learning as collectives is common in a social context because of regular horizontal or vertical contact and interaction. Eisner (1991) recommended that “one of the most useful of human abilities is the ability to learn from the experiences of others. We do not need to learn everything first hand” (cited in Harland, 2014, p. 4). Learning (both personal learning and collective) begets some form of change in perspective, thinking, ideas, resolution, behavior, decision, planning, action, practices and activities. Hence what is being learnt with regard to ESD among university educators, how it is being learnt and the resultant consequence of such encounter which could be tangible or ideological, is worth exploring.

Learning a little something from a learning space is contingent on the learners’ interest not the teacher, writer or researcher (Harland 2014). An interesting response from a case study where the participants said that they learnt a little something (maybe a lot, who knows?) about something they were interested in and on the basis of that little something, they construct a complete story of the phenomenon, was presented by Ragin and Becker (as cited in Harland, 2014). ESD learning and change processes require more than only one type or approach to learning and research. University educators need to learn beyond their boundaries and areas of specialisation for effective ESD mainstreaming in higher education. The following sections discuss significant and contemporary approaches to learning and research in ESD.

Multidisciplinary, interdisciplinary, transdisciplinary and knowledge co-production

i. Multidisciplinary: This approach to learning and research involves different disciplinary studies addressing a common empirical focus or problem, without changing existing disciplinary methods and structures (SARUA, 2014a). Multidisciplinary learning and research is significant in developing different ‘angles’ or different understandings of a problem, from the strength and vantage point of different disciplines (ibid.).

ii. Interdisciplinary: This kind of learning and research approach marks the midpoint between multi- and transdisciplinary research (SARUA, 2014a). It involves multidisciplinary studies, but also takes cognisance of and engages with synthesis work done across the different disciplines (ibid.). It is characterised by the development of a common framework and the use of “discipline-transcending terminology and methodologies while maintaining certain critical disciplinary distinctions” (ibid., p. 59). Interdisciplinary learning and research approach is significant in terms of its ability to or processes of synthesising the knowledge from different disciplines (ibid.).

iii. Transdisciplinary: This research approach uses strategies from interdisciplinary research, but also advances this by developing “new theoretical understanding and new forms of praxis that are needed across sectors and at different scales” (p. 59). Bhaskar, in his explanation of interdisciplinary approach to research, elucidated the need for transdisciplinary research approach:

Epistemologically, for the successful pursuit of such interdisciplinary work, we need in addition both transdisciplinarity, involving the potential creative employment of models, analogies and insights from a variety of different fields and disciplines; and cross-disciplinarity, involving the potential to empathize with and understand and employ the concepts of disciplines and fields other than one’s own. This has radical implications for both the curriculum and pedagogy of higher education.

(Bhaskar, 2010, p. 11)

Transdisciplinarity is therefore based on an “inter-penetration of disciplinary perspectives or understandings, and a ‘creative re-deployment’ of these in [often complex] contexts of practice” (SARUA, 2014a). It is therefore clearly possible to differentiate between existing ‘weak transdisciplinarity’ and ‘strong transdisciplinarity’ research approaches. Weak transdisciplinarity approaches are those that only relate existing knowledge to practice and ‘strong transdisciplinarity’ approaches are those that go beyond this by developing new and more complex ways of understanding and engagement with theory and practice in particular contexts, across sectors and at different scales (SARUA, 2014a). Rio+20 Treaty on HE (2012) refers to the relevance of interdisciplinarity and transdisciplinarity in its Principle #6 “Inter- and trans-disciplinary learning and action. With rapidly and constantly changing realities, inter- and transdisciplinary approaches to learning become more appropriate and significant. The complex challenges facing society and the environment cannot be understood or dealt with in isolation and will need innovation and cross-disciplinary dialogue. Higher education must create opportunities

for furthering these approaches” (p. 5). Transdisciplinary research is increasingly being seen as a real opportunity for innovation, offering interesting potential for advanced reflection, oriented towards knowledge production for societal improvement (ibid.). This lends itself to the next and final kind of research approach, a process that can develop over time.

iv. Knowledge co-production: Also known as knowledge co-creation, this is an emerging kind of research orientation. It is only prominent in international research platforms, particularly those dealing with socio-ecological and development related issues and concerns like climate change. This shift towards interdisciplinary and transdisciplinary knowledge co-production is yet to be employed by most traditional and current research partnerships which still focus only on a single discipline (SARUA, 2014a). Engaging in this novel kind of research approach is pertinent for sustainable development related research because of its interest in new synthesis and creative deployment of knowledge in contexts of practice across scales and sectors that unavoidably require new ways of thinking, doing, and relating (ibid.). However, the success of this research approach is dependent on certain factors. These factors are responsible for the success of the ‘knowledge co-production’ in the SARUA climate change country mapping study:

- 1) Wide involvement of society including researchers, managers, practitioners and civil society;
- 2) Investments of time to develop the needed trust and competence between research partners and participants;
- 3) Willingness to reckon with the fact that in order for societal change to occur, there is need to recognise and interact with existing different forms of knowledge; and
- 4) Ability to work and bring together different contributions in the knowledge production process i.e. learning by doing or social learning. (SARUA, 2014a)

There are different forms of knowledge that can be co-produced, investigated and analysed in research. For the purposes of understanding sustainable development related knowledge issues, the following categories of social and scientific knowledge production (scientific inclusive) have been identified:

1. Knowledge of ‘what is’, or what can be observed and analysed (for example, knowledge of the current situation);
2. Knowledge of ‘what is not yet known’ but can be predicted or ‘staged’ (for example, knowledge of sustainability risk and vulnerability);
3. Knowledge of ‘why things are the way they are’, and how they can be changed (for example, historical and explanatory accounts of events)
4. Knowledge of ‘what can be different’ and how this could be achieved (for example, possible solutions); and
5. Knowledge of ‘what can and must be done’ and ‘new ways of being, doing and becoming’ (for example, practical options for solution and change processes). (SARUA, 2014a, p. 144)

It is noteworthy to mention that the post-2015 Sustainable Development Goals have been shaped by multidisciplinary, interdisciplinary and transdisciplinary research findings and approaches, and a body of research is emerging regionally and internationally that deals with the link that exists

between the dimensions of sustainable development (economy, society and environment) (SARUA, 2014a, p. 100). According to SARUA (2014a, pp. 104-105), the following are some of the implications of knowledge co-production for universities and university systems:

1. How to engage with and enhance the validity of inter- and transdisciplinary research activities, with their dynamic integration of theory and practice from various disciplines, and the extent to which these are recognised as a substantial part of contemporary science systems;
2. How to engage with the reflexivity that is required of university scientists to become more aware of the potential societal effects of their research and to take these into account as they select research objects, methods and approaches; and
3. How to engage with new criteria for research related to societal relevance, and how these can be integrated into systems of scientific quality control e.g. peer review, funding frameworks, and also into evaluation systems of individuals, projects and organisations.³²

All these issues need to be critically considered by university systems, taking into account the heterogeneity of science, and the differences that exist between scientific fields and national contexts, priorities, policies and societal change concerns.

2.6.3 CHANGE

Myers (1990) opined that change necessitates an alteration in the state and process of doing things (in Nicolaides, 2006). Change, however, does not happen easily: opportunities ought to be deliberately created for it and it encounters many obstacles at both individual and collective levels (Darling-Hammond, 2009; Hargreaves & Fullan, 2009; Agbedahin, 2012a). In short, Nicolaides (2006) pointed out that change is perceived to be a threat by many institutions that therefore prefer maintenance of the status quo rather than attempting or imbibing the principles of sustainability. Hargreaves and Fullan in their book *Change wars* suggest that change does not happen passively or peacefully but that positive change is something that needs to be ‘fought’ together for, “not in a war against each other, but in a hopeful struggle against the odds of drift, despair, and despondency” (2009, p. 5). The transformation of structure and agents does not occur harmoniously; this is because they both exercise peculiar inherent power relations which are exhibited tensionally and subsequently in time and in space (Archer, 1998). It thus makes sense to say that an agent without motivation and/or insight into a particular change process cannot easily facilitate the transformation of structure; there is potential in the ITP intervention to keep HEIs participants abreast of the rudiments of ESD and to equip them for the actualisation of institutional change and contribution to the UNDES D.

³² SARUA (2014a, pp.104-105) partially adapted this from Hessels and van Lente, “Re-thinking new knowledge production”, but it is also reflective of the consultations in their mapping study.

2.7 CONCLUSION

This is the theoretical framework chapter of this dissertation. I have clustered the theories used in this study into levels of realist theorising, namely (1) metaphysical realism, (2) general realist meta-theory, and (3) domain specific meta-theory. Under metaphysical realism, I have presented both critical and social synergies of realism, the multiplicity of mechanisms in realism, as well as a history, overview, and characteristics of critical realism. Also as part of the first and overarching level of realist theorising, I presented the evolution and component of the concept of laminated system, from the transformational model of social activity, to the emergence of the concept of the four-planar social being and finally to the seven-scalar laminated system which is used in this study (among the other available laminated systems). The exploration at this level ended with empirical application possibilities of the seven-scalar laminated system to sustainable development and ESD research. Under the general realist meta-theory, I presented the morphogenetic approach with its associated analytical dualism and three-part cycle, namely structural conditioning, social/cultural interaction and structural elaboration. The position-practice system theory was thereafter presented, drawing on other intellectual contributions that have alluded to the efficacy of position-practice system theory. The concept of emergence has been discussed in relation to position-practice system as well. Finally, under domain specific theory, I have presented social learning and change in relation to the above theories and this research. The choice of the above theoretical perspectives has been made owing to their relevance and usefulness to this research interest and process. They have provided a strong philosophical and theoretical foundation and pillar for the entire study. The next chapter focuses on the research design, methodology, data collection methods, methods of data analysis, research validity and ethics employed in this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

“Working out how humans can continue to learn to flourish as we move together into the Anthropocene is perhaps the biggest sociological and educational question for our times.”
(Lotz-Sisitka & Ramsarup, 2015, p. 3)

3.1 INTRODUCTION

In this chapter, I present the research design, research methodology, methods, methods of data analysis and modes of inference. I also address questions of validity, reliability, and ethics. The chapter starts by presenting a summative overview matrix of the research phases and corresponding research questions; sub-questions, data collection methods used in each phase; and associated theoretical and analytical frameworks, as used in the research (Table 3.1 below).

Table 3.1: Matrix of research design and methodology

Research questions of research phases	Data collection methods	Theoretical framework	Analytical framework
Phase one research question: Who are the African and Asian ITP participants and what are their change projects, change project implementation process, change project outcomes and relevance of their change project to the ITP objectives?	Document review (2008-2013 ITP report)	Social learning theory	Morphogenetic cycle
	Computer-assisted self-administered questionnaire/web-based survey ITP participants’ portfolio	Morphogenetic theory	Inductive analysis
SEE APPENDIX 3			
Phase two research question: What are the positions and practices of the African ITP participants and how can the morphogenetic approach be used to describe their ESD learning and change process before, during and after the ITP?	Phase one data 30 face to face self-administered open ended questionnaires 2 computer- assisted semi-structured interviews 3 face to face semi-structured interviews	Morphogenesis Position-Practice mediating system theory	Morphogenetic cycle Inductive and Abductive analysis

SEE CHAPTER 4

Phase three research question:

How do position-practice system and the ITP shape (enable or constrain) effective ESD mainstreaming (ESD learning and change processes) in case countries and institutions and how can the morphogenetic approach and laminated system be used to understand and explain these?

Sub-questions	Methods	Theoretical framework	Analytical framework
<p>Sub-question 1: What were the pre-ITP and pre-ESD MESA Chair positions and practices of participants and how do these pre-positions and practices shape the ESD learning and change processes in their institutions?</p> <p>Sub-question 2: What institutional ESD related problems did the participants propose to address through their participation in the ITP/holding an ESD MESA Chair?</p>	<p>Phases one and two data</p> <p>20 (-1) in-depth face to face semi-structured individual interviews</p> <p>6 university website review</p> <p>Institutional documents review</p>	<p>Position-practice mediating system theory</p> <p>Morphogenetic theory</p> <p>Social Learning theory</p>	<p>Level one: Analytical dualism</p> <p>T¹ Structural and agential conditioning</p> <p>Social learning Step 1</p> <p>Social learning Step 2</p>
<p>Sub-question 3: What kind of support have the ITP participants (and their respective institutions) received through their participation in the ITP/availability of an ESD MESA Chair in their institutions and country?</p> <p>Sub-question 4: What are the post-ITP and post-ESD MESA Chair positions and practices and how do these post-ITP and post-ESD MESA Chair positions and practices and the ITP shape the ESD learning and change processes in their institutions/countries/region/Africa?</p>	<p>Computer assisted telephonic interviews</p> <p>Computer-assisted semi-structured questionnaires</p>		<p>Level two: Analytical dualism</p> <p>T²-T³ Social cultural interaction, ITP mediation, and learning and change processes</p> <p>Social learning Step 3</p> <p>Social learning Step 4</p>
<p>Sub-question 5: Are there agential elaborations (or reproduction) after participation in the ITP; if any, what are they and what do they imply?</p>			<p>Level three: Analytical dualism</p> <p>T⁴ Agential and structural elaboration</p>
<p>Sub-question 6: Are there structural elaborations (or reproduction) after participation in the ITP; if any, what are they and what do they imply?</p>			<p>Social learning Step 5</p> <p>Social learning Step 6</p>

SEE CHAPTERS 5, 6, AND 7

3.2 RESEARCH DESIGN

3.2.1 EXPLORATORY AND EXPLANATORY RESEARCH

Various scholars have written and postulated different kinds of social (realist) research. Largely and on various levels, this research draws on the works of Schutt (2012) and Ollman (1993 as cited in Judd, 2003, p. 128) and Sayer (2000, p. 162). Schutt (2012, pp. 12-15), stipulated four types of research: descriptive, exploratory, explanatory, and evaluation research. This research can be best described as exploratory and explanatory research, depending on its phases. In phases one and two of this study, I sought to understand the ITP as a broad research case study and the institutions and participants that have participated in the programme. I was confronted with voluminous longitudinal data and documents to analyse in order to understand what was happening in particular social contexts without necessarily wanting explicit and in-depth explanations. This kind of research is explorative because there is interest in investigating how people operate in the research context under investigation, the meaning they give to their actions, and issues that concern them. Inherent in the research design is the use of data collection methods that are able to “capture large amounts of relatively unstructured information or that take a field of inquiry in a new direction” (Schutt, 2012, p. 13).

Explanatory research has been considered as consistent with phase three of this research; at least, superficially by name, and more concretely, its consistency with critical realism. In the research process and developments presented in Chapters Four, Five, Six and Seven, I explore and tried to explain what was happening to the ITP participants in their institutions after their participation in the ITP. This was done through the use of theoretical and analytical frameworks proposed. Of more interest was the investigation and explanation of what was responsible for what was happening at both individual and collective levels of reality. According to Schutt (2012, p. 14), explanatory research “seeks to identify the causes and effects of social phenomena and to predict how one phenomenon will change or vary in response to variation in some other phenomenon”. Explanatory research should therefore be the principal goal of any science, most especially social sciences. The identification of cause and effect in Schutt’s definition of explanatory research often uses experiments, or surveys, both of which are most likely to use quantitative methods. However, this research, which is mostly qualitative, uses survey methods and other qualitative methods including interviews and document analysis.

3.2.2 DIALECTICAL AND NON-DIALECTICAL RESEARCH

Two types of research have been described by Ollman (1993, as cited in Judd, 2003, p. 128) namely dialectical research and non-dialectical research. The former “begins with the whole, the system, or as much of it as one understands, and then proceeds to an examination of the parts to see where it fits and how it functions, leading eventually to a fuller understanding of the whole from which one has begun.” In the latter, “one starts with some small part and through establishing its connections tries to reconstruct the larger whole.” This research can be classified

or can fit appropriately into both categories. This will depend on the angle of argument or the phase of research. Since this research design and its phases start from the global education and sustainability issues and UNEP and Sida's contribution to the commencement of the African and Asia ITP, to an investigation of countries, institution and participants from southern Africa, it can be viewed as dialectical research.

If one argues from the point of phase three's in-depth investigation of the individual ITP participants broadening to their institutions, countries, region, and global policy and practice – it will be correct to refer to this study as non-dialectical research according to Ollman's classification. If both arguments are justifiable and accepted, then this study is both dialectic and non-dialectic, still according to Ollman's definition. This discourse and argument resonates with Bhaskar's (2010, p. 12) proposition regarding the point of commencing the laminated system exploration and explanation. He postulated that on the one hand one can decide "to trace the causal series as it actually happens, [that is] the diachronic pattern of causality" which is applicable to the argument that this research is dialectical. On the other hand, one can consider the option of beginning "with the most basic or rooting or grounding (e.g. physical) level" – which is the individual, institution, countries, region and then eventually exploring the whole laminated system (2010, p. 12). The overall study is, however, more dialectic than non-dialectic.

3.2.3 INTENSIVE AND EXTENSIVE RESEARCH

This research is both intensive and extensive in design (Sayer, 1992; Danermark et al., 2002; Harré, as cited in Sayer, 2010; Edwards, O'Mahoney & Vincent, 2014). The research can be considered literally and superficially in order to depict a sense of relation between depth and breadth of data collection, analysis, and presentation of findings. Phases one and two have an extensive research design covering the wider scope and population of all ITP participants in Africa, while phase three follows an intensive research design covering a smaller scope and population sample of only ITP participants and MESA Chairs in three countries in southern Africa. This research is, however, both extensive and intensive (beyond the depth and breadth criterion), based on others factors such as (1) the sort of research questions asked, and (2) the kind of techniques and methods used (Sayer, 2010). In the extensive research of phases one and two, the research questions were concerned with investigating some of the common properties and patterns of an entire population such as ITP participants' position, institutional context, change project start-up and process, and outcome of change project. In the intensive research of phase three, the main questions were concerned with how participation in the ITP facilitates individual and institutional learning and change processes and how the position-practice system of individuals and collectives enables or constrains ESD learning and change processes. The methods used for data collection in both types of research are also different.

3.3 RESEARCH APPROACHES

3.3.1 QUALITATIVE RESEARCH APPROACH

This research is mainly located in the qualitative research paradigm rather than the quantitative paradigm, although it has been argued that it is unnecessary to choose between paradigms (Harland, 2014). The research is mainly qualitative in that, as a researcher, I have inquired into a particular phenomenon by seeking insights into the meaning made by ITP participants, and I have also had to take account of my own subjectivity in the research. Interpretations and findings are shaped by subjectivity, understanding, perception, experience, of both participants and me. Harland (2014, p. 5) maintained that in qualitative research “the unique circumstances of the case are contingent on the individual”; hence if the research is done by another researcher using the same research design, methods, techniques and analytical frameworks, the interpretation and findings may differ slightly because of the abovementioned factors. Interpretation of participants may also be diverse depending on times and circumstances of their participation. Among the various possible qualitative approaches to research, such as ethnography, phenomenology, interventionist and interpretive approaches, this thesis used a case study approach.

3.3.2 RESEARCH APPROACH – CASE STUDY

The decision to use the case study is informed by its appropriateness to understand the reality under study. The use of a case study approach was particularly useful in classifying and differentiating the phases, scope, objects and subjects of this research. Phase one is a case study of all African and Asian ITP participants; phase two is a case study of only African participants; phase three is a case study of research participants from only three countries in the southern African region. These three levels of case study were both a process of learning about the case and the product of my learning about the case because I investigated both what is peculiar about each case, as well as what was common across all cases (Stake, 1999).

This approach was also chosen because a case study approach to research can be used in both qualitative and quantitative studies. Besides, a case can be flexibly used; a case can be intensive or extensive, simple or complex, long or short as long as there is a plan to concentrate the investigation on something specific. Hence, Stake argued that “the case is a specific. Even more, the case is a functioning specific” (p. 236). In case study research various research methods can be used where appropriate (Yin, 1981, 2006 in Harland, 2014). Data collection methods used in this multi case study research included survey questionnaires, interviews and document analysis. The decision to call a particular study a case study draws attention to the research phenomenon, the research (epistemological) question, as well as what can be specifically learnt from the case.

In a case study, more than one case can be simultaneously carried out without the intention to do a comparative study with each study a concentrated inquiry into a single case. The exploration for the case studies in phases one and two provided a good starting point for investigation of my

research interest, as well as for testing out assumptions and theories of analysis. A case study can be useful in providing small steps towards an overarching generalisation although this should not be emphasised in all research. Although a study may only be interested in a particular phenomenon or population or even an individual case, a case cannot be fully understood without knowledge of other cases. Case study consists of empirical inquiries of single cases that are contextually unique (Stake, 1995) and usually addresses a problem or an intervention of interest within the researcher's professional practice (Harland, 2014). As is characteristic of qualitative research, the findings of a qualitative case study can only be learnt from, and never truly replicated, either by the researcher, or the reader (Harland, 2014). The product or final report of a case study should be based on a comprehensive case record that provides the basis for the study of the phenomenon or case.

3.3.3 PHASES OF RESEARCH AND CORRESPONDING TYPES OF CASE STUDIES

I now present each of the phases of this research, explaining how they reflect three types of case studies: intrinsic, instrumental, and collective case studies. This classification is however more heuristic than functional (Stake, 1999).

Phase one research was constituted as an intrinsic case study because its aim was to get a better understanding of a particular case (the ESD ITP and all participants and institutions from Africa and Asia), which is of interest, not necessarily because the case is a representation of other cases or because it contains particular characteristics or problems. This was the case when I commenced my research on the ITP. The ITP is not in any way a representation of other cases; actually, there is no programme on ESD like the ITP.

Phases two and three of this research are instrumental case studies. These are considered instrumental because the cases provide insight into a particular issue or help in the refinement of a theory. The particular issues are how position and practice, and the ITP shape ESD mainstreaming. As reported in Chapter Two, the theory is the position-practice system theory, morphogenetic and laminated system theory. The case therefore is of secondary interest even though it plays a supportive role; hence, the Asian participants could have been included here as well. In the instrumental case study in phases two and three, there is in-depth scrutiny of the contexts and activities but it is only done because of the interest in the particular issue of interest not the case. This instrumental case may be considered as typical; in other words, position-practice system can be studied in other ESD Higher Education programmes, not only the ITP.

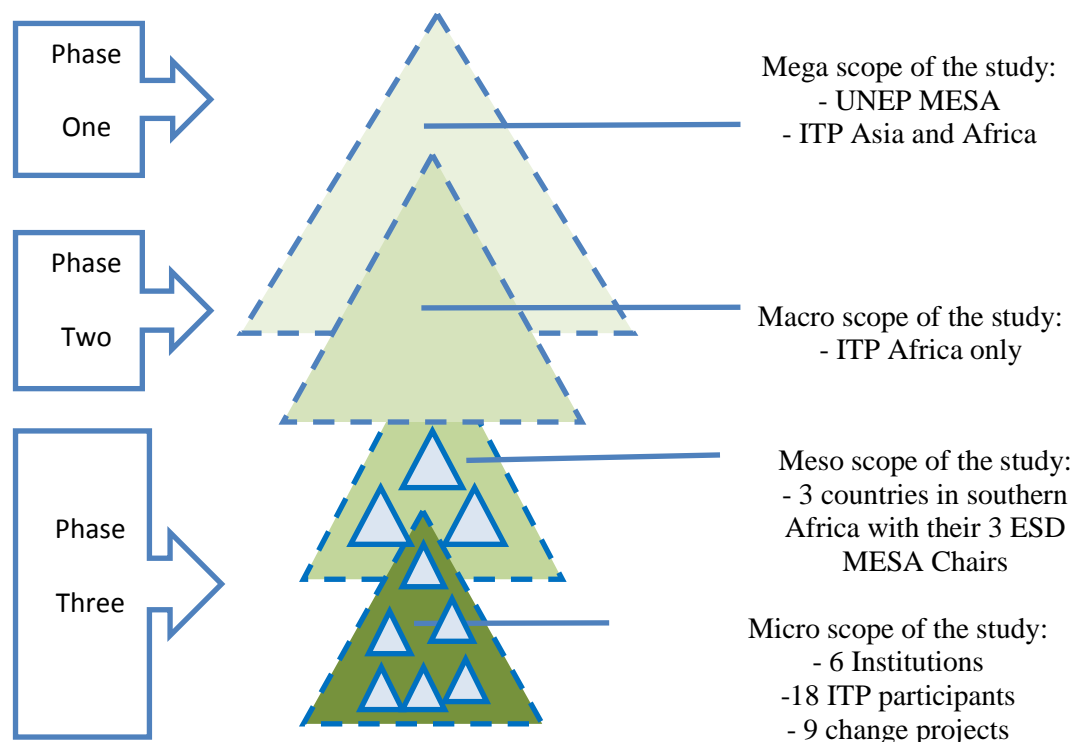
Phase three of this research involves a collective case study, a concurrent joint study of a number of cases, with less interest in one particular case in order to inquire into a phenomenon, population, or general condition. Three case countries and six institutions were concurrently visited and studied, namely Swaziland (UNISWA), Botswana (UB) and Zambia (UNZA, NIPA, CBU and KCoE). In this study, the cases are similar in terms of countries in the southern African

region, countries with an ESD MESA Chair and institutions of higher education that have had participants in the ITP. Hence, individual cases were known before the commencement of the field trips to the countries for data collection. The choice was made because there was a belief that an in-depth understanding of these cases would lead to a better understanding or better theorising of the larger collection of cases in the ITP. The concurrent joint study of a number of cases has many names, such as embedded case study (Yin, 2012); nested case study (Lotz-Sisitka & Raven, 2004); multisite qualitative research (Herriot & Firestone, 1983; Lofland & Lofland, 1984). I may use any of these concepts in this thesis. The efficacy of the nested or multisite or embedded or collective case study methodology when doing research related to learning about environmental and sustainability education in HE has been presented by Lotz-Sisitka and Raven (2004). Both authors argue that the emphasis of a case study methodology on context-dependent knowledge was essential for drawing conclusions on their experiences with the case of the Gold Field participatory certificate course on environmental education. This approach, therefore, appears to have the capacity to inform theory and practice in professional development in ESD because of the value and worth of the context-dependent knowledge it provides.

3.4 RESEARCH PROCESS: SCOPE, SAMPLE POPULATION AND DATA COLLECTION

Although the context of this research has been extensively presented in Chapter One, I provide the figure below, to show the scope and phases of the study.

Figure 3.1: Scope and phases of research



3.4.1 PHASE ONE: INVESTIGATING ALL AFRICAN AND ASIAN ITP PARTICIPANTS

This phase one research process included all ITP alumni who are Asian and African participants from its inception to its ending over a six-year period (2008–2013). This phase was particularly characterised by researching and reporting on these participants, their co-participants, their countries, their institutions, their ESD change project process, implementation progress as well as their impact in relation to the ITP objectives. This included 280 academics from Asia and Africa in 35 countries, from 106 institutions, with their 139 change projects. This enormous dataset and analysis process were instrumental to the entire ITP research and paved the way for a specific area of interest of focus for this PhD contribution. In phase one, an ITP alumni tracking system was developed (See Appendix 3). Data collection in phase one of this research involved various methods such as computer-assisted data collection through email correspondence that preceded the use of structured and semi-structured survey questionnaires. These survey questionnaires were administered to all ITP participants from Africa and Asia, using an online survey facility known as ‘survey monkey’. This phase covers Asia simply because this doctoral study took place within a bigger ITP monitoring and evaluative project. This data collection was done in the bid to develop an ITP tracking, monitoring, and evaluation database, which informed the final reporting on the ITP NIRAS 2015 (See Appendix 3).

3.4.2 PHASE TWO: INVESTIGATING ALL AFRICAN-BASED ITP PARTICIPANTS, THEIR POSITIONS, PRACTICES AND CHANGE PROJECT MORPHOGENESIS

Phase two of this research concentrated on a less broad population of research participants comprising only all African ITP alumni. The case studies comprise participants from the five main regions in Africa: North Africa, West Africa, Central Africa, East Africa, Southern Africa, and the Western Indian Ocean Islands. The aforementioned phase one research and its preliminary analysis paved the way for the phase two of this research, where it was noted that there was a relationship between participants’ positions and practices when mainstreaming ESD in universities. Inductive analysis of phase one data showed that participants occupying key and high positions appeared to be more able to implement their change projects and mainstream ESD without reliance on the positions of others in their institutions, compared to participants occupying low positions who relied heavily on their senior colleagues for approval to implement their change projects. This discovery prompted the need for deeper analysis of fewer selected cases in phase two of this study for phase three research, and opened up the study focus on position-practice system in ESD mainstreaming research.

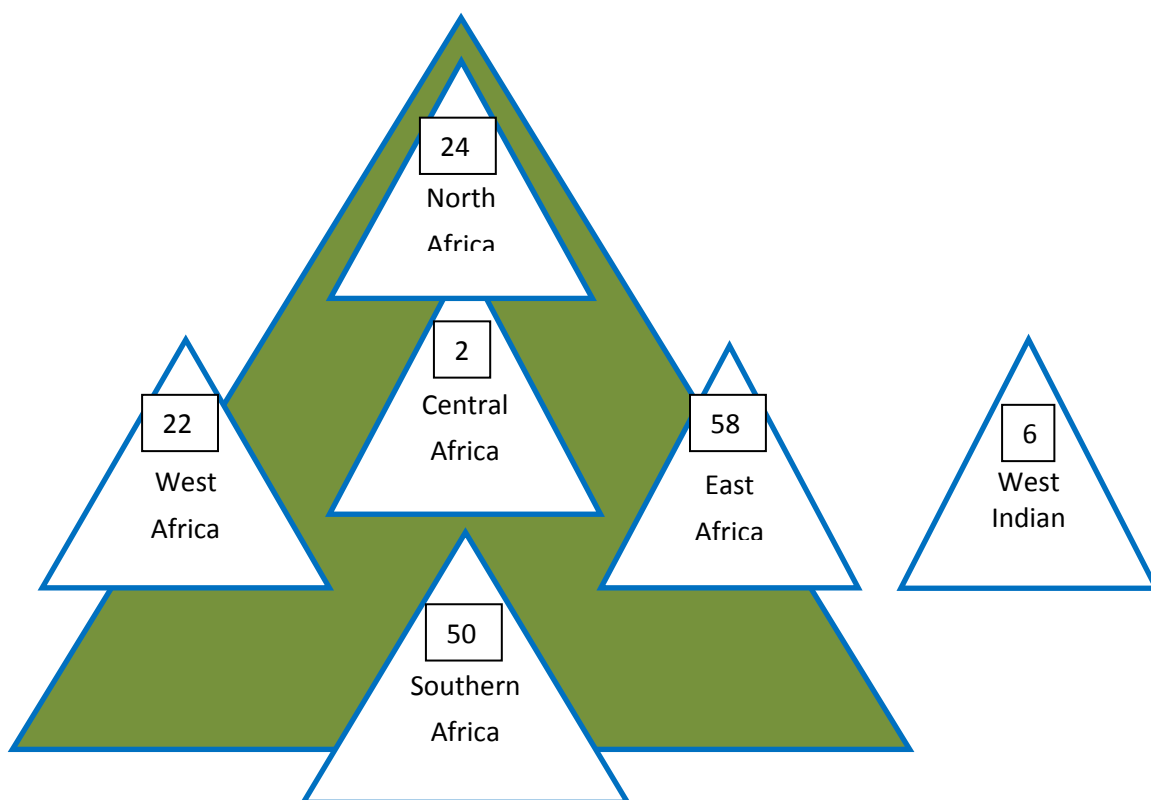


Figure 3.2: Regions in Africa and number of participants involved in phase two research

The following are the statistics of participants according to regions:

- North Africa with three countries namely Sudan³³, Egypt, Morocco (24 participants, nine institutions and 11 change projects);
- West Africa with four countries namely Liberia, Nigeria, Gambia and Senegal (22 participants, nine institutions and 11 change projects);
- Central Africa with Cameroon (two participants, one institution and one change project);
- East Africa with four countries including Kenya, Uganda, Ethiopia and Rwanda (58 participants, 24 institutions and 29 change projects);
- Western Indian Ocean with three countries, Madagascar, Mauritius and Seychelles (six participants, three institutions and three change projects); and
- Southern Africa with eight countries including Malawi, Namibia, Tanzania, Mozambique, South Africa, Swaziland, Zambia and Botswana (50 participants, 20 institutions and 25 change projects).

In phase two of the study, the positions of the African participants, their general practices and ESD related practices were investigated, analysed, documented and presented in Chapter Four. Data collected, analysed and presented for/in this phase in Chapter Four was generated from the computer-assisted self-administered questionnaire/survey of phase one research, face-to-face self-

³³ There was no split into South and North Sudan at this time.

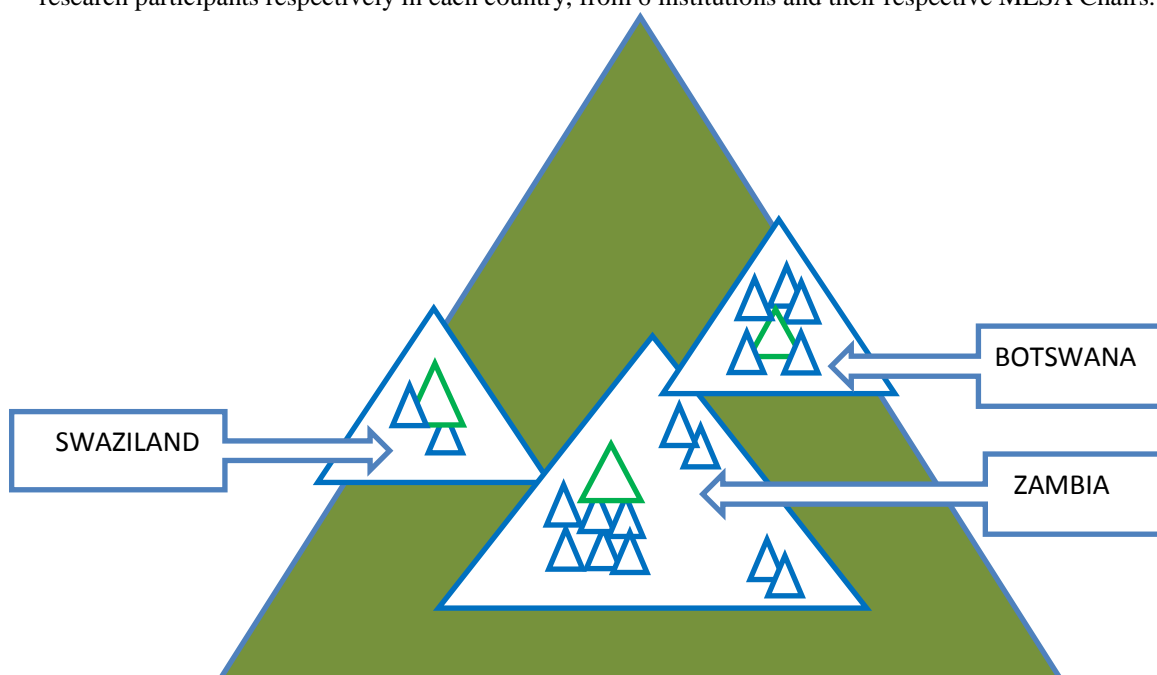
administered open ended questionnaires administered during phase three regional component of the 2013 ITP programme, when participants were at Rhodes University, South Africa. This involved 31 participants from four African countries namely Morocco, Tanzania, Ethiopia and Mozambique.

Data collection in this phase also included document review involving the six years of course reports from 2008-2015 and three face-to-face semi-structured interviews with three ITP alumni from University of Botswana, University of Swaziland and University of Namibia. This selection was made possible by virtue of the participants' availability in South Africa and at Rhodes University during the 2012 30th EEASA conference; hence the reason for the use of convenience sampling at this stage of the research. The overall data collection and analysis included 162 academics in 23 African countries from 66 institutions with their 81 change projects. The scope of the data and research participants in this phase was wide and voluminous and there was a need for further sampling as well as more in-depth data collection and analysis to focus in more depth on the PhD research interest.

3.4.3 PHASE THREE: IN-DEPTH PROBING OF SELECTED CASES

Phase three was therefore characterised by intensive researching of one region in Africa, the southern African region which I considered a worthwhile and information-rich sample because the region has three ESD MESA Chairs as well as 20 ITP alumni. The population sample in this phase three therefore contained 20 academics in the three African countries with the ESD MESA Chairs (in the southern Africa region – Swaziland, Zambia and Botswana) from six institutions with their nine change projects, as shown in Figure 3.3 below.

Figure 3.3: Southern African case of three countries, Swaziland, Zambia and Botswana (left to right), 3, 11, 6 research participants respectively in each country, from 6 institutions and their respective MESA Chairs.



This phase of research was then tightly focused on the positions and practices of these 20 participants, before, during, and after their participation in the ITP and appointment as ESD MESA Chair and how these positions and practices have shaped ESD learning and change processes over time. In addition, the research was centred on gaining a deeper understanding of how various positions and practices have shaped (enabled or constrained) the change project implementation and outcomes to emerge in the different university contexts and countries. Furthermore, the research aimed to understand the role of the ESD MESA Chairs and the synergistic (or not) relationship between the ESD MESA Chairs, the ITP programme, ITP participants, change projects, their HEIs, countries and region (i.e. from a social learning vantage point, with a morphogenetic approach and critical realism as an underlabourer).

In this phase, purposeful sampling was used; this is a non-probability sampling strategy where a researcher intentionally chooses cases that are information-rich that which can provide sufficient and appropriate data (Patton, 2001). It was used to choose research participants from the southern African region, but specifically those from the countries and universities with SADC-REEP ESD MESA Chairs. This is because these MESA Chairs have been designated in the region to occupy key and strategic ESD related positions and their expected practices are also specific to each office. They were funded to support academic and non-academic activities aimed at implementing the UNDES within their universities, their countries and across the SADC region. The three countries they are based in, including their HEIs and other ITP participants, have also been chosen purposefully to afford in-depth data collection and analysis.

3.5 METHODS OF DATA GENERATION

Since this is a multiphase case study research design as presented above, I have used multiple sources of evidence for multi-method research (Denzin & Lincoln, 1994). Multi-methods used in this research include computer-assisted self-administered questionnaires (phase one data collection); self-administered survey questionnaire (phase two data collection); interviews (phase three data collection); and documents review (phase one, two and three data collection).

3.5.1 COMPUTER-ASSISTED SELF-ADMINISTERED QUESTIONNAIRES (CASI) (PHASE ONE DATA COLLECTION)

This method was used because of the large population being studied in phases one and two research. A survey is a data collection tool or method used to access a large number of responses and information from a large population of people (in this case all the Asian and African ITP participants), using a set of questions. The questionnaire was designed with a mix of structured and semi-structured questions, with options for participants to tick and write. Data collected comprised information about participants' names; names of co-participants; country; institution; department; current position; job description; change project; status of change projects;

knowledge, capabilities, competences related to environmental and sustainable development issues acquired because of participation in the ITP; institutional changes as a result of their change projects; and positive and negative factors that influenced the implementation of their ESD change projects. See Appendix 4 for sample of computer-assisted self-administered questionnaires and data.

In phase one, this study employed computer-assisted self-administered questionnaires (CASI) using survey monkey software, to send out an internet or web survey. CASI is currently the most popular survey method (Nicholls, Baker, & Matins, 1997; Leeuw & Hox, 2008). Unfortunately Africa has less than 1% internet penetration compared to Sweden which has 75% (Leeuw & Hox, 2008). Internet coverage was not too much of a concern in this case because the research was dealing with university educators who generally have good access to computers and internet facilities. The research participants were first notified about the essence of the questionnaire (contact phase) and were then sent and asked to fill in the questionnaire (response phase) (Leeuw & Hox, 2008). A follow-up phase was included in which all respondents who had not sent in their filled questionnaires were reminded to complete the questionnaire (ibid.).

Survey questionnaires were sent to both main ITP participants and co-participants but only one participant or co-participant was meant to respond. The current and subsequent ITP participants during the time of this data collection (2013) were excluded from the survey because most of the questions revolved around the implementation of change projects and their outcomes – this group of participants had only recently started or were yet to commence the programme in 2013. Hence, questionnaires were sent only to the 2008, 2009, 2010 and 2011 ITP participants from Asia and Africa. There were cases of email delivery failure; some recipients did not have a yahoo account or gmail account as documented, while accounts of others had been disabled or discontinued. These 32 faulty email addresses were verified to ensure that the error was not from my side. After the contact, response and follow-up phases, the following 37 of an expected 115 ITP participants with valid email addresses responded to the survey questionnaires sent out.

Table 3.2: List of ITP participants that responded to 2013 online survey questionnaire

SN, NAMES, COUNTRY, YEAR OF PARTICIPATION	SN, NAMES, COUNTRY, YEAR OF PARTICIPATION
1. Rajendra P. Adhikari (Nepal 2009)	20. Supriya Guuati (India 2012)
2. Md. Helal Uddin (Bangladesh 2012)	21. Mona Sharaf Abdelgalil (Egypt 2012)
3. Do Thi Thuy Quyen (Vietnam 2011)	22. Douty Chibamba (Zambia 2011)
4. Delia B. Senoro (Philippines 2011)	23. Musonda Moses (Zambia 2011)
5. Teresita C. Mendoza (Philippines 2009)	24. Bianca Currie (South Africa 2011)
6. Tulasi Prasad Acharya (Nepal 2009)	25. Edward Andama (Uganda 2011)
7. Elnazir Ramadan (Sudan 2008)	26. Baigalimaa Jambaljav (Mongolia 2012)
8. Joy C. Lizada (Philippines 2009)	27. Mary Goretti Kariaga (Kenya 2012)
9. Charles Onkundi (Kenya 2012)	28. Antonio Dos Anjos Luis (Mozambique 2012)
10. Patricia Kariaga (Kenya 2012)	29. Rabi Jibrilla Muhammad (Nigeria 2008)
11. Leopold Mbereyaho (Rwanda 2012)	30. Pr Alioune Kane (Senegal 2008)
12. Tassew M. Gebrehiwot (Ethiopia 2011)	31. Avinash Madhale (India 2009)
13. Boshra Salem (Egypt 2012)	32. Simisola Mercy Odeyinka (Nigeria 2008)
14. Elvira Sagyntay Kyzy (Kyrgyzstan 2012)	33. Narangerel Dogsronjav (Mongolia 2012)
15. Zhou Jin (China 2011)	34. Lara Orafidiya (Nigeria 2009)
16. M.J. Kethoilwe (Botswana 2008)	35. Byaruhanga Aloysius Bro (Uganda 2009)
17. Gilson C Ngoma (Zambia 2009)	36. David Manyatsi (Swaziland 2011)
18. Manoj R. Borkar (India 2012)	37. Fatima Rashid Khalfan (Tanzania 2008)
19. Kul Prasad Khanal (Nepal 2012)	

In summary: ITP 2008 – 6 participants, ITP 2009 – 8 participants, ITP 2011 – 9 participants, ITP 2012 – 14 participants. These 74 participants and co-participants were often working on the same project. Information was received, therefore, about 37 change projects of 139 change projects (without the subtraction of the 2013 ITP participants) or 27% of all change projects. In phase one, I therefore relied heavily on data from documents other than the survey (e.g. course programme and change project reports). It was not possible to obtain current/updated information from ITP participants that did not respond to the online survey. Document analysis of all ITP reports was also used to provide baseline information on change projects. The survey data provided useful updates on project and course report data but, as is common with other studies, “there is obviously more to be learned about these” (SARUA, 2014a, p. 64).

Self-administered survey questionnaire (Phase two data collection)

In phase two data collection, self-administered survey questionnaires were administered to the 2013 African ITP participants that were excluded from the above presented computer-assisted self-administered questionnaires because of their stage in the ITP. The option and possibility of self-administration was feasible because these 31 participants were all at Rhodes University in

South Africa where I am based. The survey questionnaires were composed of semi-structured questions about the name, institution, department, designation, position and practice before and during the ITP, as well as their ESD related practices before and during the ITP. Thirty survey questionnaires were collected out of 31. Each data source was indexed with 2013p where p stands for participant, followed by a serial number, hence 2013p1 – 2013p30. See Appendix 5 for sample of the 2013 self-administered survey questionnaires and data.

3.5.2 DOCUMENT REVIEW

Documents reviewed in the three phases of this study are presented in Table 3.3 below, including the kind of data obtained from each. Some of these documents were provided by ITP facilitators, and research participants, while others were downloaded from the internet.

Table 3.3: List of documents reviewed and forms of data retrieved from each

DOCUMENT REVIEWED	DATA RETRIEVED FROM DOCUMENT
ITP course file	Data regarding the ITP, its history, objective, phase, themes, structure, obligation
MESA toolkit	Data regarding contemporary environmental issues and risks in Africa, sustainable development principles, ESD mainstreaming process and procedure, change processes in higher education, the ITP course content, examples of best practices inter alia.
ITP participants' portfolios (consisting of their work on the change project in 5 phases)	Data concerning ITP participants, their universities, starting points of their change projects, sustainable development related institutional situation, the outcome of institutional audit done before the commencement of change project, information about participants' countries and socio-ecological conditions, change project implementation process and progress.
Annual ITP 2008, 2009, 2011, 2012, 2013 reports	Data about participants admitted for each year, their institutions, their participation; activities and proceedings in the programmes; ITP facilitators and their roles at various stages of the programmes; participants' change projects implementation process and outcome etc.
Additionally for the Botswana, Zambia and Swaziland cases study	
Botswana case study: - Botswana EE guidelines for primary, secondary and tertiary institutions -Botswana National Conservation strategy	-Evidence/proof of availability of national EE policy, alluded to by participants. - Evidence/proof of national effort to conserve natural resources in Botswana
Zambia case study: -NIPA brochure -NIPA 2011 annual report (most recent version available to the public) -NIPA (DGS 203 course outline) -UNZA Calendar 2011-2013	-For information on programmes and divisions in NIPA -For information on the history, vision, mission, operations, staff, committees, programmes and activities of NIPA -Evidence of mainstreamed course -For information on history, vision, mission, operations, officers of the university, staff, committees, programmes and activities in UNZA

-UNZA Strategic Plan 2013-2017 -CU brochure	-Government Act 1999 and information on environmental issues and factors prevalent in Zambia and national strategies. -Information on the School of Built Environment -Information on Department of Urban and Regional Planning
Swaziland case study: -UNISWA Calendar 2012/2013 -UNISWA Calendar 2014/2015 -UNISWA Faculty of commerce 2013/2014 academic year course details -Swaziland Environment Action Plan – vol 1 and 2	-For information on history, vision, mission, operations, staff, committees, programmes and activities in UNISWA -For more recent information on history, vision, mission, operations, staff, committees, programmes and activities in UNISWA -For evidence of ESD mainstreamed courses, alluded to by participants -Action plan by the Swaziland Environment Authority

3.5.3 INTERVIEWS

Semi-structured individual interviews

Stake (1995) posited that case studies involve obtaining interpretive and descriptive data from others and this can be done through interviews in order to gain access to multiple realities concerning an issue of interest. Semi-structured interviews and open-ended questions offered the freedom to talk to the interviewee and the opportunity for probing by the interviewer. Open-ended questions are characterised by the non-availability of choices from which respondents can select answers but are rather phrased to allow for individual responses (McMillan & Schumacher, 2006, p. 206). The following table shows details of phase three research participants that were interviewed and the few that could not be reached for interview.

Table 3.4: Phase three research participants, their names, institutions and year of participation in the ITP

Country	MESA Chairs	Institution	Year	Participants and co-participants	Interviewed
Swaziland	Mandla Mlipha	University of Swaziland	2009	Nathie E. Maseko and David Manyatsi	Yes
Zambia	Charles Namafe	National Institute of Public Administration	2008	Bridget S. Mwiya and Fredson K. Yamba	No
		Copperbelt University	2009	Roy Alexander Chileshe and Gilson Chisomo Ngoma	Yes

		University of Zambia	2011	Enock N. Sakala and Douty Chibamba	Yes Yes	
		University of Zambia	2011	Milupi Inonge Kasimona and Esther Hara Zulu	Yes No	
		Kasama College of Education	2011	Ntenga Oscar Emmanuel and Musonda Moses	No No	
Botswana	Mphemelang Joseph Ketlhoilwe	University of Botswana	2008	Mphemelang Joseph Ketlhoilwe and Koketso Jeremiah	Yes Yes	
		Now at UKZN	2009	Gregory Kamwendo and Tshiamiso V. Moumakwa	Yes Yes	
		University of Botswana				
		University of Botswana	2011	Kabita Bose and Gabatshwane Tsayang	Yes Yes	

In the Kingdom of Swaziland, there are two ITP alumni and an ESD MESA Chair all working at the University of Swaziland. In Zambia, there are 10 ITP alumni with an ESD MESA Chair. The ESD MESA Chair and four of the ITP alumni are based at the University of Zambia, which is in Lusaka, located in the South-Central part of Zambia. Two ITP alumni are at the National Institute of Public Administration (NIPA), also in Lusaka, although one of the participants no longer works at the institute. Two other ITP alumni work at the Copperbelt University, Kitwe, which is located in the North-West region of Zambia. The last two ITP alumni are at Kasama College of Education, which is located in the northern part of Zambia.

In Botswana, there is an EE/ESD MESA Chair with six ITP alumni (although one of the participants is now based in South Africa and works at University of KwaZulu-Natal (UKZN) and I met and interviewed him there. The three MESA Chairs and 14 of the 17 ITP participants in the three case countries, Swaziland, Zambia and Botswana (as in Table 3.3 above) were met and interviewed. Before each interview, I introduced myself and thanked the participants for their support and availability. Although I had already established initial relationship through email correspondence with all research participants, I made it a point to introduce myself and informed them about the research purpose, and the aim of the interview again. The content and essence of a consent form was explained and participants were requested to sign the consent forms (they all signed) (see Appendix 6 for sample of signed form).

The recording of all interviews was done with a digital audio recorder and notes were also taken. Interviews were conducted at the interviewees' convenience, for example, days, times, off-duty hours and venue that suited them. The shortest interview lasted for 37 minutes and the longest lasted for 2 hours 33 minute with an average of 1 hour 55 minutes, and seven hours 12 minutes 41 seconds in totality (see Appendices 28-30 for interview guide). All interviews were indexed for identity protection and anonymity purposes. See Appendix 7 for phase three ITP alumni's questioning route and Appendix 8 for phase three MESA Chair's questioning route. See Appendix 9 for photographs of interviewees and interviewer, dates of interviews, lengths of interviews and locations.

3.6 DATA ANALYSIS

Data analysis occurs during the research literature review, formulation of research question, data collection, formal analysis and eventual writing up; it only stops (temporarily) when the research is published (Harland, 2014, p. 5). To present the documentable process of data analysis undertaken in this research, I drew on Schutt (2012) who postulated the following five steps for data analysis, which I elaborate further in Sections 3.6.1-3.6.6.

Table 3.5: Research phases, procedure for data analysis, and mode of inference

SN	Research phases	Steps to data analysis	Procedure and framework	Mode of inference
1	Phase 1	Documentation of the data and the process of data collection	-QSR NVivo 10 software	Inductive analysis
2	Phase 2	Organisation/categorisation of the data into concepts through thematic content analysis	-QSR NVivo 10 software -Morphogenetic framework -Social learning framework	Inductive and abductive analysis
3	Phase 3	Connection of the data to show how one concept may influence another through continuous qualitative content analysis	-QSR NVivo 10 software -Morphogenetic framework -Social learning framework	Abductive and retroductive analysis
4	Phase 3	Corroboration/legitimation; case-oriented understanding; qualitative comparative analysis	-Morphogenetic framework -Social learning framework	Abductive and retroductive analysis
5	Phase 3	Representing the account	-Morphogenetic approach -Laminated system	Abductive and retroductive analysis

3.6.1 DATA ORGANISATION AND PROCESSING

Due to the large volume of data available and collected from different sources and the need to refer, process and account for them systematically and appropriately, I employed a software programme, specifically QSR NVivo 10. I used NVivo 10 software to index, create themes, file and, code phase one, two, three data sources. Transcription of phase two and three audio recorded interview data was done using NVivo. In addition to NVivo, another software called InqScribe was used to aid manual transcription of audio recorded interviews. Analytical themes were created even before the phase three field trip and interview data collection, using the analytical framework developed which also informed the phase three interview questioning route. These themes were fed into the NVivo nodes during the process of data coding and analysis. Data sources were coded using the initially created themes and the other themes that were present and emerging from the data. Using NVivo, data related to each theme were coded under such themes. Data coded into each analytical theme from various sources of data collection were collated and analysed for correlation, differences, contradictions and similarities using the processes presented below in Sections 3.6.2 – 3.6.5.

3.6.2 MORPHOGENETIC FRAMEWORK FOR DATA PROCESSING AND ANALYSIS

This empirical research entails the use of the morphogenetic cycle methodology (Archer, 1995; Cruickshank, 2003), described in Section 2.3.1. Data was analysed using this theory of change that is based on a dialectic of structure and agency, and which avoids central conflation, determinism and voluntarism (Lotz-Sisitka et al., 2015), see Section 2.3.1.

Figure 3.4 below, presents Archer’s morphogenetic framework in relation to this research and envisaged mode of analysis.

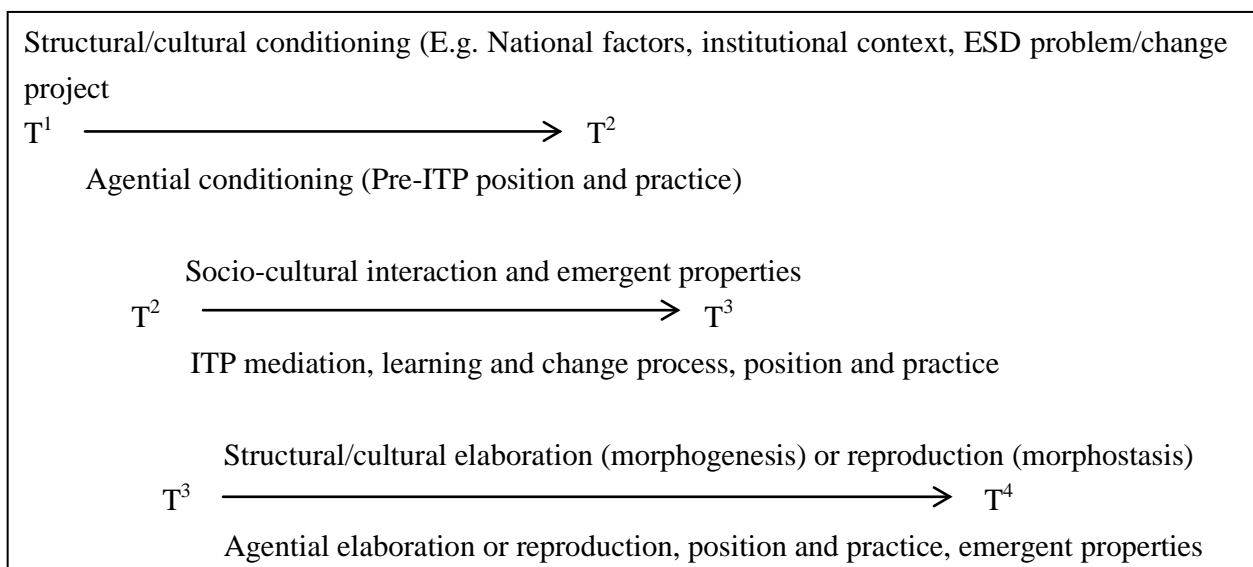


Figure 3.4: Morphogenetic analysis of structure and agency in relation to position and practice

Analytical dualism (see Section 2.3.2) was employed for a morphogenetic analysis of the individual, institution and the interplay between them. Analytical dualism was used to analyse and reflect on the individual and institutional context before the participants' encounter with the ITP, emergence of the change project, the learning and change processes, ESD mainstreaming and emergent properties found in case institutions/participants in relation to their positions and practices (working with each research sub-question). This is essential because the "properties of social structure and systems ... must be taken as given when analysing the processes of action and interaction because of the conditional influence" of the structure (Archer, 1995, p. 90).

According to Archer, every morphogenetic cycle distinguishes three broad analytical phases consisting of: (a) A given structure (a complex set of relations between parts), which conditions but does *not* determine; (b) Social interaction (action emanating from current agents and in turn leading to (c)); and (c) Structural elaboration or modification (a change of relations between parts – hence morphogenesis ensued rather than morphostasis) (1995, p. 91). Similarly, Bhaskar proposed that analytically, social reality must be separated into moments that are distinct and by so doing prevents the error of central conflation (in Archer, 1995).

It is important to note that the aforementioned cycle is not static; it therefore starts again and the transition between (a) and (c) (above) is not direct precisely because structural conditioning is not the sole determinant of interaction patterns – there is mediation (Archer, 1995). The mediation focussed on in this research is the intervention of the ITP (macro mediation system) and the research participants' engagement with a self-defined change project with colleagues in contexts of practice (micro mediation system). Hence a thorough interactional analysis of each cycle in relation to the other and in conjunction with the research interest can provide a valid account for structural elaboration in order to understand and detect the process of morphogenesis and/or stasis in the research context (Archer, 1995).

As reflected in Figure 3.4 above, I explored Archer's Structural Emergent Properties (SEP) and Cultural Emergent Properties (CEP), which could be institutional change and learning outcomes such as community engagement, campus management, teaching programmes, policy innovation, or new pedagogy. I also considered the significance of Personal Emergent Properties (PEP), such as cognitive gains, reflexivity, ethics, self-consciousness, self-monitoring ability, valued being and doings of research participants in relation to their positions and practices when mainstreaming ESD. Figure 3.5 below links Archer's morphogenetic framework to the research sub-questions (see sub-research questions in Chapter One and Chapter Three). This framework has been used to structure the presentation and discussion of data in Chapter Four.

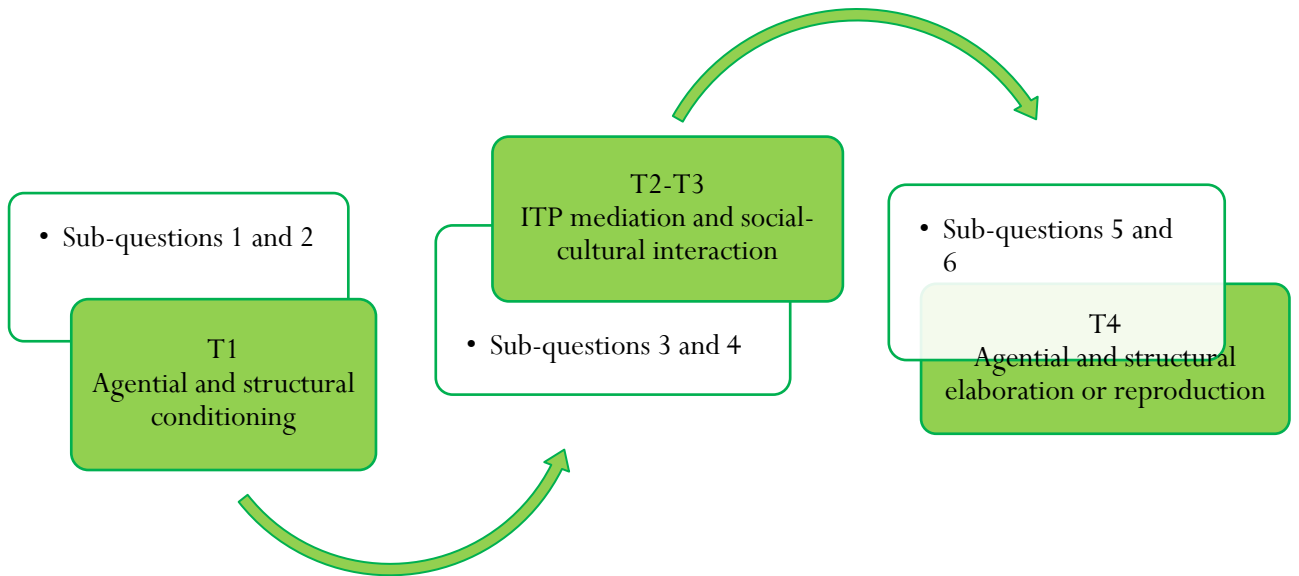


Figure 3.5: Linking Archer's morphogenetic framework to research sub-questions

Data processing and analysis was further enriched by using an adapted version of Tábara's (2005) social learning framework, Archer's (1995) morphogenesis, and Bhaskar's (1978) position-practice system as shown in Figure 3.6 below.

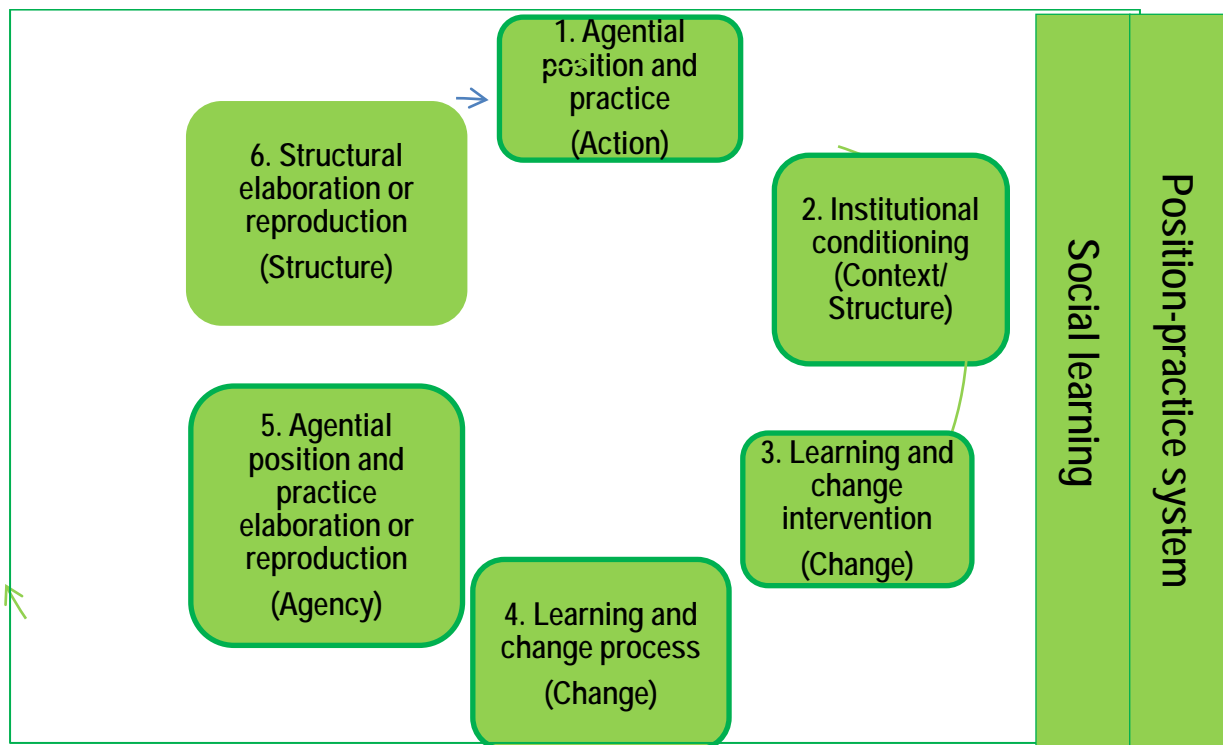


Figure 3.6 Social learning framework congruent with this research

I initially adapted Tábara's (2005) social learning framework, Archer's (1995) morphogenesis, and Bhaskar's (1978) concept of position-practice system to develop a research congruent framework or model for analysing educational change to help me collect data, analyse the data as

well as present and explain the data. Each of the sub-questions focussed on a key concept/object of analysis:

- Sub-research question 1: **Agential action** (positions and practices of ITP participants);
- Sub-research question 2: **Institutional context** (social conditions, structure, initial institutional practices),
- Sub-research question 3: **Learning and change intervention** (the ITP programme and processes of mediating the institutional context the ITP participants intended to change; the role of position and practice of human agency):
- Sub-research question 4: **Learning and change process** (the learning process, the change process, the change project implementation processes in relation to position and practice of human agency);
- Sub-research question 5: **Agential elaboration or reproduction** (outcome of the learning and ITP mediation experienced the articulated by research participants in form of personal changed position and practice); and
- Sub-research question 6: **Structural elaboration or reproduction** (outcome of the learning and ITP mediation, change project implementation and actual changed institutional practices).

This framework for analysis was developed by initially adapting Tábara’s (2005) framework and Archer’s (1995) morphogenesis presented above (see Sections 3.4). This allowed me to develop the following framework congruent with the research interest and questions in order to guide epistemology, methodology, analysis, as well as presentation of data and research findings.

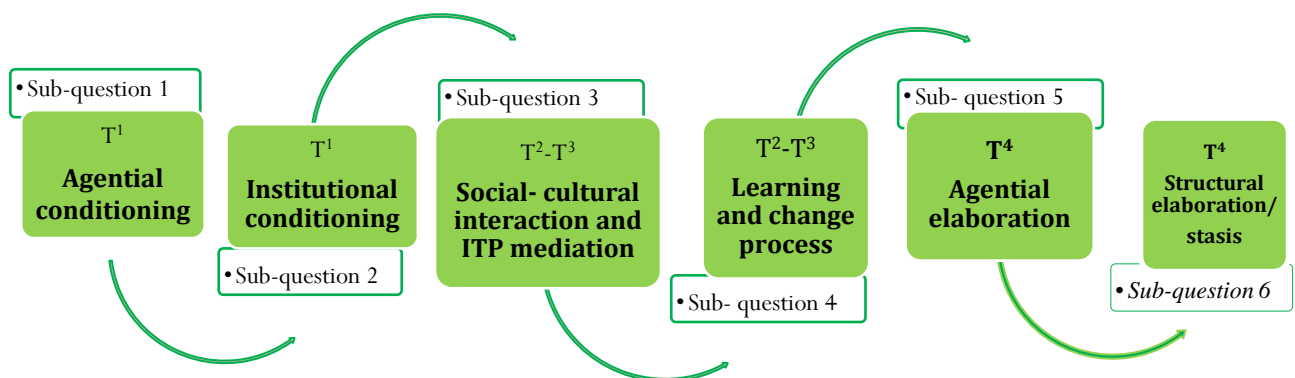


Figure 3.7: Framework congruent with this research.

This framework informed data collection and organisation. It was used to inform the development of coding themes for analysis of data (see Appendix 10, where coded themes are presented). The sub-questions were eventually turned into themes and used as the structure for the presentation of data in Chapters Five, Six and Seven and to guide the discussions of the data. The purpose of above framework was to explain change processes.

3.6.3 A CONCENTRIC CIRCLE VIEW OF POSITION-PRACTICE SYSTEM

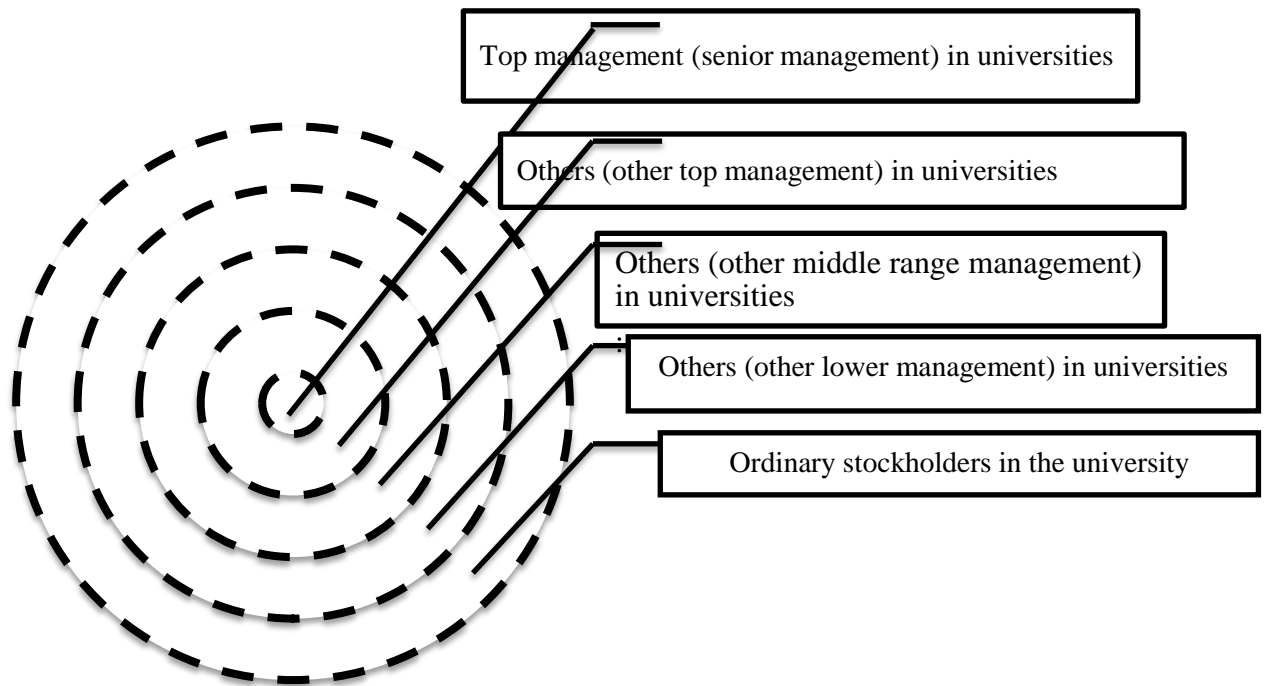


Figure 3.8: Concentric circle view of position-practice system in higher education, depicting the sphere of influence

The above concentric circle has been discussed in Section 2.4.1. The purpose is to explain and shed light on position-practice system relations in Higher Education. It has been used in Chapters Five, Six and Seven in the explanation of each institution in relation to ESD mainstreaming.

3.6.4 LAMINATED SYSTEM ANALYSIS AND EXPLANATION

The seven-scalar laminated system diagram below (see Section 2.2.5 where this was discussed in more detail) has been used to make sense of the multi-leveled change in the ITP programme. It forms the basis of the discussion in the final chapter of this thesis and helps to provide an in-depth explanation of how position-practice systems and the ITP shaped the status of ESD mainstreaming in institutions, in countries and in Africa. Their implication is presented and discussed using this laminated system perspective, offering the synthesis findings of this study. The purpose is to understand and explain the multi-levelled nature of the ITP and ESD mainstreaming process in Higher Education.

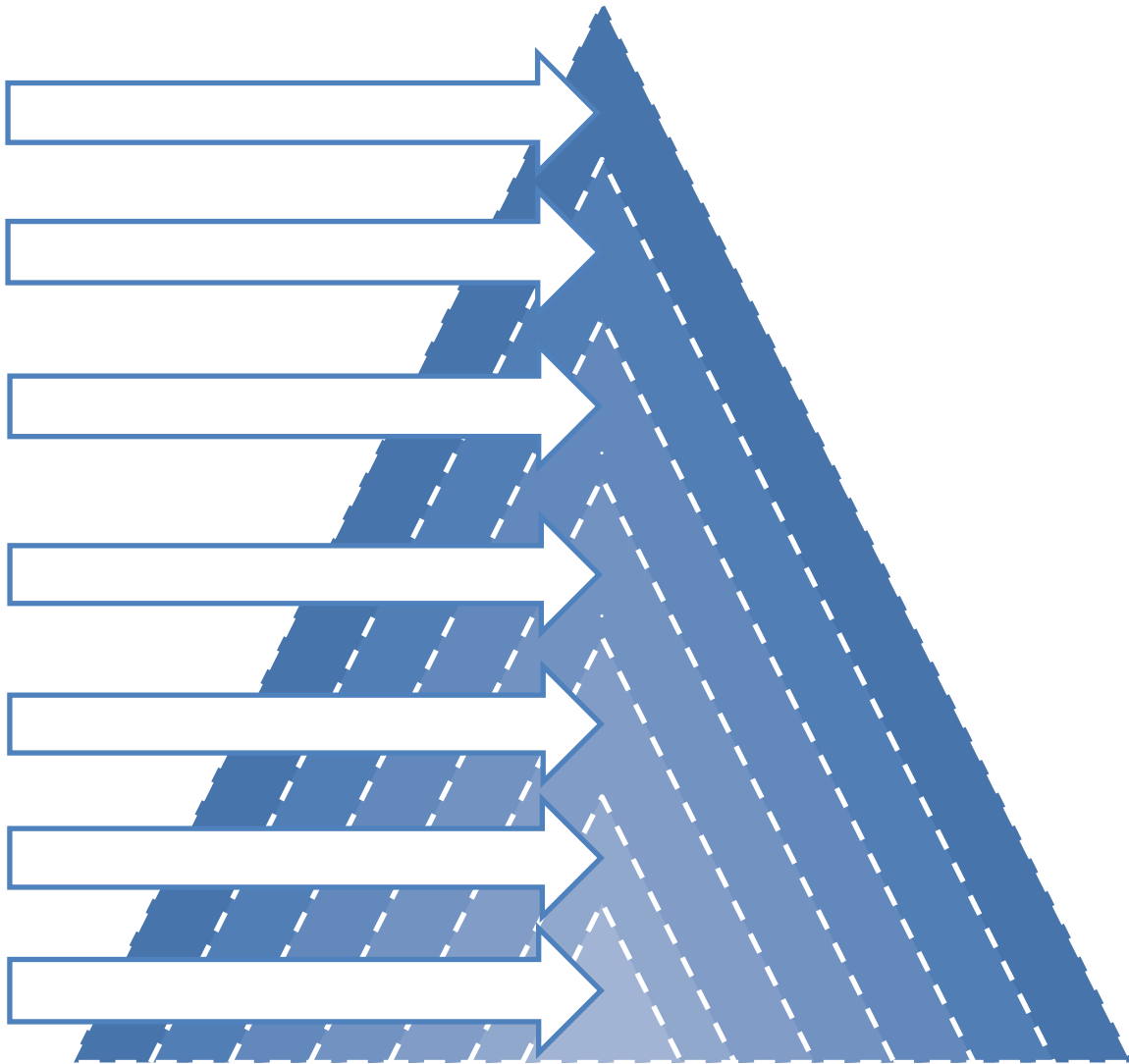


Figure 3.9: Seven scalar laminated system diagram

3.7 MODE OF INFERENCE

In critical realism, there are four different modes of inferences: deduction, induction, abduction and retrodution, each representing “different thought operation, a different way of moving from one thing to something else” (Danemark et al., 2002). As presented in Table 3.1 and Table 3.5 above, this study drew on three modes of inferences: induction, abduction and retrodution (Danemark et al., 2002; Hartwig, 2007). When relating the particular to the general, inference refers to the explanation of the different procedures, forms of reasoning and basis of arguments employed (Danemark et al., 2002). Inference is a “cognitive process in virtue of which a conclusion is drawn from a set of premises” (Hartwig, 2007, p. 256). Inherent in inference is the point that conclusions are drawn from one thing about another thing, denoting various thought operations used, be it formalised or logical conclusions (Danemark et al., 2002).

Fundamental structure or thought operations employed in **inductive mode** of inference is made:

From a number of observations to draw universally valid conclusions about a whole population. To see similarities in a number of observations and draw the conclusion that these similarities also apply to non-studied cases. [This is important because it] provides guidance in connection with empirical generalizations, and possibilities to calculate, in part, the precision of such generalizations. (Danemark et al., 2002, p. 80)

Fundamental structure or thought operations employed in **abductive mode** of inference is done to:

To interpret and recontextualize individual phenomena within a conceptual framework or a set of ideas. To be able to understand something in a new way by observing and interpreting this something in a new conceptual framework. [This is important because it] provides guidance for the interpretative processes by which we ascribe meaning to events in relation to a larger context. (Danemark et al., 2002, p. 80)

Fundamental structure or thought operations employed in **retroductive mode** of inference is possible:

From a description and analysis of concrete phenomena to reconstruct the basic conditions for these phenomena to be what they are. By way of thought operations and counterfactual thinking to argue towards transfactual conditions. [This is important because it] provides knowledge of transfactual conditions, structures and mechanisms that cannot be directly observed in the domain of the empirical. (Danemark et al., 2002, p. 80)

In day to day operations in social open systems conclusions are continually generally drawn from events that are observed and in this research process, I have drawn general conclusions from individual cases and collective research cases. These conclusions have been drawn based on cognitive processes of analysis or the above modes of inferences, depending on the phase of the research (see Table 3.5 for research phases and corresponding mode of inference). Apart from the manner of presentation of research phases (Appendix 3, Chapters Four, Five, Six and Seven), modes of inference used in this research are also reflected in other parts such as introduction and orientation to the context of the study (Chapter One), theoretical and conceptual framework of the study (Chapter Two); and research design and methodology (Chapter Three). Induction was initially used in this study to depict the process of data documentation and analysis using the QSR Nvivo 10 software, with limited reliance on specific theory.

3.8 RESEARCH VALIDITY AND ETHICS

3.8.1 RESEARCH VALIDITY, TRUSTWORTHINESS, AND QUALITY

Data collection (as well as all other aspects) of case studies must be validated by the researcher as well as the readers (Stake, 1995). In this research process, I drew on the seasoned research contribution of Guba and Lincoln (1985). Guba and Lincoln considered trustworthiness as the process of establishing rigour in qualitative research. Efforts to produce social empirically

grounded knowledge that has the potency to enhance and ascertain a more equitable world must be both rigorous as well as relevant (Lather, 1986). Trustworthiness suggests that research findings accurately epitomise the data and the interpretation of data provided by research subjects (Guba & Lincoln, 1985). Trustworthiness is “not something that just occurs naturally, but instead it should be regarded as the result of rigorous scholarship that includes the use of defined procedures” (Padgett in Lietz, Langer, & Furman, 2006, p. 444). I also drew on Reason and Rowan who advised the appropriation of the concept ‘validity’ from traditional research but suggested the revision and expansion of such concepts into phrases like “an interactive, dialogic logic” or “objectively subjective” inquiry (in Lather, 1986, p. 270).

I undertook a number of measures to ensure the validity, trustworthiness and quality of this research and its process. There are certain criteria that can assure quality in a case study. Harland (2014, p.6) has drawn on the propositions made by several scholars and presented these in ‘sticking point 4’ of his paper. I have considered them in this research process (see list of requirements in quote below) and discuss how I have worked with these:

Quality research requires imagination ... creativity ... must bring the reader as close as possible to the experience being described. [It] provides conceptual insight ... needs to be believable and to achieve this the account should be coherent and provide both new theory and instrumental utility. [It] has to be believable in the context of the careful use of evidence in supporting claims, and if it is of quality, it should have the potential to create an impact on the field and practice.

In the points that follow I have used ‘as’ to establish the correlation between research validity and the various aspects and characteristics of research quality criteria.

Research validity as audit trail (Lietz et al., 2006): An audit trail is used during data analysis. In an effort to ensure an adequate audit trail, I have described the procedures I followed throughout the research process and with the ultimate aim of establishing rigour (Johnson & Waterfield, as cited in Lietz et al., 2006, p. 448). Doing this thoroughly, especially with regard to the procedures followed for data collection and analysis, allows other scholars to review both my research process and my findings. I also contributed to my audit trail by presenting my research at various fora during the course of this study, including conferences, seminars, workshops and in informal situations. An audit trail helped me to open up this research project to be critiqued by various research (and non-research) communities. The ability to critically critique research is an essential part of the research process and research tradition. Audit trails “allow for critical thinking to occur in qualitative inquiry” (Lietz et al. 2006, p .450).

Research validity as indulging in methodological rigor (Lather, 2013). In order to ensure methodological rigour in this research, I have worked with concepts, theories, research design, analytical frameworks and data presentation structures that provide the contexts and issues that this research seeks to bring to the fore. The context of higher education and the mainstreaming of ESD, through the support and avenue provided by a professional development training

programme like the ITP, has been teased out (see Chapter Two). Lather was wary of narrow definitions of the concept of methodological rigor and drew on Spencer's 2009 report which defined methodological rigor as "a depth of understanding educational contexts ... sensitivity to issues of social justice ... and epistemological sophistication" (Lather, 2013, p. 637). While context is often reduced to classroom culture and less to macro-structures, mechanisms and forces that play out in reality, this research has sought to produce methodological rigour by the acknowledgement of an in-depth analysis of what lies beneath the surface of change processes in Higher Education ESD mainstreaming activities.

Research validity as ensuring triangulation: Triangulation "promotes the quality of qualitative research" (Flick, 2007, p. 43) and entails the use of different data sources or methods on the same phenomenon being studied in human behaviour (Janse van Rensburg, 2001; Cohen, Manion, & Morrison, 2007). The use of different methods on the same object of study and procedure of analysis that I have used in this research has ensured methodological triangulation (Bassey, 1999). The involvement of a wide number of participants and other sources such as documents, at each phase of this research while investigating specific phenomenon ensured triangulation of data sources and trustworthiness. Triangulation should entail the use of "multiple data sources, methods, and theoretical schemes" and the conscious utilisation of research "designs that allow counterpatterns as well as convergence if data are to be credible" (Lather, 1986, p. 270). I have employed data collection methods such as semi-structured interviews, survey questionnaires, document analysis and field visits in this study. Data processes and analysis have also been done using various theoretical frameworks and perspectives.

Research validity as guaranteeing data authentication and correct description and interpretation of data: Data authentication refers to the truthfulness of the statements that a researcher makes regarding data collected (Janse van Rensburg, 2001). I have sought to guarantee research validity in this research by being truthful about the multiple sources of my data, the methods of collection and the type/quantity of data I have collected. Original records in a comprehensive set of appendices have been collected onto a CD. I have also ensured that I collected sufficient and relevant data using different sources at different times, over a period of almost three years. I have presented sources of data accurately and appropriately with evidence. I have also correctly and accurately described, interpreted, reported and presented raw data.

Research validity as data verification: I sought data verification through the process referred to as face validity (Lather, 1986; Bassey, 1999; Cohen et al., 2007; O'Leary, 2010) or member checking (Bassey, 1999; Cohen, et al., 2007) or respondent validation (Creswell, 2008; Johnson & Waterfield, 2004; Guba & Lincoln, as cited in Lietz et al., 2006). I intentionally verified my understanding and interpretation of respondents' notions during the interview sections through member checking which involved sending back interview transcripts to research participants to read and verify. Not all participants were able to return texts but at least they had been given the

opportunity to read and check them. Sending or giving participants a copy of the transcript is a productive ethical and data authentication procedure even if they fail to respond. Presentation of thick descriptive data that represents a whole discourse and the researcher's interpretation of such data (which is in relation to the research interest and question) is another effective strategy for ensuring face validity. Hence sharing the specific sections that implicated each participant in the data presentation chapter before final thesis submission was deliberately planned for in this research process. This allowed for more targeted and structured member checking.

Research validity as practising reflexivity: Self-reflexivity (Lather, 1986; Janse van Rensburg, 2001) and field based reflexivity (Bourdieu, 2004) are two forms of reflexivity were considered in this study. I was aware of the possibility of influencing forms of data collection and influencing data analysis and presentation through my opinion, standpoint, subjectivity and aspiration. Acknowledgement and constant reflection on the effect of my subjectivity as a researcher, while seeking to be objective throughout the research and writing process, were my ways of practising self reflexivity. Also, the effect of my own subjectivity was taken into consideration. I made conscious efforts to limit how my value-laden position might influence and shape the research processes and outcomes (positively or negatively). These processes were most useful during the development of research questions, data collection, data analysis, discussion and the entire writing process. I attended to field-based reflexivity by locating the motivation, relevance and value of this study in the field of environmental education and ESD in the context of Higher Education and professional development training programmes on ESD (see Chapter One).

Research validity as ensuring theoretical coherence: Theoretical coherence was ensured by carefully reviewing and reflecting on the proposed theoretical framework of this research as reflected in Chapters Two and Three. I tried to link every aspect of this research process to the components or concepts of my proposed theoretical framework. Theoretical coherence was also ensured by linking the relationship that exists among these concepts to the research process to maintain internal or structural coherence (Maxwell, 1992; Janse van Rensburg, 2001). The credibility of results in qualitative research can be established through theoretical validity (Maxwell, 1992; Bassey, 1999; Janse van Rensburg, 2001).

Research validity as engaging with critical friends: I received a considerable amount of support from critical friends in my community of practice. This process is sometimes referred to as peer debriefing (Guba & Lincoln, 1985; Bassey, 1999). Through peer debriefing the researcher engages “in dialogue with colleagues outside of a research project who have experience with the topic, population or methods utilized” (Lietz et al., 2006, p. 451). An environment for such critical research exists in the Environmental Learning Research Centre (ELRC) and Rhodes University where I conducted my research and I regularly asked for and received peer feedback from a range of colleagues. I also presented various aspects of this research during conferences, workshops and seminars including a weekly Friday seminar (ELRC); annual quarterly PhD weeks (Rhodes University); the South African Educational Research Association (SAERA)

conference – 12-14 August, 2014 (University of KwaZulu-Natal, Durban); the Interdisciplinary Postgraduate Conference (IPGC) –1-3 September, 2014 (Rhodes University, where I was awarded the prize for the ‘Best PhD Presentation’); and at the ITP Alumni Seminar – 25-28 November, 2014 (Rhodes University). My abstracts were also accepted for oral presentation at two other international conferences but I could not attend due to visa and other financial constraints, namely International Association of Critical Realism (IACR) in July, 2014 (Institute of Education, London) and the Environmental Education Association of Southern Africa (EEASA) in September, 2014 (University of Namibia). Colleagues and researchers at the above forums made useful comments and suggestions on my presentations, and this greatly helped to improve many aspects of my research.

Research validity as ensuring referential adequacy (Janse van Rensburg, 2001): Referential adequacy was ensured by careful acknowledgement of the sources of concepts and ideas employed in my research proposal, research process and final thesis writing. This was done to avoid plagiarism. I used APA Sixth Edition and the referencing facility provided by Microsoft Word to capture references as well as a system of index and coding to reference data sources.

Research validity as being careful of overgeneralising: Schutt (2012) explained that overgeneralising occurs when a conclusion is made about social processes or people that what is found, observed or even known to be true about a case, is true for all cases or most cases. He explained further that when investigating the social world, the researcher’s interaction and perception of a case can lead to unjustifiable conclusions about other cases and this happens when particular cases are excluded and only a few are focused on i.e selective observation. The choice and use of critical and social realism as theories helps to avoid this. Differentiating generative mechanisms in social open systems from empirical experiences which are particular to context, time, agent, culture, and structure helps avoid this error in the research process, as critical realism does not assume that empirical experiences are generalisable or that an event will be the same in open systems, yet a certain (fallible) level of generalisability is possible at the level of mechanism. For example, social-ecological degradation (generative mechanism) shaped all the diverse empirical experiences in the ITP.

Research validity as avoiding invalid assumptions: According to Schutt (2012, p. 7), invalid assumption happens when researchers “prematurely jump to conclusions or argue on the basis of ... illogical reasoning”. The use of multiple sources of data triangulation, member checking, as well as engaging many research participants on the same issue of interest prevented me from doing this. In my in-depth open-ended interviews, I sought to gain in-depth responses from research participants to confirm and ensure adequacy of perspectives and quality of data. Repeating what interviewees had said or expressing what I had deduced from what they had said during interview sections helped to limit invalid assumptions. I also tried to confirm with other research participants, what other participants had said either about them, their institutions or a particular issue.

Research validity as gathering information rich data (Wax as cited in Lather, 1986). While phases one and two provided good overview data, phase three field trips to conduct one-on-one interviews afforded me the opportunity to gain access to data that was more contextually rich and relevant. The open-ended interviews gave participants the opportunity to talk freely and deeply. Venues and timing were also carefully planned to avoid distraction. Interview questions were sent to all interviewees long before the date of the interview to help participant reflect in advance on their potential responses to questions. This enabled good understanding of and engagement through the dialogue between us.

Research validity as ensuring construct validity: This I tried to do by investigating and recognising the “roots in theory construction” (Cronbach & Meehl in Lather, 1986, p. 271). This research has drawn on a number of different theoretical constructs from literature (see Chapter Two), as well as from research participants (see Chapters Five, Six and Seven). I needed to explore theoretical constructs and how they contradict or complement each other. I tried to figure out how to work with them at various levels in ways that were relevant to the research questions and context. Some were very core and extremely relevant, while others expanded understanding and provided specific insights. Confrontation with and respect for the experiences of research participants in their daily lives helped me to guard against theoretical imposition which is important to construct validity. This is needed in the building of emancipatory social theory. Lather advised that our empirical endeavour must operate within a mindful milieu of theory-building. She asked:

Where are the weak points of the theoretical tradition we are operating within? Are we extending theory? Revising it? Testing it? Corroborating it? Determining that constructs are actually occurring, rather than they are merely inventions of the researcher's perspective, requires a self-critical attitude toward how one's own preconceptions affect the research.

(1986, p. 271)

Research validity as providing strong retroductive explanation: In critical realism, validity is greatly determined by the strength of the retroductive explanation in question (Price, 2015). This has to do with the extent of retroductive explanation and whether it sufficiently explains what is known about a particular subject (ibid.). In this research, employing a morphogenic and laminated approach helped in understanding and explaining the effect of the position-practice system and professional development by strengthening their retroductive explanation. This is because “validity lies in the adequacy of the theory presented to fully explain [the phenomenon under investigation]” (Price, 2015, p. 2).

3.8.2 RESEARCH ETHICS

In recent decades, awareness of ethical issues and concerns in research has increased (Flick, 2007). An ‘anything goes’ approach to doing research is morally unacceptable, therefore researchers must be ready to take ethical responsibilities for the process and product of their research which directly affects the world (Janse van Rensburg, 2001, p. 4). The practical activity of doing research cannot be taken for granted because there are ethical constraints and philosophical concerns in data collection, data authenticity, data analysis, interpretation and presentation of data by researchers (Scott, 2010). Researchers are meant to be truthful about data collected, the manner in which it is analysed and in the reporting of findings (Bassey, 1999). Bassey (1999) presented ethics as the freedom people have to investigate issues, to ask questions and to give and receive information. In the light of this, I as a researcher have ethical obligations and the researched also have ethical obligations. I observed the following ethical measures to meet my ethical responsibilities as a researcher:

Research ethics as affording reciprocity: According to Lather (1986, p. 263) “reciprocity implies give-and-take, a mutual negotiation of meaning and power [which] operates at two primary points in emancipatory empirical research: the junctures between researcher and researched and between data and theory”. As discussed above, there have been several email engagements with my research participants, especially phase three participants, before, during and after the field trip and interview session. As explained above (see Section 3.5.4) every interview commenced with a full introduction of myself, my research interest, purpose of the research and expected research outcome and how the research might benefit research participants. The structure of the questioning required me as a researcher to engage the interviewees in considerable dialogue about the past, present and future. The interview allowed for reciprocity and a deeper engagement with research question and interest without boring my participants. Interviews seemed to enable interviewees to reflect on their practices and commitment to ESD mainstreaming practices and their experiences of the ITP process and outcomes.

Research ethics as democratic freedom: I tried to observe this ethical consideration by taking cognisance of the democratic freedom of research participants by ensuring that they were not coerced or forced to respond to research questions in a particular way or manner, that may not be comfortable. Timing, venue and procedure were mutually deliberated and participants’ convenience was paramount. Participants were given the choice not to make comments on certain issues. Bassey (1999) explained that ethics takes cognisance of the freedom people have to investigate issues, ask questions, and to give and receive information. Freedom involves being able to express ideas and to criticise the ideas of others. It also encapsulates the freedom to publish research findings. All the above freedoms are acceptable as long as researchers can do these things without doing harm or endangering either the participants’ or the researcher’s lives (Bassey, 1999; Agbedahin, 2012a). Lather (1986) used the concept of ‘research as praxis’ to advance emancipatory knowledge in the context of empirical social science research in order to

support researchers in the process of involving the researched in a “democratized process of inquiry characterized by negotiation, reciprocity, [and] empowerment (p. 257).

Research ethics as ensuring proper access negotiation: This ethical consideration is closely linked to the need for researchers to request and receive either verbal or better still, written informed consent which stands as evidence (Cohen et al., 2007). Access to research participants and their institutions was negotiated and granted. The essence of proper access negotiation according to Christian (as cited in Flick, 2007, p. 69), is that “no one should be involved in research as a participant without knowing about this and without having the chance of refusing to take part”. ITP participants were aware that there was a PhD researcher from Rhodes University doing research on the ITP to help clarify its role in ESD mainstreaming. I also ensured that participants fully understood the essence and jurisdiction of this research as well as their requested involvement (O’Leary, 2010). Before and during every interview session, participants were fully briefed about this research, its aim and objectives and verbal and written informed consent to participate in research, use process and use audio recorded interview data, photographs taken together and documents given for research purposes, was requested and accordingly granted by all participants. The informed consent included the publication of participants’ institutions, offices, and names as anonymity and confidentiality were not necessary. Information about personal and institutional participation in the ITP is widely known, even accessible on the internet.

Research ethics as affording voluntary participation and withdrawal: No participant should be involved in a research process without knowing what the research is about and without having the freedom to participate or withdraw voluntarily (Flick, 2007; O’Leary, 2010). Regarding participation in a research process, the relationship between researcher and participants is supposed to be made clear from the inception of the research. All ITP Asian and African participants were communicated with via email during phase one of the research in which a questionnaire survey was used. However, not all email addresses in the data base were valid and some bounced back. However, data used in phase one and two was publicly available via the regular ITP reporting system and consent was obtained for all interviews in phase three.

Research ethics as guaranteeing truthfulness and transparency: Ethics of respect for truth and transparency regarding the nature of my enquiry were ensured by being sincere and transparent throughout the research process. Researchers are “expected to be truthful in data collection, analysis and reporting of findings” (Bassegy, 1999, pp. 73-74). In accordance with this, I made sure that I was sincere in my dealings with all research participants and the entire research process.

The above are the ethical measures I have taken in this research process.

3.9 CONCLUSION

In this chapter, I have presented the research design and methodology, a recapitulation of the research questions of research phases one to three, data collection methods, theoretical frameworks and analytical frameworks employed in each phase. I also considered the research design by reviewing different types of research designs such as descriptive research, exploratory research, explanatory research; dialectical and non-dialectical research; intensive and extensive research, all of which helped to shape this study. Research approaches used in this study have been explained, including a qualitative research approach and case study research, underlaboured with critical realism philosophy and social theory. The scope of the study, sample population and data collection processes of each of the three research phases, were described. Details of phase three research participants during the field trips have also been presented. I provided a comprehensive description of the methods of data collection used in all three phases: self-administered survey questionnaires; computer-assisted self-administered questionnaires; document review and semi-structured interviews. In addition, I have described how I organised, processed and analysed the data collected, as well as the modes of inferences employed in each phase of analysis. The final sections of this chapter cover research validity and research ethics. In the next chapter, I present phase two of this research and its data which encapsulates all African ITP participants' countries, institutions, faculties, departments/units, positions, and general practices. The morphogenetic theory of change with its three-part cycle T1-T4 is used to present the participants' change project inception, implementation process and outcome, with comments on existing position-practice system dynamics and effects.

CHAPTER FOUR

SUB-REGIONAL PRESENTATION OF AFRICAN ITP CASE STUDY

An emancipatory social research calls for empowering approaches to research whereby both researcher and researched become ... "the changer and the changed". (Lather, 2013, p. 263)

4.1 INTRODUCTION

This chapter constitutes phase two of the research and its data presentation. It is a brief presentation of all African ITP participants' countries, institutions, faculties, departments/units, positions and general practices. It is also a synthesised morphogenetic analysis, hence presentation of structural conditioning known as T^1 , which represents the existing structures, conditions, contexts in the participants' institutions and countries before their participation in the ITP. In accordance with the ITP phase 1, T^1 also represents the starting point for situating learning and change, contextual auditing of the existing situation and identification of situated change projects by the participants.

T^2 - T^3 , according to the morphogenetic framework, represents the social-cultural interaction and marks the actual encounter of participants with the ITP mediation. It characterises the resultant socio-cultural interaction in their institutions as well as the processes involved in the implementation of the change project. In line with the ITP phase 2-4, T^2 - T^3 represents exposure to new ideas, examples of best practices, networks, tools and strategies through international and regional programmes; activities that allowed for reflexive development of changed practices in context (e.g. development of materials to support the change); institutional workshops; reporting; and action planning. Other forms of support rendered by the ITP and received by the ITP participants and their institutions include the USAT tool, the Swedish and Southern African regional component of the ITP and help in refining ideas about ESD; this was taken further in the regional component with the MESA materials.

T^3 - T^4 is the movement towards structural elaboration evidenced in changed practices and changes in socio-cultural and institutional conditions. Based on the ITP, it marks the outcome/impact of the ITP interaction and what modifications or actual changes can be recorded as a result of the ITP and the change project implementation process. In line with the position-practice system theory, one is able to trace the influence of ITP participants and other colleagues on ESD mainstreaming.

In this chapter, data is synthesised according to the 23 African countries that have participated in the ITP in HE, from its inception in 2008 to 2013. These countries are presented in sub-regional clusters namely: Central Africa: Cameroon; Eastern Africa: Ethiopia, Kenya, Rwanda, Uganda; Northern Africa: Egypt, Morocco, Sudan; Southern Africa: Malawi, Mozambique, Namibia, South Africa, Tanzania; West Africa: Gambia, Liberia, Nigeria, Senegal; Western Indian Ocean Islands: Madagascar, Mauritius, and Seychelles.

Data presented in the chapter concerning participants' institutions, titles and designations only applies to the period this chapter was written (between 2008-2014) and depends on the starting date of participants in the course and data available on their participation (See Appendix 3). I acknowledge that some participants may have changed work places, gained higher academic qualifications or promotions, and hence changed designations. I have also intentionally left out writing titles where I have no confirmation of the participant's actual title.

4.2 CENTRAL AFRICA

4.2.1 COUNTRY: CAMEROON



4.2.1.1 Cameroonian Change Project 1 of 1: University of Yaounde II

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Cameroon is the only country that has successfully participated in the ITP in central Africa, with two participants from University of Yaounde II, in the Faculty of Laws and Political Science. Both participants, Tamasang Christopher Funwie and Alban B. Lukong were lecturers in 2008. According to the lecturers at the Faculty of Laws and Political Science, they lacked insight on how to teach and conduct research through transformative approaches to learning. This had implications for students being taught and who were graduating from the Faculty and University of Yaounde II. Their change project focussed on capacity building of teachers in order to mainstream ESD in their teaching and research. The main objective of their change project was to organise a series of workshops in Cameroon to expose teachers to innovations in teaching and research through transformative approaches to learning.

T2-T3: SOCIAL-CULTURAL INTERACTION

The ESD related practices of Tamasang Christopher Funwie included presentation on the topic 'Mainstreaming ESD into Land Law in Cameroon' during the regional workshop in Nigeria. He facilitated workshops in Cameroon to expose teachers to innovations in teaching and research through transformative approaches to learning. He also developed an ESD provisional support centre. Alban B. Lukong has been involved in capacity building of teachers to mainstream environment and sustainable development in teaching and research. They both initiated a lobbying task force for all ESD related activities in the University. They organised workshops,

which were meant to encourage students to take on new roles, and teachers to rethink their teaching in different ways in the learning process.

T3-T4: STRUCTURAL ELABORATION

A provisional support centre was proposed to be set up to provide the following services: information and guidance on ESD and Sustainable Development; reference materials; a think-tank on improving the implementation process of the product; a lobbying task force for ESD and Sustainable Development; and management of all other ESD and Sustainable Development related activities.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Lack of sufficient information and available updates on the change project that was initiated in 2008 prevented the possibility of analysis of current status of the change project. However, from the information available, the two lecturers were able to interact with students and staff in a constructive manner through workshops. Their practices during their participation in the ITP reflect engagement with ESD and influence on the teaching and learning practices in University of Yaounde II, at least in the Faculty of Laws and Political Science.

4.3 EASTERN AFRICA

4.3.1 COUNTRY 1 IN EASTERN AFRICA: KENYA



4.3.1.1 Kenyan Change Project 1 of 9: University of Nairobi

T1: STRUCTURAL AND AGENTIAL CONDITIONING

There have been 18 ITP participants from Kenya. Two were from the University of Nairobi namely Fred I. Mugivane and Rose Helen Adhiambo Nyikal, who participated in 2008. The University of Nairobi is a key university in Kenya, offering agricultural education and training. Before participation in the ITP, the agricultural curriculum offered at the University of Nairobi had almost no emphasis on environmental concerns. The change project of these participants was to re-structure courses in the Department of Agricultural Economics to include critical thinking and an environmental focus.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants used the USAT to audit ESD practices in the Faculty of Agriculture, across a number of departments. They discovered evidence of poor integration of environmental concerns into curricula, and a need to address sustainability issues in teaching, research, examination, community engagement, assessment and capacity development in critical thinking. Stakeholder

consultation and participation in an institutional workshop was successful. There was consultation with curriculum developers in the institution and refinement of the focus of the change project on the design and development of a certificate in Environmental and Agricultural Community Education to be offered by the University.

T3-T4: STRUCTURAL ELABORATION

A curriculum framework was produced for a certificate course in Environmental and Agricultural Community Education and this course was then offered to students.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The recorded outcome of the change project is evidence of effective socio-cultural interaction. The participants were able to influence the organisation of workshops and stakeholders' consultation possibly because of their position in their faculty. The production of a curriculum framework as well as the active commencement of a certificate course can only become a reality within a short space of time when the academics involved are in decision-making positions in the faculty and institution.

4.3.1.2 Kenyan Change Project 2 of 9: Strathmore University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Another 2008 Kenyan ITP participant and resource person is Prof Joseph Gitile Naituli from Strathmore University, who later became Deputy Vice Chancellor of Multimedia University in Kenya. He is an ESD related publisher, editor and project manager. His change project was to provide the support needed for the East and North African cluster of the MESA programme and specifically for the HESD ITP process, which was supported and implemented by Strathmore University. Hence his project was entitled 'Development of an East and North African MESA Cluster Network'.

T2-T3: SOCIAL-CULTURAL INTERACTION

There was deliberation and discussion by HESD ITP participants on the links between this initiative and the West African ESD network, and the SADC/EEASA networks. The meeting of this network was hosted in Addis Ababa in 2013, with support from UNEP.

T3-T4: STRUCTURAL ELABORATION

A framework document to guide the establishment of this network and the development of East African network for MESA has been developed.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

As a key stakeholder in East Africa in ESD related practices and activities, based on his position, this participant was able to implement an influential project. His position in the network gave him

a sphere of influence that could contribute constructive deliberation and the eventual development of the East African network for MESA.

4.3.1.3 Kenyan Change Project 3 of 9: UNEP

T1: STRUCTURAL AND AGENTIAL CONDITIONING

There was a need to strengthen and extend the contribution and influence of the MESA Universities partnership, and to prepare African contributions for the World ESD Congress that was held in Bonn in 2008. Prof Akpezi Ogbuigwe, a former Director of Environmental Education at the United Nations Environment Programme and the Chairperson of Anpez Centre for Environment and Development in Nigeria took up the challenge. Her change project involved organising the first MESA International Conference.

T2-T3: SOCIAL-CULTURAL INTERACTION

Part of the social-cultural interaction that took place included the drafting of conference programme framework and putting logistical elements in place with other stakeholders. In addition, the existing ITP North-South dialogue was extended by inviting Swedish universities participating in the HESD ITP to participate in the MESA Conference.

T3-T4: STRUCTURAL ELABORATION

The first MESA International Conference took place successfully in (add year); a report on the MESA initiative from 2004 to 2008 was developed and presented at the MESA International Conference; the MESA Conference proceedings report was produced and distributed. This involvement of UNEP led to a strong partnership between the ITP programme and UNEP for the last three years of the ITP (2011-2013).

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

If Prof Akpezi Ogbuigwe had not occupied the position of the Director of Environmental Education at the United Nations Environment Programme, she would not have been able to take up a project of such magnitude. Her sphere of influence within UNEP and sister organisations and colleagues was significant. A junior lecturer, for example, is unlikely to have been able to do this successfully.

4.3.1.4 Kenyan Change Project 4 of 9: ICRAF

T1: STRUCTURAL AND AGENTIAL CONDITIONING

August Basil Temu and Sebastian Chakeredza were from the World Agroforestry Centre (ICRAF) and participated in the 2008 ITP. The World Agroforestry Centre was known as the International Centre for Research in Agroforestry (ICRAF) before 2002. ICRAF is an international institute headquartered in Nairobi, Kenya, founded in 1978. The Centre specialised in the sustainable management, protection and regulation of tropical rainforest and natural reserves. It was one of 15 agricultural research centres, which make up the global network known

as the CGIAR (Consultative Group on International Agricultural Research). The Centre conducts research in agroforestry, in partnership with national agricultural research systems with a view to developing more sustainable and productive land use. The African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) comprises African colleges and universities teaching agriculture and natural resource sciences. ANAFE is supported by ICRAF. August Basil Temu is the Director of the Capacity Building unit of ANAFE and works directly with over 30% of the universities in Africa on sustainable development issues. The participants' change project was to strengthen Africa's strategic agricultural capacity for impact on development.

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project involved an in-depth review of the state of agriculture and agricultural education in tertiary institutions in Africa, involving approximately 100 institutions. Issues influencing agricultural education and training (including aspects such as biotechnology and climate change) were identified as key areas for intervention to improve the quality and content of agricultural education in Africa.

T3-T4: STRUCTURAL ELABORATION

Seven objectives of the project focussing on various aspects of capacity building were identified, such as curriculum, materials and methodology development for agricultural education and training. Strategies for the different objectives were developed, including strategies and approaches for producing context relevant materials and curricula to guide and support agricultural education and training in tertiary institutions.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The capacity building in an institution like ANAFE, and practices involving direct interaction with over 30% of the universities in Africa on sustainable development issues, are enormous in their scope. Not all staff at ANAFE could successfully have facilitated such a change project, but Prof Temu's position as a Director was helpful in this regard. His level of influence is directly linked to his position and related practices.

4.3.1.5 Kenyan Change Project 5 of 9: NEMA

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Josey Njoki Mukiri and Patricia M. Wambua worked at the National Environment Management Authority (NEMA) during their participation in the ITP in 2009. In line with their job description there was a need to develop an ESD implementation strategy for Kenya and to provide mechanisms for adopting a holistic approach to sustainable development by engaging all sectors and stakeholders in Kenya. Their change project focused on the monitoring of the implementation of ESD in institutions of higher learning.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey and could not be reached in order to investigate the process and outcome of their change project. Thus there is no information about social-cultural interaction and structural elaboration. However, based on the kind of change project they developed, it was obvious that they knew they had a certain amount of influence and capacity to implement it. For example, the challenge of engaging all sectors and stakeholders in Kenya in order to develop ESD implementation strategies and a holistic approach to sustainable development can only be possible within their sphere of influence through their positions at NEMA in Kenya.

4.3.1.6 Kenyan Change Project 6 of 9: Kenya School of Government

T1: STRUCTURAL AND AGENTIAL CONDITIONING

The Kenya School of Government is an institute with a training mandate of reaching out to all ministries and departments in the entire civil service sector of Kenya. It is influencing policy formation through research and its operations are driven by emerging national challenges and it facilitates Kenyan community development. Charles Onkundi and Frederick Mukabi Khaunya participated in the ITP in 2012 from the Kenya School of Government. Their change project was to develop a leadership programme on environment and sustainable development.

T2-T3: SOCIAL-CULTURAL INTERACTION

There were several reviews and consultations by stakeholders as well as a sustained interest in stakeholders to develop leaders in the public service to champion environmental issues for economic and social development of Kenya as expressed during interactions.

T3-T4: STRUCTURAL ELABORATION

There was an institutional interest and willingness to implement the ESD leadership programme. There was approval of the change project by the school's management. In addition, a one-month training curriculum and programme on leadership for ESD was developed.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

In order to convince stakeholders about a programme and stimulate their interest and willingness to implement it, the programme must be deemed relevant, and the colleagues proposing it, credible and influential. The school management cannot approve a change project if the proposed project is not doable and initiated by unreliable staff members. Since the developed one-month training curriculum and programme on leadership for ESD was approved and scheduled, the sphere of influence and sustained influence of the initiators (ITP participants) at the level of initiating of curriculum change appeared to have enabled implementation.

4.3.1.7 Kenyan Change Project 7 of 9: Masinde Muliro University of Science and Technology (MMUST)

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Patricia Kariaga and Mary Goretti Kariaga Ohanya were from the Department of Criminology and Social Work and Department of Sugar Technology respectively, when they participated in the ITP in 2012. They were working in Masinde Muliro University of Science and Technology (MMUST), and their change project was to establish a networked multi-disciplinary ESD community of practice for sustainability engagements within and beyond the University. At MMUST, there are a number of undergraduate and postgraduate studies, but most of these do not have a strong environment and sustainability orientation. There has also been insensitivity towards environmental issues and a lack of discipline in basic environmental etiquette e.g. waste management on campus.

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project developed responded to the need to establish and/or improve institutional infrastructure for ESD in MMUST. It was also designed to increase awareness of the importance of effective ESD in the HE sector, and specifically in MMUST. To achieve this aim, the Unit Based Sustainability Assessment Tool was used to audit the institution in February and March 2011. Afterwards, meetings and consultations were held to discuss the project.

T3-T4: STRUCTURAL ELABORATION

A MMUST ESD Research project committee has been established under the office of the Deputy Vice Chancellor of Planning Research and Extension (PRE) in February 2012. This was a 20-member working committee including MMUST lecturers, students and community members from Kakamega. Some sub-committees were also established to work on different areas of sustainable development including ICT, student environmental activities, a mushroom project, spirullina projects, soya projects, botanical garden, Kakamega forest and links with the PALWEKO projects (local agricultural development programme) and an academic paper was written on the current ESD status of the university.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants responded to the 2013 survey and Patricia Kariaga participated in the 2014 Alumni Seminar in South Africa; thus it was easy to ascertain the recent status of their change project. The successful establishment of a MMUST ESD Research project committee and the various sub-committees involving lecturers, students and community members from Kakamega is notably as a result of the influence of the stakeholders in higher institutional positions rather than that of the participants. The support and substantial positive influence of the Deputy Vice Chancellor and the use of the office of the Deputy Vice Chancellor of Planning Research and Extension (PRE) played a key role in the successful implementation of the change project. The Vice Chancellor

was also very supportive of ESD, and had herself pioneered ESD related research on nutrition using spirullina.

4.3.1.8 Kenyan Change Project 8 of 9: Ministry Of Higher Education, Science, And Technology (MHEST)

T1: STRUCTURAL AND AGENTIAL CONDITIONING

There were three 2012 ITP participants from the Ministry of Higher Education, Science and Technology (MHEST), namely Johnson Wechuli Nanjakululu, Zachary Ooke and Janet Mbwaya. The change project was developed from an analysis of the history of Technical and Vocational Education Training in Kenya. It was identified in the review that the content-based approach and the 'old' curriculum contents were not furthering sustainable development objectives of Kenya. The change project entitled 'Competence-based curriculum development for artisan training to contribute to sustainable development of Kenya' addressed this gap in the national development path of Kenya.

T2-T3: SOCIAL-CULTURAL INTERACTION

Some workshops to sensitise TVET college heads on CBET (competence-based approach) approaches were held in Mombasa in April 2013 and meetings were held with stakeholders from the industries to design the main competence areas for the curriculum.

T3-T4: STRUCTURAL ELABORATION

Environment and sustainability concerns were integrated into these competence-based curriculum designs. TVET curriculum frameworks for artisan training were completed with a sustainable development focus.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The creativity and innovative capacity of these ITP participants made the implementation of their project possible. Their positions in the Ministry of Higher Education influenced the implementation of planned activities, as they were able to work across institutions at policy level. There were inconspicuous power relations factors that contributed to this.

4.3.2.9 Kenyan Change Project 9 of 9: Mount Kenya University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Mount Kenya is a new private university in Kenya. It has rapidly expanded to multiple sites across the country, and is also expanding to Somalia, Rwanda and other countries. At Mount Kenya there are a number of undergraduate studies in environment and sustainability areas. None of these however leads to postgraduate studies in environmental security and sustainable development. Nemwel Obi Isaac Okeiga, Kennedy Mutundu and Joshua Mogare Ateka participated in the 2012 ITP from Mount Kenya University.

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project aimed at the development of a Master of Arts in Environmental Security and Sustainable Development. It started out with a vision of establishing a multi-disciplinary approach to environment and sustainability education at Mount Kenya University. During the phase 3 workshop, a multi-disciplinary concept of ESD was introduced and deliberated. This was later refined to include acceptance of an ESD unit and programme at the Mount Kenya University.

T3-T4: STRUCTURAL ELABORATION

A 'flagship' programme within the wider intentions to develop ESD was established, namely a Master of Arts in Environmental Security and Sustainable Development. Curriculum for this flagship programme was developed, presented to Senate, approved and the course advertised.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

There was no evidence that the position of these participants influenced the implementation of the change project. If they successfully implemented the project, it appears that the proposed project was sufficiently relevant to convince university management. The creativity and innovative capacity of these ITP participants made the implementation of their project possible.

4.3.3 COUNTRY 2 IN EASTERN AFRICA: ETHIOPIA



4.3.3.1 Ethiopian Change Project 1 of 11: Bahir Dar University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Ethiopia is one of the most populated countries in Africa. It has demanding issues related to water supply, deforestation, and rapid growth in universities. Mulugeta Kibret Azene and Firew Tegegne Amogne participated in the ITP in 2008 from the Faculty of Education, Bahir Dar University. The University was seeking ways of integrating Sustainable Development into programmes and ways to strengthen postgraduate teaching and outputs. Their change project was aimed at developing Bahir Dar University's mainstreaming process because there was no concrete institutionalised ESD mainstreaming process in the whole university.

T2-T3: SOCIAL-CULTURAL INTERACTION

An institutional workshop involving 30 staff members from different faculties took place. It was supported by the Acting Vice Chancellor and the Swedish International Development Agency (Sida) funded Institute of Land Administration. The Acting Vice Chancellor indicated continual support for the implementation of the change project.

T3-T4: STRUCTURAL ELABORATION

There is strong institutional support for mainstreaming of environment and sustainability in the university. The university ESD initiative has been integrated into the development objectives of the institution. A ‘champions working group’ now exists, to develop ESD strategy and framework. Regular activities to raise awareness of mainstreaming were planned for the next three years.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The support received from the Acting Vice Chancellor was very crucial to the success of the change project. The possibility of planning activities for the next three years to a great extent depends on the Vice Chancellor’s active involvement to ensure the project’s sustainability. In 2013, when two additional participants joined the ITP (see change project 9 of 11), Firew Tegegne was Director of Academic affairs. Strong management support for ESD had strengthened wider mainstreaming in the other faculties of the university.

4.3.3.2 Ethiopian Change Project 2 of 11: Addis Ababa University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Demoz Nigatu Asfaw and Fekadu Mulugeta worked in the Office of Continuing and Distance Education, Addis Ababa University during their ITP participation in 2009.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 survey. Unfortunately their ITP participation report could also not be tracked, resulting in a complete lack of data regarding their change project, process and outcome. There is therefore nothing recorded as social-cultural interaction and structural elaboration.

4.3.3.3 Ethiopian Change Project 3 of 11: Institute of Technology, Addis Ababa University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Addis Ababa University’s Institute of Technology formed a multi-institutional partnership to develop and offer a M.Sc. in Integrated River Basin Management Sciences with funding from the Dutch government. It involved lecturers from eight different Ethiopian universities and technical support and capacity building initiatives were in place. Dereje Hailu Asfaw and Abeyu Shiferaw Yilma worked at this institute during their participation in the ITP in 2011. The objective of the change project was to integrate the principles of ESD and the environmental, societal, and economic dimension of ESD into 16 modules of the Integrated River Basin Management (IRBM) MSc. programme.

T2-T3: SOCIAL-CULTURAL INTERACTION

During their change project implementation process, they employed the stakeholder approach to curriculum design, hence internal stakeholder consultation processes were used to generate relevant inputs for the integration of ESD into the modules.

T3-T4: STRUCTURAL ELABORATION

Issues of environment, economy, society and local sustainable development challenges were integrated into ten of the 16 modules. A document was produced entitled 'Strategies for Teaching in an 'ESD way' within the IRBM M.Sc. Programme' which was used for ongoing staff development within the programme. Agreement after an internal consultation process meant the above materials and ESD approaches could be used more widely in the university, and that this would be integrated into the university MESA programme initiatives.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The position-practice system was influenced by the existence of wider networks, programmes, and funds into which the programme 'slotted' and which enriched the modules that were in development.

4.3.3.4 Ethiopian Change Project 4 of 11: Wondo Genet College of Forestry and Natural Resources (WGCF-NR)

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Gessesse Dessie and Menfese Tadesse Eirgete participated in the ITP in 2011 while working at Wondo Genet College of Forestry and Natural Resources (WGCF-NR) as forestry management educators. Dr Dessie was later appointed as the curriculum and capacity development officer at the United Nations University in Ghana. Their change project was entitled 'Rethinking Forestry and Natural Resources HE in Ethiopia: An Education for Sustainable Development Perspective'. This project was chosen because deforestation a major issue in Ethiopia as most of the forest cover has been lost. Additionally, there are issues linked to forestry education, namely: 1) employers have reported concern about the decline of graduate competence, hence quality of education; 2) loss of desirability of forestry education amongst students joining Ethiopian universities; 3) emerging global and national opportunities that have brought forestry back into the limelight; and 4) the need for increasing the visibility of WGFNR as a centre of excellence where academic programmes are rigorous and relevant. National environment and forestry policy are aligned with sustainable development principles. There are some examples of national initiatives to incorporate ESD into education, but these are not well integrated at institutional level.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT was used to audit the situation of ESD in the college and audit results were used in strategic meetings to discuss the direction of the change project. Senior level support was

provided for internal workshops with Heads of Units, Deans of Faculties and Heads of Departments in the university. Funding was provided by the community services office for the interactions associated with the development of the change project.

T3-T4: STRUCTURAL ELABORATION

An academic paper on forestry education was produced to provide a new conceptual framework for forestry education and was published in the Southern African Journal of Environmental Education. A workshop was organised with the developed curriculum guidelines presented to colleagues and stakeholders and the Centre of Excellence guidelines proposed for ESD. A national workshop and a regional research and action proposal were developed.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were then participating in the first phase of the ITP but responded to self-administered questionnaires in phase 4 and Dr Dessie participated in the 2014 Alumni Seminar in South Africa. From this it was possible to ascertain that the Forestry Curriculum Framework was in use in Ethiopia, and that it was being more widely used by the United Nations University in Ghana, where Dessie was now working and supporting Forestry Education more widely.

4.3.3.5 Ethiopian Change Project 5 of 11: Haramaya University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Anteneh Belayneh Desta and Tassew Mezgebu Gebrehiwot were from Haramaya University during their participation in the ITP in 2011. Ethiopia has a large population hence agriculture is a key issue for development. There is rapid growth in the university in terms of programmes and faculties. There is also the need to train lecturers in new methods and approaches. The Post-Graduate Diploma in HE Teaching (PGDHET) structure existed for this, but did not include ESD, despite strong policy imperatives for Sustainable Development at national level, and a vision and mission that supported ESD principles and concepts. Haramaya University is large, with 31 500 students, and a large number of graduate and postgraduate programmes and new lecturers. The change project was developed as a result of the need to raise awareness of the emergence of the concept of ESD in HE in Haramaya University and to move towards integration of sustainability contents in the future curriculum reform. The project was entitled 'Development of an ESD Module for the Post-Graduate Diploma in HE Teaching (PGDHET)'

T2-T3: SOCIAL-CULTURAL INTERACTION

A number of Faculties, Departments and Deans were involved in the development of a draft ESD Module for the Post-Graduate Diploma in HE (seventh module in the course). The module drew heavily on materials and ideas presented in the course, and was reviewed twice in the university. More so, the Senate decided to introduce a common course for all university students, hence the training of staff from all faculties for capacity development.

T3-T4: STRUCTURAL ELABORATION

More than 100 faculty staff members were successfully and sustainably trained in the area of ESD. An ESD module was developed and added as one new training course in the PGDHET programme that is run annually for lecturers.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The active involvement of Deans in the development of a draft ESD Module for the Postgraduate Diploma in HE, partly accounts for the successful implementation of the change project.

4.3.3.6 Ethiopian Change Project 6 of 11: Gondar University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Desalegn Wagari Kifle, Haimanot Gebrehiwot Moges and Solomon Meseret were three other ITP participants from Gondar University (GU) in 2011. Ethiopia has a large population. Initially, a Public Health College, the university grew rapidly. The university has many new faculties and programmes and a student population of over 30 000. There were national Sustainable Development policy imperatives but there was no ESD policy or strategy existing in the university at the beginning of the change project. There was a fragmented approach to integrating Sustainable Development. The USAT audit showed that the overall sustainability assessment of the academic departments of Gondar University was around 50%, whereas sustainability performance of operation and management of Gondar University and students' involvement on sustainability issues and availability of sustainable development policies and practices were below average. No sustainability structure existed at the university when the change project started. The change project was aimed at developing university-wide guidelines for integrating ESD into university curricula that were hitherto absent.

T2-T3: SOCIAL-CULTURAL INTERACTION

The results of the USAT analysis of five faculties were shared across the institution. There was involvement of various institutional mobilisation processes in the project, including a set of strategic internal meetings with different stakeholders of the university, such as the Vice President for Academic and Research, Heads of the College, Faculties, Departments and students. Additional funding from the research and community services office secured was for the development of the guidelines.

T3-T4: STRUCTURAL ELABORATION

A draft document on 'Guidelines for Integrating ESD into University Curricula' was produced. There was a level of preparedness of the university, for a large scale curriculum re-orientation under a modularisation system, and the ESD guidelines were used therein. A sustainability unit was established by the Vice President of the University, involving the three ITP participants, with a mandate of taking the ESD project forward in the university. This change project was taken further by two participants in 2013 (see change project 8 of 11).

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The sphere of influence of the Vice President and the Heads of the College made the change project successful beyond its initial aim, as well as the involvement of other stakeholders and heads.

4.3.3.7 Ethiopian Change Project 7 of 11: Dire Dawa University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Alemu Yonas Tadesse and Abeya Degeje Terfassa participated in the ITP in 2013. They were from the School of Social Science and Humanity, Department of Geography and Environmental Studies at Dire Dawa University. Alemu Yonas Tadesse was an Associate Dean, Coordinator of the Teachers Development Programme (TDP) and he lectured students in courses related to environment such as environment and development, environmental impact assessment, hydrology etc. Abeya Degeje Terfassa was a Dean, involved in planning, monitoring, evaluating all activities pertaining to the Faculty in the university. Their change project was a curriculum development project which entailed the development of a module for the University's HE Diploma with an emphasis on the use of ESD teaching methodologies in different disciplines. The title of their Change Project was 'Integrating ESD into the Post-Graduate HE Certificate Course: Module Development.'

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants drew heavily on concepts and ideas they were exposed to during the ITP. They networked with the ITP participants at Haramaya University and drew on their experience and module framework (see change project 5 of 11). They held a number of workshops and established an ESD open day with support from local industry as well as changes to their own curriculum.

T3-T4: STRUCTURAL ELABORATION

Participants sketched the framework of their project, developed the contents, formulated the objectives of their module, and developed the chapters. In addition, they mainstreamed ESD in the already existing modules. They established an ESD open day involving student groups and community members, and changed the content of their own courses.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they participating in the first phase of the ITP but completed a self-administered questionnaire in phase 4 in South Africa. There was limited consultation and need of approval from stakeholders since both participants were Deans. The implementation of the change project was not difficult, and they were also able to negotiate partnership funds for the ESD open day with local businesses.

4.3.3.8 Ethiopian Change Project 8 of 11: University of Gondar

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Woreta Hiwot Kassa worked at the Nursing Department, Health Sciences Faculty as a lecturer, and secretary of the sustainability unit established via the ITP change project of 2011 (see change project 6 of 11) while Nega Mihret Alazbih was Head of Department of Population studies, both at the University of Gondar. Their change project further strengthened the sustainability unit and integrated sustainability issues into different research thematic areas in the University. Before their participation in the ITP, and due to the already available ESD related activities in the University of Gondar, participants included the course ‘Sustainable Development’ and ‘Population and Environment’ in their respective curricula but sustainability issues had not been fully integrated in their departments.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT tool was used to investigate ESD in the research and community engagement processes of the university. A committee was established to focus on ESD research issues in the university, with the support of the Research and Community Service Vice Dean of the university. They submitted a letter to the Vice Dean to consider the integration of sustainability in the University’s currently 20 thematic research areas or to make sustainability one independent or additional theme.

T3-T4: STRUCTURAL ELABORATION

There was development and completion of draft guidelines for the sustainability unit including its rationale, vision, mission, goal, objective, strategy and framework. The guidelines were presented to the sustainability unit committee members. The final document was submitted to the research and community service unit for approval, with Deans and academics showing agreement at the workshop for integrating SD issues into the university research agenda.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were participating in the first phase of the ITP but they completed the self-administered questionnaire in phase 4 in South Africa. The involvement and support of the Vice Dean, Research and Community Service in the project influenced the extent of its success. There was evidence of social interaction between the participants and the constituted committee in the change project implementation process, as well as efforts to build on the earlier outcomes of the first ITP change project.

4.3.3.9 Ethiopian Change Project 9 of 11: Bahir Dar University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Wondem Dereje Taye was a lecturer and a part-time consultant at the Ministry of Education on the National Teachers Development Programme Faculty of Education, Bahir Dar University. He offered courses, supervised students during teaching practices and revised teacher education

curriculum at all levels. Asrat Dereb Ebessa was the Dean of Faculty of Educational and Behavioural Science, Bahir Dar University. He had the duties of a Dean and lectured in the educational planning and management programme. Their 2013 change project was aimed at developing an ESD module for the postgraduate diploma in teaching in Ethiopia, and formed part of the wider ESD initiatives at Bahir Dar University (see change project 1 of 11).

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT tool was employed to see the extent to which environmental education was being included in the teacher education curriculum and where there was a need to intervene in the process, lecturers were interviewed. A selection of teaching and curriculum approach sections meant that the tool could be customised for local use. Eleven programmes were evaluated and recently modularised versions of these curricula were collected for review. A decision to use a multi-dimensional approach to introduce ESD was reached. A resolution was taken to develop one core module that all teacher education students would take, and other small modules specific to each programme that can be combined into the specific teaching methodology courses.

T3-T4: STRUCTURAL ELABORATION

A core module was developed using UNESCO and MESA materials. The core module consisted of major themes namely: teaching and learning for sustainability in a changing context; ESD in teacher education; conceptual clarifications; teaching approaches for ESD; and the assessment for ESD learning and outcomes. Additionally, an ESD student club where students can be supported with ESD activities was initiated.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were participating in the first phase of the ITP but responded to self-administered questionnaire in phase 4 in South Africa. The Dean's participation and support was important, also policy links of Dereje Taye, and the history of support for ESD from VC and academic Registrar (see change project 1 of 11).

4.3.3.10 Ethiopian Change Project 10 of 11: Mekelle University and Ministry of Communication, Information and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Most of the universities in Ethiopia in general are facing many productivity-related challenges. They have disorganized working processes, poor laboratories and workshop management and resources are wasted and used inefficiently. This change project was concerned with the integration of the 'Kaizen principles' into their institution. The introduction of Kaizen philosophy into the universities is aimed at addressing issues including lack of skilled manpower, research and development, poor working environment, infrastructures, best practice management etc. The Kaizen philosophy is based on principles of continuous improvement – improve working procedures, productivity, quality and other parameters continuously. Hagoss Weldegebriel

Abraha is the Assistant Head in the Office of Ministry of Communication, Information and Technology (MCIT). Hadush Berhe Asgedom was at the Engineering Department, Ethiopian Institute of Technology, Mekelle University. He was a lecturer and Deputy Managing Director. Their 2013 change project was to develop a framework for cleaner production, and a framework for implementation integration of the 'Kaizen principle' into university education.

T2-T3: SOCIAL-CULTURAL INTERACTION

Awareness was created amongst the employees and students of the university concerning Kaizen and the need to minimise waste, and to improve the management of workshops and laboratories. Efforts were made to observe and improve the work environment of the laboratories, workshops, and the environment by removing unnecessary waste. The creation of networks and partnerships with some universities and organisations like JICA and Dominican University of California was in progress.

T3-T4: STRUCTURAL ELABORATION

The Kaizen management principles change project is now harmonised with the mainstreaming of ESD in Mekelle University. A concept note on the Kaizen implementation process, identifying implementation strategies and procedures, was developed in collaboration with the university management. Training manuals in both English and a local language were developed. Subsequently, training was given to administrative and academic staff and students concerning ESD, cleaner production and the Kaizen application. An MSc programme in Kaizen has been launched, and at the time of writing, had an enrolment of nineteen students.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were participating in the first phase of the ITP but responded to the self-administered questionnaire in phase 4 in South Africa and Mr Abraha participated in the 2014 Alumni Seminar, where he was able to report on the ongoing developments in the programme. The combination of ministry official and director in a university was significant for the outcome achieved.

4.3.3.11 Ethiopian Change Project 11 of 11: Addis Ababa University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Debebe Yilma Netsanet and Sofonias Yosef Abebe worked at the communications office, office of the university president, Addis Ababa University during their participation in the ITP in 2013. Debebe Yilma Netsanet was the head of the University Communications Office which organises events, makes publications and documentations on the website and media, and also acts as liaison between the university and the community. Sofonias Yosef Abebe assists the Head of the Communications Office in all media related matters. Their change project was to develop local problem solving community engagement initiative involving women's livelihoods and firewood collection in Addis Ababa for a sustainable future

T2-T3: SOCIAL-CULTURAL INTERACTION

A workshop was held at Addis Ababa University, and was attended by the Ministry of Education, the community engagement office, the international office, and a number of students and some staff from the Horn of Africa Regional Environmental Programme and by the ITP regional coordinator.

T3-T4: STRUCTURAL ELABORATION

Exploratory work was done to conceptualise a community engagement project for the university. Development of the concept note was to be submitted to the University Community Services office for approval.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were participating in the first phase of the ITP but responded to the self-administered questionnaire in phase 4 in South Africa. The position, practice and responsibility of the ITP participants in the communication office, and their active role in community engagement led to the refinement of the change project, in response to local problems.

4.3.4 COUNTRY 3 IN EASTERN AFRICA: RWANDA



4.3.4.1 Rwandan Change Project 1 of 3: Kigali Institute of Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Kaneza Florence and Sano Anselme worked in the Kigali Institute of Science and Technology (KIST) during their participation in the ITP in 2009. KIST consists of three faculties (Applied Sciences, Engineering, Architecture & Environmental Design). KIST is a young Higher Learning Institution, which needs to introduce some ESD aspects in its programming although some programmes already have aspects of ESD in their modules. The main objective of their change project was to develop teachers' skills in learning and teaching in HE, while developing practical skills leading to Sustainable Development. This entails the training of teaching staff in teaching and learning methods while building their capacity in ESD: a shift from Teacher Centred Learning (TCL) to Student Centred Learning (SCL).

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project was established as an integral part of the KIST Teaching and Learning Strategy, and designed to be in alignment with the requirements of relevant professional bodies. There was therefore resolution to ensure that successful course participants would be entitled to a certificate in teaching and learning in HE.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to 2013 survey. Change project updates went back to 2009 in the ITP annual report, and there was no information about the structural elaboration that may have occurred at Kigali Institute of Science and Technology (KIST) by 2013. The subsequent participants and project from KIST can be found below. Position-practice influence allowed participants to influence curriculum within the institutional teaching and learning strategy context.

4.3.4.2 Rwandan Change Project 2 of 3: Kigali Institute of Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Leopold Mbereyaho, Dean of the Faculty of Engineering and Antoine Nsabimana, Dean of the Faculty of Applied Science participated in the ITP in 2012 from Kigali Institute of Science and Technology (KIST). The title of their change project was 'Review of KIST's curriculum and inclusion of aspects of ESD'. The aim of the project was to ensure that the institute's curriculum was able to meet the need of Rwandans and to ensure that the teaching and learning in KIST is of the highest quality. The change project was located within the Engineering Faculty consisting of five departments offering nine undergraduate programmes and five postgraduate programmes. Prior to the project it was evident that less than 50 percent of ESD principles in the curriculum, teaching, research and community services were incorporated across the five departments.

T2-T3: SOCIAL-CULTURAL INTERACTION

There was a holistic analysis of the KIST curriculum providing other faculties currently not involved in the change project with important information about the current status of Sustainable Development principles and concepts in the curriculum. The curriculum review process in the institution provided an opportunity for the change project implementation. A workshop was organised and proposed modules were presented to students, academics and KIST administrators.

T3-T4: STRUCTURAL ELABORATION

Three new modules with ESD integrated therein were developed. One of these modules cuts across KIST and the other two were developed for the Engineering and Applied Science Faculty respectively. The three new modules were accepted with minor adjustments and then went through the normal processes of approval at Faculty level, through to Senate level and were offered in 2014.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participant 1 responded to the 2013 survey. The added value of having the participant and co-participant with Dean status in two different faculties afforded engagement with the same exercise simultaneously. Thus the two Deans worked together on the module that cuts across all programmes offered in KIST as well as developed faculty-based modules for their respective

faculties. Transdisciplinary approaches were used in this project as proposed modules will have content with topics related to programme fields on offer but also in addition to them.

4.3.4.3 Rwandan Change Project 3 of 3: Kigali Institution of Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dorothy Tukahabwa and Kabanda Chantal Dusabe participated in the ITP in 2012 from Kigali Institution of Education (KIE). KIE's mandate is to train teachers who are urgently needed to fill the gap in the schools, which are sometimes filled by untrained teachers. The change project was located within the Education Faculty consisting of three departments: Educational Psychology, Curriculum and Teaching, Educational Foundations and Management. Aspects of sustainable development are referred to in modules; however, a more formalised and focused intent seemed to be necessary. This change project started out with a vision of introducing into the teacher education curriculum practical ways to promote integration and sustainability issues into the teaching, research, and community engagement. The participants' change project involved improving the teaching of environmental education at the undergraduate level in KIE; an effort towards Sustainable development.

T2-T3: SOCIAL-CULTURAL INTERACTION

At this level, the USAT data collection and analysis was done. A workshop was organised and meetings were scheduled. Participants consulted members of the faculty and decided to focus on a course titled 'FED 101' which is an existing module that does not require university Senate approval to modify. The change project got additional substantial contribution from Mrs Kabanda and Chantal Dusabe who took over the project when Ms Tukahabwa, Dorothy received a scholarship to study towards her full time PhD in England. There was keen interest by the Science Faculty in ESD mainstreaming in their modules and ideas were shared at the Phase 5 workshop.

T3-T4: STRUCTURAL ELABORATION

There was identification of 'Fundamental Life Skills for Teachers (FED 101)' as a cross cutting module which includes a topic on environmental issues to be the focus of implementation of the change project. Integration of subthemes in the curriculum namely waste management, climate change, and air pollution, gender issues, population issues, human rights issues, and civic education issues was achieved.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The strategy developed by the participants, after consultation to focus on an already existing course because this will not require university Senate approval to modify is commendable. This sheds light on the effectiveness of the sphere of influence of the participants in effectively mainstreaming ESD without encountering structural approval constraints and the negative influence of the position-practice system of others. Through this strategy they were able to

achieve a strong programme of integrating ESD into existing courses, which was accessible to, and doable by others, as shown by the fact that others continued when the main participant left for her PhD.

4.3.5 COUNTRY 4 IN EASTERN AFRICA: UGANDA



4.3.5.1 Ugandan Change Project 1 of 6: Mbarara University of Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Kenneth K. Kwikiriza and Basil Tibanyendera were from Mbarara University of Science and Technology during their participation in the ITP in 2008. At the time, there were relatively low levels of integration of sustainability issues in the university curriculum, teaching and research. Their change project was on the development of materials and approaches to improve the relevance of science and technology teaching in the Education Faculty.

T2-T3: SOCIAL-CULTURAL INTERACTION

An institutional audit was conducted using the USAT tool. Also, an institutional workshop was held to deliberate the change project and outcome of USAT audit. Another second institutional workshop was held involving university management, staff, students and the wider community.

T3-T4: STRUCTURAL ELABORATION

A course framework was developed; an ESD sensitisation week was held, and a number of other student and orientation related activities were undertaken to highlight ESD. There has been a shift in awareness, willingness and knowledge of ESD shown by USAT tool evaluation done at the end of the intervention process.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

This change project was proposed and developed in 2008. The current situation of the developed course framework is unknown in terms of senate approval however; the involvement of the university management, students and other staff members and wider community may have helped in recording substantial ESD related practices. The ITP team went on to lead establishment of an RCE), linking the university to an African wide network that further provided opportunity for expanded ESD mainstreaming.

4.3.5.2 Ugandan Change Project 2 of 6: Uganda Martyrs University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Bro Aloysius Byaruhanga and Jimmy Spire Ssentongo were from the Faculty of Education, Uganda Martyrs University when they attended the ITP in 2009. Bro Aloysius Byaruhanga is a senior lecturer, the Dean and a focal person for ESD and Greater Masaka RCE. He has, inter alia, designed and taught a course on ESD in a Masters programme in education and published on ESD. Jimmy Spire Ssentongo has a Master's degree in Sustainability and he has written several books and articles on sustainability. Their change project involved mainstreaming ESD in Uganda Martyrs University's programmes and policies through management, staff and student leaders' capacity development. As a way of ensuring that education in Uganda Martyrs University (UMU) responded to the local and global concerns of sustainability, this initiative was geared towards building capacity for integrating ESD in the university's policy, practice and pedagogy in an integrated approach which is yet to be achieved.

T2-T3: SOCIAL-CULTURAL INTERACTION

Substantial moral and financial support was received from the Vice Chancellor and top management of the University. Teaching and non-teaching staff, student leaders, students and student clubs played various vital roles. Course outlines and teaching materials were developed and innovative ways of supporting staff (e.g. the use of the course materials on the intranet) were used. In addition, training for management, staff, and student leaders from all faculties on approaches for mainstreaming ESD was organised.

T3-T4: STRUCTURAL ELABORATION

There has been an approval of the proposed mainstreaming of ESD in principle by the University Governing Council and the Senate. Elements of ESD were incorporated in the ten-year strategic plan and in the revised university Charter.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Bro Aloysius Byaruhanga's position as the Dean and focal person for ESD and Greater Masaka RCE, to a great extent might have influenced the University Governing Council and the Senate's approval in principle of the proposed mainstreaming of ESD. The University was a recipient of the 2009 MESA award, which gave further impetus to the activities.

4.3.5.3 Ugandan Change Project 3 of 6: Ministry of Education and Sports, Department of Higher Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Sande Awava Kabirizi participated in the ITP in 2009 from the Ministry of Education and Sports, Department of Higher Education. His change project focused on the assessment of ESD implementation in institutions of higher learning in Uganda. The objectives of this project were to find out if the institutions of HE in Uganda, had mainstreamed ESD in their programmes and how

they have implemented it. It was the duty of HE Department to monitor all institutions of higher learning in Uganda (a total of 160).

T2-T3: SOCIAL-CULTURAL INTERACTION

There was random selection of eight representatives of educational institutions in Uganda for piloting because of limited time and funding. An assessment questionnaire was developed and administered to the heads of institutions or academic registrars and institutional reports and documents were reviewed. Informal discussions were held with students, lecturers, university/institution administrators and the broader community.

T3-T4: STRUCTURAL ELABORATION

Data was consolidated and the related reports were produced.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The participant did not respond to the 2013 survey. According to the 2009 report, the final consolidations of the data and the related reports have not yet been finalised. Informal feedback in the MESA network suggests that these were finalised and that a productive partnership on ESD exists between NEMA and DHE that has been supporting ESD mainstreaming. The position and practice of the participant as a key staff of the Department of HE, Ministry of Education and Sports accounted for the extent to which the target institutions could be reached and assessed.

4.3.5.4 Ugandan Change Project 4 of 6: Makerere University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Victoria Tamale, Bwanika Mathias Mulumba and Kagwa Rosette were 2011 participants of the ITP from Makerere University. Their change project was entitled 'Integration of Sustainable Development into the Theory and Practice of Educational Administration and Management Course Outlines'. Their choice of project was influenced by the audit of different sub-disciplines in the School of Education which showed poor integration of ESD concepts and approaches in all courses.

T2-T3: SOCIAL-CULTURAL INTERACTION

Due to internal structural difficulties (re-structuring, strikes, and loss of financial resources), the initial change project was re-shaped from a faculty-wide intervention, to a course-based curriculum intervention focussing on improved content, teaching methods and assessment practices that reflected some of the principles of ESD. The original course outline was enriched and pilot tested with students who responded positively to the changes.

T3-T4: STRUCTURAL ELABORATION

A draft course outline, i.e. Educational Administration and Management with ESD inclusions was produced. Changes in the curriculum increased students' interest in the course. There has been an increased desire from staff to gain deeper understanding and skills in Sustainable Development in

the School of Education as a whole. A proposal has been made to design a postgraduate diploma and Master's Degree course on ESD in the School of Education; short courses on ESD; and to enhance community engagement.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Modifying the change project from a faculty-wide intervention, to a course-based curriculum intervention ensured the doability and feasibility of the project. It also avoided the normal structural barriers educators encounter in higher education when pushing for curriculum transformation.

4.3.5.5 Ugandan Change Project 5 of 6: Nkumba University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Agnes Nambatya Kivumbi and Alithum Bruce worked at Nkumba University (NU) during their participation in the ITP in 2011. According to the participants, ESD was not well understood in the institution; fragmented approaches to ESD existed in the university, including at a whole institutional policy level, curriculum level, and community engagement and research levels. The aim of their change project was the mainstreaming of sustainable development in disciplines within the School of Humanities and Sciences with a focus on Religious Education Programmes, Teacher Education Programmes, and Social Sciences.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT was used to audit three courses, namely the Religious Education course, Teacher Education course and Social Sciences course. The change of Religious Education studies curricula was based on the recommendation from USAT audit. The curriculum change activities budgeted for were within the Faculty budget and were therefore well-resourced.

T3-T4: STRUCTURAL ELABORATION

A Green Foods Project, fully supported by the University, commenced to establish a student-based community engagement programme linked to the ESD mainstreaming efforts. A newly developed course was to be presented to the School board for approval, and then to the assurance committee and finally tabled at Senate for approval.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The budgeting for curriculum change activities within the faculty budget is evidence of good socio-cultural interaction, understanding of the essence of ESD among the faculty management, proof of acceptance and concrete support. This is an example of the positive influence of position-practice system of others in effective ESD mainstreaming and practice. Although this is positive at the faculty level, it is unknown what happened with the case at the senate level.

4.3.5.6 Ugandan Change Project 6 of 6: Busitema University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Edward Andama, the Dean Faculty of Science Education, Academic unit, Faculty of Science and Education and Ms Margaret Stella Ujeyo from Busitema University (BU) participated in the ITP in 2011. Dr Edward Andama was involved in lecturing; researching; administration of the Faculty; supervision of staff; coordination of activities between the faculty and the main campus. The title of the change project was 'Mainstreaming ESD Principles and Practices in Teacher Education Programme (Bachelor of Science in Education and In-Service Teacher Training Diploma)'. This change project was instigated by the fact that firstly, Uganda as a country had already developed an ESD policy which provided a basis for this project. Secondly, Busitema University set itself to educate for sustainability from the start. The University Strategic Plan provided a holistic approach to building a sustainable long-term future. Audit findings revealed low levels of integration of sustainability in many areas and little involvement in community outreach; a lack of awareness of ESD and key issues relevant to sustainability despite a strong university and national policy environment oriented towards Sustainable Development. Therefore, all departments needed strengthening to internalise and realise policy in practice.

T2-T3: SOCIAL-CULTURAL INTERACTION

There was substantive engagement of university management by means of dialogue and seeking the support of other stakeholders like the student leaders and staff. The change project received full financial and moral support of the university administration, particularly the Vice Chancellor and the academic registrar for its successful implementation. Initial and final institutional seminars were organised with the involvement of key stakeholders. Technical support from National Environment Management Authority (NEMA) and Uganda National Commission for United Nations Educational, Scientific and Cultural Organization (UNESCO) was received.

T3-T4: STRUCTURAL ELABORATION

Piloting of crosscutting ESD courses for the bachelors and in-service teacher training programmes commenced. A student group was formed to spearhead campus sustainability activities and community engagement. Networks were established with the neighbouring town council, local governments and surrounding schools and joint ESD activities within communities were started. Faculty members are now more informed about ESD than at the start of the project due to workshops and weekly public lectures on ESD.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Dr Edward Andama's position and influence as Dean may have gained the support of other key academic and administrative positions that allowed for a successful implementation of the change project. The engagement with the position-practice system of multi-stakeholders including UNESCO, NEMA, the Vice Chancellor, Registrar and others has contributed to the success of this change project.

4.4 NORTHERN AFRICA

4.4.1 COUNTRY 1 IN NORTHERN AFRICA: EGYPT



4.4.1.1 Egyptian Change Project 1 of 7: Suez Canal University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Yahia Youssef Mosleh, a senior lecturer and Abdelrehim Ahmed Ali worked at the Plant Protection Department, Faculty of Agriculture, Suez Canal University during their participation in the ITP in 2008. In the change project they planned to develop a sustainable agriculture curriculum in universities. The project commenced with a full proposal developed to strengthen sustainable agriculture in all Egyptian universities because of perceived weakness and dire need in this area.

T2-T3: SOCIAL-CULTURAL INTERACTION

During the course of the change project implementation, Dr Yahia Mosleh left Suez Canal University for another university and the responsibility of the project was picked up by the co-participant, Abdelrehim Ahmed Ali. Further support was needed, hence ANAFE was recommended due to its focus on agriculture. A full proposal was developed to strengthen sustainable agriculture in all Egyptian universities but this was reduced to Suez Canal University after workshops held in Sweden. Another workshop planned could not take place within the project period but presentation at forthcoming MESA conference was envisaged, and took place in 2009.

T3-T4: STRUCTURAL ELABORATION

A framework was developed for courses for sustainable agriculture during the regional workshop component for the Faculty of Agriculture.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

This case shows the importance of having two participants anchor one change project and the usefulness of networks in sustaining ESD projects.

4.4.1.2 Egyptian Change Project 2 of 7: Alexandria University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dina M. Sameh Taha, Zeyad El Sayad and Ingi Elcherif came from Alexandria University during their participation in the ITP in 2009. Dina M. Sameh Taha was from the Department of Architecture, Faculty of Engineering. Their change project was aimed at promoting sustainable development practices in higher education, particularly in the area of waste paper management.

T2-T3: SOCIAL-CULTURAL INTERACTION

An awareness raising campaign was held within the Faculty of Engineering, as a pilot campus for Alexandria University. The development of the campus of the Faculty of Engineering into a green campus by managing waste paper and paper reuse/recycling institution was promoted. Two workshops were held to mobilise substantial interest in waste paper management.

T3-T4: STRUCTURAL ELABORATION

The interest in sustainable development and paper waste management has increased. Introduction of courses with mainstreamed environmental engineering is evident in other departments in the Faculty of Engineering apart from the Department of Architecture.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

There is lack of sufficient information and update on the change project which was proposed since 2009. However, the strategy of commencing learning and change processes from participants in the Faculty of Engineering, as a pilot campus for other faculties in Alexandria University seemed a good one.

4.4.1.3 Egyptian Change Project 3 of 7: Alexandria University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Associate Prof Mona Sharaf Abdelgalil and Assistant Lecturer Amal Ali Khattab are both from the Home Economics Department, Faculty of Specific Education, Alexandria University. They participated in the ITP in 2012. Home Economics is a multidisciplinary domain of study, for preparing future teachers of Home Economics (for students aged 12 to 18 in middle and secondary schools) in Egypt. The Home Economics department had little Sustainable Development reflected in the programmes they offered. Home Economics focuses on the family as the primary unit of change in human society. Moreover, household management perceives the household as a core economic unit, whose decisions and behaviour have an impact on the economic, social and ecological environment. This change project focused on re-orientating and developing the curriculum of household management and family sciences, especially some courses for under- and postgraduate students to provide greater focus on sustainable development.

T2-T3: SOCIAL-CULTURAL INTERACTION

Course participants used the USAT to determine the level of ESD integrated in the department. They identified modules into which ESD could be infused and opportunities for introducing new modules. They met with the Dean, Vice Dean and staff members and decided to integrate the concept of sustainable development into the departmental research plan and courses. They conducted seminars and workshops and enjoyed the cooperation between the department of home economics and art education on how to present the ecosystem.

T3-T4: STRUCTURAL ELABORATION

Participants integrated the concept of sustainable development into both the scientific research plan of the department entitled 'Management of family resources and sustainable development in home economics' and reoriented two undergraduate and Masters course contents namely 'Family health and family economics and consumer guidance' and 'Family health and the environment' respectively. The institutional team produced a document reflecting key aspects of their change project, together with a long-term plan for implementation, evaluation and reporting. Two new courses were designed entitled 'Strategies for Sustainable living and family well-being (Sustainability Management)' and 'Green art', which were discussed at the department council and approved by the university. Other achievements include community service, development of best practice posters, and winning of the award for best posters at a symposium.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

A considerable amount has been achieved by these participants and the role of their position-practice system, especially the main participant who is an Associate Professor, and this may have been responsible for the recorded progress. Another factor is the interaction with others such as the Dean, Vice Dean and staff members, and their supportive roles.

4.4.1.4 Egyptian Change Project 4 of 7: Alexandria University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

The Department of Environmental Sciences, Faculty of Science, Alexandria University had two ITP participants in 2012, namely Prof Boshra Salem and teaching assistant, Ahmed Elsayed Rashed. There was the need to implement an ESD programme that was locally relevant and culturally appropriate and the need to improve basic education, and reorient existing curricula to address sustainable development in their Department. Their change project aimed at 'Linking learning with happiness: Towards ESD implementation for undergraduate and postgraduate students'.

T2-T3: SOCIAL-CULTURAL INTERACTION

Course participants had institutional support to hold awareness workshops in the Department and Faculty to explain the concept of ESD. They mapped the curriculum of the undergraduate studies and major compulsory courses with support from staff and students. They selected the courses for implementing ESD concepts and developed toolkits for selected courses. There was training for M.Sc. students teaching undergraduates on ESD and mapping, assessing the MSc core courses using the USAT tool as well as developing recommendations on where changes could be implemented to reorient to ESD in postgraduate courses.

T3-T4: STRUCTURAL ELABORATION

A draft ESD toolkit for undergraduate students was produced. Also, an integrated waste management, student involvement, biotechnology, biodiversity and environmental data analysis

was conducted. Participants wrote and published a paper on ‘ESD as a means to strengthen the sustainable management of marginal drylands in Egypt’.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants’ positions helped them to receive support from the department and the faculty and this allowed for a successful implementation of the change project. This change project was the only one co-implemented by a professor and a student, working with other postgraduates. The outcomes achieved show this to be a powerful combination of position-practice system.

4.4.1.5 Egyptian Change Project 5 of 7: Sohag University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Lobna Abdel-Mohsen Ebaid Nassr and Ahmed Aziz Abdel Moneim were from the Faculty of Science, Sohag University during their participation in the ITP in 2012. Sohag University is an independent university in Egypt. The Faculty of Science consists of six academic departments. The analysis drawn from the data generated by using USAT indicated that the change project could provide a greater focus on sustainable development and encourage innovation and engagement of the stakeholders in curriculum review. The objective of the change project was to integrate sustainable development into curricula at Sohag University; re-orientate and update the curriculum of some courses for undergraduate and postgraduate students (sustainable development topics related to the main content of each course); and add a new course in the new credit hours bylaw (under establishment) covering sustainable development issues.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants used the unit-based sustainability assessment tool to determine level of ESD in department. They interacted with staff members from different faculties in the university who expressed their willingness to participate in the project.

T3-T4: STRUCTURAL ELABORATION

Measurement tools to ascertain the changed attitudes and knowledge of students and staff attitudes engaged in sustainable development activities were developed. Tools included the focus group discussion, questionnaires, and documentation of the updated courses, exams, and student scores. About 25 modules based in four different faculties were re-orientated to include ESD content and principles.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The participants’ ability to interact with other faculty members helped them to successfully implement the proposed change project across four faculties. They also had good support from senior management in the university.

4.4.1.6 Egyptian Change Project 6 of 7: Mansoura University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Mostafa, Asmaa Mahoud, Shaza Mohamed and El Nabi Hammand are three 2012 ITP participants from the Quality Assurance and Performance Evaluation Centre at Mansoura University. Using the USAT, it was discovered that sustainable development is a neglected component in Mansoura University. Mansoura University is to have directors of quality assurance in each faculty and jointly all directors form a committee of advisors to lead the work of ensuring quality programmes at the university. The development of a strategic plan of Mansoura University to articulate the university's commitment to sustainable development was the aim of the change project.

T2-T3: SOCIAL-CULTURAL INTERACTION

Simultaneous policy review by the Quality Assurance team investigated the status of sustainability and identification of contradictions and tensions in policy. There was collaboration by stakeholders from across sectors towards the development of a strategic plan.

T3-T4: STRUCTURAL ELABORATION

There has been promotion of institution-wide discussion on ESD and development of an institution- wide 'Strategic Plan' for ESD.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The position and practice of the participant was an asset. Since his role was to ensure quality programmes at the university, it was relatively easy to suggest innovative ways through which the change project took place. In addition, they could easily influence other staff members across the institute, as quality in education is a topical issue, and is relevant to all faculties. Integrating sustainable development into the quality criteria appeared to have a high impact across the institution.

4.4.1.7 Egyptian Change Project 7 of 7: Helwan University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Shaza Gamal Md Ismail and Dr Aly Omar Abdallah from the Faculty of Tourism and Hotel Management, Helwan University participated in the ITP in 2012. Dr Shaza Gamal Md Ismail is the former Dean of the Faculty of Tourism and Hotel Management and former Vice President of Helwan University; while Dr Aly Omar Abdallah is a senior lecturer. The Faculty of Tourism and Hotel Management has three departments. USAT data analysis indicated that there was no real focus on sustainable development except for the tourism department, which focused on some courses on sustainable development in tourism. As for other departments in the faculty, there was no discussion of sustainability even in 'obvious' departments such as Hotel Management where one would expect discussions of sustainability. The title of the change project was 'Infusion of

sustainable development concepts in the curriculum of the tour guidance department at the Faculty of Tourism and Hotel Management’.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT was used for analysis of ESD integration in the Faculty and the applied ESD content and principles were developed. The Head of the Department of Hotel Management indicated serious intent in developing joint modules with the Tourism Department. The Faculty developed a strategy to continue revising the Faculty curricula.

T3-T4: STRUCTURAL ELABORATION

The proposal to infuse Sustainable Development into five existing modules in the Faculty of Tourism was accepted by management. Five basic courses in the guidance of the department were revised.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

As a former dean, Dr Shaza Gamal Md Ismail has a level of influence which positively contributed to the implementation of the change project. Working with a senior lecturer, allowed for engagement with other staff at a different level, making a good combination for influence and praxis development.

4.4.2 COUNTRY 2 IN NORTHERN AFRICA: MOROCCO



4.4.2.1 Moroccan Change Project 1 of 3: University Mohammed V Agdal

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Professor Lefdaoui Youssef and Professor Abderrazak Khohmimidi participated in the ITP 2013. The participants’ institution is called Ecole Supérieure de Technologie-Salé (High School of Technology-Salé), which is a component of Mohammed V University. The school began its activities in September 1993 and its students, once successful, are awarded a national Diplôme Universitaire de Technologie (Technological University Diploma). Their proposed change project was entitled ‘Teaching capacity building based on an interactive approach pedagogy, content and ICT’. The main goal of the project was to promote ESD, in the university’s system and to develop a network of expertise in Mohamed V University to facilitate the implementation of this process in all the institutions affiliated to the university in the forthcoming years.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants obtained a clear idea of how to implement ESD in their university and how to deal with the potential obstacles that could emerge during the process of implementing their change

project. The change project was initially focused on ‘training of technicians’ but was changed to ‘teaching capacity building based on an interactive approach to pedagogy, content and ICT’. This was necessary after dialogue, consultation, and contextual assessment of how doable the initial change project was. The USAT tool was used to audit the institution. Several workshops were organised to introduce ESD and create awareness among students and lecturers.

T3-T4: STRUCTURAL ELABORATION

A change project action plan and framework were developed and thematic workshops were organised based on the content of the analysis of the USAT results. A new course entitled ‘An introduction to sustainable development’ was proposed and accepted and is now a new teaching programme in the High School of Technology-Salé. The knowledge and skills of teachers necessary to teach ESD concepts were increased. Good and innovative ESD practices in study programmes for the benefit of student communities were implemented and shared. Finally, resource materials on ESD were developed and shared with colleague professors and students.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were participating in the first phase of the ITP. All 2013 participants were not part of the survey. They were, however, part of the self-administered questionnaire in phase 4 in South Africa and contributed a chapter to the ITP/MESA 2015 book. Their position-practice system as professors and lecturers in the University was significant for the implementation of their change project. Their change project which necessitated and was characterised by dialogue and consultation with colleagues seems to have also contributed to the extent of success. The multiple number of institutional workshops conducted (four), appears to have been responsible for the student/lecturer awareness, commitment and contribution to the change project.

4.4.2.2 Moroccan Change Project 2 of 3: Cadi Ayyad University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

2013 ITP participant Aboussalah Mohamed, was the former Dean, Faculty of Science and Technology at Cadi Ayyad University and later Director of Higher Education in the Ministry of Higher Education. His co-participant Youssef El Amraoui became the Dean, Faculty of Science and Technology in the same University. Their change project aimed to promote awareness and good practice of sustainable development in Morocco’s higher education system. Cadi Ayyad University is composed of thirteen faculties (or colleges).

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants worked together to develop ways of ensuring the success of their change project in Morocco. They conducted workshops involving members of staff of the Faculty of Science and Technology and other Faculties at Cadi Ayyad University. Other stakeholders in the Ministry of Higher Education were also involved in the planning, consultation and deliberation processes.

T3-T4: STRUCTURAL ELABORATION

A draft charter with the following strategies was developed: 1. Organising awareness campaign on waste sorting, renewable etc.; 2. Organising ESD workshops; and 3. Establishing action plans.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still part of the first phase of the ITP; all 2013 participants were not part of the survey. They were however part of the self-administered questionnaire in phase 4 in South Africa. The position of both participants as former and current Dean at the time of this write-up was key to the rate of progress made and the level of support received from colleagues and other stakeholders.

4.4.2.3 Moroccan Change Project 3 of 3: Cadi Ayyad University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Bouabdelli Fatima and Fatima Zahra Touzani were 2013 ITP participants from the Faculty of Letters, Cadi Ayyad University. Bouabdelli Fatima was a senior lecturer, Head of Department of English, and member of the faculty council who dealt with budget, pedagogical and research issues at the time of her participation. Fatima Zahra Touzani was a Professor in the Department of English who taught, coordinated modules as well as played an active role in the department's council and students' supervision. Their change project was to integrate Sustainable Development within the curriculum of the English Department. The major objective of their change project was to innovate curriculum and research orientation and contents within the Department of English by integrating sustainable development concepts within already existing courses and research structures.

T2-T3: SOCIAL-CULTURAL INTERACTION

Based on the USAT analysis and results, participants discovered that of the thirteen faculties (or colleges) in Cadi Ayyad University, various faculties were already involved in sustainability-oriented strategies, such as the organisation of workshops, study days, and conferences that aim to raise sustainability awareness. Yet, there were no sustainable development based courses in the Department of English before their change project. Participants described their change project clearly to colleagues and discussed possible ways of implementing the project and general ESD assessment in the faculty.

T3-T4: STRUCTURAL ELABORATION

In terms of the proposed curriculum change, the only change participants could bring to the curriculum of the English Department was partial and individual. They could not change courses and propose sustainable development ones as it is only the Ministry of Higher Education that can play this role. They however integrated ESD and SD concept and values into the already existing course they taught as lecturers. The actual implementation of the change project commenced in the first semester of 2014 with, for example, S1 module 4, a course titled *Introduction to*

Humanities (which is an introductory course for all the students of year one); *World Literature*; and *Argumentative Writing*. S1 module 10, a course on *Public Speaking* and SI module 12, a course titled *Introduction to Moroccan Culture*. They did not have the authority to oblige other professors in the English Department to do the same since professors have the freedom to choose their own texts. They therefore hoped that by introducing their own students to ESD, other professors might do the same in the future.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still participating in the first phase of the ITP. Although 2013 participants were not part of the survey, they were part of the self-administered questionnaire in phase 4 in South Africa. This case is an example of the dependence of curriculum innovation approval on the position-practice system of others besides the ITP participant who proposes the project without the power to fully implement it. Despite this structural constraint, the curriculum change that participants could make and did make depended on their individual autonomy and sphere of influence as senior lecturers.

4.4.3 COUNTRY 3 IN NORTHERN AFRICA: SUDAN



4.4.3.1 Sudanese Change Project: University of Juba

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Elnazir A.M.A. Ramadan and Abdelmoneim A. A. Abusin were from the Department of Geography, urban and regional planning unit, University of Juba during their participation in the ITP in 2008. Elnazir A.M.A. Ramadan was an Associate Professor who was involved in teaching, researching, and community service. The title of their change project was 'Development of a Policy Document for the University on ESD in a Post-Conflict Context'. The initial purpose of their change project was to mainstream sustainability in curriculum, research and community service. The University of Juba had to split into two as a result of the separation of South Sudan and a new initiative to restructure all university curricula was in place at the time.

T2-T3: SOCIAL-CULTURAL INTERACTION

The institution was audited using the USAT tool with very low results related to sustainability, which added impetus to the focus of the change project on policy. An institutional workshop was held and consultations were done. Decisions were made towards key interventions on developing a policy on mainstreaming sustainability into the university. Elnazir A.M.A. Ramadan ultimately left the University, but the change project and the Phase 5 workshop were carried out by Abdelmoneim A. A. Abusin.

T3-T4: STRUCTURAL ELABORATION

There has been an increased awareness about ESD in the university.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS.

The first participant responded to the 2013 survey. Despite his absence, the change project process continued; this was an advantage to having two participants handling one change project. The aftermath of the aforementioned institutional split has negatively affected the implementation of the change project; new priorities were said to have arisen and many negative factors have influenced the change process, including the political development in south Sudan.

4.5 SOUTHERN AFRICA

4.5.1 COUNTRY 1 IN SOUTHERN AFRICA: MALAWI



4.5.1.1 Malawian Change Project 1 of 1: Natural Resources College Of Malawi

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Feston Kaupa and Kingsley Mikwamba were 2009 ITP participants from Natural Resources College of Malawi. The Ministry of Agriculture and Food Security (MoAFS) has a 15-ha piece of land next to the Natural Resources College campus at Likuni about 17 km west of Lilongwe city. The MoAFS' unused virgin land can be put to good use for demonstrating the use of already available technology in order to improve farm productivity. This initiative will complement existing strategies used by the MoAFS to generate and disseminate technologies. The objective of this change project was to establish an Integrated Agriculture Learning Centre on a 15-ha piece of land next to the Natural Resources College campus. Their change project was to establish an 'Integrated Agriculture Learning Centre'.

T2-T3: SOCIAL-CULTURAL INTERACTION

The project was supported by two visits by the ESD in HE ITP regional co-ordinator. There was advanced negotiation with potential funders, national government and international donors for support because of the scale of the project.

T3-T4: STRUCTURAL ELABORATION

A very comprehensive concept note and project proposal was developed in collaboration with the Ministry of Agriculture and Food Security.

COMMENT ON THE CHANGE PROJECT POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey hence the current status of the project is unknown. However the successful establishment of an 'Integrated Agriculture Learning Centre' would require the support of various stakeholders and institutions. The project took off by negotiating and soliciting support from potential funders, national government and international agencies and organisations, but eventual outcomes are unknown.

4.5.2 COUNTRY 2 IN SOUTHERN AFRICAN: MOZAMBIQUE



4.5.2.1 Mozambican Change Project 1 of 6: Ministry of Education and Culture, Directorate of Higher Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Garciano Francisco Cumaio and Emelina Ana Khossa were 2009 ITP participants from the Ministry of Education and Culture, Directorate of Higher Education. Their change project was to develop a strategic plan for the development and adoption of ESD policy for Mozambique. In 1995, the government of Mozambique approved the National Programme for the Environmental Management, which outlined the bases for action, the objectives, the activities and means of implementation of Agenda 21 as well as the National Environmental Policy in Mozambique. This change project is aimed at working within government structures to raise the profile of ESD generally in Mozambique, particularly in HE.

T2-T3: SOCIAL-CULTURAL INTERACTION

There was further correspondence and support from the ITP Regional Coordinator. The collaboration and support of the previous Government of Mozambique and the DHE was secured, as participants worked there.

T3-T4: STRUCTURAL ELABORATION

The election in Mozambique during the 2009 project implementation process substantially slowed progress on this initiative. It was not clear whether the new government would take up this initiative within the approved National Programme for Environmental Management.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The implementation of the proposed change project was influenced by political factors and possibly governmental bureaucracies. This may be due to the fact that the initiators are in the government and any changes in government on a macro level usher in new procedural intricacies capable of impinging developmental initiatives. There is the influence of the ITP participants on

effective ESD mainstreaming to consider as well as the influence of the position-practice system of others in their institutions and countries.

4.5.2.2 Mozambican Change Project 2 of 6: University of Eduardo Mondlane

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Aguiar Baquete and Amado Albino were 2012 participants from the University of Eduardo Mondlane (UEM). For Mozambique, international cooperation is essential for complementing the national efforts directed towards the implementation of development programmes aimed at the eradication of extreme poverty and the promotion of sustainable development. The teaching and learning in most Mozambican educational institutions are more theoretical, and do not develop action competence. Most of the time, the lack of competence in key aspects of teaching is also linked to weaknesses in conceptual understanding. The University of Eduardo Mondlane is the oldest and largest university in Mozambique. It has a well-established education faculty that offers support and leadership to other education faculties in the country. The country has since independence increased the numbers of HE institutions from 1 to 44. Environmental Education and ESD are new areas of study in the university, but there is agreement that they reflect national priorities. The participants' change project was to develop interactive instructional teaching and learning approaches and materials on ESD for the BEd Environmental Education Programme.

T2-T3: SOCIAL-CULTURAL INTERACTION

After deliberations, the change project was re-oriented more towards curriculum development in the Bachelors of Environmental Education Degree for stronger impact. A number of internal consultations led to the selection of four of their 22 modules for piloting change methods. Workshops were held in the Education Faculty to strengthen a common conceptual understanding of Sustainable Development related concepts.

T3-T4: STRUCTURAL ELABORATION

There was substantive improvement of the four selected modules namely: Introduction of Environmental Education; Psycho-pedagogy; Climate Change; and Development of Didactic materials. Student activities have also contributed to campus greening and demonstration programmes for ESD in schools.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The nature of the Education Faculty and its openness to novel approaches to teaching and learning played a key role in the implementation of the change project. The Education Faculty cannot exist without the agents in the structure who play the role of transforming or reproducing the status quo. The position-practice system of these agents in the faculty can thus be said to have influenced ESD mainstreaming positively. Participants had good support from the Dean and students responded well to the proposed innovations, but not all lecturers were interested.

4.5.2.3 Mozambican Change Project 3 of 6: Catholic University of Mozambique

T1: STRUCTURAL AND AGENTIAL CONDITIONING

António dos Anjos Luis and Ali Ahamed Puna Atumane were from the Faculty of Agriculture, Catholic University of Mozambique during their participation in the ITP in 2012. The Catholic University of Mozambique is a private university owned by the Bishop's Council of Mozambique. It has 11 campuses in eight cities and its headquarters are located in the city of Beira. It has eight faculties, one of which is the Faculty of Agriculture where the ITP change project was implemented. The Faculty of Agriculture is located in Cuamba and has four academic programmes namely: Bachelor in Agriculture Sciences, Bachelor in Education Management and Administration, Bachelor in Public Administration, and Master in Education Management and Administration. The title of the change project was 'Integrating ESD in a BSc Agriculture Science and ensuring Green Campus at Catholic University of Mozambique'. The Change Project developed out of the concern that the current curricula and courses in the Faculty of Agriculture needed to be further reviewed and reoriented towards sustainable development. Additionally, there was need to green the university by transforming Cuamba campus where the Faculty of Agriculture was located, into a green and sustainable campus.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT was used to audit the institution. Several consultative meetings were held to plan the change project implementation. There was collaboration between Eduardo Mondlane University and Catholic University of Mozambique for the curriculum development project. The local government and other stakeholders such as city municipality and a farming company in Cuamba were involved in the implementation of the greening project.

T3-T4: STRUCTURAL ELABORATION

Awareness was created in sustainability concerns for the faculty board of directors, lecturers, and students, guided by the USAT audit findings. A framework was developed to guide integration of sustainability thinking across the different departments of the BSc in Agriculture Science. Implementation of the green campus project was facilitated by assigning its components to student associations in order to encourage students' involvement. A general infrastructural refurbishment was done on campus.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The strategic involvement of multi-stakeholders with different positions and practices could afford the successful implementation of the change project, including collaboration between Eduardo Mondlane University and Catholic University of Mozambique, local government, the city municipality and a farming company.

4.5.2.4 Mozambican Change Project 4 of 6: Catholic University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Niquisse Moises Sérgio was the coordinator of the department of regional planning, in the Faculty of Economics and Management, Catholic University. His co-participant, Albertina Ribaug, was the Pedagogical Director and Deputy Dean of Faculty of Economics and management and a member of the academic council. Their 2013 change project was aimed at mainstreaming sustainability concepts in the Master of Science Programme in regional and development planning. This was necessary because there was a lack of Sustainable Development contents in many curricula in the Faculty of Economics and Management. Only some curricula in a few disciplines reflected environmental issues.

T2-T3: SOCIAL-CULTURAL INTERACTION

Deliberation and consultation were done and there was support from the Dean, administrators, research department and colleagues; and the contents of a new module on Sustainable Resource Management in Master Programme in Regional Development Planning was outlined.

T3-T4: STRUCTURAL ELABORATION

There was faculty awareness about environmental problems and the importance of ESD; an introduction of Sustainable Development related concepts in three already existing courses was offered. An annual conference named ‘Mozambique, towards sustainable development’ was organised. A new Bachelor Degree in Climate Change and Sustainability was in progress.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still participating in the first phase of the ITP but they responded to self-administered questionnaire in phase 4 in South Africa and Mr Sérgio participated in the Alumni Seminar in 2014. Enabling factors responsible for the extent of the success of this ESD project could be attributed to Mr Sérgio’s role as the coordinator of the department, the support and role of Mrs Ribaug, his co-participant, Pedagogical Director and Deputy Dean of the Faculty, as well as the existence of a sustainable development committee and the role of the position-practice system of committee members.

4.5.2.5 Mozambican Change Project 5 of 6: Lúrio University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Ismael Abdulcarimo and Fatima Jamal Ismael were 2013 ITP participants from Lúrio University. Ismael Abdulcarimo was based in the Vice-Chancellors’ Office where he held the position of Pedagogical Director and he was involved in teaching, learning, curriculum development, training and resource development. Fatima Jamal Ismael was formerly a lecturer but now Deputy Dean. Their change project entitled ‘Strengthening Sustainable Development perspectives in

‘One Student – One Family’ Programme’ was aimed at promoting awareness of sustainable development among young students and amongst the community.

T2-T3: SOCIAL-CULTURAL INTERACTION

The areas of intervention for awareness change were clearly identified, including agricultural practices, water and forestry resources. Several types of intervention or activities within the student community were identified. These included an open day workshop with the community on campus, radio programmes, sustainable development contents in four selected subjects, theatre exhibitions, working and living with farming families and a plantation programme called ‘One community member, one tree’. Students lived with selected families for a 2-4 week period, sharing knowledge of sustainable development and also learning from farmers.

T3-T4: STRUCTURAL ELABORATION

A detailed agenda for preparation, process and evaluation, including a monitoring and evaluation workshop in Unango, phase 5 of the ITP were suggested. A country ESD/sustainable development seminar was held in Unango, which was attended by students, lecturers, and community members. The one-student, one family programme was evaluated with recommendations for improvement.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they still participating in the first phase of the ITP but they responded to the self-administered questionnaire in phase 4 in South Africa. The position of the Pedagogical Director was significant for the success of this project; the participant had the Vice Chancellor’s support and was also responsible for mentoring young lecturers. Other academics were also involved and the Director had the capacity to negotiate with them and set up programmes in communities.

4.5.2.6 Mozambican Change Project 6 of 6: Ministry of Education, Directorate of Higher Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Omar Farizana and Sansao Jaime Xerinda were 2013 ITP participants from the Ministry of Education, Directorate of Higher Education. Omar Farizana was a Manager in the Management Department, Institutional Fund Development Unit, in charge of approving and financing projects, as well as monitoring and evaluating the implementation of those projects. Sansao Jaime Xerinda was in the Academic Department, in charge of the analysis of ordering processes/proposals for accreditation of new HE institutions, programmes and courses. Their change project was entitled ‘Curriculum and Research Development Fund for ESD in Mozambique’.

T2-T3: SOCIAL-CULTURAL INTERACTION

There were already four funding windows within the Institutional Development Fund (IDF) in the Ministry of Education, Directorate of HE. The participants decided to open a new fifth window

called ‘Curriculum Development and Research on ESD financial assistance’. Through this, they planned to initiate research and curriculum development in the following areas: water, waste, energy, climate change, agriculture, and forestry.

T3-T4: STRUCTURAL ELABORATION

To operationalise the above, participants developed a draft strategy proposal, which was presented to directors in the Ministry of Higher Education and USAID staff who control the funds.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they still participating in the first phase of the ITP but they responded to self-administered questionnaire in phase 4 in South Africa. Ministry of Higher Education officials have wider influence, but are still subject to political and financial decision-making, including those made by development and aid organisations (e.g. UNAID).

4.5.3 COUNTRY IN SOUTHERN AFRICA: NAMIBIA



4.5.3.1 Namibian Change Project: University of Namibia

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Cornelia Shimwooshili Shaimemanya and Dr Alex T. Kanyimba were in the Faculty of Education, University of Namibia during their participation in the ITP in 2009. Their initial change project was to develop the University of Namibia Education for Sustainable Development Policy.

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT tool was used to conduct an audit. There was ample financial and material support from the Pro-Vice Chancellor for Academic Affairs to organise workshops with the participation of the Deans of the Faculty of Humanities and Social Sciences, Ministers and other colleagues. It was decided that the participants would pursue two different change projects after due deliberation and collaboration with stakeholders.

T3-T4: STRUCTURAL ELABORATION

A proposal for the MEd in Environment and Sustainability Education and a proposal for ESD policy at University of Namibia were developed.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 survey but one of the participants was interviewed in 2012. Participants' dual change project implementation process received support from the Pro-Vice Chancellor for Academic Affairs. The Deans of the Faculty of Humanities and Social Sciences, Ministers and others colleagues participated in the workshops that were sponsored by the Pro-Vice Chancellor. The contribution and practices of individuals occupying these various positions have shaped the status of ESD in the University. Dr Kanyimba appears to have sustained influence in ESD in Namibia. He recently organised the EEASA Conference and contributed to ESD policy in Namibia.

4.5.4 COUNTRY 4 IN SOUTHERN AFRICA: SOUTH AFRICA



4.5.4.1 South African Change Project 1 of 3: University of Cape Town

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Alexander Ross Paterson participated in the ITP in 2008 from the Faculty of Law, University of Cape Town. His change project was entitled the 'Development and expansion of Environmental Law Offerings in the Law Faculty.'

T2-T3: SOCIAL-CULTURAL INTERACTION

The USAT tool was used to identify various environmental activities on campus. After collaboration and reflection, it was decided that he would focus on his own departmental offerings (instead of developing a multi-disciplinary programme across faculties), thereby improving the breadth and opportunities for the study of environmental law in the UCT Faculty of Law. An environmental awareness programme for students was developed, stimulating interest and debate, and various meetings with senior management were organised.

T3-T4: STRUCTURAL ELABORATION

Proposals were produced, which were approved by university committees. Two new staff members, both with tenured positions, were approved, and will ensure the longer term sustainability of the change project initiative. The reform of the LLB curriculum (at both undergraduate and postgraduate levels) and various new environmental law modules were prepared, with teaching materials, leading to an increase in Environmental Law offerings at UCT. A new environmental law research forum was established. Based on his successes, the participant was the recipient of the MESA award in 2009.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Initiating ESD learning and change processes from the level of sphere of influence of individuals to the department, and then to one faculty before other faculties as an institutional wide project, appeared to be a successful strategy for those mainstreaming ESD from a lecturing position like Paterson. The involvement of others in the project was also critical. The involvement of more than one person in the institution (apart from ITP participants) with the responsibility of sustaining the project was effective. Being able to negotiate for additional resources – in this case, two new posts – also seemed to be important for effective ESD mainstreaming.

4.5.4.2 South African Change Project 2 of 3: University of Venda

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Ndanganeni Florence Litshani and Humbulani Nancy Mutshaeni were ITP participants in 2009 from the School of Education, University of Venda. Their change project was entitled 'Integrating Education for Sustainable Development in the Curriculum'. The focus of the change project was to reorient the Education final year students' curriculum by integrating education for sustainable development.

T2-T3: SOCIAL-CULTURAL INTERACTION

The implementation of the project provided an important learning opportunity for the participants and their colleagues. There was also a clarification of what was required by a very turbulent HE sector in South Africa as far as environmental issues were concerned.

T3-T4: STRUCTURAL ELABORATION

By keeping changes to the syllabus to below 30%, the participants were able to implement their project immediately. Participants worked with colleagues to infuse ESD into final year courses for the beginning of year 2010.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Implementation of participants' ESD change project 'immediately' means there was little or no dependence on others in their institution for formal approval before implementation. The 30% limitation for syllabus changes also shows the limit of the power of these lecturers in curriculum modification.

4.5.4.3 South African Change Project 3 of 3: Nelson Mandela Metropolitan University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Bianca Currie was from the School of Natural Resource Management, Nature Conservation Unit, Nelson Mandela Metropolitan University (NMMU) during her participation in the ITP. Her two other colleagues in the change project implementation, Anerie Vlok who was a student and Christo Fabricius who was the head of campus, were also from NMMU. Their project was an

NMMU student mobilisation project. Before the commencement of this change project, NMMU already had a Green Campus Initiative, which was predominantly driven by the management and academic staff. However, NMMU was experiencing high levels of student apathy in terms of sustainability practices on campus and this was the impetus for the change project. The purpose of the change project was therefore to establish a student driven society for sustainability practice on the NMMU campus, to formalise the management of the society, to embed the society in the institution in order to access funds and to gain management support.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants adapted the student involvement tool in the USAT as the foundation of the project with 14.3% participation and ongoing evaluation of improvement. A workshop entitled 'Agent of Change' in leadership capacity development was organised and attended by the Head of the Campus and international visitors. The level of student participation led to various initiatives and actions including: formal registration and revival of the Green Campus Forum through formal registration as a student organisation; access to funding; establishment of communication channels using social networking tools; and development of a newsletter. A committee succession plan was developed to address project continuity issues.

T3-T4: STRUCTURAL ELABORATION

The Green Campus Forum was successfully established as a new structure in NMMU and recorded continuous growth. The Green Campus Forum raised funds to assist needy individuals on campus and adopted various community projects to alleviate poverty in the local area. The forum also established links to other networks. It influenced management practices and policies e.g. solar lights across the campus and a solar geyser policy in all student residences. There was significant reduction in the level of student apathy at NMMU.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The involvement of three passionate agents including a student, lecturer and the Head of Campus (operating at different levels) in this project played a role in its success. The already existing Green Campus Initiative at NMMU, although it was predominantly driven by the management and academic staff, provided a strong basis, platform and anchor for this project. The shift from staff-led initiative to the establishment of a student-driven society for sustainability practice on the NMMU campus is evidence of acknowledging the position-practice system of students in institutional transformation towards effective ESD mainstreaming in higher education. After all, the capacity building of educators is ineffective and futile without capacity building of students.

4.5.5 COUNTRY 5 IN SOUTHERN AFRICA: TANZANIA



4.5.5.1 Tanzanian Change Project 1 of 5: University of Zanzibar

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Mohammed Abdulrahman Jiddawy and Fatma Rashid Khalfan participated in the ITP in 2008 from the University of Zanzibar. Fatma Rashid Khalfan was a part-time lecturer who also did research on development projects. She was involved in student counselling, the establishment of a student Bureau in Dar es Salaam and Bagamoyo, and teaching and training of students. Fatma Rashid Khalfan also participated in workshops held by UNICEF and Save the Children in Zanzibar on the drafting of the bill for the Zanzibar Children's Act. The University of Zanzibar was among the first private higher learning institution to be established in Zanzibar. It was also the first institution to establish the Faculty of Law and Shariah in Tanzania. However, in order for the institution to develop and produce students with good quality education, the university curriculum had to incorporate and accommodate changes. The aims and objectives of the change project were to develop curriculum and integrate subjects that would ensure that students had skills to employ themselves (not become job seekers) and to build their internal capacity. More so, it was important to introduce new subjects central to community development.

T2-T3: SOCIAL-CULTURAL INTERACTION

A workshop was held to develop a new version of the change project revised from mainstreaming ESD across the university to implementing it within current processes and resources. There was a meeting held between the ITP facilitator, the Deans of the different faculties and the Vice Rector for Academic Planning. Fatma Rashid Khalfan left University of Zanzibar but Mohammed Abdulrahman Jiddawy continued the project. Other University workshops were conducted to teach students how to employ themselves through agriculture and particularly sustainable agriculture.

T3-T4: STRUCTURAL ELABORATION

A student participation project (camping initiative) was also launched to strengthen student involvement. A diploma course on Children Rights Protection with an ESD component was incorporated under development subjects which were taught in all Faculties. There was wider engagement of more students and community members in the University of Zanzibar environmental, HIV/AIDS and marketing clubs.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Fatma Rashid Khalfan responded to the 2013 survey and even before she left the institution, a significant amount had been achieved. The involvement of stakeholders within the institution such as Deans from various faculties and administration shaped the progress recorded in the

change project. This case is another example of strengthening student involvement in ESD mainstreaming activities on campus. The DVC (Academic) of the University of Zanzibar later attended the ITP in 2013 and implemented change project 5 of 5 below.

4.5.5.2 Tanzanian Change Project 2 of 5: Dar Es Salaam University College of Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Mashaza Leatitia Gabriel and Innocent Buberwa Rugambuka from the Curriculum and Teaching Unit, Dar Es Salaam University College of Education (DUCE) participated in the ITP in 2013. They were both assistant lecturers involved in teaching, research, consultancy activities and student supervision. Their change project was aimed at integrating ESD aspects into a B.E. Arts Programme at Dar Es Salaam University College of Education.

T2-T3: SOCIAL-CULTURAL INTERACTION

An institutional workshop was organised with all the heads of departments and course coordinators. There was deliberation on changing the change project from 'Development Education Course' to 'Integrating ESD aspects into B.E. Arts Programme' and consultation with their Dean.

T3-T4: STRUCTURAL ELABORATION

The refinement of the change project from 'Development Education Course' to 'Integrating ESD aspects into B.E. Arts Programme' was accepted and approved.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they still participating in the first phase of the ITP but they responded to the self-administered questionnaire in phase 4 in South Africa. The reported consultation with the Deans and others and the decision to change the project from 'Development Education Course' to 'Integrating ESD aspects into B.E. Arts Programme' (an already existing programme in the faculty) was structurally effective. This limited the project to the sphere of influence of the faculty and reduced dependence on the senate for approval before commencement of the project.

4.5.5.3 Tanzanian Change Project 3 of 5: Nelson Mandela African Institute of Science and Technology (NM-AIST)

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Pasape Liliane, Dean and lecturer, and Neema Atupakiseye Heri Mwakabonga, teaching assistant, participated in the ITP in 2013 from the Department of Business Studies and Humanities, Nelson Mandela African Institute of Science and Technology (NM-AIST). NM-AIST was a newly established postgraduate university. This department was in a unique position in offering the following three courses as compulsory to all students registered at the university: (1) Enterprise Development and Management, (2) Philosophy Law and Ethnics, and (3) Communication Skills

and Research Methodology. Therefore any innovation in this department will have the potential to impact across the campus.

T2-T3: SOCIAL-CULTURAL INTERACTION

Pasape Liliane was absent for the regional component of the ITP in South Africa. In her absence, Neema Atupakiseye Heri Mwakabonga was able to work out how to better mainstream sustainability in two already existing curricula in courses such as (1) Sustainable Entrepreneurship, and (2) Ethics and Social Imperatives.

T3-T4: STRUCTURAL ELABORATION

Sustainability practices in other business schools were explored. Good examples of courses in other institutions were benchmarked. The preliminary course outline, learning objectives and course contents were developed.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still participating in the first phase of the ITP but they responded to the self-administered questionnaire in phase 4 in South Africa. The role of the co-participant in this project when the main participant was absent was essential for continuity. The decision to mainstream sustainability in two already existing curricula was a practical approach that can be expanded upon with wider engagement over time.

4.5.5.4 Tanzanian Change Project 4 of 5: Mbeya University of Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Kayuki Gwido Eliam was the Registrar and a lecturer at the Science and Business Management Department, Mbeya University of Science and Technology (MUST) while his co-participant, Raphael Iddphonze Mkini, was an assistant lecturer in the Department of Mechanical Engineering during their participation in the ITP in 2013. MUST became a registered public institution in 2012 and is situated in the southern region of Tanzania. Despite the relevantly new public registration, a range of diploma and degree programmes housed under seven departments (Architecture, Computer Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering and Science and Business Management) have been on offer as far back as 1990. Their change project was on the integration of sustainable development into science and technology curricula at Mbeya University of Science and Technology.

T2-T3: SOCIAL-CULTURAL INTERACTION

Both participants participated in the regional component of the ITP in South Africa. After refinement of their change project and on arrival in their institution, the participants organised meetings and workshops to deliberate on the change project and pattern of implementation. Colleagues and administration were involved and supported the implementation process.

T3-T4: STRUCTURAL ELABORATION

Strategies for implementation of their project have been developed. Research areas and sources of funding for the project from their University budget for projects have been identified.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still participating in the first phase of the ITP but they responded to the self-administered questionnaire in phase 4 in South Africa. The position of Kayuki as Registrar and the Raphael as lecturer influenced the implementation of this project and the level of support and buy-in received from others in their institution.

4.5.5.5 Tanzanian Change Project 5 of 5: State University of Zanzibar

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Mwevura Haji was the DVC (Academic) and Said Khamis Juma was an assistant lecturer at the School of Education, State University of Zanzibar (SUZA). As the DVC, Mwevura Haji taught environmentally related courses, and was responsible for overseeing all academic research and community engagement programmes to ensure quality and relevance. Said Khamis Juma was involved in teaching and research. Their change project was entitled 'Project to boost employability of State University of Zanzibar graduates' The project was aimed at creating new business opportunities that would be economically viable without compromising the environment.

T2-T3: SOCIAL-CULTURAL INTERACTION

Both participants were at the regional component of the ITP in South Africa. In order to boost the proposed employability of State University of Zanzibar graduates, participants sought to modify programmes and courses in the university. They also deliberated on a tool to be used to evaluate the project during and after implementation.

T3-T4: STRUCTURAL ELABORATION

A proposed framework was developed and centred on Three Ps: 1. PEOPLE - the protection of human rights, guarding against child labour, unethical labour practices as well as responsible leadership; 2. PLANET - protecting the ecosystem, the impact of the company on natural resources and the environment; and 3. PROFIT - financial gain and its distribution.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey because they were still participating in the first phase of the ITP but they responded to the self-administered questionnaire in phase 4 in South Africa. The position and practice of Mwevura Haji who was the DVC (Academic) and co-participant Said Khamis Juma who was an assistant lecturer were key to achievement of their

project. Mwevura Haji as DVC operated at the level of both lecturer and administration while Said Khamis Juma operated at the level of lecturer.

4.6 WEST AFRICA

4.6.1 COUNTRY 1 IN WEST AFRICA: GAMBIA



4.6.1.1 Gambian Change Project: Department of State for Higher Education, Research, Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Bintou Dibba and Musa I. Touray participated in the ITP in 2008. They were from the Department of State for HE, Research, Science and Technology (DOSHERT) in the Ministry of HE, Research, Science and Technology (MoHERST) which was established in 2007. There was a need to develop the human resource capacity of the HE Directorate of the DOSHERST to enable better management and co-ordination of tertiary institutions within the HE sector in The Gambia. There was a need also to improve the knowledge, skills and competences of the staff of the HE Directorate of the DOSHERST in sustainable management, quality assurance; monitoring and evaluation. Their change project focused on 'capacity building in sustainable management, quality assurance, monitoring and evaluation for staff of the HE Directorate of the Department of State for HE, Research, Science and Technology (DOSHERST).

T2-T3: SOCIAL-CULTURAL INTERACTION

Musa Touray made a presentation on 'The Gambian Response to the Challenges of ESD'. He also participated in the regional MESA programme in West Africa.

T3-T4: STRUCTURAL ELABORATION

A curriculum was developed; it consisted of six modules including: 1. Understanding Sustainable Development; 2. Leadership and Management with regard to ESD in HE; 4. Management Ethics for ESD; 5. Systems Approach and Management; 6. Quality Assurance; and 7. Evaluation.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Bintou Dibba and Musa I. Touray did not respond to the 2013 survey. The participants' position and practice as officials in the Department of State for HE, Research Science and Technology contributed to the production of the six-module curriculum that was developed successfully.

4.6.2 COUNTRY 2 IN WEST AFRICA: LIBERIA



4.6.2.1 Liberian Change Project 1 of 2: Ministry of Education, National Commission on Higher Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Michael P. Slawon and Dr Saaim W. Naame participated in the ITP in 2008 from the Ministry of Education, National Commission on Higher Education. Dr Michael P. Slawon was the Director-General, National Commission on Higher Education (NCHE) and the Chairman of NESDIWECA (Network for Environmental Education and Sustainable Development Innovations in West and Central Africa). Dr Saaim W. Naame was the Secretary General of the Association of Liberian Universities. Liberia was emerging from 14 years of devastating civil war which left massive destruction of the infrastructure and trained people. In post-war Liberia, there was an urgent need for manpower development that would bring sustainable development to Liberia in the recovery process. This can only be achieved if the universities and colleges who are providing adequate trained manpower, provide services that will bring sustained development in Liberia. This project aimed at initiating a process of mainstreaming environment and sustainability concerns into research and community engagement in Liberia. Their change project focused on mainstreaming ESD through Service Learning and National Youth Service Programmes in Liberia.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants teamed up in Nigeria during the second phase of the training to formulate the change project. They made a presentation entitled ‘The Liberian Roadmap for Integrating ESD into HE’. Stakeholders proposed to work with all baccalaureate degree granting institutions in Liberia to incorporate service learning in their programmes. This was to be done by assigning students to various communities to work and mobilise the resources and human knowledge in promoting ESD in Liberia during their junior and senior years.

T3-T4: STRUCTURAL ELABORATION

There was creation of awareness among students, HE and rural dwellers on sustainable living and development. There was ongoing interaction between the participants and the West Africa MESA network.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The participants were occupying key positions which allowed for the successful implementation of the change project for ongoing regional interaction with MESA partners in West Africa . Involvement and collaboration with various stakeholders such as students, staff, colleagues and

community members provided a strong and sustainable foundation for the change project and other ESD related activities.

4.6.2.2 Liberian Change Project 2 of 2: Ministry Of Education and Stella Maris Polytechnic

T1: STRUCTURAL AND AGENTIAL CONDITIONING

David S. Dahn and Patrick Jagba Nah participated in the ITP in 2009. David S. Dahn was from the Ministry of Education, National Commission on Higher Education while Patrick Jagba Nah was from Stella Maris Polytechnic. Their change project focused on the implementation of mainstreaming ESD through the Learning and National Youth Volunteer Service Programme in Liberia, an extension and continuation of 2008 course participants' change project. The project sought to build understanding of ESD, to mainstream ESD in national policy and to operationalise ESD through the service learning programme in Liberia.

T2-T3: SOCIAL-CULTURAL INTERACTION

The project received support from the Director-General, National Commission on Higher Education (previous ITP participant) ensuring that this project had substantial status in the national government. The project relied on international funding and was receiving support through United Nations structures.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants could not take part in the 2013 survey. But the success of the implementation of the project largely depended on the role played by the Director-General, National Commission on Higher Education, a 2008 ITP alumnus, and the positions and roles held by 2009 participants which were policy and system implementation related. This case example shows how the position-practice system can be related across two different ITP cohorts, expanding potential impact.

4.6.3 COUNTRY 3 IN WEST AFRICA: NIGERIA



4.6.3.1 Nigerian Change Project 1 of 7: National Universities Commission

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Olamide Esther Adesina and Muhammed Asuku Audu participated in the ITP in 2008 from the National Universities Commission (NUC). Muhammed Asuku Audu was the Assistant Chief Academic Standards Officer. The title of the project was mainstreaming Environment and Sustainability into Nigerian Universities Curriculum and involved 93 universities in Nigeria. This project was aimed at sensitising the Nigerian university system community on Environment and

Sustainability issues through formal education, thus preparing them for effective advocacy and appropriate decision-making.

T2-T3: SOCIAL-CULTURAL INTERACTION

A stakeholders' forum on ESD was scheduled for 18 November 2008. All 93 universities as well as UNESCO and Sida were invited to the workshop. Discussions revolved around the need for ESD and mainstreaming ESD in Nigerian universities. The forum also focused on seeking further support from government agencies, development partners and international organisations for sustainable development in Nigerian universities.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 survey. The available progress on the change project was based only on the 2008 annual report. Nevertheless the high level of collaboration with several university officials and bodies such as UNESCO and Sida seems to have been a productive strategy. The participants highlighted the need for support from government agencies, development partners and international organisations for sustainable development in Nigerian universities thus demonstrating the importance of engaging with personnel in top and key positions who have a stake in shaping the Nigerian universities. The NUC later made use of free materials on ESD mainstreaming to promote the adoption of a common course on ESD in Nigerian universities, which was adopted by some.

4.6.3.2 Nigerian Change Project 2 of 7: Bayero University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Suraj Salihu Duwa, a senior lecturer and Dr Hamisu Mai-Unguwa from the Department of Physics, Bayero University, Kano, participated in the ITP in 2008. The title of their change project was the 'development of a curriculum and implementation plan for a general ESD course for all students'.

This project sought to influence the Strategic Plan of Bayero University Kano, by incorporating ESD into the curriculum of every department in the University.

T2-T3: SOCIAL-CULTURAL INTERACTION

Deliberations made on the design of the curriculum included: 1. introducing a new General Studies (GS) course on ESD; 2. adding ESD topics into existing GS courses; 3. integrating ESD across all departments; 4. integrating ESD in some courses; and 5. a combination of 1-4.

T3-T4: STRUCTURAL ELABORATION

There was some evidence of curriculum innovation, but not enough feedback or evidence of longer term curriculum change.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 survey but from the evidence presented above, they were able to initiate curriculum innovation dialogue at cross-faculty level from within their faculty.

4.6.3.3 Nigerian Change Project 3 of 7: Obafemi Awolowo University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Chris Ukachukwu Manus and Dr William O. Idowu participated in the ITP from Obafemi Awolowo University in 2008. Dr William O. Idowu is a lecturer in the Department of Philosophy, Faculty of Humanities. Obafemi Awolowo University (OAU) is one of the African universities involved in the UNEP MESA partnership. OAU is owned and funded by the Nigerian federal government and located in the historical ancient city of Ile-Ife, Osun State. The title of their change project was 'Mainstreaming ESD in the Humanities Curriculum'. This project aimed to mainstream ESD into the curriculum of four programmes in the Faculty of Humanities, namely Religious Studies, Philosophy, History and Sociology at Obafemi Awolowo University, Nigeria.

T2-T3: SOCIAL-CULTURAL INTERACTION

Issues addressed during the change project implementation included the values inherent in interdisciplinary courses or programmes; greening the curriculum; exposing all humanities students to ESD; community engagement and providing the necessary resources. After the ITP, the participating staff of Obafemi Awolowo University formed the Obafemi Awolowo University MESA Group. The OAU MESA group became a platform for the MESA project in the university and beyond.

T3-T4: STRUCTURAL ELABORATION

Both participants, being part of the OAU MESA, seem to have collaborated with other ITP alumni to develop some environment-related courses taught at undergraduate and postgraduate levels beyond the Faculty of Humanities to others including Faculties of Science, Law, Technology, Environmental Design and Management and the Institute of Ecology and Environmental Studies. These courses include Environmental Law; Energy, Oil and Gas Law; Man and Nature; Environmental Impact Assessment; Human Settlement and Development; and Climate Change.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 survey. The existence of the structure and network of OAU MESA partnership in their institution, involving all former ITP participants and stakeholders, supported implementation of their change project. The position and practice of participants as then lecturers (but now most likely senior lecturers) occupying high positions at OAU could be another key influencing factor.

4.6.3.4 Nigerian Change Project 4 of 7: Rivers State University of Science and Technology

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Iyenemi Ibimina Kakulu was the Head of Department and Dumo O. Mac-Barango, the former Head of Department from Department of Quantity Surveying, Faculty of Environmental Sciences, Rivers State University of Science and Technology (RSUST). Their 2008 change project was to create a 'Lifelong Learning Centre for Sustainable Development (CSD)'.

T2-T3: SOCIAL-CULTURAL INTERACTION

The Vice Chancellor attended the first MESA Conference held in Nairobi in November 2008. A one-day MESA workshop was organised with full sponsorship of all lecturers and leaders of all higher Educational Institutions in Rivers State in 2009. The Rivers State University of Science and Technology (RSUST) sponsored the workshop titled 'Mainstreaming Climate Change and Sustainable Development in HE in Rivers State, 30th April, 2009 and with support from UNEP EETU, Nairobi. This led to a commitment to 'Greening' the Academic Syllabus.

T3-T4: STRUCTURAL ELABORATION

A paper was presented by the Vice Chancellor Prof B.B. Fakae and Dr I.I. Kakulu I.I. on Sustainability compliance in HE at the 12th African Association of Universities Conference, Abuja, indicating their commitment to Sustainable Development. Greening of the syllabus in several departments at RSUST ensued, and the introduction of Environmental Management and ICT courses commenced. There has been improved awareness on wastewater management in Nigeria following the delivery of nine capacity building programmes organised in collaboration with UNEP-GPA 2008-2010. The ITP has been a catalyst to the development of the first city-wide wastewater treatment facility by the Government of Rivers State. A MSc in Real Estate programme has been approved at RSUST with an option on Land Management and Sustainable Development.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to 2013 survey but updates were possible because Dr Kakulu participated in the ITP Alumni Seminar in 2014. Although a dedicated Lifelong Learning Centre was not established as perceived at inception, the vision was fully actualised through the RSUST/UNEP Technical Collaboration and several capacity building programmes with UNEP/GPA, UNEP/PCDMB and the support of UNEP/EETU. Dr Kakulu testified to her personal development in the area of Wastewater Management and Land Management due to the initial engagements in the ITP.

4.6.3.5. Nigerian Change Project 5 of 7: National Commission for Colleges of Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Rabi Jibrilla Muhammad was from the Department of Curriculum and Educational Technology, National Commission for Colleges of Education. He was the Head of Institution (Provost), Chief Executive in charge of the academic affairs as well as administrative supervision of the Institution. He was involved in activities related to reducing environmental pollution and proper disposal of waste waters in fish farming. His co-participant, Dr Fatimah Muhammed Palmer from the Department of Fine and Applied Arts, Federal College of Education, Kano State, was the former Head of Department. The National Commission for Colleges of Education: Federal College of Education Kano State is a teacher training institution at a tertiary level. Unemployment of teachers and the low income of currently employed teachers influenced the choice of this change project. At a point, trained teachers started abandoning teaching jobs for other better paid jobs in banks, media houses, customs, immigration and so forth. Fish farming was often chosen as a side business by teachers to supplement their income because the teacher did not need to be taken out of the classroom. One of the objectives of the project was to help graduates of the teacher training institutions with a source of livelihood while waiting for government employment. The title of their 2008 change project was 'Fish Farming and Entrepreneurship Training Scheme of Work for Nigerian Certificate in Education (NCE) Trainees'.

T2-T3: SOCIAL-CULTURAL INTERACTION

This change project addressed the issue of vocational skill acquisition in a professional teacher education programme. The project sought to achieve poverty alleviation while inculcating the benefits of Environmental Education and Sustainable Development in teacher education.

T3-T4: STRUCTURAL ELABORATION

The change project implemented with the college resulted in a farm where fish and other livestock were raised and entrepreneurship was taught as a general course. The large farm is an institutional structure for ESD, which is now available for training and demonstrations with farming implements.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants responded to the 2013 survey. One of the participants has become head of the organisation and the wide unemployment in the region, have contributed immensely to the acceptance and successful implementation of the change project. The change project contributes to poverty alleviation by way of integrating entrepreneurship skills alongside other professional training, specifically fish farming which was chosen as a good additional business for professional teachers to earn a better living. At the national level there has been reduction of unemployment and at the organisational level, self-reliant teachers who also employ labour have been supported.

4.6.3.6 Nigerian Change Project 6 of 7: Obafemi Awolowo University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Simisola Mercy Odeyinka from the Agricultural Unit, Animal Sciences Department and Sylvanus Babafemi Odunsi from the Department of Business Law, both from Obafemi Awolowo University, Ile-Ife participated in the ITP in 2008. Simisola Mercy Odeyinka is a Professor, Senior Lecturer, once Head of Department, Dean of Faculty. She taught students, carried out research and administered the affairs of the Faculty; engaged in activities that are tailored towards the need to conserve the environment and also taught others to do so; and propelled action towards the possibility of establishing a sustainable development centre at Obafemi Awolowo University. Their change project was entitled the 'Establishment of Sustainable Development Centre at Obafemi Awolowo University (OAU), Ile-Ife, Nigeria'. The importance and need for the above named Centre was underscored by the following research findings: many departments and units did not integrate sustainability issues into their curricula; teaching approaches of many departments and units have not adequately addressed sustainability concerns; the University lagged behind in the area of in-depth research in sustainability issues and challenges; the University's examinations did not satisfactorily assess sustainability topics; and the University staff's expertise in view of the local and global challenges of sustainability was inadequate.

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project proposal was sent to the University administration and the various committees responsible for approving the establishment of new units and departments. All Deans of Faculties were mandated to include environmental issues among the topics to teach students during University students' colloquia and members of MESA committee were nominated to handle them. After the ITP, the participating staff of Obafemi Awolowo University formed the Obafemi Awolowo University MESA Group. Among their various activities include presentations and lectures offered at the University periodic Faculty Colloquium. The colloquium involves all students from each faculty interacting with lecturers and university officials. With the cooperation of the university management, the OAU MESA group has inducted ESD lectures into these sessions with about two hours devoted to discussions, questions and answers on ESD issues at each session

T3-T4: STRUCTURAL ELABORATION

ESD has been incorporated into the University students' colloquium. Many lecturers have mainstreamed ESD into their teaching. A compulsory course that addresses environmental and sustainability issues has been introduced. The university now champions the revision of curricula in consonance with global trends.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Simisola Mercy Odeyinka responded to the 2013 survey. The role and the involvement of the participant as Head of Department as well as the support of the Institutional Head and colleagues

had a positive impact on the implementation of the project. Student empowerment and involvement in ESD issues via the student colloquium and engagement with the new courses could instigate the positive shaping of the University ESD status through their eventual position-practice system and sphere of influence.

4.6.3.7 Nigerian Change Project 7 of 7: Obafemi Awolowo University

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dorothy Ekuia Salami and Prof. Lara O. Orafidiya participated in the ITP from Obafemi Awolowo University in 2008. Prof. Orafidiya was the Dean, Faculty of Pharmacy, Department of Pharmaceutics. Their change project was ‘Development of Obafemi Awolowo University Students as Change Agents for the Environment (Maintenance of clean and beautiful environment)’. The aims of the project were to draw attention to the degradation of the immediate environment of Obafemi Awolowo University campus, to design change strategies, to effect positive changes, and to involve members of the community in the change process. Policies that would help relocate the shanty market on campus and design a better structure were also envisaged.

T2-T3: SOCIAL-CULTURAL INTERACTION

Participants convinced the university management of the need to relocate the shanty market on campus and to build a new well planned market. They received full support of the university authority despite threats from the marketers to maintain the existing location. Participants are also part of the Obafemi Awolowo University MESA Group which brings together all Obafemi Awolowo University ITP alumni. There was substantial deliberation and collaboration with staff, administration and students.

T3-T4: STRUCTURAL ELABORATION

The shanty market on campus has been relocated despite much resistance from marketers and the community. A new market which the university management has more effective financial and sanitation control over has been developed. This is well laid out and necessary amenities which were lacking in the former location have been provided.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Prof. Lara O. Orafidiya responded to the 2013 survey. Her position as Dean of the Faculty of Pharmacy and her related practices and sphere of influence within and outside the University could have propelled the extent of the success of the change project. Participants’ involvement in the OAU MESA partnership also provided a strong network for consultation, collaboration and sustenance of ESD projects and activities within and outside the University.

4.6.4 COUNTRY 4 IN WEST AFRICA: SENEGAL



4.6.4.1 Senegalese Change Project 1 of 1: University of Cheikh Anta Diop of Dakar

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Prof Alioune Kane and Dr (Mrs) Awa Fall Niang participated in the ITP in 2008 from the Department of Geography, Faculty of Arts and Human sciences, University of Cheikh Anta Diop of Dakar. Prof Kane was based at the Doctorate School of Water Quality and Water Uses, and Dr Niang was a senior lecturer and General Secretary of Edeque. Senegal was facing a water crisis and it was necessary to adapt new curricula to the context of water scarcity but the challenge was to make major stakeholders and researchers aware of how water is precious for human beings. Hence, the participants' change project was aimed at strengthening ESD issues in the Doctoral School on Water, Water Quality and Water Uses in Senegal.

T2-T3: SOCIAL-CULTURAL INTERACTION

A specific training programme on ESD in Senegal was set up, focusing on the field of water. A framework for collaboration with United Nations Educational, Scientific and Cultural Organization (UNESCO)/BREDA and National Commission for Sustainable Development (NCSD) was incorporated into the project. A workshop was organised with the aim of identifying mechanisms and strategies to acquire financial resources needed to finance the training scheme of the doctoral school and the establishment of a national ESD network in Senegal. There were also interactions with AMCOW and NEPAD.

T3-T4: STRUCTURAL ELABORATION

The change project proposal was developed and adopted by the University, the Ministry and water societies. The University of Cheikh Anta Diop of Dakar is now a Centre of Excellence for Water Science and Technology and coordinates the West African network. The proposed doctorate school has taken off and is well recognised. Students are being received from different faculties and from the entire sub-region, Central Africa and Europe (particularly Romania).

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants responded to the 2013 Survey. Local networks on environment were integrated as well as network of AUF (francophone agency). Further support of the existing network is intended to develop the cooperation of other French speaking countries. Food security and water availability are indivisible; hence the change project aimed at influencing water and water use will in the long run help alleviate poverty. Participants' connection to regional support groups and institutions was significant especially as Prof Kane also held a UNESCO Chair in Water Sciences.

4.7 WESTERN INDIAN OCEAN ISLANDS

4.7.1 COUNTRY 1 IN WESTERN INDIAN OCEAN ISLANDS: MADAGASCAR



4.7.1.1 Madagascan Change Project 1 of 1: Ecole Normale Superieure d'Antananarivo

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Dr Rémi Rakotondradona and Mrs Zara N. Razafiarimanga were from the Faculty of Education, Ecole Normale Superieure d'Antananarivo during their participation in the ITP in 2008. Their change project was entitled 'Introducing environmental education into the MENSr curriculum for primary and secondary teacher education'. Madagascar is located in the Western Indian Ocean and suffers extreme environmental degradation, particularly with regard to deforestation and land degradation.

T2-T3: SOCIAL-CULTURAL INTERACTION

There was an engagement in activities and methodologies tailored towards the development, review and implementation of a primary and a secondary teacher education toolkit, leading to the development of strategy and a proposal for the development and introduction of the toolkits in teacher education programmes. The project was integrated into the SADC REEP teacher education activities.

T3-T4: STRUCTURAL ELABORATION

The development of toolkits for primary and secondary teacher education was completed. An improved relevance of teacher education was recorded.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

This project was initiated in 2008 and the only available update was that the development of toolkits for primary and secondary teacher education was completed. It would be interesting to know if the developed toolkits are being used and the outcome and implications of this for teacher education and the student body. From a position-practice perspective, capacity to network regionally and access support from SADC REEP seemed significant in this case, and participants were able to use their positions to network and gain support for their desired practices.

4.7.2 COUNTRY 2 IN WESTERN INDIAN OCEAN ISLANDS: MAURITIUS



4.7.2.1 Mauritian Change Project 1 of 1: University of Mauritius

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Geeta D. Unmar and Hema Ramsurn-Aulum were from the Faculty of Engineering, University of Mauritius when they participated in the ITP in 2008. Their change project was concerned with the development of an eco-campus initiative involving composting research and activities. This project was located in the Faculty of Engineering, and was initiated by the Vice Chancellor of the University who was interested in green campus development.

T2-T3: SOCIAL-CULTURAL INTERACTION

The change project was supported and motivated by the Vice Chancellor to enhance green campus development. Research was conducted on available and sustainable composting technologies. Further research was conducted as a result of previous research to address the problem of heavy metal discovered to be present in composting waste. The project broadened to include an energy conservation project, and the development and introduction of a General Environmental Management module for all students.

T3-T4: STRUCTURAL ELABORATION

There have been improved management and sustainable development practices on campus. A successful study to develop new technological processes for sustainable development was carried out. A General Environmental Management module for all students was introduced in the University.

COMMENT ON THE CHANGE PROJECTS, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

The active involvement of the Vice Chancellor of the university who was interested in green campus development, greatly contributed to the successful implementation of this project. His position and practice has shaped the status of ESD commendably. Additionally, the choice of Engineering Faculty researcher was significant as they could conduct real-world problem solving research and propose practical change for campus management.

4.7.3 COUNTRY 3 IN WESTERN INDIAN OCEAN ISLANDS: SEYCHELLES



4.7.3.1 Seychellois Change Project 1 of 1: Ministry of Education

T1: STRUCTURAL AND AGENTIAL CONDITIONING

Selby Dora and Audrey Nanon, both from the Ministry of Education, participated in the ITP in 2008. Their change project was aimed at the development of a core module on Sustainable Development to shape curriculum development of the new University of Seychelles. The Seychelles at the time of the ITP programme in 2008 did not have a university, but plans were in place to establish a university and course participants were in charge of designing its framework, which they sought to align with ESD, given the challenges in the Seychelles.

T2-T3: SOCIAL-CULTURAL INTERACTION

A deeper understanding of Sustainable Development and ESD was shared. The project developed greater focus and clarity in Phases 2-5 of the change project process, after discussion with colleagues. Participants changed jobs but fed the work into the planning committees and the board responsible for establishing the university.

T3-T4: STRUCTURAL ELABORATION

A wide framework supporting the development of a new university and a concept document were produced. A module outline for a core course for Sustainable Development that could be integrated into all faculties in the new university, establishing a good foundational Sustainable Development ethos and orientation for the university has commenced. The university has since been established and it has a strong ESD focus.

COMMENT ON THE CHANGE PROJECT, POSITION-PRACTICE SYSTEM AND MORPHOGENESIS

Participants did not respond to the 2013 Survey. The position and sphere of influence of the participants in Seychelles Ministry of Education and in the establishment of the university clearly contributed to the possibility of effective implementation and long term impact and influence of the change project.

4.8 SYNTHESISING INTERESTING TRENDS AND DYNAMICS OBSERVED IN THE ANALYSIS OF THE ABOVE 181 CHANGE PROJECTS

This section is aimed at highlighting key trends and dynamics that have been observed across the 181 change projects. However, these points require deeper empirical investigation, reflection and provision of evidence to substantiate claims. Hence the in-depth case studies of Swaziland, Zambia and Botswana presented in the following three chapters. Below are the trends:

- 1) Maximising ESD agents' position-practice system and associated sphere of influence is essential for effective ESD mainstreaming in higher education. The manner and extent of institutional, policy or curriculum changes possible by agents is dependent on their position-practice system and associated sphere of influence. The lower an agent's position in an institutional hierarchy, the more the dependence on the positions in higher institutional hierarchy, unless their change projects are clearly within their sphere of influence.
- 2) The position-practice system and associated sphere of influence of agents' colleagues and stakeholders in and around their institution and the manner of socio-cultural interaction that exist is vital for commencement and progress with learning and change processes in higher education.
- 3) Multi-stakeholders' networking, engagement and involvement in change processes seems to have significant impacts. For example,
 - Empowerment and engagement of the position-practice system of university administration and students requires both efficiency and sustainability of ESD change projects in higher education.
 - Involvement and engagement of the position-practice system of community members and leaders can propel effective and sustainable ESD learning and change processes.
 - Involvement and support of government agencies and ministries, non-governmental organisations, development partners and international organisations helps to establish and sustain change projects.
 - Collaboration with African sub-regional ESD/MESA/ITP networks over time helps concretise learning and change processes.
- 4) Ability to catalyse cross-faculty curriculum dialogue on ESD and a 'common cause or common good' has been seen across institutions. This level of engagement with academics from different faculties can potentially reduce or totally avoid the commonplace transdisciplinary and interdisciplinary ESD constraints that many academics experience. The successful achievement of this approach (incorporating ESD into the curriculum of every department in a university) will of necessity depend on the position-practice system of the agents directly involved and their corresponding sphere of influence, including those of others in their institutions.

- 5) The existence of an ESD related institutionally recognised and accepted international, regional and national structure like MESA, SADC REEP, and UNEP provides a strong foundation for ESD learning and change processes in higher education.
- 6) The existence of institutional and national EE/ESD related policies, strategies and practice seems to assist agents establishing their change projects as well as with convincing colleagues to support projects. When the reverse is the case, agents are confronted with various challenges and obstacles.
- 7) Progress with ESD change projects have more impact and are more grounded when the Vice Chancellor or Deputy Vice Chancellors or senior management of agents' in higher education are aware, convinced, knowledgeable and in support of ESD mainstreaming. When the reverse is the case, progress seems to be either slow or non-existent.
- 8) Lack of continual engagement and formal or informal correspondence with the ESD community of practice and facilitators of the ITP tends to simmer learning and change processes that are felt directly at both individual and institutional levels. This is also linked to the need for a structured monitoring system for change processes because the fact that there is little or no information about participants' change processes and outcomes, does not mean there has been no change in participants and their institutions.
- 9) The anchoring of ESD change projects by at least two participants has proven to be effective for start-up, build-up and sustenance of learning and change processes in higher education. Only in a few cases have there been conflicts of interest. Most participants' have worked harmoniously together and in cases where one participant is unavailable, the project is continued by the other participant.
- 10) The involvement of more than one person in the institution (apart from ITP participants) with the responsibility of implementing and sustaining the project is effective.
- 11) Participants' ability to negotiate for and source additional resources, including human, material or financial resources seems to be important for effective ESD mainstreaming.
- 12) Continual formal engagement of colleagues on ESD issues and change projects by ITP participants seemed to help with awareness, support and buy-in of colleagues. This was done by organising more than one institutional workshop and inviting colleagues from all faculties and departments.
- 13) There was substantial progress in almost all cases where participants either changed or modified their initially proposed change projects. Many change projects were modified from initially proposed institution-wide or faculty-wide intervention, to course-based, unit-based or department-based interventions in order to ensure doability and feasibility of projects.

4.9 CONCLUSION

This chapter has attempted to describe all the African ITP change projects of the years, and emphasis has been placed on the inception of the change project (social conditioning) with reflections through to the position-practice system and morphogenesis where this was evident. The data presented in this chapter emanates from phase one research as a baseline as well as from subsequent data collected. The role of the agents directly involved in the ITP and the projects, in terms of their position and practice (agential conditioning), has also been highlighted. This chapter also sheds light on the efficacy of the position-practice system of others in participants' institutions during socio-cultural interaction to determine the acceptance, progress and current status of participants' change projects. Data has also been provided to show the morphogenesis of the envisaged change process in the participants' institutions during and after the ITP. Some of the (known and available) tangible outcomes of the change project implementation process have also been itemised (agential and structural elaboration). The dynamic between the ITP participants' position and practice and the position and practice of other colleagues in their institutions who have contributed to the change process has also been highlighted (socio-cultural interaction).

Unlike the data presented in this chapter, the following three chapters (Five, Six and Seven) will focus in more depth on the country cases excluded from this chapter, namely Swaziland, Zambia and Botswana. These chapters shed light on each participant's experience in their participation in the ITP; their pre- and post-positions and practices; the influence of their existing positions and practices and that of others in and around their institutions on ESD mainstreaming in their various institutions; and pre- and post-institutional conditions and agential conditions. The next chapter (Five) is the data presentation and discussion of the in-depth case study of the Kingdom of Swaziland, the University of Swaziland, ITP alumni and the EE/ESD MESA Chair based in Swaziland.

CHAPTER FIVE

POSITION-PRACTICE SYSTEMS AND THE ITP: MAINSTREAMING ESD IN THE KINGDOM OF SWAZILAND



I would say the MESA Chair added value to the ITP change project in the sense that without the MESA Chair we wouldn't have had a formalised and focused approach to ESD but then the MESA Chair sort of provided a Launchpad – Swaziland participant.

5.1 INTRODUCTION

This chapter is the first of three chapters of this thesis dedicated to Swaziland, Zambia and Botswana's in-depth case study research record. In each of these chapters I have included a description of the country, the context and history, the higher education landscape, environmental and educational legislation as part of a document analysis of each case country. I have presented data about the institution involved in the ITP; its core functions, mission, vision and values; structure and governance; faculties, centres, institutes, departments and programmes for the purpose of contextualising the case institution.

There have been only two ESD in higher education ITP participants from the Kingdom of Swaziland, both of whom worked at the University of Swaziland (UNISWA); they were associated with and nominated for the ITP by the MESA Chair to enhance capacity for MESA in UNISWA. The MESA Chair received seed funds from SADC-REEP, over four years for ESD mainstreaming activities. All three research participants were interviewed during a field trip to Swaziland.

Data presented here broadly responds to the main research question but more specifically to the research sub-questions (see Chapter One). Unlike the data presented in Chapter Four, this chapter (and the following two chapters) aims to shed light intensively on: 1) participants' experiences during their participation in the ITP; 2) their pre- and post-positions and practices; 3) the influence of their positions and practices and that of others in and around their institutions on ESD mainstreaming; and 4) the pre- and post-institutional conditions. Thick descriptive data presented in this chapter is indexed using SRP (Swaziland Research Participant) followed by a

number to differentiate one participant from another. Note that other participants' names in interview data have been replaced with index codes as well.

5.2 CASE COUNTRY ONE - SWAZILAND

5.2.1 THE KINGDOM OF SWAZILAND

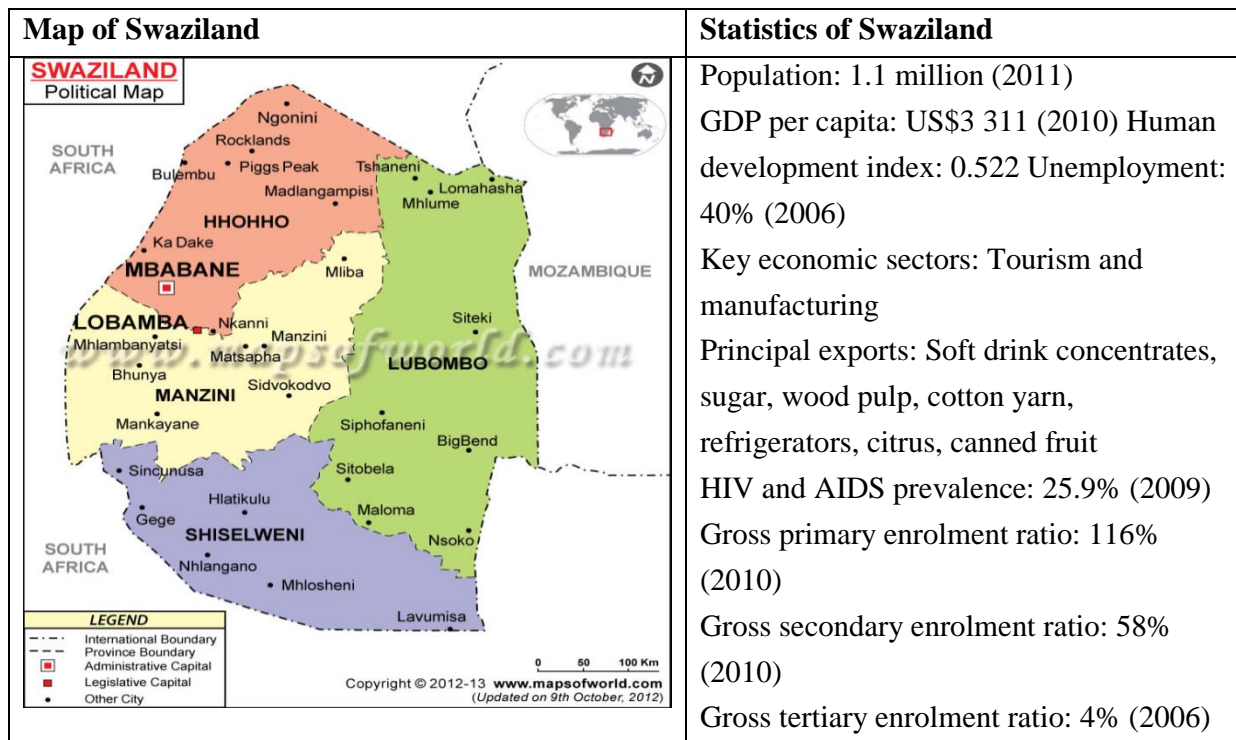


Figure 5.1: Map and statistics of Swaziland. Source: CIA, UNAIDS, UNDP, UNESCO as cited in SARUA (2012b, p. 87)

Swaziland³⁴, also known as the Kingdom of Swaziland (see Figure 5.1), is bordered by South Africa and Mozambique. Swaziland's economy is heavily influenced by its main neighbour, South Africa. The majority of the population depends on subsistence agriculture and due to its small size, Swaziland relies on export industries. These industries are composed of large firms with largely foreign ownership and are concerned with commodities such as wood pulp, sugar, citrus and canned fruit (US Department of State, as cited in SARUA, 2012b). Swaziland's annual mean temperature has increased by more than 3°C from 1961 to 2000 in all agro-ecological zones. This annual temperature is significantly above the regional average for southern Africa, which is itself above the global average. The country is already feeling the impacts of climate change, and urgent action is needed on many fronts.

³⁴ The information in this section is summarised from SARUA (2012a; 2012b).

Swaziland gained independence in 1968 and has since been a monarchy. In 2005, King Mswati III endorsed Swaziland's first constitution in over 30 years. This constitution endorses the king's absolute governing powers, reinforces the ban on political parties and allows human rights clauses to be suspended by the king if he finds them in conflict with public interest (although no definition of public interest is provided) (CIA, as cited in SARUA, 2012b). Swaziland, one of the few remaining monarchies in the SADC region, is faced with a range of challenges and opportunities in the higher education sector. The country's political system and recent financial crises have stressed the public higher education system, and a way out of these difficulties is urgently required.

5.2.2 HE LANDSCAPE IN THE KINGDOM OF SWAZILAND³⁵

Swaziland's higher education system consists of four institutions of higher learning: two privately-funded accredited universities, one public university and one public technical college. The public institutions are the University of Swaziland (UNISWA) and the Swaziland College of Technology. In 2011, two private universities were opened: the Limkokwing University of Creative Technology and the Southern African Nazarene University. The "Ministry of Education and Training reported that 24 percent of students are enrolled at the public university, while only 3 percent attend the private university and another 5 percent are enrolled in technical colleges" (SARUA, 2012b, p. 89). These new universities provide places for students who want to study architecture and other courses not offered by UNISWA. A third private university, the Swaziland Christian Medical University, include three colleges namely medicine, nursing and ICT.

The Ministry of Education in Swaziland states that the aim of tertiary education is to provide trained personnel who will meet the socio-economic needs of the country, to build research skills and instil a culture of research at all tertiary institutions (. There are currently no national policies in place specific to higher education, but there are polices waiting to be approved in parliament. These include the National Qualification Authority and the Higher Education Bill, intended to improve the quality of higher education and set guidelines for good practice. In 2011, the Ministry of Education and Training published the Swaziland Education and Training Policy, which contains a section on tertiary and higher education.

5.2.3 EDUCATIONAL LEGISLATION IN SWAZILAND

The 2011 National Education and Training Sector Policy is the first document in Swaziland to address education and training issues holistically. Since Swaziland attained her independence, the Ministry of Education, currently known as the Ministry of Education and Training, has used individual documents to guide this sector (MoE&T, 2011, p. v). The absence of a consolidated Education and Training Sector Policy document to address the education and training needs of this sector resulted in some departments and components operating as 'islands' and not 'talking'

³⁵ The information in this section is drawn from SARUA (2012b, pp. 87-89).

to each other as expected, thus leading to duplication of efforts and wastage of resources. This also led to the development of individual sub-sector policies which need to be aligned with the National Education and Training Sector Policy (MoE&T, 2011, p. v).

The primary mandate of the Ministry of Education and Training in Swaziland is to provide access to relevant quality education at all levels of the education system to all learners in Swaziland; taking into account all issues of efficacy, equity and special needs (Swaziland. MoE&T, 2011, p. v). The Kingdom of Swaziland has, since independence in 1968, grappled with the same challenges in delivering effective education services such as “education access; increasing failure and dropout rates; a lack of qualified teachers; a lack of curriculum innovation; and slow responses to education and training changes in regional and international arenas”, challenges which have “frustrated the development and innovativeness of the education sector” (Khumalo, 2013, p. 3).

5.2.4 ENVIRONMENTAL LEGISLATION IN SWAZILAND

The UNISWA strategic plan 2011³⁶ has implications for environment and sustainability issues. The National Development Strategy document, based on the report of the stakeholders’ representatives appointed by the king, was responsible for 1) Articulating a long-term vision for 2022; 2) Identifying the key areas of development against which national resources will be allocated; and 3) Formulation of macro and sectoral strategies for the attainment of the vision for the country (Government of Swaziland, 2013). This 2022 Vision was launched by King Mswati III and states that by 2022, the Kingdom of Swaziland will be in the top ten percent of the medium human development group of countries founded on sustainable economic development, social justice and political stability (Government of Swaziland, 1999; Walmsley & Patel, 2011; Government of Swaziland, 2013).

Even though the document was only finalised in 1999, changes began from 1997 (Walmsley & Patel, 2011). Commitment was evident to considerable improvement of Swaziland’s world standing in terms of measurable indices of human development, relying on sustainable economic development social justice and political stability (Government of Swaziland, 2014). Underlying the vision is a focus on quality of life in Swaziland, with critical dimensions of this including poverty eradication, employment creation, gender equity, social integration and environmental protection. These dimensions are significantly linked to education, health and other aspects of human resource development (ibid.).

5.3 CASE INSTITUTIONS IN SWAZILAND: University of Swaziland (UNISWA)

³⁶ <http://www.uniswa.sz/administration/upc/stratplan>

UNISWA is the institution where all three research participants in Swaziland work. One participant is from the Faculty of Commerce, another is from the Education Faculty, while the third is from the Faculty of Science and Engineering. Two are ITP participants while one holds the MESA Chair office.

5.3.1 CONTEXT AND HISTORY OF UNISWA³⁷

The University of Swaziland stemmed from the University of Botswana, Lesotho and Swaziland (UBLS), formerly known as University of Basutoland, Bechuanaland and Swaziland (UBBS) between 1964 and 1975, with its headquarters in Lesotho. After independence, the three countries started to take a close look at the colonial inheritance of education and then recognised the role of UBLS in the training of higher and middle-level personnel. A report that recommended the establishment of a university campus in each country and a unified development of HE and vocational technical training was developed. This report was accepted by the three universities and their respective government in October 1970. In 1976, there was further negotiation between the university and the Government of Botswana and Swaziland and thus two constituent university colleges were set up. Before long the two countries realised that there was a dire need for the university colleges to be ungraded to independent national universities, hence a development plan for 1975-1985 was agreed upon to this effect and by June 1982, new academic years commenced in the two independent institutions.

Since then UNISWA has sustained growth and developed in accordance with its stated aim of assisting national development. UNISWA therefore now consists of three campuses namely Kwaluseni Campus (Faculties of Humanities, Commerce, Education, Science and Social Sciences), Luyengo Campus (Faculty of Agriculture) and Mbabane Campus (Faculty of Health Sciences). Student enrolment has risen continuously, alongside an ever-increasing output of graduates since the university's first congregation for the conferment of degrees in 1982. The chief mandate which UNISWA has tried to implement has been human capital development for state development which is clearly indicated in the type of programmes that were selected at the beginning and which even now constitute a major part of UNISWA programmes.

5.3.2 CORE FUNCTIONS, MISSION, VISION AND VALUES OF UNISWA³⁸

UNISWA has the vision of providing 'Leadership through Excellence in Education'. The mission of UNISWA is 'to achieve excellence in teaching and learning, research and research training, community service, provision of opportunities for consultancy, professional leadership and enterprise development in the contemporary context'. The objects and functions of the University of Swaziland include the following "(a) to provide instruction to all students admitted to the University; (b) to assist in the preservation, transmission and increase of knowledge and in the

³⁷ Information here is adapted from the University of Swaziland Calender 2012/2013 and 2014/2015.

³⁸ Information here is adapted from the University of Swaziland Calender 2012/2013 and 2014/2015 (UNISWA 2012; 2014).

stimulation of the intellectual life and cultural development of Swaziland; (c) to provide facilities for higher learning, including technological and professional education, and for research; (d) to conduct examinations for granting degrees, diplomas, certificates and other awards; (e) to cooperate with other bodies in the planned development of HE and, in particular to examine and, if thought fit, approve proposals for new faculties, departments, courses and subjects of study” (UNISWA, 2012, p. 303; UNISWA, 2014, p. 309).

5.3.3 STRUCTURE AND GOVERNANCE OF UNISWA³⁹

The Academic Staff of UNISWA consist of the Vice Chancellor, the Librarian and all members of the staff who are engaged in teaching and/or research. The Administrative Staff of UNISWA consist of the Registrar, the Bursar and such other members of the staff, not being engaged in teaching or research as the Council may from time to time determine.

5.3.4 FACULTIES, CENTRES, INSTITUTES, DEPARTMENTS AND PROGRAMMES OF UNISWA

There are seven faculties in UNISWA namely the Faculty of Agriculture, the Faculty of Commerce, the Faculty of Education, the Faculty of Health Sciences, the Faculty of Humanities, the Faculty of Science and Engineering, and the Faculty of Social Sciences. Other Faculty structures include, Faculty Board, Faculty Executive Committees and Departmental Boards (UNISWA calendar 2012/2013, p. 312; UNISWA calendar 2014/2015, p. 318). Institutes, centres and units of UNISWA include: the Academic Development Centre, University Bookshop, the Centre for Community Services, the Consultancy and Training Centre, the UNISWA Health, Information and Counselling Centre, the Information and Communication Technology Centre, the Institute of Distance Education, the Institute of Post Graduate Studies, the University Research Centre, the Swaziland Institute for Research in Traditional Medicine, Medicinal and Indigenous Food Plants, the University Planning Centre, the Students’ Affairs Unit, the University Farm, and the Entrepreneurship and Business Development Centre (UNISWA calendar 2012/13, pp. 312-313; UNISWA calendar 2014/2015, pp. 318-319).

³⁹ Information here is adapted from the University of Swaziland Calendar 2012/2013 and 2014/2015 (UNISWA 2012; 2014).

5.4 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT UNISWA AND IN SWAZILAND

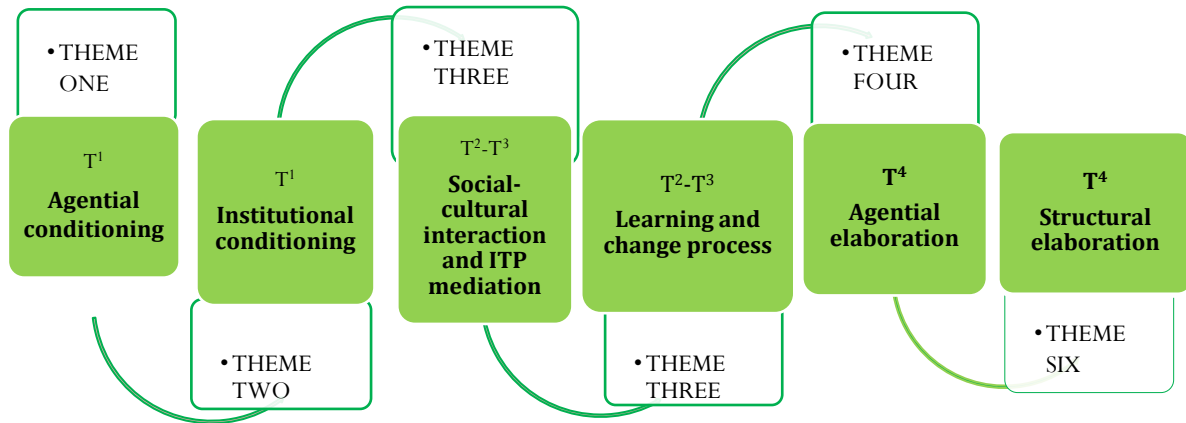


Figure 5.2: Framework for presentation of data and discussion

5.4.1 T1: AGENTIAL CONDITIONING

Theme one: the pre-ITP and pre-ESD mesa chair positions and practices of participants and how these pre-positions and practices shape the ESD learning and change processes in their institutions

As mentioned, the three research participants from Swaziland will be referred to as SRP1, SRP2 and SRP3. They all work at the University of Swaziland (UNISWA). Before participation in the ITP in 2011 and appointment as MESA Chair in 2010, they were from different departments and faculties, namely the Faculty of Commerce, Department of Business Administration; Department of Curriculum and Teaching, specialising in Geographical Education, and Department of Geography, Environmental Science and Planning in the Faculty of Science and Engineering. SRP2 and SRP3 were nominated to be members of the MESA Implementation Committee (MIC) which was instituted before the appointment of a MESA Chair and the provision of 'seed funding' to facilitate ESD related activities in Swaziland and neighbouring countries. The MESA Chair is the chairman of the committee.

Before the ITP, SRP1 was a tutor. His position and practice as a tutor, in relation to teaching mostly undergraduate students depicts easy access to and influence on students, in terms of character, attitude, ethics and intellect. This means direct contact with students when it comes to instigating and facilitating ESD learning and change. It also means less power and authority in terms of partaking in crucial department, faculty and institutional decision-making processes. The

sphere of influence of SRP1 was therefore primarily around teaching undergraduate students. He explained:

Before the ITP I was a tutor. I teach marketing courses and also assist in management courses ... mostly preparing for lectures; going to classes; marking; doing research when there is time because of the number of students. On average we have about 300 students. I taught marketing and business administration to 2nd years, 3rd years and 4th years, so per semester, roughly about 300 students... That means I did have the right in a way to influence students in a certain way. In terms of power, I didn't have a lot of power because if you are a tutor you are mostly dealing with students and students issues so your power is minimal.

The position and practice of SRP2 and SRP3 at UNISWA, both senior lecturers who had worked for UNISWA for more than 20 years, were quite different from SRP1. SRP3 who has occupied various key positions within and outside the university has, for example, considerable powers, rights and privileges, such as being a member of the university Council, the chairman of a university wide MESA Implementation Committee, the chairman of the Swaziland Standards Authority and a member of the Environmental Education Public Awareness and Participation Committee. SRP2 was a key member of the MIC. These institutional positions, powers, privileges and places before participation in the ITP as well as holding the position of the MESA Chair, have been considered as a strength, medium and platform that have shaped ESD learning and change processes considerably in Swaziland. SRP3 and SRP2 testified:

The other strength was the influence as a result of the position I had within the university, firstly as a senior lecturer and secondly as a member of the university council, because with that it becomes a strength because you are able to open doors that you will not otherwise have been open to everyone. (SRP3)

Before the ITP, we had the Curriculum Development Network, the CDN, which was run by SADC REEP. Then we also got involved in MESA when MESA came about. Yeah, the MESA Implementation Committee became active in 2009, before our participation in the ITP that was actually how we were selected to participate in the ITP; it was more on the strength of our activities with MESA Implementation Committee. (SRP 2)

With regard to their pre-ITP and pre-MESA Chair ESD related practices, participants had different experiences. SRP1 lacked knowledge of Sustainable Development and ESD, while SRP2 and SRP3 were already involved in Environmental Education and ESD activities and could mainstream these in their teaching. SRP3 has been so involved in environmental education activities that he considered himself an activist and champion for the environment in Swaziland and in the SADC region. SRP2 explained:

Well I have been working for the university for quite some time, more than 20 years and I have gone through some positions. Sometime around 1996/1997 we started the Environmental Education period here in Swaziland and I included it

among my topics in geographical education. I also included Environmental Education, which later became Education for Sustainable Development. (SRP 2)

Since it is theorised that structure is transformed or reproduced by the position-practice system of agents, it can be said that the pre-ITP agential conditioning of these three agents have hitherto enabled and constrained ESD learning and change processes in different ways. These pre-ITP agential conditions would not only have posed a challenge or strength to institutional effective ESD mainstreaming but to personal ESD practice as well. On the one hand, ESD learning and change has been constrained by SRP1 who knew little about SD and ESD before his participation in the ITP. On the other hand ESD learning and change would have been enabled by the same participant based on his other capacities and practices even though he did not have much ESD related practice before. This is because he had a strong influence when teaching his students by integrating issues of ethics and values in his lessons (which he knew well), and this he considered as the strength he had regarding ESD. He explained:

Before the ITP, as I said I didn't know anything about the environment. No, my activities before the ITP were not ESD related. Although some of my courses touched just a little bit on my environment but I was not aware of sustainable development. In terms of the environment, I won't lie because I didn't know what it was before the ITP. I only knew sustainable development is how to keep your business for a long period of time. The only strength I had was being an ethical person, a principled person, that's all and I could teach and I was teaching yes, I was trying to impact that to my student to be ethical for a good society, that's the only aspect but in terms of the environment, there was nothing at all. My influence on them [students] was basically more on ethics and values which is part of sustainable development. (SRP 1)

SRP2's pre-ITP position and practice agential conditioning can be said to have hitherto enabled the status of ESD at UNISWA even before his participation in the ITP. His pre-ITP practice already revealed a good foundational knowledge. His participation in the ITP and his efforts to build on his previous environmental education capacity constitute a medium of deliberately enhancing further institutional and personal ESD development. He elucidated:

I would say the strength was my training because geography as a subject has some ESD in build into it, even though at that time we used to call it Environmental Education. So each time I teach a topic I try to make my students think about the relevance of the topic in every human activity instead of just teaching for the sake of teaching. I was comfortable with that but not as comfortable as I am now. (SRP 2)

Apart from the shaping of the status of ESD by different academic qualification and positions of participants as presented above, other personal factors can influence the effectiveness or lack of effectiveness of ESD mainstreaming in HE by educators. Institutional structures can enable or constrain agents' ability to easily pursue credible activities like ESD mainstreaming. Despite the diverse institutional conditions, as presented in the next section, participants did their best to develop strategies which emphasised conservation of natural resources, although there was little emphasis on wider sustainability issues. For example, SRP3 maximised his strength (a great

interest and passion for ESD related issues) and was in collaboration with other ESD agents within and outside Swaziland. These strength, powers and practices exemplify agential properties and conditioning. It can be said therefore that these agential properties have enabled ESD learning and change processes, personally, institutionally and beyond. The following interview excerpt confirms this point:

We did not have the official and recognised platform to operate on but we tried to do this and that in an ad hoc manner. We also formed environmental clubs [but] the issue of sustainability was not there, it was purely environment to a large extent. We were preaching conservation because the issue of sustainability was still weak at that time. I think it was just environmental education in its strictest sense, without the expanded role of ESD ... My biggest strength was interest. I had a keen interest in ESD issues ... Another strength I had was being part of a network ... when I got involved in this [ESD activities] I brought all my networks into this, so it helped us in expanding ... I believe being part of a network was also my strength. (SRP3)

Some agential properties and conditionings that have inhibited effective ESD mainstreaming at UNISWA include lack of time to practise, and lack of many people with ESD expertise. Although capacity has been built over the years at UNISWA, almost everything ESD-related still required the attention of only a few agents because there were no other people with ESD capacity working at that time. Limited financial and material resources have also been a reason for their presence not being felt in terms of propagating and expanding issues of ESD. SRP3 attested:

The other biggest challenge was time, time really is still a big challenge, I sacrifice a lot. There is so much I have to do, but time doesn't permit. Associated with time really is the lack of expertise and individuals in my surrounding especially at the university to assist me ... we did provide a platform for training but with limited resources. We did offer public lectures, I would say, we participated in events, some national, some international, like the world environment day and others.

The above discussion and data excerpt give an idea of how the pre-ITP and pre-MESA Chair positions and practices may have shaped the status of ESD learning and change processes at UNISWA. It is, however, a one-sided view from the analysis of only three of the educators and staff of UNISWA. In the next sections, the institutional social-cultural conditioning that may have inhibited ESD mainstreaming and warranted the mediation of the participants, using their position and practice, will be presented.

5.4.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme two: institutional ESD related problems the participants propose to address through their participation in the ITP/holding an ESD mesa chair

The research participants encountered various institutional problems and constraints that needed to be addressed urgently at UNISWA. Some were general but most were born of their institutional positions and everyday practices. This provides evidence of frustrations that agents

can experience in their social contexts, because of the unavoidable influence of past structures and current agents (Archer, 1995). Based on and out of these frustrations, emerges their personal resolute or 'ultimate concern' to bring about change (Archer, 2003; Etelapelto et al, 2013). SRP3's ultimate concern was the commencement of the UN Decade of ESD and the associated realisation that universities are expected to mainstream ESD in their teaching, research and community engagement (which was not fully realised by UNISWA at that time). Based on this global agenda and demand/request, SRP3 decided to take the lead; this was also based on his expertise and interest in ESD and his institution. He rose to the challenge of transforming UNISWA to meet HE sustainability-required standards. His interest and concern went beyond UNISWA, to communities around him and the nation at large. He explained that in Swaziland there is the law of compliance to regulations but he knew that the ESD agenda required more than mere compliance. ESD necessitated stewardship, which foregrounds ethics, attitudes and willingness to assume responsibility towards the environment, society and economy. This was his goal, this was what he wanted to inculcate in the society and his colleagues and students in the university. He explained:

We are supposed to have activities on environment and sustainable development but there are none, and you notice that the institution is not in any way geared towards mounting such activities or facilitating the mounting of such activities; you then have to take it upon yourself to try and assist the institution to move it to that... [This] is the space where one can make a contribution to the country and be seen that we are implementing ESD especially during the decade that was proclaimed. So I think that was our goal. (SRP 3)

Another negative institutional conditioning that these three participants wanted to address was the fact that Environmental Education and ESD did not exist in the Faculty of Education, Faculty of Commerce and other faculties at UNISWA. This meant that SD and ESD knowledge and awareness were lacking in many faculties in UNISWA as at that time. The frustrating lack of major institutionalised ESD endeavours constituted a challenge to introducing or integrating ESD concerns and issues within the structures of the university.

Another factor was the lack of institutional support and official recognition of activities which prevented the availability of financial resources for ESD related activities on campus and surrounding communities. Hence before the establishment of the MESA Implementation Committee, the inauguration of the MESA Chair and participation in the ITP, the ESD activities of these participants and other few colleagues were ad hoc at UNISWA. Despite the ad hoc ESD related practice, SRP3 and SRP2 were able to support local organisations that wanted to implement something that was related to environment, education and sustainability. Two of the participants highlighted:

I cannot recall the university as a whole; I cannot recall it encouraging ESD or Environmental Education except the ad hoc approach which we had ... but the university side of it, I cannot recall the administration getting involved. (SRP 2)

Environmental Education does not even exist in the Faculty of Education. It is not there. ESD did not exist, so it was difficult really to have it within the structures of the university one way or the other ... that affected our resources, we did not have money. Just to cite an example, we had our ESD implementation plan in 2006 but it did not take off because of lack of finance, up until the seed fund that came with the MESA Chair then there were some activities, otherwise we had a plan ready to be implemented but [this] could not be implemented because of lack of money. (SRP 3)

Through participation in the ITP, SRP1 became aware of the roles companies and industries have played in depleting the environment and what they are also capable of doing in terms of leading sustainability. The concern grew and he therefore wanted to address the issue of lack of awareness and knowledge about SD and ESD in his faculty, as well as facilitate the development and introduction of courses that will integrate the business environment with the physical and social environment. He explained:

My concern was the lack of awareness of sustainable development in my faculty and since we are faculty of commerce, the students we produce end up being leaders of businesses and companies. I was aware through the ITP that the business companies are the major cause of environmental degradation, air pollution and waste and all kinds of things, so my ITP change project was first to create awareness in my faculty about Sustainable Development. Then once awareness was created, to influence the faculty to have courses that will address directly issues of Sustainable Development which we didn't have before ... so that was my major concern. (SRP1)

The problem SRP2 wanted to address was also related to his department, background, profession and expertise. His pre-ITP exposure to environmental education and his more concrete encounter with SD and ESD through the ITP and MESA have made him even more concerned and resolute. He wanted to teach his subject matter in a more interesting, appealing, learner-centred, problem-based, change-oriented and 'user friendly' manner – thereby practically actualising the principles of ESD. He explained:

The main concern was mainly due to my background that is my subject. Let me just start from my school days when I learnt geography at school. To me it was a subject which was relevant but the way it was taught it was just like you will teach history and so on, so when I went for training as a geography teacher I found that it was more than just a subject to be passed or failed. It was relevant to our everyday activities. So when I started teaching I found that a subject has to be taught in order to sort of bring a change in one's life so that it can be useful even outside the classroom. So my main concern was the teaching of the subject and 'how'; the 'how' part of it was very very important because I thought that if you teach a subject it has to bring a difference in one's life. (SRP 2)

The evidence above indicates that UNISWA had hitherto inhibited the flourishing of the knowledge and practice of the sustainable HE. There was a lack of awareness through courses and programmes that exposed staff and students to SD. Participants were able to overcome at

least some of these institutional frustrations and conditions and pursued institutional transformation due to their positions and practices, as well as the capacity gained through the ITP which exposed them to areas in which they can mainstream ESD. Their personal concern for change, improvement and intervention facilitated the process of ESD learning and change at UNISWA. In the subsequent section, the influence of these three participants in ESD mainstreaming will be considered in relation to the coordinators of the ITP, other ITP colleagues, and their colleagues in and around their institution.

5.4.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme three: the kind of support the ITP participants (and their respective institutions) received through their participation in the ITP/availability of an ESD mesa chair at UNISWA and Swaziland

The Swaziland ITP participants have testified to the success of the ITP. The impact of the ITP on them as individuals and their institutions has also been deemed enormous. They have articulated the effectiveness of the components, themes and approach, and the entire structure of the ITP. ITP participants have also received resource materials support which they have been using in their institution. As an interviewee pointed out:

There were a lot of reading materials. There were many sessions, workshops and so on which we had; I liked their approach. Instead of being lectures, it was sort of hands-on; you could easily share what we got from there with other people. (SRP 2)

The MESA Chair who had not participated in the ITP but who had good interaction with the ITP participants, said:

Well the ITP helped a lot, it helped a lot. I think they [ITP organisers] also had a good approach. I am having this case study of SRP1. SRP1 joined the MESA implementation committee having no interaction with issues of environment and sustainability, taking him to the ITP really worked wonders because when he came back, he was speaking a different language to me and I was really happy. I don't know the model they use but the model they are using really works. (SRP3)

The substantially practical and abstract knowledge of sustainable development, its meaning, its interrelated dimension and its importance were presented to ITP participants in accessible ways. Interaction with and listening to the presentation of fellow university educators during the course sessions were also instrumental. The two ITP participants had this to say:

OK, I think for me, as I said, being from the faculty of commerce, the challenge was having no idea what it was, so I think the journey started from first getting the understanding of Sustainable Development, and through the ITP, it gave me the holistic picture of Sustainable Development. ... They made me understand what ESD was. For me that was really really important because if you don't understand what it is then it doesn't exist. (SRP 1)

The ITP helped me a lot in the sense that it formalised the ESD which all along has

been informal and I got to understand it more than I understood before. Yes yes the ITP has definitely made me better than I was before. If the ITP was not there, I think the challenge would have been, maybe I wouldn't have been focussed or channelled but having gone through the ITP with people talking about climate change, people talking about pollution, people talking about waste, others talking about ethics and values. It makes you more well-grounded, it gives a better understanding of what it is. (SRP 2)

The structure of the ITP, in terms of the south-south, south-north knowledge exchange and interaction which mandated the travel of participants either to Sweden, South Africa, Kenya or Nigeria (depending on their year of participation), has been considered extremely useful. Linked to this aspect is the strategy of admitting two participants from an institution to undertake one change project together. The positive effect of this strategy has also been highlighted and appreciated. The following interview excerpts confirm this claim:

The exposure to various countries, like Sweden, even South Africa and how they were going about implementing Sustainable Development practices and also how it can be mainstreamed into programmes and curricula. I think that what was the ITP did for me, it exposed me to such...Through the various lectures, the different programme and different universities in Sweden and also at Rhodes, everyone explaining different aspects of Sustainable Development. (SRP 1)

I didn't go to Sweden I only joined them at Rhodes [South Africa], I also learned a lot because my knowledge of ESD was sort of superficial not focussed but due to the ITP, my ESD Knowledge became focused. (SRP 2)

I like their training which myself lacked in the past. The training, you know what happens; you end up training two people. SRP2 would have benefitted, but now when SRP1 came and they went together, I saw a lot of transfer of what was in Sweden and by the time they went to Grahamstown, basically SRP2 [who was the co-participant] was aware of what was happening. I liked the issue of training them together, yes. (SRP 3)

The ITP has also provided the easy application of abstract and seemingly complex concepts faced by participants. The field trips made to various places where sustainable development practices were evident, were also found useful. One participant explained:

And then also the exposure to the various practices in various countries and institutions is like putting application to knowledge. I think that's where it helped me, that it is not as complicated as it seems, it can be done by basic steps, because you are seeing the thing, that it is not just theoretical, they will take us on trips and show us what others were actually doing. Some of them were simple, simple as conserving water, rain water, simple things, planting and gardening using tyres, those are simple things that everyone can do, saving electricity, things like that. So I think for me that was important and also meeting other participants from different countries, networking and also the challenges that they had, that was what the ITP provided for me. (SRP 1)

UNISWA has a strong MESA programme which has VC level support and an internal MESA committee structure involving cross-faculty co-operation. It has a SADC MESA Chair, and has

conducted a whole university USAT audit. The MESA Committee is active and provided a strong context for this ITP Change Project (the participant and co-participant serve on the MESA committee). After the institutionalisation of MESA, there was provision of funds to the office of the UNISWA MESA Chair. The SADC REEP gave financial support with the supply of what was known as the 'seed fund' which came with the MESA Chair. This fund was meant to help in the initiation and facilitation of ESD related activities within and out UNISWA. UNISWA administration also provided institutional moral and material support.

I think most of the support which we have had is moral support from the administration. They have been very supportive, that is in addition to the grant we got from the SADC REEP, which is financial support. We have been able to finance ourselves, doing workshops and so on. I think it is not material support as such that was from UNISWA, I would say moral support, yes. We report to the pro-vice chancellor and he is very very supportive morally to the MESA activities. (SRP 2)

There is ample evidence that the MESA Chair and the institutionalised MESA Implementation Committee had a positively influential social interaction with the ITP participants even before the actual programme commenced. The support the MESA Chair provided included the identification and nomination of the two ITP participants from Swaziland who were already members of the MESA Implementation Committee, as well as other local support. Apart from the above bits of evidences regarding the existence of social interaction between the three research participants and their positions and practices, the quotes below also show the importance, outcome, and implication of the existence and position-practice system of the MESA Chair at UNISWA. Participants stated:

We have facilitated participation in the ITP because the MESA Chair identified and encouraged people to go there and then locally because there are some supports they need locally, we did provide that. (SRP 3)

I would say the MESA Chair added value to the ITP change project in the sense that without the MESA Chair we wouldn't have had a formalised and focused approach to ESD but then the MESA Chair sort of provided a launchpad. (SRP 2)

It [the existence/presence of a MESA Chair] did help a lot because part of my change project was to create awareness of ESD in my faculty, which was also part of MESA's responsibility, it is among the activities we were doing and planning to do. When MESA was launched in the UNISWA, it was mainly to create awareness about sustainable development, so I think it just tied very well together. (SRP 1)

The position-practice system of the MESA Chair has supported students in participating in various training workshops, and environmental related conferences. These youth empowerment-related practices have shown the social interaction between the research participants who are lecturers and their students who are also key stakeholders and change agents at UNISWA. The following interview excerpt illustrates this interaction facilitating learning and change:

Our support was not only for colleagues, we also supported the training of the youth. We sent about 10 of our youths to Grahamstown for training on leadership.

... Lesotho under SADC had organised a training workshop for youth leaders in the region we facilitated that. We also sent three students again to what is called the Youth Summit for youth volunteers which take place every year. We've sent two youth members who are leading a student club called UNIGEPS. ... The UNISWA geography, environmental science and planning students and the last one to participate in 2014 was the chairman of the Green Team. (SRP 3)

It can also be said that there has been socio-cultural interaction at the societal and national level between the MESA Chair and Swazi citizens. The MESA Chair has provided national support such as helping the participants of the Regional Centre of Expertise (RCE) meetings with local support including the acquisition of visa, travel insurance etc. Local farmers have also been supported in terms of training sponsorship, travel expenses, purchase of materials and equipment needed for production of mushrooms. As a participant put it:

Nationally we have offered help to our participants in the RCE ... [although] most of the trips are funded but we normally assist locally. The MESA Chair also assists in research. We have also assisted farmers ... The idea was to have three core trainers, we gave all the equipment, we gave them the tools to construct until they produced the first mushrooms and then we withdraw our support. The idea is for all community members to come and learn; they sell the mushrooms; they eat them, mostly for livelihood. (SRP3)

Further national support and socio-cultural interaction between the participants and other stakeholders includes the implementation of the new Swaziland Safety Act with the introduction of a system of biotechnology. The MESA implementation committee (MIC), including these three participants, were consulted for this project because the Government officials found the ESD mainstreaming approach useful. The following interview excerpts attest to this:

Our country liked our approach, which is mainstreaming and they wanted a similar approach for biotechnology ... They wanted to raise awareness and get it into the curriculum one way or the other ... So we implemented the first phase of this project which involved a seminar for institutional leaders in the country, all the universities and training colleges. It also involved the development of a manual. It also involved the training of the MESA team itself, including similar members of the MESA from Mozambique, the pedagogical university and we are working together on this in Swaziland because we will be the implementers and other things in phase 1. In phase 2 we will be basically conducting awareness and knowledge based kind of workshop for all universities, training colleges in the country along what we did for MESA. MESA was faculty based but this one will be institution based. (SRP 3)

We have also been engaged with other companies, training some government officials also on biotechnology and biosafety issues; that was just recent I think at the beginning of the year. So I think the first was the issue of creating the awareness but also other companies are using MESA for facilitating workshops in the country, since it is based in the university, since it is reputable institution, so they find it ideal for MESA to help, especially in issues of sustainable development. They come to the MESA secretariat, SRP3, SRP2 and they inform the whole MIC committee, and those who can, those who have the expertise in particular areas will go to help them. (SRP 1)

Like now we have taken on board, biosafety and biotechnology which we have mainstreamed which have not been done before. (SRP 2)

There is more evidence of institutional socio-cultural interaction in relation to ESD. ESD mainstreaming and practices at UNISWA, have not only been shaped by ITP participants, the MESA Chair and the MESA Implementation Committee. There have been some position-practice systems within UNISWA that have shaped the current status of ESD in Swaziland. Named among these groups of people, offices or organisations are the Vice Chancellor, Directors of Centres and Institutes, and Deans of Faculties. When the whole-institution USAT analysis was done by the MESA Implementation Committee, the Commerce Faculty showed low levels of engagement with ESD. The ITP Change Project was linked to the work of the university MESA implementation committee, which conducted workshops for not only the Commerce Faculty, but also for other faculties, the Library and Institutes in the university. The research team worked with the staff members in the Faculty of Commerce separately, and the process was repeated at Faculty level. Staff members were trained on methods of incorporating ESD concepts and principles into their courses, curricula and research. The management of the University of Swaziland is supportive of the Change Project and members of staff have shown interest in environment and sustainability issues. The MESA Implementation Committee meets every Friday to deliberate on ESD issues. There is ESD-related social interaction between the research participants and the Pro-Vice Chancellor who plays an important role in instigating and assessing the status and progress report of ESD submitted by the Deans.

On campus, I would say the Office of the Vice Chancellor virtually; it advised that if we want to host a seminar or a training workshop, for attendance to be guaranteed, we must use the office for invitations. That's what the Vice Chancellor advised us to do. So we really use that office to invite, especially if we invite Directors, and Deans and so on, they normally respond, that's what he said, he said they normally respond if we use his office, so we must use his office. Then, the Pro-Vice Chancellor virtually that one, his position is to influence the Dean. I remember when meeting with the Dean and I was coming from a meeting that we have every Friday that was dedicated to ESD, that Friday everyone was looking for SRP3 to assist because the Deputy Vice Chancellor wanted us to report on what we have done on ESD. Then we have the position of the MESA team, they are from all sectors, now they have become champions of ESD in their faculties where they come from, that's how people have influenced ESD, by being members of the committee. Again it has given them the clout in their faculties so they are able to influence others, that is how their positions have influenced ESD. (SRP3)

There is also social-cultural interaction between the UNISWA MESA Implementation Committee and other positions and practices outside the institution; for example the Ministry of Education, Swaziland Environment Authority, student organisations and other universities, as shown in the citations below:

In the MESA committee, we also accorded an observer's status to the Swaziland Environment Authority (SEA); where that man [the appointed officer] is the coordinator and our representative to the SADC REEP. He has access to all networks in the country which basically deal with the environment. So through him he carries MESA for us to all. Through him we were also accorded observer status to other universities in the country [especially] the SADC Southern African Nazarene University, they meet with us regularly ... They have started their own MESA there

and their colleges. Fortunately people who come to MESA are people like from the SEA, the acting director of the policy research and information unit. This is the person who is really high, second in charge. From Nazareen University we have two senior lecturers who are participating, so we are using them really, using their position to get MESA recognised in the country and in the other institutions other than in the UNISWA. The Southern African Nazarene University train teachers and they also train nurses. (SRP 3)

Current activities include the clean-up campaigns, we also organise conferences like now we are planning to bid for 2015 EEASA conference, and then of course also the re-orientation of our lessons. Then we have World Environment Day celebrations, we are in the committee... We had the Earth Hour and then Earth Month in which we play an important role. We are also 'patrons' of the students' Green Team which is the environmental and sustainability arm of the students, yes. (SRP 2)

Yes in the country, first by the Ministry of Education, the fact that it has reviewed its 1999 policy and included ESD. The fact that the national curriculum centre has included ESD and has produced materials, new materials for teaching in high schools that are related to ESD, it think it shows. Then the fact that now even the Swaziland Environment Authority (SEA) is beyond compliance now, it has undertaken to hold workshops for its own clients on ESD, on climate change and so on. I help with those workshops, because I delivered a lecture for the SHE forum, the Safety Health and Environment officers for all the industries, I presented on ESD to the SHE forum, now they call it SHEQ, Safety Health Environment and Quality forum, these are personnel from industry, yes. (SRP 3)

5.4.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme four: the post-ITP and post-ESD mesa chair positions and practices and how these (including the positions and practices of others in their social context) and the ITP shape the ESD learning and change processes in their institutions or countries

The positions and practices of these three research participants started changing immediately during and after their participation in the ITP. The change in position has also been traced to the introduction of MESA at UNISWA and particularly the MESA Chair. When asked if their positions and practice have changed (especially based on their well received understanding of the theoretical and conceptual meaning of 'position', which means much more than the layman or superficial meaning but meaning duties, rights, influence, power, authority), they responded as described below. It is worth mentioning that the tendency was there for participants to say "no my position did not change, I am still a lecturer" but after probing, they expressed a deeper understanding of the concept. The following excerpts present ITP participants' description of their changed position-practice system after their participation in the ITP.

My current position hasn't changed much; I am still senior lecturer in the department with more experience than I had before, before the ITP and MESA. I am also chairperson of EEPAP, Environmental Education Public Awareness and Participation, which is a semi government committee ... I am the chairman of the

Regional Centre of Expertise (RCE) Swaziland. It is a committee of four, me, SRP3 [two others]. In a way, I would say it [position and practice] changed in the sense that we got the mandate to try and help our colleagues in mainstreaming Environment and Sustainability in their courses, instead of just teaching for the sake of teaching as they used to do. Then of course there was the MESA which gave us some 'clout' which was more powerful than before. Because before then nobody would listen to me that much when I talk about ESD but after the establishment of MESA, the MESA Implementation Committee will have the authority to even report at faculty boards, we had a slot to report. (SRP 2)

I think so. In terms of the realisation of why ESD is important, because when I came back from Sweden, then I had consultations with the Dean to see how we can influence the Faculty to implement some of the things I have learnt during my travels, so we began to work on that. It also helped me to get my faculty to begin to access our courses to see how much content do we have that were addressing Sustainable Development. Part of the ITP project entailed that, I couldn't do it alone, so I needed the faculty's cooperation support, so I think that is where my position began to change. Yes, I think the awareness of sustainable development, coming from a faculty, which had no understanding of what ESD was. Starting from there, to just knowing what it is, and also helping others, creating awareness among my colleagues on ESD and also convincing some of them to actually develop courses or modules on sustainable development, yeah I think that is for me I will say the ITP helped me to do. (SRP 1)

The post-ITP and post-MESA positions and practice most likely have facilitated an extended learning and change process within and outside UNISWA. The social-cultural interaction within these research participants has facilitated the expansion of the knowledge and practice of a lifestyle inclined towards sustainable development . The following interview excerpt shows the process of ESD mainstreaming at UNISWA:

... I think first will be creating awareness of ESD especially in the university of Swaziland because what MESA did after the ITP and during the ITP programme as part of it was that we trained the whole university, almost all staff members, academic and non-academic staff on issues of ESD; that was the first aspect. We tried to create awareness of ESD in the whole university for both academic and non-academic staff. (SRP1)

The evidence presented above of substantial social-cultural interaction in Swaziland among ITP participants, the MESA implementation committee, the university officials and colleagues, personnel from the Ministry of Education and Ministry of Environment, other universities and colleges, has much to do with the status and progress of ESD mainstreaming in Swaziland. The evidence in data presented regarding the change (and pattern or mode of change) in the post-ITP and post-ESD MESA Chair positions and practices has already affected the efficacy of professional development for HE educators by building their capacity and thus ensuring effective ESD mainstreaming into all disciplines and functions of HE.

5.4.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme five: Agential elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

The change in position and practice of participants presented above may have emerged from their personal agential elaboration. This is worth noting because an individual without an experience of substantial agential elaboration is most likely not be able to influence any social-cultural elaboration in their social contexts. The following participants' interview excerpts show agential elaboration in knowledge of SD and ESD and application of such knowledge and expertise to practice. This elaboration can be considered as a stepping stone for the elaboration of students, colleagues and their institution.

My knowledge of ESD was sort of superficial, not focussed, but due to the ITP, my ESD knowledge became focused and I could share it with other people, which I couldn't do before. Yes somehow the activities changed because the infusion of some topics which will make my subject geography more ESD inclined. My core responsibility is curriculum studies in Geography and then of course Environmental Education and Adult Education and I also include ESD, even though it is not mentioned in their [students'] text but it is in my practice. (SRP2)

I think now for the practice, instead of being the champion, an agitator and I am now a facilitator, I'm now an adviser, I now coordinate ideas, you know most of the time, I think my role has become that. I am no longer, I wouldn't call myself a champion now, I think that state has passed. I think now I facilitate the activities of other people, I am now a coordinator; I am the link between various stakeholders on ideas. I now advise other people, I think that is the role I have assumed recently. (SRP3)

From the foregoing and beyond the agential elaboration of research participants is the need to present data that provides evidence of participants' agential elaboration in relation to agential elaboration of others in their institutions – including students and staff. This attested agential elaboration of students and colleagues at UNISWA has come about through various mediums and channels of learning, awareness and orientation, as the following interview excerpts show:

And then of course I even got the confidence of talking to my colleagues about ESD even on a casual basis, yes. I think the change has been mostly in the approach to teaching, yes. I have tried to as much as possible to include ESD topics within my teaching, even in the exam, there is always a question on ESD at all the levels and the students, my students have also changed. I can detect that there are changes in their approach to examination, their approaches to teaching because we see them in teaching practice. (SRP2)

I am a lecturer in the Faculty of Commerce, Department of Business Administration. I am also currently the Head of Department for Business Administration. I think through the teaching of some of the aspects of sustainable development, especially ethics and also environmental issues, I think there are changes of some students' behaviour. We have seen the change, starting with us as staff. I am sure the MESA Chair will concur, he will tell you that before at night you will see our faculty, since it is on the road, all the lights will be on at night as if it's a hotel but now if you drive

past, the place is dark because it is not just only us lecturers but also students. They know that if there's no one in the room you switch off the lights, so I think the change is there, we are seeing it, it might be little but there is a bit of change occurring. (SRP1)

The faculty of commerce besides coming up with a course, they made a resolution to switch off their lights. The Faculty of Commerce is that white building when you come into the university; it had always the light, always their lights were on but that has changed now. (SRP 3)

Apart from agential elaboration in terms of position and practice, there is also evidence of other kinds of elaboration such as motivation, determination, lifestyle, achievement, compliment, resolution, mind-set, agenda, and plans etc. These categories of agential elaboration could be linked to the ever evolving sub-individual and individual laminated system level one and two (see Chapter Eight). The following excerpts show not only the current elaboration but an expression of envisaged elaboration of agency and structure.

I want to just influence my colleagues, my students and companies that sustainable development should be a lifestyle; it shouldn't just be concepts that we talk about but something we should all live by and practise; so I think that is what I think I believe is left for me to do, yeah. Part of my ITP change project, which is not yet complete because of my change of status, is to produce a training manual. Well I started on it, it is just that it is not yet completed on how lecturers can mainstream ESD in their work but I have done quite a number of chapters. It's just that I haven't had the time since my position changed to be Head of Department. (SRP1)

As an individual, I think, I don't want to sound like I am blowing my own trumpet but I have seen myself being recognised as an individual who brings leadership to environment and sustainability issues in the country, as well as in the region. I see that by the number of invites one receives to come and share experiences of the MESA Chair in various platforms in Swaziland and outside. In Swaziland, I have become, I wouldn't say respected but recognised where certain events now will not be, will not take place, will not be complete without my invitation and without my participation. I have found myself being used to add value to other initiatives other entities are undertaking with my participation, it is like it will carry more weight. Then in the university, I have become synonymous with environment and sustainability issues, whenever there is an issue about environment and sustainability, they will normally say 'have you contacted SRP3, what is his opinion' you know. So, I have just assumed that kind of a stature. My profile has also increased both in the country, in my university and I think in the region too. But you wouldn't want to be too upfront on that one because it is only people who will recognise you but I think in the region I have as an individual, I have seen my stature increasing in this field and I appreciate it. (SRP3)

Then of course the colleagues also approach me now and again when it comes to questions on mainstreaming and how they can include or infuse ESD in their subjects and I help them somehow. And then of course there is also the recognition from government and other sectors and students especially when it comes to orienting them because every year we get a crop of new students and they approach either me or

SRP3 to come and help them during the orientation when we have to orient them to ESD and mainstreaming and they do approach us and we feel somehow empowered so much so that we have written some papers on ESD. We have published some articles. (SRP2)

5.4.6 T3-T4:STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme six: Structural elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

The definition and articulation of significant change by research participants in Swaziland (compared to Zambia and Boswana presented in subsequent two chapters) is based not only on their participation in the ITP, but also on the pre-ITP existing MESA activities, as well as the availability of the associated MESA Chair funding. Through participation in the ITP and through the coordinated MESA activities, the Faculty of Commerce have audited their courses and programmes and having found the urgent need to integrate SD and ESD, which had hitherto been lacking. They have developed new courses and modified some others. The currency of ESD at UNISWA has greatly increased and in many departments there are new topics, course outlines, teaching approaches, methods. Some of the courses for students that are new and modified include: BA 423- The physical environment and Sustainable Development; ACF 431- Carbon Accounting; and BUS 440- Environmental Issues in Business. There is awareness of the sustainable use of water and electricity. Students and teachers in the Faculty of Education research on ESD. The following interview excerpt highlights this:

One of the things that has happened since the ITP is that the faculty of commerce got a chance to review our programmes, so one of the things that happened which helped me was to influence the faculty of commerce to have courses on sustainable development being offered in the Faculty for students in commerce. We have a course on carbon accounting, we have a course on environmental issues in business and we have an elective on sustainable development, so we managed to come up with these three and I think we are yet to come up with more, it's just that we just wanted to start with those. I think we have two or three that are coming up and in some of the course outlines you can see topics on sustainable development and that has changed since the ITP. At least I am happy that we have two or three courses that have been developed. I am the one working on one of them, yes. (SRP1)

There has also been evidence of structural and cultural elaboration in the area of teaching and learning on campus especially with the sphere of influence of participants. The research participants and some of their trained colleagues are mainstreaming ESD in their courses. Since the approval of new courses takes time and effort, UNISWA lecturers have learned to integrate sustainability concepts and concerns in their teaching in class. It has also been noted that the mainstreaming of ESD is so significant that it reflects at the level of assessment and examination of students.

Through the MESA Chair we have seen that you don't have to have a standalone course, you can infuse sustainability issues within a subject and within the limit of that subject. Colleagues have mentioned that they have changed their approach to

teaching in order to include ESD topics within their lectures consciously, instead of coincidentally. I think that's about all, the change in their approach to teaching and it is very difficult though to monitor them, hence we just take them by their word that they have infused some ESD sessions. (SRP2)

I think one obviously is awareness, introduction of topics and also introduction of courses on sustainable development which were not there before the ITP ... I think the faculty's position had changed and also some lecturers. You can see in the course outline, you see environmental issues actually appearing in some of their courses, even some of the text, and even examinations. There have been questions on environmental issues, which were not there prior to the ITP programme. Now you can see some of those aspects being well defined. It is a slow progress but something is done, I am happy about it yes yes yes. (SRP1)

I was invigilating one paper in Sociology and there was a question on ESD from Sociology, which means a lecturer taught it for him/her to have asked. And then of course I am also teaching Environmental Education course in adult education, I am planning to revise the text that I am using because I am using somebody's books but during my teaching I do include ESD and even in the exam, it also shows that students are coming up for it. (SRP2)

I have classified the following forms of elaboration into levels including faculty level elaboration, institutional level elaboration and national level elaboration. Although the previously presented data provides some evidence of the elaboration at faculty level, the following are more specific to practice and sustainable management of resource. This section also sheds light on the mainstreaming of ESD within the sphere of influence, position and practice.

As a faculty we now understand the importance of sustainable development, why we buy things, we don't buy for the sake of buying, things like that, you know sometimes you have money and you just want to spend the money but now you understand that if I buy something, why should I buy it. (SRP1)

The currency of ESD is very high now, it is very high and the pleasure of it is that even subjects that we thought could not be amenable to ESD [have been mainstreamed]. I am sure you talked to SRP1 this morning, he was a surprise package in his commerce course, because he is the one who actually showed us that we can mainstream in commerce. And we have another representative from the Faculty of Humanities from the Department of History, he is also a surprise package, because he showed us how we can mainstream ESD in history and that to us means that change has taken place. (SRP2)

The [ITP] change project has made significant difference because I have noted that there has been some review of curriculum, especially in commerce. (SRP3)

Institutional social and cultural elaboration is attributed to factors and the position-practice system beyond those of the research participants. Evidently, the institutionalisation of MESA at UNISWA, the inauguration of the UNISWA MESA Implementation Committee and the existence of the MESA Chair at UNISWA go beyond the sphere of influence of the three research

participants from Swaziland. For example, the research participants expressed their opinion on how the acquisition of the MESA Chair by UNISWA has contributed to institutional level ESD elaboration:

The MESA Chair has brought life to university activities especially because we've got representatives from all the faculties, from the administration, from the library, and the academic development centre which is sort of overseeing the MESA activities. So what I would say is that the MESA Chair is a flagship for Education for Sustainable Development and it has also been used for many other purposes besides teaching at the university. I would think the MESA Chair has made a difference in the sense that we have approached education for sustainability in a focused way instead of the sporadic and ad hoc approach which we have been having all along. One of the problems, which we have been having, is that each one of us comes, some colleagues will come and ask, 'how can I mainstream ESD within history', 'how can I mainstream ESD within commerce'. That is why all the faculties are represented, so if somebody comes to ask about geography, I will try to help him or her on how ESD can be mainstreamed. And one of the things which has helped us are the three pillars of ESD, because we have environment, economics, and social issues, so each of the subjects has a strength in one or two of these pillars, maybe not all of them. So they have seen that in commerce it is more on the economic side, and history and bible knowledge is more on the social side, geography is more on the environmental side. So they have approached it that way and seem to appreciate it. Yes the existence of a MESA Chair has made a difference. (SRP 2)

In the university, you know now mainstreaming not only of environment and sustainability, but mainstreaming as a concept is now entrenched in the university because I heard them now saying 'instead of having a separate course for this why don't we mainstream it' and we are the ones who brought the concept of mainstreaming. The strategic plan of the University 2011 now has an issue and an objective on environment and sustainability which was not the case before. ... Mainstreaming in the institution is underway now because we've been given of glimpses of review of curriculum. I've just seen a new research agenda from the research institute in the university, they've shown me, and I've seen it. We also have a new course now on Education for Sustainable Development in my department. They are working on an Education for Sustainable Development programme in the Faculty of Education. There is green accounting course in commence and all these things which are taking place in the universities. ... And then we have also developed a reporting system for water that is leaking. The difference we also made in the university is facilitating a very very vibrant youth organisation called the Green Team. I think now it is a recognised structure in itself. (SRP 3)

The evidence of elaboration at the national level has been presented according to the number of various community projects that have emerged and improved engagement with the Swazi community members and industries.

I think we have assisted nationally. To the country, the MESA Chair has contributed to the 2011 Education and Training Sector Policy where we have a chapter on ESD, but mainly to operationalise the article ... We have what is called NEEP, National Environmental Education Programme; the MESA Chair has provided expertise for the NEEP to come up with a new strategic plan for its own activities. There is so much that has happened I cannot really recall all. (SRP 3)

And even through the Swaziland Environmental Authority, they engaged MESA to

conduct an audit on bio-technology and bio-safety and then engaged MESA also in developing material for training, we are yet to do the phase 2 if successful, which means we need to do workshops for different stakeholders on bio technology and biosafety in Swaziland. (SRP 1)

5.5 DISCUSSION

The sphere of influence of HE educators has also been seen in the experiences and practices of the participants. As reported above, the morphogenesis of the ESD learning and change process elaborating from individual agential level to institutional structural level and gradually to national structural and socio-cultural-ecological level has also been seen. Below is a presentation of the concentric circle view of the position-practice system influencing effective ESD mainstreaming at UNISWA, according to the case records presented above:

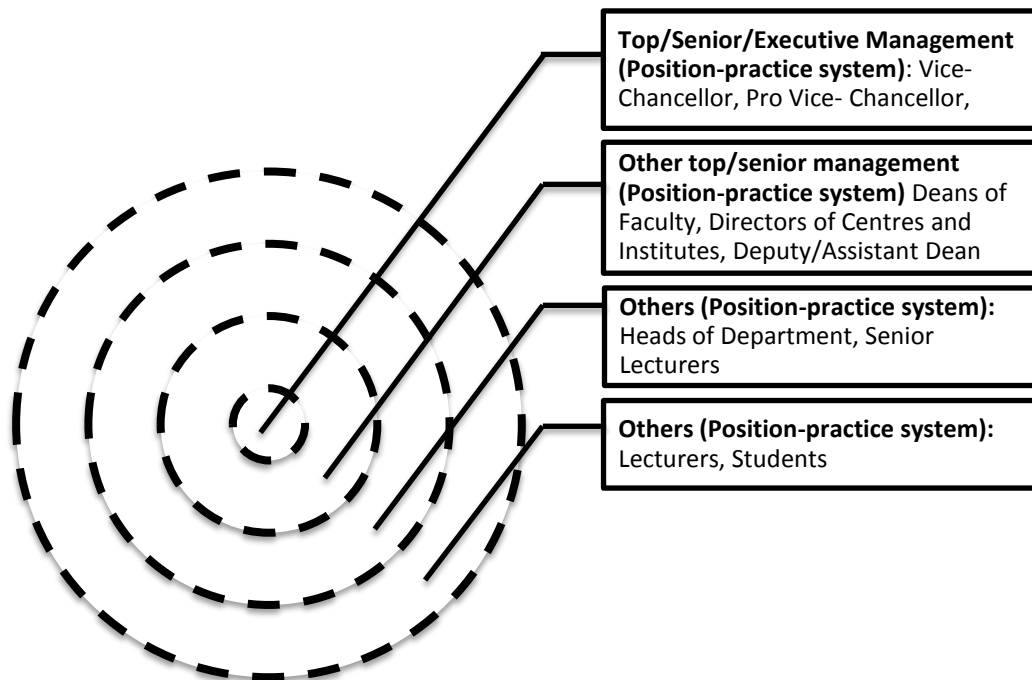


Figure 5.3: Concentric view of the position-practice system of UNISWA on ESD mainstreaming

Figure 5.3 above is a representation of the key institutional positions that have shaped the status of ESD mainstreaming at UNISWA. Insightful information has emerged from this case study. This includes the evidence of individual-professional elaboration from participants' encounter with the ITP as in the case of SRP1 and SRP2 and with MESA, in the case of SRP3. The impact of the participation in a change-oriented professional development-training programme like the ITP was obvious, especially in the case of SRP1 who started the programme almost as a novice but ended up becoming an ESD expert and pillar in his faculty as well as a key MESA implementation committee member in UNISWA. There has also been evidence of effective social cultural interaction, which has led to structural and cultural elaboration in and around the institution. The existence, significance, and institutionalisation of the MESA Chair at UNISWA, which was proven by the open, proactive and practical support provided by the senior

management and administration at UNISWA, is substantial. The position-practice system of the research participants and that of others have constructively shaped the status of ESD at UNISWA and Swaziland. The situation may have been very different if the VC and the Pro-Vice Chancellor were not involved in the inauguration of the MESA Implementation Committee or if there had not been mandatory involvement of representatives from all the faculties, the administration, the library, and the academic development centre in MESA activities. The case would have also been different if the activities of MESA did not have the opportunity of being channelled through the office of the Vice Chancellor. Regular formal meetings of the MESA implementation committee for interaction, planning, deliberation, training, learning, activity planning, and implementation of ESD related projects both inside and outside the campus is one of the factors that positively influenced the status of ESD. The involvement of all faculties on all campuses and the involvement of representatives from affiliated colleges exemplified the orientation to ESD as interdisciplinary and transdisciplinary from the onset. This reality and realisation can be said to have limited the disciplinary barriers, misconceptions and unnecessary antagonism that seems to exist in institutions with an inadequate orientation to ESD and MESA.

5.6 CONCLUSION

In this chapter, I have produced an in-depth analysis of how the position-practice system of individuals and the ITP on ESD in higher education have shaped the learning and change processes in relation to ESD at UNISWA. I used the morphogenetic framework to systematically present data collected and I analysed the data using the same framework. I have presented the data and analysis using six themes. These themes encapsulate the experiences and characteristics of the three research participants involved before, during and after the ITP, their institutional context, and their socio-cultural interaction with others in and around their institution with regard to ESD mainstreaming and practice. Finally, I have provided a concentric circle view of the position-practice systems of those who have influenced and shaped the status of ESD over the years to its current situation at UNISWA according to the case presented above. More analysis and synthesis of this chapter (including the following two chapters) are presented in Chapter 8.

CHAPTER SIX

POSITION-PRACTICE SYSTEMS AND THE ITP: MAINSTREAMING ESD IN ZAMBIA



ITP and other related international fora are indispensable in our quest to make a difference in Africa as regards ESD. We need to promote these fora at all costs. More importantly, we need to walk the talk. Let us begin to live what we are learning, let us exhibit changed attitudes and willingness to rise to the occasion so that Africa is never the same again. Why should countries outside Africa be more concerned about our ESD affairs than ourselves? I also urge a lot of scholars like yourself to take up studies in this *cinderella* field of ESD. –Zambian Participant

6.1 INTRODUCTION

This chapter is the second of three chapters of this thesis dedicated to each country selected for phase three in-depth case study research, namely Swaziland, Zambia and Botswana. This chapter, focusing on Zambia, presents data analysed according to the methodology and analytical framing described in Chapter Three. Zambia has had ten ITP participants and one MESA chair. They have come from four different institutions, namely University of Zambia (UNZA) – five participants; National Institute of Public Administration (NIPA) – two participants; Copperbelt University – two participants, and Kasama College of Education – two participants. Eight of these eleven participants were interviewed during a field trip to Zambia. Like Chapters Five and Seven, this chapter broadly responds to the main research question but more specifically to the research sub-questions (see Chapter One) as they apply to this particular country case study. This chapter presents: 1) participants' experience in their participation in the ITP; 2) the pre- and post-position and practice of ITP participants; 3) the influence of the position and practice of others in and around their institutions on ESD mainstreaming; and 4) pre- and post- institutional conditions. Thick descriptive data presented in this chapter is indexed using ZRP (Zambia Research Participant), followed by a number to differentiate one participant from another.

6.2 CASE COUNTRY TWO – ZAMBIA

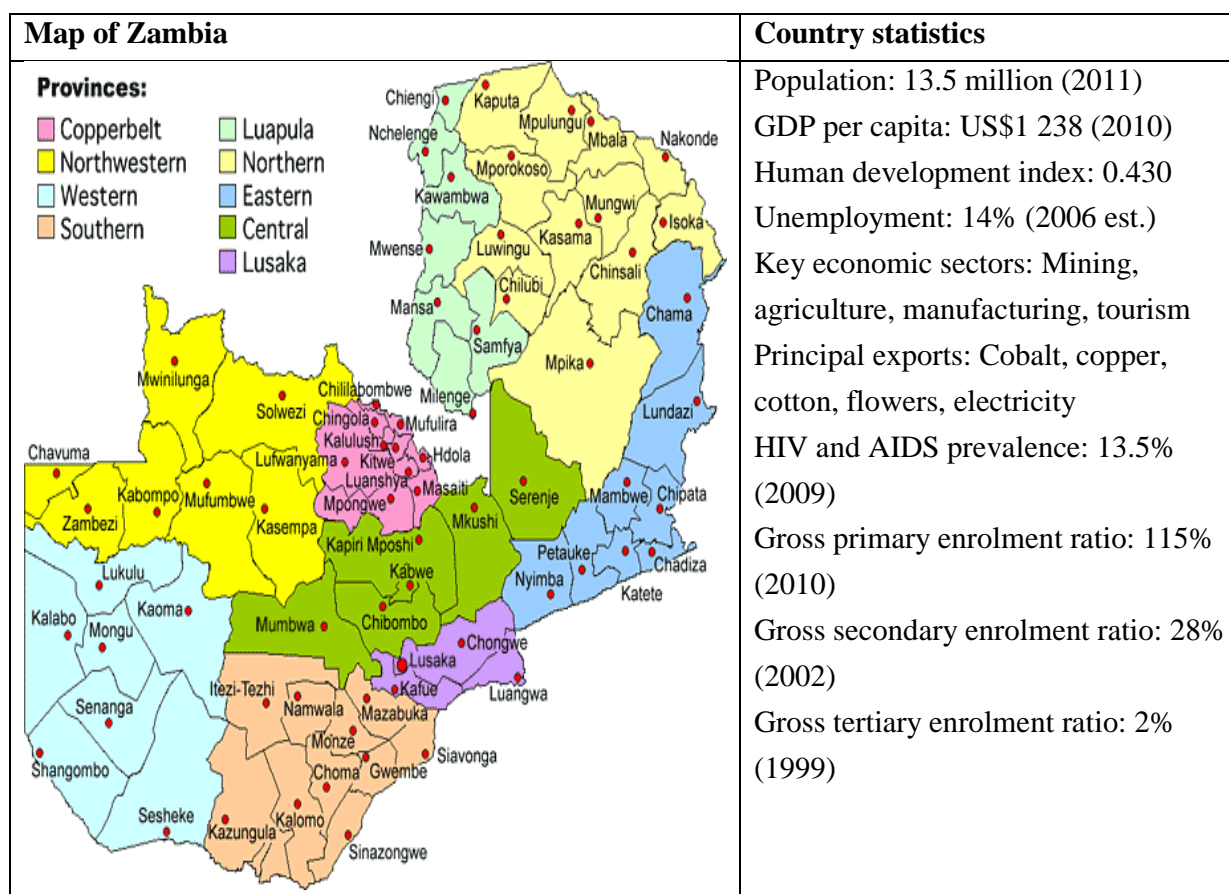


Figure 6.1: Map and statistics of Zambia. Source: CIA, SADC, UNAIDS, UNDP, UNESCO as cited in SARUA (2012b, p. 105)

6.2.1 ZAMBIA⁴⁰

Zambia is a landlocked country in Southern Africa, with a tropical climate. It consists mostly of plateau, some hills and mountains, divided by river valleys. It is the 39th largest country in the world with an area of 752 614km² (slightly larger than Texas, USA). Zambia is one of the most urbanised countries in sub-Saharan Africa, with 44 percent of the population crowded in the few urban areas, while rural areas are sparsely populated. Unemployment and under-employment are serious problems in urban areas, while the majority of Zambians in rural areas depend on subsistence farming. The Zambian economy has been based on the copper mining industry but the government is pursuing an economic diversification programme to reduce the economy's reliance on the copper industry. This initiative seeks to explore other sources of rich resources in Zambia such as agriculture, tourism, manufacturing, gemstone mining and hydro-power. Agriculture plays a very important part in the economy, providing many more jobs than the mining industry.

⁴⁰ Information presented in this section is adapted from SARUA (2012b, pp. 105-106).

Like in other countries in southern Africa, climate change has multiple impacts at diverse scales on both the economy and people's livelihoods. Zambia has already observed a "2°C rise in temperature over the past 50 years, which is significantly higher than the global average" (SARUA, 2014a, p. 310). It has experienced flooding and decreased potential for hydropower. "Projections are for up to a 6°C increase by 2100, substantial increases in the frequency of hot days and nights, and increased rainfall intensity (SARUA, 2014a, p. 310).

6.2.1.1 Educational Legislation in Zambia

Universities and tertiary institutions in Zambia are governed by the University Act No. 11 of 1999, which provides a legal framework for university education in Zambia. The Act defines broadly the purposes of a public university, and these are stated below:

- (a) Provide university education, promote research and advancement of learning;
 - (b) Disseminate knowledge and, without discrimination, to hold out to all persons, who meet all the stipulated academic or professional qualifications, the opportunity of acquiring university education;
 - (c) To provide facilities appropriate to a university of the highest standing, for the pursuit of learning and research and for the acquisition of both liberal and professional education, which is responsive to the needs of Zambia;
 - (d) To make those facilities available to persons equipped to benefit from the use of the facilities on such terms and conditions as Council may determine.
- (University of Zambia, 2012b, p. 2)

The government of Zambia "recognises the importance of higher education and pledges to increase access to university education. The Government has also pledged to increase and streamline budgetary allocation on tertiary education so as to increase the human resource development, improve and expand infrastructure. In line with this policy, the Government has set out to establish universities across the country" (University of Zambia, 2012b, p. 11).

6.2.1.2 Environmental Education in Zambia⁴¹

At the national level in Zambia, EE/ESD has been structured through a number of programmes. With support from the World Wide Fund for Nature (WWF), the Zambian Environmental Education Project (ZEEP) was launched in 1989 to address Zambia's need for a concrete Environmental Education Programme as identified in the National Conservation Strategy of 1985. A further objective was to contribute to the achievement of WWF's global conservation aims. Chalimbana (National In-Service Teachers' College – NISTICOL) was involved in the production of EE materials and the development and delivery of an in-service module in EE for basic school teachers who wish to upgrade their professional qualifications from Teachers' Certificate to Basic School Teachers' Diploma. EE at Mufulira College of Education includes the development and delivery of a Pre-Service EE course component module for the Basic School Colleges of Education in Zambia and the development of Basic School Lesson Guides in EE.

⁴¹ Information presented in this section is adapted from Sakala and Chibamba (2012).

Additionally, Livingstone Environmental Education Project was involved in the development of the School Environmental Policy (SEP) programme, while Serenje Environmental Education Project has been involved in greening of Basic Schools and planting of trees. The Zambia Network of Environmental Educators and Practitioners (ZANEEP), which was launched on 14 December 2002 coordinates all EE activities in Zambia and its secretariat is located at the Zambia Environmental Management Agency (ZEMA) in Lusaka. At the University of Zambia (UNZA), existing policy frameworks for EE/ESD innovations include Zambia's first long-term plan called 'Vision 2030' which articulates the following key principles: gender responsive sustainable development; democracy; respect for human rights; good traditional and family values; positive attitude towards work; peaceful coexistence; and private-public partnerships. All these principles form essential building blocks for achieving sustainable development. Finally, the National Policy on Environment (2007) clearly stipulates that EE shall be taught on a multidisciplinary basis and integrated into ongoing curricula at all levels and on a continuous basis.

Despite the above, Sakala and Chibamba (2012) have argued that UNZA has identified the paucity of qualified Zambian personnel in EE/ESD as the greatest sustainability challenge which needs to be addressed urgently. In this regard, the institution has initiated various educational innovations including: BEd (Environmental Education) degree programme; BA(Ed) in Zambian Cultures and Ceremonies programme (newly approved); MEd (Environmental Education) programme; MSc (Sustainable Development in Mining in Africa) (proposed); SADC Regional Training Programme in Teacher Environmental and Sustainability Education (newly approved); and MSc Environmental and Natural Resources Management (approved in the Department of Geography). The primary objective of these programmes is to contribute to quality human resource development in EE/ESD in Zambia. Beneficiaries of these programmes are pre-service and in-service candidates from a cross-section of institutions such as government, non-governmental organisations, industry and civil society groups from a wide range of levels including intra-institutional, community, national, regional and international levels.

6.2.2 CASE INSTITUTIONS IN ZAMBIA

The following case institutions, which are the phase three case institutions in this research fall under the aforementioned Zambian University Act No. 11 of 1999, with research participants:

1. University of Zambia – UNZA (ZRP1, ZRP2, ZRP3, ZRP4, ZRP11 and ZRP12⁴²)
2. National Institute of Public Administration – NIPA (ZRP5 and ZRP6)
3. Copperbelt University – CBU (ZRP7 and ZRP8)
4. Kasama College of Education – KCoE (ZRP9 and ZRP10)

⁴² ZRP12 is a colleague of ZRP3. Although he is not an ITP alumni he participated in the interview session with ZRP3 and made concrete contributions.

6.3 CASE INSTITUTION 1 – UNIVERSITY OF ZAMBIA⁴³

6.3.1 CONTEXT AND HISTORY

The University of Zambia (UNZA) enjoys international recognition as the oldest public university in Zambia and is located in the heart of the City of Lusaka and. Lusaka is the centre of business in the country and thus presents opportunities for multi-sectoral cooperation and linkages. The University of Zambia is the first public university in Zambia; it was established by the University of Zambia Act of 1965 and consequently opened in 1966 (University of Zambia, 2012b). The University started with three Schools in 1966, namely Education, Humanities and Social Sciences, and Natural Sciences. In its first academic year, 1966, the University enrolled 312 students at the Great East Campus in Lusaka which was then the only campus.

6.3.2 CORE FUNCTIONS, MISSION, VISION AND VALUES OF UNZA⁴⁴

The core functions of the University of Zambia are teaching and learning, research and community service. The vision of the University of Zambia in its Strategic Plan, 2013-2017 (which succeeded that of 2008-2012 period) is to be “a provider of world class services in Higher Education and knowledge generation” (p. 16), while the mission is “to provide relevant higher education, through teaching, research and community service” (p. 16). The theme of the strategic plan is “promoting excellence in teaching, research and community service” and UNZA is guided by the following values: “(i) Academic Freedom; (ii) Accountability; (iii) Equity; (iv) Excellence; (v) Green Environment; (vi) Innovativeness; and (vii) Integrity (University of Zambia, 2012b, p. 16).

6.3.3 STRUCTURE AND GOVERNANCE⁴⁵

According to the University of Zambia – Strategic Plan, 2013-2017, (2012b p. 4) “the University Council is responsible for the governance, control and administration of the University of Zambia. The Chancellor is appointed by the President of the Republic from among eminent Zambian citizens, on recommendation by the Minister responsible for Education. She/he presides at all ceremonial assemblies of the University and confers all degrees, other academic titles and distinctions of the University. The Senate is the supreme academic authority of the University. The principal officers of the University are the Vice-Chancellor, Deputy Vice-Chancellor, Registrar, Librarian, Bursar and Dean of Students. All schools are headed by Deans while the directorate, institutes and centres are headed by Directors”.

Concerning style of management, UNZA “operates by using a participatory democratic system of governance, for example election of Deans, rotation of departmental headship and use of

⁴³ Information provided in this section is drawn from University of Zambia - Strategic Plan, 2013 – 2017, pp. 1-4, 9.

⁴⁴ Information provided in this section is drawn from the University of Zambia - Strategic Plan, 2013-2017, (2012b, pp. 2-9).

⁴⁵ Information provided in this section is drawn from The University of Zambia - Strategic Plan, 2013-2017, (2012b, pp. 4-9).

committees” (University of Zambia 2012b, p. 10). Regarding staffing, “the core resource of the University lies in its diversity of highly qualified and skilled, academic, administrative and technical staff” (ibid., p. 6). There are full-time and part-time academic staff or lecturers. In 2012 “the university has a total of 621 full-time lecturers and the total establishment of lecturers stands at 879 against a total population of 12 450 full-time students, translating into a lecturer-student ratio of 1/20. This is compounded by the lecturer attrition rate that stands at 4.00 per annum” (ibid., p. 6). There is a need to develop and implement staff retention schemes for various categories of staff. Apart from the need to increase staffing levels, attention should be paid to gender balance, staff mix and the implementation of the staff appraisal system. With regard to the skills of UNZA staff, the University boasts of a pool of staff that is highly skilled in lecturing and teaching. In addition, the institution has excellent research skills that are being used to enhance academic excellence and in providing practical solutions to societal problems (University of Zambia, 2012b).

6.3.4 SCHOOLS AND PROGRAMMES⁴⁶

There are nine schools at UNZA, namely the School of Agricultural Sciences, School of Education, School of Engineering, School of Humanities and Social Sciences, School of Law, School of Medicine, School of Mines, School of Natural Sciences and Samora Machel School of Veterinary Medicine. These schools offer various undergraduate and postgraduate programmes and postgraduate programmes are coordinated by the Directorate of Research and Graduate Studies while the Institute of Distance Education coordinates distance learning courses offered by the Schools of Education, Humanities and Social Sciences, Natural Sciences, Medicine and Veterinary Medicine. The University offers postgraduate programmes at diploma and degree levels and most of the programmes offered at Diploma, Degree and Postgraduate levels are not offered elsewhere in Zambia. It also has the ability to produce new programmes since it has a high concentration of skilled human resources which are supplemented by the availability of land for future expansion and development of physical infrastructure.

⁴⁶ Information provided in this section is drawn from the University of Zambia - Strategic Plan, 2013-2017, (2012b, p. 3).

6.4 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT UNZA AND IN ZAMBIA

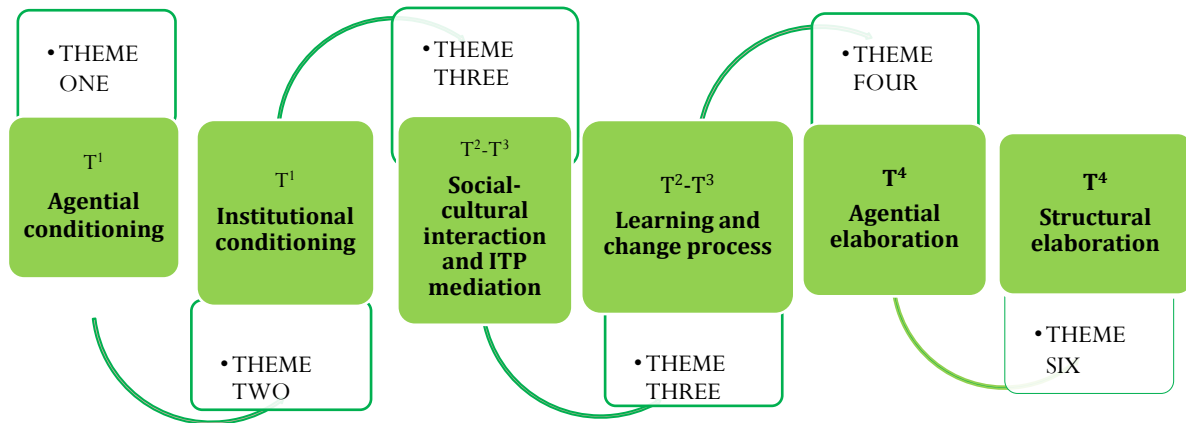


Figure 6.2: Framework for data presentation, analysis and discussion

6.4.1 T1: AGENTIAL CONDITIONING

Theme One: The pre-ITP and pre-ESD mesa chair positions and practices of participants and how these pre-positions and practices shape the ESD learning and change processes in their institution

There have been four ITP participants from UNZA indexed ZRP5, ZRP4 from Geography Department, School of Natural Science and ZRP1 and ZRP2 both from School of Education. Before their participation in the ITP in 2011, all four research participants were lecturers at UNZA. Their institutional job profiles are related, especially in terms of teaching, community engagement and research. Some of them already had academic qualifications in Environmental Education (EE), and others have been involved in activities, projects, and related conferences. The fifth research participant at UNZA is indexed ZRP11, the MESA Chair, from the Faculty of Education, Department of Language and Social Sciences Education. As the MESA Chair, he is responsible for mainstreaming environment and sustainability education at UNZA together with other colleagues at the SADC region, since the MESA Chair is not only a Zambian Chair but meant to service, local, national and regional initiatives in ESD. ZRP11 has been promoted to associate professorship in EE, which makes him the first person to hold a professorship in EE in the whole of Zambia. Before he became the MESA Chair, he has occupied positions including Head of his Department for two terms (for four year). He has also been the Head of the Geography Section, Assistant Dean at the School level in his Faculty and has acted as Dean of the Schools at times. The following interview excerpts show the positions and practices of these research participants:

I am a Lecturer ... I embarked on doing a Masters in Environmental Education at the University of Zambia ... I became one of the pioneers employed by University of Zambia to start lecturing to Environmental Education students, Environmental Ecology ... The course is offered to first year students, it's a compulsory course ... in addition to other courses that I was given such as Environmental Management ... I was also an academic adviser to most of the students ... I also engage in community service programmes ... through our students formed into groups in UNZAEEA (University of Zambia and Environmental Education Association). (ZRP1)

Even before the ITP I have worked with a number of Government departments, the Forestry department for example, the Ministry of Environment and Natural Resources; to look at basically issues to do with sustainable development, especially the issue of climate change. I was in Durban for that Climate Change Conference (COP17). I was a negotiator on behalf of the Zambian Government. (ZRP4)

I am in the Faculty of Education, Department of Language and Social Sciences Education ... Since 1992 I have been at the University of Zambia, participating in issues to do with Geography Education, Environmental Education ... Now I am the MESA Chair and hold a professorship in EE ... before 2010 when I was made a MESA Chair, I was a lecturer of two subjects mainly Geography Education and Environmental Education. For EE, I was a key facilitator to its initiation here, way back in 2000, when I started devising a master's programme in EE. ... At that time I was just Lecturer 1 [referring to entry level lecturer post] and within the University belief system a Lecturer 1 at that time was not expected to initiate master's programme hence it took a long time before the programme was approved, eventually it was while I was still Lecturer 1. (ZRP11)

I have been at UNZA since 1996 as undergraduate, I had my masters and PhD from outside, Masters in Environmental Science and PhD Environmental Engineering ... I am the secretary at departmental level in charge of minutes, curriculum development. (ZRP3)

As seen above, the ESD related practices of these research participants before their participation in the ITP or appointment as MESA Chair vary; although none of them was a complete novice. ZRP11 had extensive EE and ESD capacity, while ZRP1, ZRP2 and ZRP4 were quite knowledgeable in EE. Hence their practices before the ITP were based on their level of knowledge and expertise specifically in EE related issues and risk. Their practices were also dependent on their previous academic qualifications and positions in their institutions, which also determined their sphere of influence, rights, powers, authority and administrative involvement in decision making. Being lecturers, their positions gave them the opportunity to teach mostly undergraduate students. Their mastery and practical application of the principles of ESD in mainstreaming were limited except for ZRP11. Their power to participate in key institutional decision making was also limited except for ZRP11. When asked about their practice, their influence, rights and ESD related practices before participation in the ITP, they said:

Not really, before that it was just normal teaching, yeah, it was normal teaching. Environmental activities became much after the ESD programme, yeah the ITP, yeah the normal teaching, examining, yeah there was nothing much. (ZRP1)

I was involved in teaching, research, and community work ... much of what I did was teaching, and a bit of research, yeah group research, and presentations, chairing meetings or workshops and so on. Yes, teaching undergraduates. (ZRP2)

...Just lecturing according to the mandate of the university ... just general teaching. (ZRP3)

As a lecturer my job basically was to teach and supervise students that are doing Geography courses. So I teach, I supervise students, I can participate, I can do some research. ... I do definitely have influence on the students which could either be positive or negative depending on how the student is. In terms of power, not so much in terms of being involved in major decisions in the department but when it comes to professional participation I think we have that right. (ZRP4)

So I have been more of less lecturing and researching in issues of ESD, as well as conducting public service in the same field. On top of that I have been involved in the training of teachers occasionally in the country through workshops. Also I got involved in publications ... I did a good amount of supervising of my masters students. I was able to innovate a number of programmes within the Faculty ... I served on a number of government committees in EE ... I must say that the transition from what I have talked about to becoming MESA Chair has not been clear-cut in terms of clear boundaries because many of the activities which I was doing before I became a MESA Chair continued to be done. For instance training of students at Masters level in EE as well as researching and publishing in ESD. (ZRP11)

With regard to the personal strength/technical know-how of research participants in terms of ESD mainstreaming before participation in the ITP/appointment as MESA Chair, they had diverse points of strength and weaknesses which resulted in how well they were able to harness the pre-ITP level of ESD knowledge and skills. Most of their strength and capacity was drawn from their educational background, qualification, personal resolution, resilience, attitude of colleagues and not necessarily from any past professional development on ESD.

I was only getting the strength from my background, because I was a science student, yes my Biology. That's where I think I was drawing most of my strength from. (ZRP1)

Well I wouldn't say I was comfortable with ESD in the sense that if you are new in a place, you tend to first watch what's going on, until you are given leverage, yes. And I think that leverage came almost at the same time or with that time when we were doing the ITP. (ZRP2)

My personal strength has always been my link with climate change. My PhD was on urban expansion and the implications for all. (ZRP4).

My personal strength was largely in my training which I got through my Masters and PhD because at that time there were very few people who have been trained in EE and I was among the earliest to be trained in that field. That was the biggest strength. The second strength I must say was that I am a bit fortunate my colleagues are inclined to listen to me, meaning they respected me. Amount of respect is very influential in innovating programmes. I was able to initiate a number of programmes within the Faculty ... I think the other strength I got was support from my doctoral supervisor from University of London. She was extremely supportive ... (ZRP11)

Irrespective of the various strengths and capacity in their disciplines or subject areas before participation in the ITP/appointment as a MESA Chair, research participants had personal challenges and limitations regarding ESD mainstreaming personally and professionally. These challenges range from inadequate ESD experience, knowledge and capability, to lack of departmental support. Institutional bureaucracy and lack of coordinated institutional effort and slow response of the government, especially the Ministry of Education, were further constraints or challenges to ESD mainstreaming experienced by participants. The following interview excerpt present participants' limitations and struggles:

Ok, I think the challenges that I would say I faced, maybe was just the aspect of being inhibited, in terms of expressing. Anyway, maybe it also has to do with who is at the top [also] maybe just generally the information was scanty and maybe the way one understands development, yes. (ZRP2)

Challenges and limitations were infrastructure, finances and if you look at the history of our university, it was built for 3 000 students under the Kaunda regime ... and now in the same university instead of having 3 000 students there are about 36 000 students ... the biggest challenge now is textbook ... sustainable development textbooks are very difficult. (ZRP3)

My knowledge, my knowledge base was narrow at that time. (ZRP1)

Before the ITP ... the main challenge there for me was doing this thing without a solid base. [A situation whereby] you don't have the tools, you don't know what initiative is going to be done to try and make the issues of ESD more into your curriculum. That was a major limitation of ignorance, if I'm to put it that way; ignorance of ESD tools and the things that go with it. (ZRP4)

The first one is the entrenched attitude amongst some academic colleagues who had a thought that only people holding certain ranks can initiate a programme and that only professors could start a master's programme, I think that was one of my biggest challenges. The second challenge was the newness of EE, although in the Government circles there were talks on introducing it to institutions of learning but it became clear to me that although I was part and parcel of that discussion the world out there was slower in taking up EE as an institutional innovation and as a University we were faster. These mismatches I think still haunt us to this day. ... The other challenge I must say was with our own Ministry of Education ... (ZRP11)

6.4.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme Two: Institutional ESD related problems that the participants proposed to address through their participation in the ITP/holding an ESD mesa chair

Before participation in the ITP, the institutional or national status of ESD has conditioned (influenced, shaped) ESD mainstreaming and ESD practice in certain ways. Although there were national policies, there are still certain practical factors related to ESD mainstreaming to take into account. Such factors include the lack of institutional ESD policy/strategy; lack of institutionally coordinated effort that incorporated all faculties in the bid to ensure sustainability; lack of

awareness about ESD and MESA across disciplines and lack of adequate value for the essence of ESD. The financial and material support from UNZA administration to the office of the MESA Chair was also lacking. This is what some participants said:

There are a number of efforts that have been done at country level ... but basically, it is this ad hoc effort where you introduce your concept here, introduce your concept there, and, here, but as in policy, up to now I am not too sure we have a policy that will guide ESD mainstreaming in our curricula or in the university or in the nation. I mean, as ESD strategy or implementation plan, that one I have not come across, I am not too sure. (ZRP4)

I think that there was nothing much done in order to orient the ESD programmes in the University. (ZRP1)

The seed funding was very useful but unfortunately after that the University of Zambia did not seem to take it upon itself to continue the funding; which was unfortunate. The seed funding was more or less moving in synchrony with SADC REEP ... yes the funds are exhausted now, I still hold the office and the influence is still there but I think in terms of real on-the-ground activities which I like to do to complete the action plan is disabled. The plan started with the local activities and then we had a plan for national activities as well as regional activities; many of those are still just hanging because of lack of funds. In terms of fund raising we tried, as I said the biggest hurdle was the mentality, the values of our own people. We sent application but not very positive for one reason or the other yes. (ZRP11)

Apart from the lack of institutional ESD policy, strategy or framework and coordinated effort at UNZA, participants also raised challenges relating to the traditional practice and hierarchy of senior academics, disciplinary discrimination and apportionment of ESD responsibilities and expertise in certain disciplines or faculties. For example, since education appears in the concept of education for sustainable development, then it is said that the mandate should be left for the School of Education and ESD should not be taken seriously in the Natural Sciences. This misunderstanding or misconception of what ESD really means among senior academics appears to have inhibited the flourishing of ESD at UNZA. Another way the institution has constrained ESD (which is a relatively new field) is through hierarchical approaches to curriculum and course development: if those proposing the courses are not professors or senior lecturers they are largely unsupported. The few that are qualified or expected to be able to initiate new courses are faced with institutional barriers related to approval processes and the length of time for a programme to be approved. At the national level, in practice, participants indicated that ESD has also not been fully enabled by the Government – local, provincial and national. The Zambian ministries such as education, environment, health who are directly involved with the sustainability agenda are said to be lagging behind the expectations of the ITP participant. The following interview excerpts support this finding:

If you look at the generation of our young colleagues in the Department of Geography, we studied here, left and came back with a lot of news ideas. We came back and discovered that there are still the same courses we have thought many years ago but the industry is changing, the societies are changing, it is like we are always

backward. We called a meeting and asked, are you comfortable with the courses and structure and most of them were negative so we felt it is time we starting changing. Our change project was on curriculum and we targeted master's level ... The MESA Chair was supposed to be part and parcel of the curriculum development but we had a crossroad in the sense that he comes from School of Education but we sat on the same platform, so according to him, he said he will detach himself from it and do another course which is Environmental Education. (ZRP3)

We had master's programme which was masters of science and geography ... its content was basically to understand the definition and the history of Geography, which lacked practical application ... I was on the course for a whole semester, I had a high level of discontent. ... With increasing understanding and appreciation of issues of sustainability, there was a huge contention in the department that we need a new programme or new programmes that respond to the challenge of the day. This was when those that have participated in the ITP in the Department became key resources to drive the development of a new curriculum, of course with the support of externals because there was limitation in capacity and clear terms of what we should include in this curriculum. Or else we would have a chain of incompetent graduates, passing on the incompetence and we are killing the nation in the long term. (ZRP12)

It was not easy I must say. Of course I remember sitting in approval meetings where the very person chairing those meetings was of that mentality, in fact he was the leader of such mentality. So within those meetings a few colleagues will support the proposed programme but he as chair will block it. Fortunately for me I think on his own accord down the line he came to his senses if I can use that word, he approved it without much ado ... There were structural obstacles in terms of how long a new programme must be produced before it can be finally approved. For them they have more or less an expectation that the minimum a programme can take is a year before a programme can be approved and up to three, four, five years. Again, the other structural obstacle is their own training as managers or administrators of the universities. Most of them received training in fields, which were not favourable to sustainability. So I think even at country level for now things are even very bleak in Zambia. When the National budget came out last year [2013] environmental protection was the least budgeted for in the whole country, it got 0.4% of the national cake, so you can see the values behind the leaders in terms of sustainability issues. So I think at country level this is our biggest huddle. The country seems to be on a path to economic development and for them economic development is a must and no issues of sustainability must stand in the way of that. So I think that is one of the biggest structures we are facing. So much so that even in Ministries which should have led in sustainability education, like our own Ministry of Education, Ministry of Health, Ministry of Environment, Local Government, all those are not really driven by values of sustainability. ... Society is still operating within old subjects and in so to say, doing business as usual. The other challenge I must say was with our own Ministry of Education which again has not been very forthright in institutionalizing EE to date. (ZRP11)

At university level like I'm saying, I am not really sure whether we can say we have a guide to direct us on how we deal with this issue of ESD. Perhaps at School of Education, I don't know if they have something, but probably they have more activities towards ESD than us here and again, this is a bias, a professional bias; where we feel that we are geographers, so we should teach the students the content

because most of our students are from the School of Education. Now then that's another issue that we have, that's another problem that we have. Actually even like here, ideally we should not take part in ESD because ESD is for the School of Education. Even when you are to ask for permission to say 'I want to attend training in ESD' that in itself becomes a problem. The first question you are asked here is 'What do you want to learn in Education, this is Geography' – that's where we have a small problem. Education for sustainable development is for people in the School of Education, not here. (ZRP4)

Other ways in which the institutional structure has conditioned the effectiveness of ESD mainstreaming and practice include the lack of literature on sustainable development, EE/ESD in institutional resource rooms and libraries; the lack of many qualified staff to take up the challenge; large number of interested and registered students with limited outdoor ESD learning experience because of availability of funds and other factors. This then means that although there are new programmes on EE and ESD in, for example, the School of Education, there are challenges that inhibit effective ESD mainstreaming and practice at UNZA, despite the fact that UNZA has made great progress in this regard being one of the only universities in Africa that have introduced ESD properly at undergraduate level and with Masters programmes on ESD. Here are what participants have to say about their challenges:

[At the School of Education] The programmes were there, yes they were there, first years were being taught but a lot was needed to try and help the learners but there was the problem of lack of literature. It was the lack of material, literature, the course was a new programme at UNZA, with no books that students could refer to, [If I] give them an assignment, they don't know where to go to, yeah, no library. In the library, the books were not related to the new programme, yeah. So that was the challenge. Even the lecturers were fewer, there were fewer lecturers, until the coming of the ESD, the MESA Chair was only then, I think about five students were assigned as student fellows, SDFs, to be trained so that they joined because there were very few, the lecturers were very few, am speaking as one of the lecturers. I joined the two or three. So as members of staff, we're also fewer. (ZRP1)

OK first and foremost we noticed that the students were having problems with materials in a course, a second year course, which was Environmental Management. In the library the books were not available on it and the facilities, the internet facilities that are there are not adequate, and it was a problem for the students. There are a number of courses that deal with the Environment, except that of course there are challenges where you have too many students on the courses. In some of the courses they are supposed to go out there and do the practice, but then they are not able to because of the large numbers. (ZRP2)

I think the structural formation of our institutions, starting with universities in the countries so to say is one of our biggest obstacles because they have inherited practices, rules, regulations, and ways of operating which I think are not so much in line with what ESD expect things to be. So much so that starting with the University of Zambia there were structural impediments in terms of perceptions by colleagues of what should take place in terms of introducing new courses. (ZRP11)

Infrastructure is really a big challenge ... Soft infrastructure, ICT, access to information; we need to have access to ESD resources which is very difficult. We need to have proper furnished library with contemporary hard core materials that you can use. That affects both the staff and the student. The source of information is not really there. The library is poorly furnished they are supposed to affiliate to journals not just one, we have thousands of journals and you know issue of environment cut across human life. (ZRP12)

From this range of national and institutional constraints and conditions, research participants have decided to initiate projects that will alleviate some of these contextual issues and risk as part of their agential contribution to the ESD mandate. The MESA Chair as has also expressed his interest in addressing certain anti-effective ESD mainstreaming issues. In the Geography Department, efforts to integrate environment and sustainability concepts and principles were said to be patchy and poorly connected. A lack of differentiation between environment and sustainable development also existed; and a lack of clarity on how to introduce the concept of sustainability was identified by ZRP4 and ZRP3. The change project's focus was therefore to integrate sustainability concepts into five modules of the MSc Programme. The following interview excerpts describe participants' concern and intentionality:

The concern was lack of formal incorporation of ESD in approaching our curriculum. So our aim was to try and create a course that would incorporate some ESD concepts into the curriculum. Yes, within the already existing curriculum. And then see how you pick it up from there. (ZRP4)

In the library, the books were not related to the new programme, yeah. So that was the challenge and I saw an opportunity in that, that's how I had to come up with the textbook, "Environmental Management booklet", as my Change project. (ZRP1)

In the library the books were not available on it and the facilities, the internet facilities that are there are not adequate, and it was a problem for the students. So we decided on our own, let's write some material for the students. (ZRP2)

I think the main interest was prompted by my own training myself in EE, I think that training was really fundamental because it capacitated me to know that our society needs change so with that capacity in me I was eager to implement the needed changes. At that time even in Government circles, the Government was in touch with international players and the direction of introducing EE in Zambia, there was a bit of support from that end to some extent although it was not a very reliable support so to say. Yes but the biggest concern was the lagging behind of the Zambian society in terms of sustainability issues vis-à-vis my own training and my capacity. (ZRP11)

6.4.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme Three: The kinds of support that the ITP participants (and their respective institutions) have received through their participation in the ITP/availability of an ESD MESA Chair in their institutions and country

The research participants at UNZA (apart from ZRP11 who did not attend the course) all reported remarkable experiences with the ITP. The entire structure, knowledge content, phases, lectures, indoor and outdoor activities were considered to have had great impact personally, professionally and institutionally. They received ample support from the ITP coordinators in South Africa, as well as those locally available in Zambia. This support helped in implementing their change projects as well as informing their practices as lecturers. ZRP2, ZRP3 and ZRP4 explained below:

The ITP has broadened my understanding of the issue and also it gives you this constant reminder that now you really have to focus. It gives you a framework through which you can now begin to see education for sustainable development. To the point that if, I think there's a saying in the environmental circle that goes basically, 'If you can't live it, don't teach it.' If you can't live it then you don't teach it, so it gives you that broader awareness of environmental issues ... It gives you that consciousness that this thing is an everyday business rather than just a classroom based. (ZRP4)

The ITP has added to me tremendously. As lecturers we thought we knew everything but after we discovered that we have been following a wrong part. I think it has enlightened us so much to see the focus we need to take as a department and as a country. The support we got from the ITP was not that physical, it was the training part of it ... we were supervised, we had to meet, we had to engage them and through that mentoring we finalised and they gave us a certificate. So the training was very critical. (ZRP3)

Ok, we had a lot of support from our department. We also had support from the Dean. We used to have peer consultations and there were no problems. We also used to have meetings and there was a time we had Dr. Lupele⁴⁷. Yes Justin Lupele. Yes and the ITP representative and we discussed the change project and it, they really helped us, they made us see which corners we needed to focus on, what changes we needed to make and so on. Yes it really helped us. (ZRP2)

Learning was a positive experience of participants' encounter with the ITP. When describing their learning experiences, the increased and deepened knowledge of sustainable development and ESD were often highlighted as a key aspect. Learning from and with colleagues in the processes of networking was also noted. The learning experience of the MESA Chair is peculiar to his position and practice. He pointed out what he had learnt from experience which could shape the status of ESD effectively. This included commitment to the value and vision of ESD by educators; being mentally and intellectually sound and innovative about ESD mainstreaming strategies. This is very necessary as ESD demands sustained commitment. Owing to the relative newness of the field, ESD practitioners need to work really hard to penetrate the existing rules, laws and practices for it to fully percolate through all layers of institutional structures. ZRP11 explained from his learning experience that they have realised that institutions like public health, local government, NGOs, churches themselves require some change of mentality and students

⁴⁷ Dr. Lupele was former SADC REEP Manager and assisted ITP co-ordinators in Zambia due to his earlier experience with EE/ESD.

need to be trained to operate within institutions and to know how institutions work at various levels. The following data explains in detail:

There are a number of learning experiences I have come to pick, firstly is the need for innovators to be focused and committed to their ideals. I think commitment is paramount. ... The second one is the clarity of the concept in one's mind. An innovator needs to be very clear about what they intend to do in terms of creating new projects, now mechanisms, now programmes the way I did because I initiated EE for both undergraduate and postgraduate. I was clear. ... The third learning point has to do with the society which operates at two levels, one level which is the vocal one is the one which pays lips service to sustainability issues and which receives funds from donors and does lips service with that funding. ... At the Ministry of Education for example you will find that the Ministry say we cannot pay these teachers, our curriculum is too full etcetera all those arguments. I think the second level is where we are, having mainstreamed ESD in the University and now are producing graduates in EE who wants to be absorbed into society in the various ministries but they are facing problems because those Ministries have closed their doors. So I think that is a learning point for me, the double layered level of society. The fourth point is the issue of structure and agency. At the moment ESD agents need to work really hard to penetrate the existing rules, existing laws and existing practices for it to fully penetrate institutions. (ZRP11)

Knowledge-base as well, so from being social, socialising and networking, my knowledge has been broadened. Initially I thought ESD was only into education but I saw that ESD works in forestry, ESD was there in religious studies. I thought it was a narrow programme but, but indeed it is a wider programme. So knowledge base, yeah. (ZRP1)

The ITP learning experience was interesting. You know you take it for granted that you know most of these things, right? But when you go to training or those workshops, especially in interaction with colleagues, it mutually enriches your understanding. So you learn from colleagues and here and there you build networks for continued contacts and learning from one another. ... Individually I got a lot of knowledge on sustainable ESD. (ZRP4)

Apart from the learning experience of these research participants which has increased their agency, capacity and expertise in ESD mainstreaming, they received specific support on their change project development and implementation. The assistance, help, contributions from different sources and aspects of the ITP were considered remarkable and impactful, personally and institutionally. ZRP1 and ZRP2 attributed the various presentations made and the contribution of ITP coordinators, colleagues, students and other stakeholders to the success of their change project. In addition to these, ZRP4 has included the worth of the ESD tools and material support that the ITP provided which was a source of help to him and other colleagues. ZRP3 and his colleague ZRP12 acknowledged the relevance of the ITP as well as other sources of support which helped to mainstream ESD more effectively.

From the presentation we were able to change and to improve our projects, yes to refine them. Initially when I went it was just a skeleton, I knew I was coming up with

the booklet but I didn't know the contents of the booklet, yes. I thought it's just a matter of going on the internet and picking stuff and so forth but later on I discovered that I need to involve the learners, they are people who are going to be using that textbook, they also need to add their own input to that textbook so they can understand the materials better. (ZRP1)

First and foremost I think there was this change in thinking about materials development on my part, because normally when someone is coming up with a teaching-learning material, we tend to just get information here and there and you write, but the ITP brought in this other aspect where the stakeholders are involved, their views, yes the students, members of staff, ok, they get involved in the production of that materials, you get information from them. So that is the aspect that I never thought of, that I got from the ITP, yes. There are a lot, yes. (ZRP2)

Apart from that you have all these tools, all these materials that are supplied by the learning programme⁴⁸. Most of which now, you actually use them in your teaching. I think to me that is the biggest benefit ... and the few interested colleagues actually borrow the materials and then they can use them in their works. (ZRP4)

Both master's programme that have been initiated have come because of exposures like the ITP and input that came from outside like the Dutch and colleagues from Cape Town to help us contextualise our curriculum locally and in line with what are core needs. (ZRP12)

In addition to material and human support received during the ITP, participants have also recognised their visit to other continents, countries and places. This aspect of the programme has made participants more knowledgeable about local, regional and global ESD experiences and practices. It provided participants with concrete examples of best practices. It gave them insight into what to do and how to go about their change projects. Their ability to interact, socialise, communicate and co-operate with others was also enhanced during the one-year ITP programme. Their teaching methods as lecturers also greatly improved to the extent that ZRP4 confessed to find it now easy to transfer complex and abstract ESD knowledge and concepts to students and colleagues. These new positions and practices as a result of the ITP, have shaped the ESD learning and change processes at UNZA. The following interview excerpts highlight this:

Where we went for the field visits; it was like, an eye opener. Yes, a number of them. ... The other aspects that are connected with the change project are the issues of transformative learning and participatory learning and just the manner of designing materials for the higher learning institutions. (ZRP2)

A lot! I think at the individual level, I became more social than before ... Co-operation, I learnt to co-operate with one another, with my colleagues that we are working together, yes. The ITP programme exposed me to different cultures, when we went to Sweden we had different people from different backgrounds. So that widened my scope of knowledge in relation to ESD we had experiences from China, experiences from Ethiopia ... so with all that it made me become very knowledgeable about sustainability issues. ... Before the ITP my teaching approach was more of

⁴⁸ Referring to the extensive ITP toolkit containing ESD texts and other resources.

lecture centred, but from the ITP experience, I discovered when the learners are involved much, they tend to understand better. (ZRP1)

Now even when it comes to teaching you find a lot of room now to incorporate as many of these concepts across courses rather than focussing on one course, the course I teach, climate change and sustainable development. ... To me as a person, that knowledge which I now have I am able to impact on the students in the department and even colleagues, members of staff. ... I've got the knowledge to share with colleagues in the department. (ZRP4)

Since my background had some connotation of sustainability, when I saw those events in Sweden I got interested because I thought 'oh maybe I would learn more' because it was a very good platform, we had Koreans, Vietnamese, people from the Phillipines, those were the people sharing there. (ZRP3)

6.4.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme Four: The post-ITP and post-ESD MESA Chair positions and practices and how these (including the positions and practices of others in their social context) and the ITP shape the ESD learning and change processes in their institutions, country or region

Participants' positions and practices started changing immediately during and after their participation in the ITP. As discovered in the case of Swaziland, there was also the tendency for participants to 'quickly' say that their position has not changed but would explain what exactly has changed in them during the course of the interview. These changes in position and practice were linked to their new ability to influence and teach students (in the case of ZRP4) and new roles and responsibilities at UNZA (in the case of ZRP2). Before the commencement of their change projects, institutional audits were done using the USAT tool. This led to the review of existing knowledge, local issues, and consultation with stakeholders.

In the case of ZRP3, there were meetings and consultation towards the development of modules and the MSc programme and collaboration between the department and the Ministry of Local Government and Housing, to develop another MSc programme in spatial planning with an emphasis on sustainable development. This evidence thus also shows social-cultural interactions that enhance ESD learning and change processes in institutions.

I think there was a change in the sense that, it's like you are empowered ... you are not fearful. You can approach a professor and tell them certain issues. Yes, with students, when you are teaching, I think teaching is a manner where you can communicate with the learners, if it is in class. And it becomes very easy to give, even specific examples, of what is going on. Yes, very concrete examples, not just from what you read in the books, no, just real, yes. (ZRP2)

It did change; I told you that after the ITP the UNZAEEA programme started and I became the patron, yes I was the person leading them on all the programmes, I was there. (ZRP1)

The position has not changed much, just lecturing because that is what I am supposed to do in the university but I am saying the difference is there before because there was no focus; it was after then that this issue of sustainability now started coming in, so that is the gradual shift. From just general teaching to have a main focus on where we have gaps and challenges in the country ... I was the resource person for the environment and sustainability master's programme sponsored by the Dutch and the funding came at the right time when we were just finishing the ITP. So when developing the curriculum the issue of sustainability was very critical ... now there is a shift from just sitting in the classroom to what students can do outside, its real and practical. (ZRP3)

Evidence of social-cultural interaction with others in their institutions and the form and manner of their interaction was also considered here. Social-cultural interactions of the research participants with others can be said to have gone beyond their institutions to communities around them including SADC. These interactions shaped the implementation of ITP participants' change projects. It also determined how the position and practice of others influenced theirs and how their position and practice influenced others. These interactions were also integral to determining the rate or level of ESD learning and change processes in their context, especially with regard to support for implementing their change projects; in the case of the MESA Chair, his mission was achieved because of this. The manner of support gained through social-cultural interaction was therefore said to range across intellectual, moral, financial, and professional support. These interactions were also enacted during meetings, consultations, training sessions, presentation of their change projects, and joint paper development. Below are some illustrative interview excerpts:

At the institution here, I was doing a lot of consultations yes and we also had a meeting. Dr Justin Lupele from the University also came, he had an input. We had a meeting with the MESA Chair when we were together. We had a meeting with ZRP3 and his colleague [ZRP4]; they also had a lot of input in our change project. That's when I saw that there were some help from the institution. There was a MESA training that the University of Zambia held, I presented my change project, yes ... I quickly organised a paper with ZRP2, we presented to the participants in that SADC that came. (ZRP1)

After the last phase of the ITP, we had a presentation and the Dean was part of it, yes, and those two guys from Geography department. I don't know whether it was what we discussed there or what we presented but afterwards the Dean came up with 'Keep the School of Education Clean' campaign, OK. And then it started flowing and from there it spread even to the management. They are in support of it, even the Dean of students. OK, so there's been some participation in the aspect of keeping the University clean. (ZRP2)

What I did personally was that when we started the Masters programme, we also convinced the University administration to employ some of our Masters graduates as lecturers, so there was a vigorous staff development programme for EE lecturers. So much so that now as a unit of EE, we are one of the best staffed, we have about 13 or so new lecturers in EE who form a unit of EE, so it is that unit that has come to give me a lot of support. They have themselves began innovating new projects on their own for the society as well as within campus ... all of them are my students whom I

trained except one man who was trained in China. ...Yes we have worked with other HEIs in Zambia, we specially worked with the Cobberbelt University, through Prof Shumba in the Zambian Network of Teacher Educators for ESD. He was very helpful as a facilitator, including myself to help establish the Zambian the network. He used to travel from his University at his cost and of late he has also come to coordinate an international UNESCO funded group project. (ZRP11)

ITP participants have had some form of social-cultural interaction with the MESA Chair, including participants that are outside the School of Education where the Chair is based. The existence of the MESA Chair at the School of Education has, however, been perceived and experienced differently. Participants from the same School as the Chair differed in their experience from those participants based at other Schools at UNZA. The following excerpt supports both the latter and the former experiences:

It made the institution be known; in relation to ESD. In addition to that our Dr became a Professor. ZRP11 became a Professor because a lot of contributions, a lot of resources were coming to the University through him. Resources in the form of money, yeah, a lot of resources came in. He also got an award at the school level, they recognised his contribution. So the existence of a MESA Chair at UNZA has made a difference, yes it has. (ZRP1).

I think when the Chair came to UNZA, I think we started with a bang, there was a training programme for the SADC region, it took place. And the MESA Chair has been very instrumental in research as well as training, and he has initiated a number of programmes. In fact, in the first degree programme and the Masters programme, the Environmental PhD programme, he's been very very instrumental in creating programmes that you can say are connected to ESD. (ZRP2)

At the moment, the same issues of departmental boundaries. At the moment we have very little interaction really. MESA Chair is housed in the School of Education. Yeah, so, sometimes I think we seem to have this limited interaction across or between departments. I think when they have activities, I think I have attended one, one activity from that time; it was an activity they hosted here. But the rest of the activities I think I'm almost blank. ... So really I think the MESA Chair has not meant much to me, we have very limited interaction. Of course once in a while we would be notified that there is this thing going on, we will go but the interaction has not been there, yeah. (ZRP4)

According to ZRP11, the MESA Chair seed fund was a big boost to his work, both within the country, regionally and internationally. He explained that being a SADC Chair has enabled him to bring on board international students who were trained for the first time in the regional training programme (RTP) in 2011/2012 where the MESA Chair hosted about 10 or 11 trainees from the SADC region. His position and practice as a Chair has been "an exposing mechanism both regionally and internationally". It has also enabled him to publish in different fora and to sensitise colleagues at various workshops. He was able to facilitate a network of teachers to publish a booklet on some aspects of Zambian culture, including innovative ways to incorporate local culture, knowledge and skills into teacher education. According to ZRP11, a group of primary school teachers from the western province of Zambia came to brainstorm on local artefacts and

how knowledge from those artefacts could be extracted and infused into the localised curriculum; “I think that has been the best project we produced out of the MESA Chair ... At the national level the best output has been the Teacher Education Network, where we created a national forum where teacher educators could exchange knowledge, experiences and ideas, so it was officially registered by the Registrar of Societies”. ZRP11 explained also that:

We were given around R400 000 as a start-up seed money when the MESA Chair was initiated and that seed money went a long way in terms of initiating different activities. Firstly we were able to host the regional training programme for SADC participants, which was an intensive two weeks face to face training where they all came to Zambia; and Caleb and Tich [SADC REEP officials] where all here coordinating as part of the trainers. We also partnered and networked with SWEDESD in Sweden ... we went to Botswana, we went as far as South America one time with the African ITP coordinator, with a few other colleagues from West Africa, and we were in Argentina one time to speak to an international community linked to GUPES. Colleagues from UNEP in Nairobi have been very supportive right from the beginning in terms of recognising us by a certificate of recognition ... it has been like a seamless series of activities. As an initiative this was a very beautiful innovation. (ZRP11)

Within the University, ZRP11 explained that firstly colleagues in the Faculty of Education have come to appreciate the point that networking activities are important in matters to do with ESD because the MESA Chair was thriving on networking activities through the SWEDESD, SADC REEP, Rhodes University and other institutions. Secondly he stated that the MESA Chair has sensitised students on the possibilities in ESD because a good number of students (both masters and undergraduates) usually mention that the MESA Chair is an inspirational innovation, an ideal career path which represents an ideal position. Collaboration with other faculties within the University has also been attempted but more needs to be done. ZRP11 explained that “in previous attempts we met with the scepticism and doubt on the part of other faculties, notable the Department of Biology and Geography ... it is only now that we have colleagues especially the two colleagues that participated in the ITP, the two are forthcoming. ... Otherwise, apart from that our own initiatives to befriend other faculties through ESD I think have not yielded much fruit yeah, many of them are still in silos of their disciplines”. He further shed light on social-cultural interactions that have existed at the level of top/senior management of UNZA in ensure environmental sustainability, although these attempts seems to be unknown to other ITP participants from UNZA.

On the institutional level, the school of Education was a contributor to the effort by the Vice Chancellor to establish a long-term sustainability committee for the University. It was initiated by the University Senate, they constituted an interim or taskforce committee to which we are members actually as a Faculty through the MESA Chair. Actually it was all 9 faculties/schools within the University and for that particular committee, they do actually attend because it is meant to establish the rules and the modes of operating for the whole university; it’s a university wide committee and initiative initiated by the University Senate – that is where we as a MESA Chair contribute. (ZRP11)

The above varied experiences and perceptions have also resulted in the difference that the existence of a MESA Chair has made at UNZA, other institutions and the country at large. When asked about the kinds of support (assistance, help, contribution) participants have or their departments or institution have received from the existence of a MESA Chair in Zambia, this is what ZRP1 had to say: “For me, he has been a model for me, he’s been my mentor. I think in all aspects. Remember I told you that he taught me, and his approach to teaching was different, which I didn’t understand that time but now I am able to understand his approach to issues, not only teaching. That is what I can say, knowledge base, he has just really improved my knowledge base. There were programmes, community services we used to go to schools and sensitise the local environment, and he would take out students, there was transport, there was some lunch provided, I think MESA also helped there. They paid to transport maybe 400 students, maybe four, five trips going, same again coming back, and also their lunch. So MESA was helpful yeah, it did, because if that seed fund was not there it would be difficult for those programmes to materialise”.

Although the experience of ZRP4, is a little limited because of the difference in faculty, he testified that the institution probably can see change. He explained that by stating that “If you go to School of Education, you’ll find notices on the wall ‘Don’t litter’ ‘no littering’ you will be charged, you will be given a penalty of ten Kwacha ... If you go around you see a lot of these billboards about don’t litter. So I think that came to the fore, after the MESA Chair”. He added “I think that the School of Education has done a lot of things to look at these issues of sustainable development. I think at an institutional level, School of Education seems to have had some impact. This notion seems to reconcile well with the impression of the MESA Chair regarding the objective and achievements of the Chair through the assistance of the seemingly small seed fund that was made available by the SADC REEP. He explained:

That was the aim of the MESA Chair, to start at home, so to say, at the base, within my own comfort zone. So as I am speaking that aim has fortunately for me been achieved, yes, it has been achieved to a very large extent. Within the University of Zambia, Environmental Education is formalised, it is up and running and the university administrators, the Vice Chancellor, the Deputy Vice Chancellor, everybody actually the system is actually mainstreamed. Postgraduates and undergraduate students are running and attending classes and paying their tuition fees. In fact at the moment EE has proven to the university to be one of the biggest attractive points where students apply. Of course they have been disappointed with the job prospect after they graduate. So I think within the institution we have succeeded in mainstreaming ESD and this has been also partly evidenced from our sister Department, the School of Natural Science where geography Department belongs because geography as a Science belongs to another Faculty. Although initially they were hesitant to support us but down the line when they saw the popularity of EE, they were also even prompted to change the name of their department from simply Department Geography to Department of Geography and Environmental Studies. And starting this year they have also come on board to initiate a Masters programme in Natural Resources and Environmental Management as well as Regional and Spatial Planning. So I think within the University we are

home and dry, so much so that our next challenge now is the outer world, the society out there, that's new where we are focusing our energy in terms of how best we can penetrate that sphere. ... We as a University, we as a School of Education, we as University academics, people inside the institution where EE is up and running and fully operational including students, undergraduate and postgraduate students. They are now trained in the field and they are looking at the outside world to see what the world out there expects them to do for it ... (ZRP11)

The existence or the physical presence of a MESA Chair has in some cases influenced the actualisation of ITP alumni's change project and general ESD mainstreaming in case institutions or countries. Issues having an effect include proximity, location of the MESA Chair in a different discipline or School, as well as how the ITP participants were able to reach and collaborate with the office. The following are the responses of the ITP participants at UNZA when asked how the MESA Chair influenced the implementation of their change projects:

OK, in terms of the Change project, I think he really helped us. He was available, he advised us, and he was there for, I would say, all the meetings that we held, he was available. Physical support, can you say intellectual support, yes ... No, not financial support. (ZRP2)

It did in a positive way, it did yes, remember I did present my paper, I was refined, each time you present you are getting comments and yes, that improved my paper. It did. (ZRP1)

I think at the moment, not really. Because we don't really have formal activities where we can try to be and try to actualise the project. (ZRP4)

The MESA Chair is a great person in terms of performance. He is person I worked with even I was doing my project I shared with him, I went to his office and we met. Even when the people from the Swedish embassy came and we were presenting I had to make sure I invited because he has shown great influence and great interest in the same programme ... he has also started a Masters programme in EE, so you can see he is living by example. (ZRP3)

Other factors may also have influenced the implementation of ITP alumni's change projects. Some of the factors were specific to participants' personalities, the contribution of other colleagues, their peculiar departmental contexts and so on. These also include the co-operation between participants and their respective co-participants; the right choice of change project and encouragement from others; personal initiative and innovation; prompt responses from key stakeholders, etc. Of interest to this research is the role of the positions and practices of individuals in and around HE institutions. Hence, the mention of the VC, the Dean, the HOD, colleagues, the MESA Chair, funders in this section arguably means that these persons, positions and people occupying these specific positions have been influential in the facilitation of ESD mainstreaming at UNZA at one time or the other, in one way or the other and in one form or the other. Excerpts below expand on this:

The will that we had with my friend, my co-participant, yes, it was the will and also we are trying to help the learners ... the concern to help our students because of the lack of the materials. ... encouragement also from our colleagues like the MESA

Chair, they keep on encouraging us. The Dean as I said is also being instrumental in ESD, so he was also very supportive. (ZRP1)

So first and foremost is co-operation and being focused. ...The people that we approached, members of staff, the Head of Department ... their prompt kind of attention they gave to those issues also enabled the change project to move ahead. (ZRP2)

In terms of enabling factors, really, it is personal initiative rather than a formal support that you would expect from an institutional level. I know for our colleagues in education it is quite different, because there, the MESA Chair himself is a very big support. (ZRP4)

The support was direct, I was just coming from the training and the VC just came at the right time ... One factor is the demand from society, the VC, the donors that wanted to sponsor the Masters programme. (ZRP3)

The implementation of ITP participants' change projects and the general effective mainstreaming of ESD at UNZA have not only been improved by the above various enabling factors; there have also been certain constraints. Some of the factors were directly related to the position and practice of certain individuals, while others were more institutional and structural. Issues such as attitude, perception, orientation, belief, pressure in relation to the level of academic qualification and experience have also been highlighted by participants.

One factor that stood out for me in this study was the constraint related to the lack of capacity through professional development training programme like the ITP. At least three participants who preferred not to be named clearly argued that there is a clear difference between a lecturer (either senior or junior) who was trained before the African years of independence or before 1972 (when the debates about sustainable development emerged) and young and recent graduates, who are up to date with modern ways of doing things and who have been exposed to contemporary knowledge. This epistemic gap undermines the role of educators in meeting the challenge of mainstreaming ESD, especially when they think they have the capacity and do not or when they admit that they do not but constitute a hindrance to others' success.

Another major limitation to ESD mainstreaming that has been highlighted is the level of opposition facing younger educators in HE. These ITP participants explained that the majority of the senior colleagues who resist their attempt to innovate new curriculum, were actually lecturers that taught them while they were undergraduates. It seems older colleagues feel threatened seeing young academics occupy related positions and be involved in related activities to the extent of challenging outdated teaching styles, methods, approaches and content knowledge. . This of course should not be the case. Some of these older colleagues even make glaringly untrue statements like 'we know it', 'we have been doing it', 'No, this thing, we already know it, we are doing it'. With these experiential challenges, maintaining academic professionalism thus also becomes an institutional challenge and barrier to transformation if there is little or no regular

capacity building for educators. Without these forms of constraint noted by research participants, the status of ESD mainstreaming would be better than it is now. The following data shed more light on factors constraining the implementation of change projects:

The constraining factors were funds. We had planned that we were going to publish that material but we haven't yet published the materials. ... staff availability, you wouldn't expect if you approached ten people, you wouldn't expect 100% support. You'd get 90%, which is good. But you still have those negatives. Time, yes, though you can manoeuvre around, so you can manoeuvre around with time. But time is also a factor. (ZRP2)

Now it's the time, the time yes... It is just a matter of time, it's just time. I'm a bit committed, but it will be done, it will be done. (ZRP 1)

Constraining factor is departmental politics ... We used the USAT tool before, yes, the level of ESD mainstreamed was low, definitely there was nothing much, just for the geography department, it was minimal, very almost not there. Yeah, apart from this course here and there mentioning sustainability, but to formally put it there, up to now we still have not, like I was explaining to you because geography thinks education, education means that side not here. (ZRP4)

Infrastructure is one of them. Man power is definitely a big challenge because not everyone who is a university lecturer can teach ESD. This is a serious challenge and more so because students are more enlightened, students complain. (ZRP3)

In order to contextually gain insight into the level of support for institutional ESD mainstreaming and the influence of positions and practices that may have been most influential in terms of enabling ESD mainstreaming at UNZA and beyond, a question was asked and the response is relevant to this study in order to inform further ESD related interventions or mediation by local, national, regional or global role players. Here, it was not so easy to point out the position and practice at UNZA because of the existence of various schools, for example School of Humanities, School of Natural Sciences, School of Veterinary, School of Mining, School of Agriculture and School of Medicine (except the departments of participants). But in general, the School of Education was quite prominent because the MESA Chair is based there. Some participants expressed the need to break departmental barriers and departmental boundaries that exist at UNZA (like other HE institutions) in the bid to terminate the often ad hoc way in which disciplinary ESD is being practised. With this challenge, ZRP4 explained that it might be a bit difficult for the MESA Chair to instruct each department at UNZA.

One participant described how, when a master's programme in EE was to be initiated in the School of Education, the MESA Chair asked all the schools for input to develop this interdisciplinary course. It was alleged that he did not receive favourable responses from all the Schools. One of the arguments was that the issues of environment should be taught by Geography and Education should teach education. It is challenging to create social-cultural interaction effective enough to bring about formal, constructive, substantial and sustainable change. Apart

from the MESA chair whose office signifies ESD, the VC, the Dean of the School, and the Head of Department where EE is based, have also been noted for their specific and significant roles in participants' change projects and in general ESD mainstreaming at UNZA.

For the approval of the spatial planning programme, the VC played a crucial role, not just listening to us but even international people speaking to him. It also depends on who is in the VC's office. So I think the VC and individual staff... (ZRP3)

The Head of Department, yes where environmental education is; he's supportive, yes, very supportive and yeah. The Dean as well as I've mentioned, is also very supportive. Yes the DVC, he's very busy and the Dean will stand in... (ZRP1)

In the School of Education, the MESA Chair, yes; in the entire University, I wouldn't say because the University's made up of a number of schools. In terms of name, I don't know any other apart from the MESA Chair ... (ZRP4)

My answer is that it is us individual lecturers who understand where we are going ... the staff ... depending on who is occupying the position, is the position of the VC because sometimes he can give executive instructions and things can move. (ZRP3)

Regarding the influence of the position (duties, rights, places, functions, rules, tasks) and practice (activities) of other people in research participants' context, much has been highlighted. Their influence on ESD mainstreaming and practice has been positive and negative, depending on the context, the circumstance, the timing and other factors. It is clear that it is not only the position and practice of ESD experts that shape the status of ESD in institutions; the position and practice of novices equally and sometimes more intensively shape ESD learning and change. Participants agreed on this and expressed the internal institutional dynamics that play out in reality. This reality and their own personal response to this have opened up the space for participants to maximise their sphere of influence in the bid to exercise their agency and ensure effective ESD mainstreaming and practice irrespective of the impact of others on them. Positive influence and impact include the role model of the Dean of the School of Education in terms of being an example to others in practice and open support. This disposition has also been linked to his knowledge and understanding of ESD, a situation which contrasts with that of some colleagues of the participant who seem not to know much about ESD. This lack of knowledge has created a barrier to their support of ESD mainstreaming and practices in their departments.

Some people still don't understand ESD. And maybe partly because of the lack of sensitisation, the lack of meetings that we should normally have ... we don't have those meetings and I'm sure it would have helped a lot, because still people don't understand ESD, even despite the institution being a Chair, still you have people who don't understand the ESD issues in the institution, and we still have a lot of them. (ZRP1)

Now when you learn some new concepts somewhere and you try and come and see if you can discuss it. People will tell you, 'no, this is already done'. (ZRP4)

ITP alumni in Zambia, who now have an increased level of capacity and expertise in ESD compared to many educators at UNZA, seldom interact. There is no formal or structured forum at the moment for academics or non-academics who have expertise or interest in ESD to meet. There is little intellectual interaction on ESD issues, across disciplines and schools on campus. There is no formalised institutionalised inter-disciplinary ESD platform despite the presence of an arguably strong MESA Chair. Thus, after the ITP and development of change projects, ITP participants never got together again for deliberation on ESD matters in their institution nor were their change project implementation processes, outcome or challenges shared with each other across their two departments at UNZA. Below are participants' responses when asked about their interaction after the ITP phase 5.

I think when we were done with the ITP, we formerly finished, that was the end. No we don't have that forum where you all come together. There we definitely have failed, we rarely, unless just informally like that. (ZRP4)

No, no, it was limited for us ... the only time we met was the time, the second phase before we went to Rhodes. That's the only time I think we met in a meeting, I think it was just to refine our change projects ... I think that's where the institution has a weakness, we, rarely meet, to learn from each other. No, but we can improve in that area, we can improve yeah. We have guys, people from Kasama, ZRP9 and ZRP10. We have never, the moment we left those areas, that was the end. We didn't meet and see. Yeah we could not keep on networking amongst ourselves, yeah even us, it's not only the MESA Chair, even among us [ITP Alumni]. (ZRP1)

No. during the ITP, during the change project we used to meet, yes. I think the problem was, it was because of our change projects, they were very different so after the ITP programme, it's like, that was the end. (ZRP2)

No no no. and it is very critical that such engagement be there. This is not necessarily for us who are already spearheading but in order to encourage more people to come and learn. So there is a big responsibility on the Chair. There's been a gap, there is no much communication. (ZRP5)

There is none and it is important that such forum is actually held. It can take an educative route or just an interactive route. Colleagues like ZRP3 and ZRP4 and myself should be meeting to appraise 'where are we', 'what have we done' such things have not happened. (ZRP12)

There are other concerns related to the above challenge of lack of constructive dialogue between ITP participants and the MESA Chair, which constrain the flourishing of ESD at UNZA. These issues are not peculiar to UNZA but are also prevalent in other institutions, and in some case cross-cutting issues have been articulated. These include the lack of coordinated effort through institutionally orchestrated ESD platforms; limited physical and socio-cultural interaction; existing higher education disciplinary boundaries and inherent conflict of interest; improper or inadequate dissemination of information and delegation of duties. All these have a negative influence on agential and structural elaboration with regard to ESD at UNZA. It thus also means that irrespective of the efforts of the ITP participants and the MESA Chair, there has been a form of constraint of ESD at UNZA. Specific concerns have been raised in relation to the distribution

of roles and responsibility within the framework of the activities of the MESA Chair. The need for more openness, collaboration, corporate deliberation, role sharing and taking, improved communication within and across departments involving (at least) the MESA Chair and all ITP participants have been expressed by all ITP participants. These participants accepted some responsibility but also hoped for action from the MESA Chair. Unknown to these ITP participants, there exists a MESA committee as described by ZRP11 below.

Specifically for the MESA Chair we have a small committee, myself as Chair, deputised by Dr Leonard Muemba, of course overseen by our own Dean of the Faculty who have been approving our requests. We also have a financial officer, who approves the financial request. So for the MESA Chair committee, yes we have a committee. (ZRP11)

I wish we had a committee like Swaziland does, because he [MESA Chair] is just working alone ... If there was a committee things were going to work. The MESA Chair should be spearheading most of the activities. You don't work in isolation; you need to involve a lot of people. ... So there should be some improvement in those areas. Yes I've been equipped with the knowledge, I wish there was such forums where we meet and talk to harness, but we never met. ... That is also a weakness, not only the MESA Chair but also among us... (ZRP1)

Let's find the focal point person ... I think that that's probably what the MESA Chair needs to strengthen. Because if you have this focal point, he is the one actually to contact people. ... so this is where we still have a problem because of this compartmentalising things. We feel we are geography, those guys are education so there are those boundaries. (ZRP4)

6.4.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme Five: Agential elaborations (or reproduction) after participation in the ITP; if any, what are they and what do they imply?

The following interview excerpts highlight what has changed about the position (duties, rights, places, functions, rules, tasks, powers, and influences) of research participants after the one-year ITP or nomination as a MESA Chair (in the case of ZPR 11). If office and job descriptions had not changed, participants were able to explain exactly what has changed in them with regard to ESD mainstreaming. I discovered that changes, whether major or slight, actually started during phases 1 to 5 of the ITP programme itself. Thus what has been expressed during the ITP is not so different from what has happened much longer after the ITP. This situation could be due to the lack of intensive, continual formal engagement with colleagues at the departmental and institutional level. It could also mean that the capacity of these participants has been fully reached and the basic level of engagement with ESD mainstreaming and obligation in terms of practice have been reached.

I still come to knowledge-based and applicability of the knowledge. Yeah, a lot has changed. (ZRP1)

The change of mind-set in terms of the fact that someone is empowered, you can

approach other colleagues with confidence and share information with them ... you are free to change certain issues like ... I inserted environmental issues into my courses. (ZRP2)

... broadening my understanding of sustainable development ... I feel my input in community service ... I can better explain these things now than before the training. ... My contributions will be far sharper now than the explaining sustainability than before I went for the ITP. ... It gives you more authority ... to use your own initiative ... So the authority with which you put across these things kind of becomes enhanced after the ITP. (ZRP4)

You begin to interact with people based on that international exposure ... If I did not have future orientation and him future orientation through the ITP, we would not have argued that way we did in terms of the passion, the capacity and competence. Rights have to do with the level of exposure; if I know it, I will claim my right. (ZRP12)

Apart from the eventual change in positions of participants, I was interested in knowing the change in their practices after the ITP; ideally the knowledge of values and principles of ESD learning should reflect in the activities and whole lifestyle of agents. It can be said that the practices of research participants in all cases have changed in one way or the other; beyond the general change in thinking and perception, there are cases of change in behaviour, agenda, disposition, reaction, interaction, freedom to express and defend the cause of ESD, to mention a few. ZRP2 specifically described her changed practices as well as the practices of other colleagues in the School of Education, especially those in the environmental committee who are involved in keeping the university environs clean by picking up litter every Friday. The following interview excerpts show participants' continued change in practice or activities:

I'm a changed person. In all areas, in the social aspect, in the academic aspect, the way I interact with my colleagues ... I've changed in all the aspects. Professionally ... the way I assess, the way I lecture, the way that I interact with my colleagues, have changed a lot, with students. (ZRP1)

About my practice, I think I'm more free to participate in issues of the environment without feeling like 'wow I'm a lecturer therefore I shouldn't do what is regarded as being low or lowly', yes. ... In the environmental committee, there are a number of activities that we do. One of them which is ... the aspect of keeping UNZA clean. We go out every Friday between eight thirty and ten, just to go and pick litter ... As a group of lecturers, you go out to pick litter, the students see, and you talk about it in class. Many of them, it's like they also jump on the bandwagon, yes, much easily, because they've seen their lecturers doing it. It's not like they are saying you should go and do it, and they're not doing it. But they are doing it. (ZRP2)

Definitely, my practices changed. I can offer a better teaching now with that ITP training than before the training ... when we go through the ITP we see that even some of the things that we take for granted actually, you don't seem to understand them properly. So definitely my delivery of the lectures with regard to the issue of sustainable development has changed and improved. (ZRP4)

Yes I think the change is very significant; coming from teaching in a different way to teaching new things. We are now happier that we are doing the right thing. ... Definitely the power is there because we are happy and we are in charge ... I can boast that we are among the first ... what I drafted in the department was accepted. It is the Spatial planning and Environmental programmes that are approved through the VC's office. (ZRP3)

The effective and efficient teaching of ESD will determine the extent of the learning and change that can be assured in the process. The stipulated change in practice of ITP participants, especially in terms of teaching approach, knowledge sharing and building, was of interest to me. I also wanted to know what aspect of teaching and learning may have improved in the practices of these participants, as shown in the following excerpts:

The teaching approach also changed, yes. Initially my teaching was boring ... I thought I was the originator of all of the knowledge but now I think it changed. I learnt a lot from my colleagues, when we were presenting our change projects, yeah, somewhere in Sweden there, the different styles that people were using in teaching, so that also gave me some new knowledge. When you introduce a topic, you start from the learners, maybe you start with story-telling, what they know, yes, start from the known to the unknown, so that really made me a changed person. (ZRP1)

I probably now can teach better, these concepts than before I had the interaction with the ITP. ... I can teach sustainability issues with more authority now than before the ITP. The same applies to my community service, meeting with the ministries, the NGOs. I think definitely the ITP did enhance my skills and my understanding of these issues. ... The knowledge of ESD becomes my authority if you want to put it that way ... The level of consciousness of the issue of sustainability increases so that now you want to try and live it. It will show in the manner you teach, in the manner you interact with so you get to this level where you kind of begin, trying to, attempting to live it rather than just teach it. The teaching approach has changed. (ZRP4)

Beyond the changed teaching approach comes the crucial aspect of evaluation and assessment of ESD knowledge and skill. If the method of teaching has changed, then the mode of assessment is likely to change to meet the expectations of ESD capacity building. This is illustrated in the following excerpts:

Well initially I thought assessing students was to just, yes, just writing an exam, but what I have seen from the experiences, assessment is not only that ... it involves a lot, not only what the learner knows, but also what they are able to bring forward, and do with the knowledge that they have gained, the application level, yes. So even the assessment was maybe, book lifting but now I assess at application level, which is ESD. (ZRP1)

As you teach before now, you ask them a question and they answer, then mark. But now when you ask them a question you want to ask them if they can live this.... How to evaluate whether they live it or not, that again still is only limited to the tests ... unless you have some out of class activities, like school of education is doing, that will give you a broader evaluation. I mean like, in education you put up all those notices and at the end of the day you want to see, informally, whether, is it making sense or are the people following the instructions not to litter. So you can have that ad

hoc evaluation but over here you will still go back to just the test items that you give them. (ZRP4)

The contribution of participation in the ITP to post-ITP positions and ESD-related practices of research participants at UNZA has been noticeable. Participants explained that their duties, rights, places, functions, rules, tasks, influences, and powers, which are defined by position in this thesis, have been influenced quite positively by their participation in the ITP. Their ESD practices have been greatly enhanced both in and outside their work contexts. The change in position and practice of participants is evidence of their agential elaboration. The agential elaboration in knowledge of SD and ESD and application of such knowledge and expertise to real life practice beyond the classroom is evident. Apart from agential elaboration in terms of position and practice, there is also evidence of other kinds of elaboration such as inner satisfaction, pride in achievement (even though 'little'), motivation, determination, lifestyle, achievement, compliment resolution, mind-set, agenda, plans etc. The changes in these participants have propelled change in the lives of others in and outside their institutions, including fellow staff members, students and community members. ZRP1 commenced her PhD after her participation in the ITP largely inspired by her ITP experiences. ZRP4 explained how he maximises his sphere of influence and mainstreams ESD in his indoor and outdoor professional activities irrespective of constraining factors around him.

Yeah, actually from that ITP, I think that is what influenced even my choice of study area and my topic. I am looking at sustainability of wildlife resources in Zambia ... I think the ITP, my background in Science, has influenced my duties now ... my programme. So I still feel, the ITP did a lot, to me as well. (ZRP1)

OK, there's been mainly I think a change of mind-set. That influence on just the mind-set ... I think I am more concerned about the environment now. (ZRP2)

In terms of my position, when I'm out there with the forestry department, I'm free. As long as it's professional ... At the ministry, it's the same thing. You are free. You can bring your professional matters to the fore. It's the same in the class. In the classroom no one will come and tell me 'No, don't say this, because we didn't agree at the department'. But as long as it is within the framework and structure, yeah, there I'm free to do it. And the only limitation as far as that is concerned is the knowledge that I have of sustainability issues. What I know, you are free to impart it on people and students. (ZRP4)

6.4.6 T3-T4: STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme Six: Structural elaboration (or reproduction) after participation in the ITP/appointment of MESA Chair; if any, what are they and what do they imply?

This section addresses elaboration or transformation beyond the individual. It investigates what may have been modified or changed in and about the department, faculty, institution or country of these participants, as a result of their participation in the ITP, coupled with the existence of the

MESA Chair at UNZA. In other words, this section covers the impact of participants' change projects in their department, institution or country. The case presented by ZRP1 is an example of unintended consequences of social interaction: apart from simply developing a text book as proposed, a course was also developed. In this case ZRP1 and ZRP2 developed a resource book for teaching environmental management in undergraduate Bachelors in Environmental Education with a strong focus on local environmental issues and risks that require management in Zambia (it is, however, yet to be finalised and published). In the case of ZRP3 and ZRP4, the proposed new MSc Environmental and Natural Resources Management programme has been initiated through a memorandum of understanding (MoU) between UNZA and the Netherlands Initiative for Capacity development in HE (NICHE). The Vice Chancellor of the university has a strong commitment to Sustainable Development initiatives. Development of modules for the new MSc programmes and explicit integration of sustainability concepts into the core courses have been noted. Two new Masters programmes have been approved by Senate and commenced, namely 'Masters of Science in Environment and Capacity Development' and 'Masters of Science in Spatial Planning' and ZRP3 and ZRP12 are directly involved in these programmes.

A lot of programmes have come on board ... initially there were a lot of courses that were not relevant to the programme, but after this experience we came up with different courses that are relevant to ESD, yes. ...Even though the material development is still in progress, there is also a course that is related to that textbook, that I think I introduced environmental management to, there's a course for third year students that I also came up with. 'Introduction to Environmental Management', it wasn't there. ... The course is there now but something else is used since there's no textbook. (ZRP1)

In terms of the change project I think that is where there is a challenge. Most of the lecturers feel they don't have enough time to do all the different kinds of duties they are supposed to do: teach so many big classes, do research and do community work, so when it comes to writing materials it is also a challenge to have an input from particularly the main stakeholder and the students because you can only get that input if you administer a questionnaire where they will put down their views ... so just that time to sit down and do that work is a big challenge for the members of staff. (ZRP2)

Wow it hasn't changed so much. There we still have a long way to go I think so far not much, in other words, not much impact has been permeated to the departmental level; except maybe only for a few members of staff, especially the young ones. Obviously, the young ones you can sit down, discuss these things, but for the other guys unfortunately, they believe that they know it all. (ZRP4)

We now use better facilities to teach such as software. We have more applicants hence the Geography Department is now very known, another group of students are already applying for the next stream and we are just overwhelmed. It is just because of capacity, we have only 18 students and that is restrictive. If we have more computers, more space and more capacity and staff we will definitely admit more because the applications we receive is up to 50-60 and these are people who meet the minimum qualification, so we end up going for the top-notch. (ZRP3)

We have two new master's programmes, new contents ... teaching approach has changed ... we have more money because the programmes attracted more money. As we talk now the department has 72 post graduates, the department is not just known

as an innovative department in the university, it is known as an innovative department globally, you can go and read on City Scope, people are writing about us as far as Washington, coming from the same programme we are mentioning and they are still coming for further interview ... (ZRP12)

Apart from the outcomes already recorded by research participants, it is worth mentioning that they still envisage great plans with regard to their change projects and their general commitment to ESD mainstreaming practice.

I think it's pushing the publication of the book. ... I'll be very happy when the book will be published, because we haven't yet finalised it. ... I'll still follow up and see how far they have gone. (ZRP1)

No it's not a closed chapter; we want to publish it, yes. With a reputable publisher and then we can embark on another one, yes. Though it is time demanding, but I feel this is the way to go, where you have input from the stakeholders. (ZRP2)

What is left to be done is to see how the thing can be formally incorporated into the curriculum. That can only be done again through personal initiative ... In geography departments for now I am sorry to disappoint you, not much. But hopefully maybe somewhere; in the university that one is very high and bright. School of education is high, it is the biggest school, they have the largest number of students in the entire university. Even the students that we teach here, so this is where, again, it's not all is lost. Most of the students we deal with here, we don't have much of our own students here. Our own students in the geography department maybe are only 50 per stream. But we deal with the hundreds of students majority of whom are from the school of education so if they miss it here, they will probably come across it there; so not all is lost. (ZRP4)

We are not functioning at optimal level, we are still exposing ourselves further to current debates ... we are still transforming but we are definitely not below 60% we are quite above. ... Apart from individual lecturers and the VC, depending on who exactly he is, the other position which I think could do a better job or could be quite influential is the one you called the MESA Chair; because this is a person who can begin to push for paradigm shift in thinking in the mind-set of the people. He is the one who carries the vision, we are supposed to some degree listen to him because we cannot divide our agenda, we must work on a common agenda, and drive one ESD agenda for the University. So he, depending on how he carried himself and organises his office or her office, I think it could be very crucial; because he can speak to the gurus who are handling the courses and who believe in the old stuff. Sometimes the curriculum is open, we develop the curriculum be preliminary debate which could be through his office and he'll call the staff and we debate and debate so that the gurus who have hard and sceptical, even before shooting the document down will reflect and we can find things moving forward and we may not need to get to the extent of bothering the VC to give express orders. (ZRP12)

6.5 CASE INSTITUTION 2 - NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION (NIPA)⁴⁹

6.5.1 CONTEXT AND HISTORY

The National Institute of Public Administration (NIPA) was established in 1962 as a Staff Training College for the Civil Service. This was one of the strategies adopted by the Government of Zambia to meet the emerging challenges of building a new nation on Zambia's attainment of independence on 24 October 1964. Under the Public Service Reform Programme (PSRP) launched by the Government in 1993, through the Act of Parliament No.15 of 1998, NIPA was transformed into a semi-autonomous commercial institution. On receiving presidential assent in October 1998, and following the appointment of the Government Council by the President in December 1999, the new NIPA started operations under the new mandate on 1 January 2000.

6.5.2 CORE FUNCTIONS, MISSION, VISION AND VALUES OF NIPA

The functions of NIPA as stipulated in Part II of Act No 15 of 1998 are "provision of high quality training, research and consultancy services in public administration and private sector management; development of capacity of the institute of teaching, research and consultancy, relating to public administration and private sector management; and doing all such things connected with or incidental to the foregoing" (NIPA, 2011, p. 5). The vision of NIPA is "to be one of the leading institutions in providing high quality professional management and business training, research and consultancy services" (NIPA, 2010, p.1; NIPA, 2011, p. 5). The mission statement of NIPA is "to provide innovation and market-driven management and business training, research and consultancy services to the public, private and other sectors for improved performance and productivity" (NIPA, 2010, p. 1; NIPA, 2011, p. 5). With over 43 years of accomplishment in capacity building, NIPA has continued to play a leading role in consultancy, research and development of human resource for the local and regional public and private sectors in Zambia and has established sound collaboration with international institutions.

6.5.3 STRUCTURE AND GOVERNANCE⁵⁰

For effective operation, management, coordination and control of the operations at NIPA, the institute has the following organs: Governing Council, Finance Committee, Human Resource Committee, Audit and Systems Committee, Board of Studies. The Governing Council is the supreme authority of the Institute. The Council is responsible for policy formulation and implementation; and overseeing the growth and development of the Institute. The Finance Committee is responsible for initiating and recommending economic and financial policies of the Institute to the council for approval; considering and recommending to the Council for approval Annual Budgets, Management Accounts and Financial Statements; monitoring, reviewing and ensuring judicious utilisation of and accountability for the Institute's resources.

⁴⁹ Information about NIPA here is adapted from the 2011 Annual Report and 2010 programme flyer.

⁵⁰ Information about NIPA here is adapted from the 2011 Annual Report and 2010 programme flyer.

The Human Resource Committee is responsible for initiating and recommending human resources policies, programmes and activities to the Council for approval; monitoring and reviewing the implementation of human resources programme, activities; and recommending appropriate measures to the Council for approval. The Audit and Systems Committee has the functions to consider and make recommendations on the appointment or termination of appointment of the Chief Internal Auditor; to select external auditors for recommendation to the Governing Council; to approve the terms of engagement of external audit; to review the internal control systems and to review and approve the annual audit plan. The Board of Studies is responsible for developing, setting and enforcing standards for training and research; and directing the academic functions of the institute. ZRP5 is a member of the Board of Studies, while ZRP6 was also a member of the Board of Studies when he was still at NIPA.

6.5.4 DIVISIONS AND PROGRAMMES⁵¹

For effective implementation of NIPA policies, programmes, and activities, the Institute has established several divisions, departments and functional units as listed below: Office of the Executive Director; Administration Department; Management Studies Division; Business Studies Division; Research, Consultancy and Development Division; Library; Finance Department and Accounts Department; and, Internal Audit Unit. There is an outreach programmes division at NIPA, which was established in July 2009 and responsible for extension studies and distance learning programmes of the institute. The outreach programmes Division is headed by a full-time director, an administrator and consultants. Several diploma and certificate programmes are offered in extension studies under the management studies programmes at NIPA. The distance learning programmes are intended to benefit those students who can only undertake their studies by distance education. In 2010, two diploma programmes were introduced, namely, a Diploma in Public Administration and a Diploma in Human Resource Management.

⁵¹ Information about NIPA here is adapted from the 2011 Annual Report and 2010 programme flyer.

6.6 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT NIPA AND IN ZAMBIA

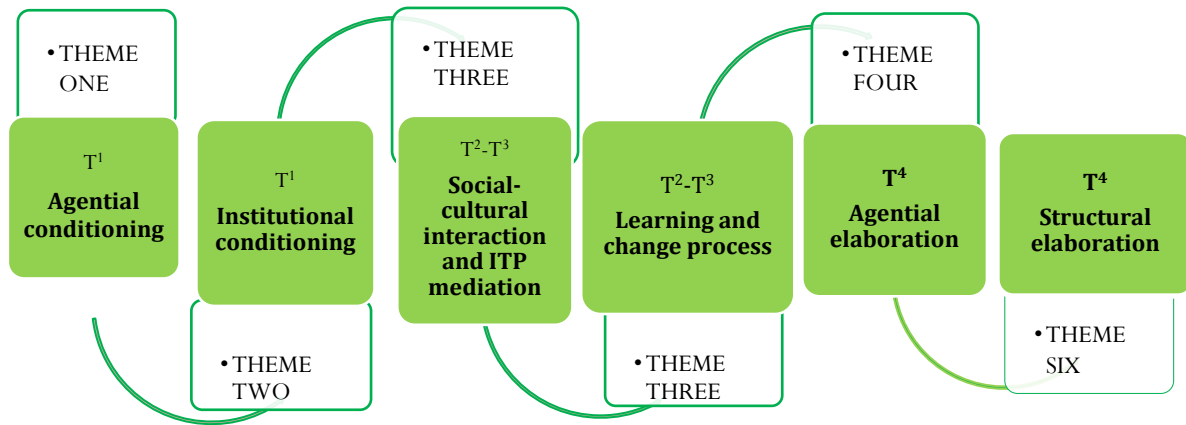


Figure 6.3: Framework for data presentation, analysis and discussion

6.6.1 T1: AGENTIAL CONDITIONING

Theme One: The pre-ITP positions and practices of participants and how these pre-positions and practices shaped the ESD learning and change processes at NIPA

Only two ITP participants have come from NIPA. This institute is slightly different from other structures and programmes of universities and colleges in that it is a Management Development Institution (MDI). These two staff members were part of the first set of ITP participants at its inception in 2008. They were directors, occupying the second in command positions after the Executive Director. ZRP5, the main participant was the Director of Management and Legal Study and ZRP6, her co-participant was the Director of Research and Consultancy. ZRP5 coordinated all management and legal study programmes while ZRP6 directed all research and consultancy related issues at NIPA. These related but distinct positions implied certain duties, rights, places, functions, rules, tasks, influences, and powers for the participants in their institutions. Their key positions contributed to an ability and capacity to push the ESD agenda. ZRP6 was not available for an interview, neither was he able to respond the survey questionnaire and interview questions sent to him via email, therefore interview data presented here is only for ZRP5. The following interview excerpt highlights the position and practice of these two research participants at NIPA:

I became a Director. The Director is the overall supervisor or manager of a division. I was the main participant and ZRP6 was the co-participant and we were working together then ... He was also a Director, Director for research and consultancy but the departments interface, we work together. ... In terms of powers it is the second level, after the Chief Executive Directors are at the second level. (ZRP5)

As directors at NIPA, ZRP5 and ZRP6 were automatically part of the board of directors who had specific responsibilities and also report back to the board of directors under the authority of the Chief Executive Directors. They were involved in determining the status of the institute in terms of design and development of programmes, revision of programmes, curriculum development and review, development and implementation of policies. They also taught students although this was their main duty on campus. Apart from the above, ZRP5 was also involved in working for certain government departments organising training and workshops for improving the skills of public servants. Thus these participants had much to offer in terms of their pre-ITP practice, the interview excerpt below confirms this:

So our role also is of policy implementation, because we have a Board of Directors so they formulate policies, and we implement, we translate the policies and ensure that we report regularly to the Board of Directors. I do participate in the development of most programmes that have a management component. So I do curriculum review. Yes I do programme design. I'll also do programme evaluation and then I am expected to do a little bit of teaching, about 20% of my time at work, I'll spend it on teaching so that I don't lose touch with students also with my staff to have a feeling of what goes on in the class. I do a lot of work with the government departments, yes, for short, tailor-made courses and I have been like more or less like the team leader when it comes to aspects that are related to workshops for skills improvement for the public service. (ZRP5)

Since it is obvious that these participants were key stakeholders at NIPA, it was interesting to consider their ESD related practices before their participation in the ITP. The prevalence of ESD practices in an agent also tends to be determined by the level of exposure, capacity received and knowledge of ESD. Hence their practices before the ITP were based on their level of knowledge and expertise specifically in ESD related issues and risk. Before participation in the ITP, ZRP5 had no significant ESD related practices hence her participation in the ITP was significant in terms of gaining intensive knowledge of sustainable development and its mainstreaming capacity for NIPA. The ESD related practices of agents are dependent on their positions in their institutions, which also determine their sphere of influence, rights, powers, authority and administrative involvement in decision making, and ZRP5 had limited influence. When asked about their practice, their influence, rights and ESD related practices before participation in the ITP, ZRP5 said:

No no, before my participation in the ITP I was doing nothing related to education for sustainable development; nothing that I can remember which is documented. So the ITP was kind of like an eye-opener, yes, it gave me an appreciation of what it was all about. This was a new area which we had not thought about, yes and I think at that time we just used to hear things on the radio and television. But they didn't really strike us; issues about the environment, issues about climate change. They were just there as general things, but we didn't see them as something that would be relevant to the trainings that we are offering and how. (ZRP5)

I also wanted to know the personal strength or technical know-how of these participants with regard to ESD mainstreaming before their participation in the ITP. This is useful because their

academic, intellectual, professional strength had a part to play in their general practices as well as ESD related practices. This will likely influence better ESD practices even if there are limitations and weaknesses. ZRP5's strength was therefore in her expertise related to her job description. ZRP4 and ZRP5 both were open to new forms of knowledge and skill. They looked out for opportunities that could enhance their job performance and relevance. This strength made them interested in this seemingly new and challenging but important area of capacity building. Training themselves also means training their colleagues, subordinates and students. ZRP5 explained below:

At first it was like a challenge and we were saying 'but how we are going to do it', yes we have agreed to participate in this programme, and we see opportunities. About the education for sustainable development and we saw that involves almost everybody, whether you are in a university or college, maybe even a primary, secondary school, and even ourselves ... there's a lot that we can do to integrate [ESD]. (ZRP5)

Before participation in the ITP, and apart from the few personal challenges or limitations about ESD mainstreaming already alluded to in these participants, there were more specific ones. One key challenge was the possibility of integrating the ESD concerns and concepts in the numerous programmes and curriculum they and their fellow directors had already developed over the many years of their careers. Of course they would have been more certain about this challenge if they didn't need the sphere of influence of other directors but unfortunately they were only certain about their own areas (Management and Legal Study and Research and Consultancy). It was also apparent that only these two participants were somehow involved in ESD related professional development training at the time of their participation. Hence they could be considered as the most knowledgeable in this area at NIPA in 2008. This reality thus means that at NIPA ESD capacity development was extremely necessary. It also means that all programmes and courses and curriculum lacked ESD, hence the content of environmental, social and economic sustainability was missing. Furthermore it can be argued that these participants and their colleagues had limited or hindered the mainstreaming of ESD at NIPA due to their own personal agential limitations and challenges. The excerpt below substantiates this claim:

But the challenge that I had was how we are going to integrate this into already existing programmes. Yes, that was our change project, how to integrate ESD into existing curriculum. Yes, and it wasn't going to be easy because I'm responsible for only management studies and legal training programmes; another person in responsible for business studies programmes, like marketing, finance, IT and so on. So that was the challenge, where do we start from, given that diversity? Yes and when you are coming from an institution where you are the only two, me and my co-participant, the only two who can talk that language. The rest have no idea what we are talking about. (ZRP5)

6.6.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme Two: Institutional ESD related problems the participants proposed to address through their participation in the ITP

Before participation in the ITP, the institutional or national status of ESD has also conditioned (influenced, shaped) ESD mainstreaming and ESD practice in certain ways. These included the absence or availability of certain things that were related to ESD. NIPA is one of the leading providers of high quality professional management and business training, research and consultancy services in Zambia and the SADC region. Findings of the audit indicated very little attention being given to sustainability issues at NIPA (in courses, administration, management and teaching practice). The participants' change project involved training of trainers on development of modules on sustainable development to integrate into current public administration programmes. Other ways NIPA had conditioned the flourishing of ESD was by the lack of institutional ESD policy or strategy; thus there was a lack of institutionally coordinated effort for sustainability that incorporated all sectors and disciplines of NIPA. This unfortunately led to a general lack of awareness about ESD and MESA at NIPA. Other ways in which NIPA had conditioned the effectiveness of ESD mainstreaming and practice include the lack of qualified staff to take up the challenge which also leads to lack of literature or general resources on sustainable development and EE/ESD on campus. This is what ZRP5 had to say:

No, no before the ITP, National Institute of Public Administration did not have any programme, lecture, course related to ESD, across the different disciplines, yeah. We have got three divisions now, but at that time we had two training or academic divisions, Business and Management. Then we had the Research and Consultancy Development Division. Those were the ones that were dealing with the training, but there was nothing in all those that were related to sustainable development. (ZRP5)

6.6.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme three: The kind of support the ITP participants (and their respective institutions) received through their participation in the ITP/availability of an ESD MESA Chair in their institutions and country

From the above range of institutional constraints and conditions, research participants decided to participate in the ITP, learn about ESD and initiate a project that would alleviate some of these contextual issues and risks as their agential contribution to the ESD mandate using their positions and practices. Their participation in the ITP therefore was a lifetime encounter that affected their profession and career path. ZRP5 had learnt a considerable amount during her participation in the ITP. She experienced an increased and deepened knowledge and understanding of sustainable development and ESD. She learnt from and with colleagues in the processes of interaction. This encounter also prompted her to begin to reflect on her role and personal contribution to ESD. She explained:

I think it has widened my appreciation of issues that are related to sustainable development. And because of that I am conscious of what it is even as a person, 'what are those things that I can do for example to conserve the environment so that even in years, the next generation will still find this environment?' (ZRP5)

Led by the need, an appropriate change project was chosen and developed with support from the. When asked about the specific kind of support, assistance, help and contribution the participants and their institutions received from the ITP to enhance the implementation of their change project, ZRP5 reported what can be found in the excerpt below. This excerpt sheds light on on-programme support as well as post-programme support. The availability of resource materials support has been cited as an example of on-programme support while the support of the ITP facilitator and ZRP11 who as at this time was not the MESA Chair has been highlighted below.

We have received quite a lot of support in terms of materials. Materials are there, and I make it a point to share the materials, yes. When we came back from the ITP trips, the first things that we did was to present a report to our management team, and the report was well taken and then there were some funding that was available through the programme. We were able to get some support through Heila [ITP co-ordinator] and ZRP11 [from UNZA] and we arranged a sensitisation workshop for three day. (ZRP5)

6.6.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme four: The post-ITP and post-ESD MESA Chair positions and practices and how these (including the positions and practices of others in their social context) and the ITP shape the ESD learning and change processes at NIPA

Participants' positions and practices started changing during and after their participation in the ITP. As was discovered in the case of Swaziland and UNZA, there was also the tendency for participants to 'quickly' state that their position had not changed but later they would explain what had actually changed. ZRP5 confirmed that her influence, authority, respect, confidence changed during her participation in the ITP and this was evidenced in her newly acquired capacity to explain and defend the course of sustainable development to her colleagues and others around her.

Doing the ITP? No, it has not changed, my post did not change. Yes, I think in terms of authority, respect, and power, those changed. I think I became a bit more influential and I was able to argue a point and show people why this must be done this way. Yes, for example, I got different positions like to chair certain committee because, maybe a little bit because of that exposure. I think somehow it helped. There was more confidence also, from people when and if I talked; I was like talking from a position of authority and influence. ... ZRP6 was the co-participant and we were working together then, after the Government changed and there was a new Government he got that position. He was also a Director, Director for research and consultancy ... Now he is the Secretary to the Treasury in the Zambia Government. (ZRP5)

ZRP4 changed his job and became a Government official, but there is no proof that his change in career had anything to do with his participation in the ITP. I investigated the evidence of social-cultural interaction of these participants with others in their institutions and the forms of interaction. Interactions recorded commenced right from the stage ZRP4 and ZRP5 compiled a

report approved by the NIPA management team. This approval led to the institutional support that warranted the organisation of what they referred to as a sensitisation workshop held for three days on campus. The social-cultural interaction took place among NIPA staff from various departments and divisions, especially the division in charge of training. The support was intellectual, moral, financial, and professional. In the workshop, ESD professionals were invited to anchor key aspects of the programmes. The workshop attracted a large turnout. ZRP5 explained this in detail in the following interview excerpt:

First we did a report which we shared at the meeting, the Management Team, and the management team gave us a go ahead and that's how we sat down and planned for how we were going to go about that process, starting with the sensitisation workshop, even the planning ... [For the ESD] sensitisation workshop which was conducted for three day ... we drew participants across the departments, the divisions, particularly the training divisions of the Institute ... So we had some experts who were able to deliver some of the topics to just expose them to the programme ... And people made an undertaking that 'yes there was an opportunity that they could do that with their programmes. (ZRP5)

There was further interaction between the participants and not only the ITP facilitators in Africa but those in Sweden. Although this was mainly at the level of evaluation, it must have prompted the participants to reflect on their involvement in the ITP and the outcome. The support of the African component was however considered very significant. The perception of the existence of a MESA Chair at the School of Education, UNZA, by participants in another institution like NIPA is of interest to this research. When asked about the kinds of support (assistance, help, contribution) participants or their departments or institutions had received from the existence of a MESA Chair in Zambia, this is what ZRP5 said:

There has been a communication between also the programme itself in Sweden and ourselves, which was mostly more of an evaluation. ...communication with us and especially Heila [ITP co-ordinator] and ZRP11 [from UNZA] in a way because after we involved them in the sensitisation workshop, they were more or less like people we could always fall back on. ... No, I didn't even know he is a MESA Chair. ... so in that capacity I have not related with him or gotten any assistance apart from the initial support in 2008 when we came back and even in 2009 we still had some contact. (ZRP5)

The import of the above is that the MESA Chair supported the actualisation of the change project of the NIPA ITP participants as an ESD professional and stakeholder in Zambia and not in the capacity of the Chair. This is especially because this project was developed in 2008, way before the inauguration of the MESA Chairs in 2011. Emerging out of the sensitisation workshop was an engagement of colleagues and other NIPA staff members and discussion for the institution to focus on capacity building of staff to integrate sustainability into courses. During the workshop, there was agreement that a pilot project should be initiated before wider upscaling, which needed to be incorporated into the Strategic Planning of the institution in 2009-2011 regarding allocation of budgets. Another institutional workshop involving 15 staff members was held to plan for the running of the programme in two of the NIPA programmes. This seemingly pleasant initial cooperation and commitment however fizzled out after the workshop. When reflecting over the

constraining factors that may have influenced the implementation of their change project, a few factors were highlighted. The appointment of co-participant ZRP4 as Treasury of the Zambian Government was one influencing factor. Other factors comprised the staff member job workload, resistance to change, general business and lack of time. Below is an explanation of the constraining factors:

The constraining factor is maybe the mind-set of people, change you know is not easy, people resist yes, so that was a constraint that we saw, that we found. Then ZRP6 was like also very busy doing other assignments ... so he also found it difficult to be fully involved in the project. So within the institute it means you have just one voice that pushes [the ESD agenda]. When you are alone, with my position, you cannot go to everybody and check, then your own job is calling you, you have to do so many things administratively, so you really have no time to really check and help people. I think that the time did not allow me to do that. (ZRP5)

The Executive Director of NIPA at the time of this project was named as the most influential position in terms of enabling ESD mainstreaming at NIPA. His support and commitment to this course even without being a participant of the ITP has been commended. Being the head of the institution, this is significant to the sustainability of the ESD agenda especially if there are other directors and staff members who are ready to carry forward the agenda. The registrar of NIPA's role and support has also been cited as significant. The chief consultant officer who is subordinate to ZRP5 has also been mentioned as critical in supporting the implementation of the change project and ESD mainstreaming in existing course and programmes. The following interview excerpt supports these claims:

The Chief Executive, the Institute's Registrar, and the Chief Consultant who was my immediate and then this staff I was talking about, the Coordinator for the Gender programme, she is also very kind of receptive; she was very interested, yes. The positions that have been very influential ... I can say the Executive Director because obviously he gave his commitment to say 'I'll go along with you, this is a good programme'. And then we have also our Registrar who is like the overall administrator who looks at support services and other things. He was able to support us in terms of resources like transport, when we needed to move and just a few other things that we needed to get done to make the programme proper. Then the people who work [hierarchically] below me, the chief consultant officer, he was also instrumental, particularly, in trying to show people that 'yes this can be mainstreamed'. I mean he came out very strongly to say 'it's possible to do that and where people needed to do so. (ZRP5)

Another staff member that influenced ESD mainstreaming at NIPA quite positively and specifically was the coordinator for the Gender programme. The role played by this staff member has specially appreciated because she was completely receptive and accommodating in terms of mainstreaming ESD in her programme. The social-cultural interaction between ZRP5 and this colleague resulted in substantial change and thus some level of implementation of the change project of these ITP participants. Below is what transpired between ZRP5 and her colleague:

So the person taking this course was receptive, yes, because I had to push that agenda. I was in control because she was new and I had the information and I said 'no this is the time'; it was easy for me. She is one of the senior consultants, about the

third level from me in that hierarchy. There was also a part-time person ... I was able to say that 'don't you think we can put this unit here?' 'It would make sense and so on'; so that's how we succeeded. But in the others it wasn't really easy. (ZRP5)

Regarding the influence of the position (duties, rights, places, functions, rules, tasks) and practice (activities) of other people in research participants' context, much has been highlighted. Their influence on ESD mainstreaming and practice was both positive and negative, depending on the context and the circumstance. It was clear that it was not only the position and practice of ESD experts that shaped the status of ESD in institutions; the position and practice of 'novices' equally and sometimes more effectively shaped ESD learning and change. Over and above the stakeholders who enabled the mainstreaming of ESD at NIPA during the course of implementing the participants' change project, there were also those who constrained ESD mainstreaming at NIPA. Constraining influences were particularly observed after verbal commitments had been made and before the actual change process began. These staff members put forward strong arguments for a rethink or postponement of the earlier proposed ESD mainstreaming agenda.

After the workshop we also prepared a programme for integrating ESD in curriculum and courses, even identified courses whereby it is possible to do. So all that plan was there but when it came to the actual implementation that's where it failed. ... There was a little bit of resistance. Others despite the sensitisation workshop, they still didn't see how they could do it, it became a challenge. They were asking, 'how do we do it we already have this prescribed unit that are supposed to go into the curriculum, and if we are integrating it we need to relate it to something, it has to appear relevant, not just something from outside, yes. [They further asked] 'Why do you want us to do this?' and then they said 'no why don't we take an opportunity of the upcoming curriculum review the following year', 'why don't we take advantage of that by doing it then'? So that year came, we went and it wasn't easy, we were only able to succeed in one programme. (ZRP5)

There were other issues and concerns related to the challenge above that constrained ESD at NIPA. Lack of due attention and response to contentious concerns and recommendations will have negative influences on social-cultural interaction that could successfully give rise to sustainable agential and structural elaboration with regard to ESD at NIPA. Issues raised include the interest and willingness to learn and practise sustainable development and its mainstreaming; the need for many more agents of change that have the capacity to mainstream ESD and this goes back to the urgent need for ESD related professional development in HE; a once-off short term training or intervention is insufficient for concrete engagement with all aspects of ESD and this cannot provide assurance of institutional and individual commitment to action; the need for regular programmes of orientation to ESD for both old and new staff intakes; a constructive and formal collaboration of all ESD experts, those who have undergone ESD professional training and the office of the MESA Chair; corporal development of local ESD initiatives. Lack of all this social-cultural interaction, social learning and change undermines the possibility of effective ESD mainstreaming at NIPA and in other institutions in Zambia. Below is an excerpt of ZRP5's suggestions:

I think it's [ESD prospect] there, it is one of the contemporary issues that needs attention and I see that that it can help, it needs the chance to take root and it just needs a lot of goodwill. It needs more people to be on board and more people can be on board only if they get the capacity. That exposure for three days is not enough, and some of the people there have gone. ZRP6 has gone and even other staff have gone and we have new staff; so again we need to develop something where we can again show them. We need to work together... For me what I think, apart from what has been done is that now that we have this Chair, the Chair can still try to get some who have not been closer so that we can have some kind of meetings where we can suggest some programmes locally, so that we can see what we can do locally, how we can support our own initiatives on ESD, through our own local initiatives. ... You need to build on the knowledge and when you build the core group becomes larger and then you have so many voices, and the more the many voices you have, it strengthens the kind of influence that group can have on individuals in their own institutions. (ZRP5)

6.6.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme Five: Agential elaboration (or reproduction) after participation in the ITP; if any, what they are and what they imply

The contribution of the participation in the ITP to the post-ITP positions and ESD related practices of ZRP5 is undeniable. The following interview excerpt highlights some of these changes. Apart from the change in position of ZRP5 during the ITP, further changes can be itemised even after the ITP ended several years ago, for example her change in thinking, disposition, interest, behaviour, agenda, and perception. A practical example is the role ZRP5 plays and the kinds of responsibilities that she is given. These roles and responsibilities constitute some kind of referral to her encounter with the ITP.

To some extent I could say the ITP did influence, but not in terms of what you are saying, not changing my post. The post remains the same, but it was like even the duties became wider like you would find that when there is a committee and a decision on who should head, I will often be called upon, yes. For example, as you were coming in, as you were driving in, if you looked to your left, there is a big greenery there, and there is a small structure there, and I sort of like initiated that and we use that for our graduation ceremony. It is open, there is fresh air, just providing a bit of shade, we planted some trees, so things like that I was part of the committee and I was the chair. (ZRP5)

6.6.6 T3-T4: STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme Six: Structural elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

Structural elaboration has been framed around what has been modified or changed in and about the structure, management, or practices at NIPA as a result of these agents' participation in the

ITP. It was re-framed as factors the participants' change project have brought to NIPA or what is being done or practised now at NIPA that was not done or practised before. During the ITP, participants developed a framework for a module on principles of sustainable development as well as a scope and sequence chart for implementation of the framework. After the ITP and the three-day institutional sensitisation workshop held at NIPA, ZRP5 recorded the successful integration of ESD issues and concepts in a Diploma in Gender Studies (DSG 203) course entitled 'Gender and Natural Resource Management'. She did this in collaboration with the course coordinator. Apart from this curriculum innovation, the management practices at NIPA also changed in terms of the sustainable use, disposal and recycling of paper on campus. There is little collaboration with the student body basically because of lack of manpower and the fact that ZRP5 has limited contact with students. Below is the evidence of this structural elaboration claim:

We were only able to succeed in one programme, which was the Diploma in Gender Studies, yes. And in the Diploma in Gender Studies we were able to put something on natural resource management. ... So within NIPA because of that we have made sure that these are some of the things that we talk about. When we say paper, nobody burns paper here. We try to put it together so that it gets recycled and when we have written on a piece of paper, we make sure we turn the other side. Envelopes, we reuse the envelopes and so on. At the institute before we used to just burn our litter, the green was there, but it is better now, not because of me, but because of talking to the others and the others also believe in the same. The students are a bit difficult to mobilise on such issues, yes. It hasn't been easy because I don't deal directly with all the students, yes. (ZRP5)

ZRP5 still has many plans. With regard to her change project and her commitment to ESD mainstreaming, she envisages institutional future plans to introduce degree programmes in NIPA. The development of these new programmes and its curriculum is likely to help overcome the previous institutional challenge of mainstreaming ESD in already existing programmes. The knowledge that ZRP11 is now a professor and holds the office of the MESA Chair in Zambia is also an impetus for re-establishing communication and dialogue towards more sustainable ESD mainstreaming in not only NIPA but in Zambia by implication. See interview excerpt below of ZRP5's commitment and future plans:

We have been given a mandate to introduce degree programmes, and I am trying to see whether we now, as we develop the new ones that can become an opportunity, so that the challenge of integrating ESD into the old one which will not be the issue here. ... since now you are saying the MESA Chair is now the MESA Chair for Zambia, I will definitely try to get to him, he may give me some guidance ... (ZRP5)

6.7 CASE INSTITUTION 3 - COPPERBELT UNIVERSITY⁵²

6.7.1 CONTEXT AND HISTORY

Zambia is one of the most urbanised countries in Sub-Sahara Africa. Because of the existence of a highly developed industrial sector on the Copperbelt, there has always been a heavy concentration of population in the area. But during the past years, the population of towns and cities elsewhere in the country has risen at a very fast rate, while the population in rural areas has declined. This movement of people has created or accentuated a number of challenges relating to the built environment and has pointed to the need for university trained specialists equipped with the skills required for dealing with the environment in a sustainable and enterprising manner. The construction industry in Zambia, which is one of the largest employers of labour, has long felt the need for a steady supply of locally trained professionals. These conditions have created a demand for professionally trained people in Architecture, Quantity Surveying, Building Management, Real Estate Studies/Land Economy and Urban and Regional Planning.

6.7.2 CORE FUNCTIONS, MISSION, VISION AND VALUES OF CBU⁵³

The vision of the University of Copperbelt University is to create a place for high-quality education and training, enabling graduates to act efficiently and effectively in a broad range of civic and professional functions and activities. It is also to create a place to which access is possible primarily on the basis of intellectual merit and of the ability to participate actively in its programmes and a place of learning founded on quality and knowledge which inculcates in its graduates the practice of lifelong learning. Further its vision is to create a community fully engaged in the search, creation and dissemination of knowledge, in the advancement of science, and participation in the development of technological innovations. The Copperbelt University attaches great importance to knowledge acquisition by students individually and in groups.

6.7.3 STRUCTURE AND GOVERNANCE

The following officers, schools and offices are in charge of the governance of the Copperbelt University: the Vice-Chancellor, Deputy Vice-Chancellor, Registrar, Bursar, School of Business, School of Technology, School of Built Environment, School of Natural Resources, School of Mathematics and Natural Sciences, School of Graduate Studies, Directorate of Distance Education and Open Learning, Library, Dean of Students, Computer Centre, Academic Office, Council Office, Public Relations Office, Security Section, Copperbelt University Clinic, and Copperbelt University Guest House.

⁵² Information in this section about Copperbelt University is extracted from its website <http://www.cbu.edu.zm/> except where indicated otherwise.

⁵³ Information in this section about Copperbelt University was adapted from its website <http://www.cbu.edu.zm/> except where indicated otherwise.

6.7.4 SCHOOLS, DEPARTMENT AND PROGRAMMES⁵⁴

There are eight schools at Copperbelt University namely the School of the Built Environment, the School of Engineering, the School of Business, the School of Graduate Studies, the School of Mathematics and Natural Sciences, the School of Medicine, the School of Natural Resources, and the School of Mines and Mineral Sciences. The School of the Built Environment (where the two research participants are) consists of four departments, namely; Department of Architecture; Department of Construction Economics and Management; Department of Real Estate Studies; and Department of Urban and Regional Planning. The School of the Built Environment offers the following programmes: Master of Science in Project Management; Bachelor of Architecture; Bachelor of Science in Construction Management; Bachelor of Science in Quantity Surveying; Bachelor of Science in Real Estate and Bachelor of Science in Urban and Regional Planning.

6.8 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT CBU AND IN ZAMBIA

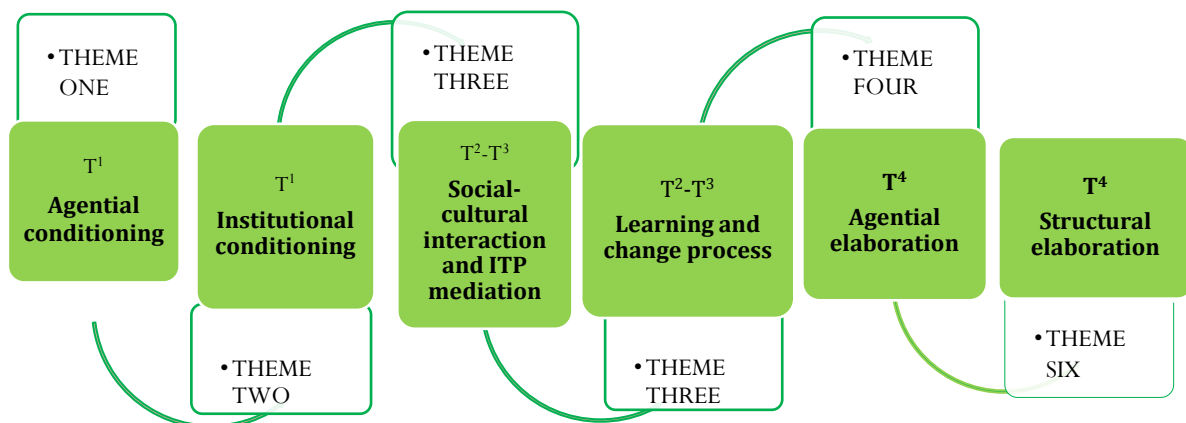


Figure 6.4: Framework for data presentation, analysis and discussion

6.8.1 T1: AGENTIAL CONDITIONING

Theme One: The pre-ITP positions and practices of participants and how these pre-positions and practices shape the esd learning and change processes in their institutions

There have been two ITP alumni at Copperbelt University: ZRP7, Department of Urban and Regional Planning and ZRP8 from the Department of Civil Engineering. They participated in the

⁵⁴ Information in this section about Copperbelt University was adapted from its website <http://www.cbu.edu.zm/index.php/academic-information/schools/built-environment/history>

ITP in 2009. Before their participation in the ITP, these research participants were both senior lecturers at Copperbelt University, in the School of the Built Environment although currently the Department of Civil Engineering has been formally moved to the School of engineering. Before participation in the ITP, ZRP8 has been in the university since 1989 when Copperbelt University was a campus of the University of Zambia, formally known as the Zambian Institute of Technology. ZRP7 began his career at Copperbelt University in 1991 as a staff development fellow. ZRP7 was the Head of Department of Urban and Regional Planning, and later became a Dean, a member of the Practice Office, as well as a member of the Board of Studies. The following interview excerpts describe the positions of ZRP7 and ZRP8.

I am a civil engineer ... The now Copperbelt University was formally the Zambian Institute of Technology before 1989; a campus of the University of Zambia. So Since 1989 till date I have been with the Copperbelt University. (ZRP8)

My qualifications are in land survey ... I did a diploma in technical education ... my PhD is in land studies ... I have worked for the School of Built Environment for the last 23 years, I came in as a staff development fellow ... I belong to the Department of Urban and Regional Planning ... here I serve as a Senior Lecturer. ... Before my participation in the ITP I was the Head of Department ... For the past six years I have been the Dean of the School. ... I was part of the Practice Office which is the consultancy wing of the School of Built environment. (ZRP7)

The positions of these participants at Copperbelt University gave them quite a good sphere of influence to mainstream ESD but their pre-ITP practices presented in this section will show if their positions have influenced ESD positively. The above stated various and distinct positions implied certain duties, rights, places, functions, rules, tasks, influences, and powers in their institution. This in turns determines the general practices or work activities that they are involved including teaching, community engagement and research. Specific activities will be as a result of their distinct position at Copperbelt University. Below are some illustrative interview excerpts:

I have been teaching from 1989 to date, mostly construction, technology, management and structural design ... the normal teaching, doing some research and publishing and so on. (ZRP8)

I was teaching courses in land survey and geographic information systems, after two years I was elected as Dean ... we are involved in a lot of projects ... during that time I was given an extra responsibility by the Board of Studies of the School to craft what was called the Practice Office Concept Paper, together with my colleagues ... I also began to chair the Board of Studies. (ZRP7)

The ESD related practices of these research participants before their participation in the ITP varied especially due to their different academic qualifications and their knowledge of sustainable development and ESD. ZRP7 was already engaging in ESD related activities although indirectly and unconsciously, while ZRP8 had nothing to do with it in his duties and practices. Hence their ESD related practices before the ITP can be said to be based on their level of exposure, knowledge and expertise specifically in ESD related issues and risks. When asked about their practice, influence, rights and ESD related practices before participation in the ITP, they said

No! I don't think I can say yes because I had no knowledge of sustainable development and Education for Sustainable Development. (ZRP8)

What I can say is that there are certain unconscious practices because of our previous experiences within the academia that I was somehow practicing even without having gone through the ITP... I was not obliged before ... I was also involved in environmental impact assessment projects where we were made to think in a certain way because of the law ... from my point of view I was interested in social impact assessments but of course with a very different perspective from the ITP ... it was not as though I was trained to think in that way during that time, I was just doing those things because I was environmentally conscious because of the teachings in some of the courses I have attended especially during my first degree. (ZRP7)

In line with the above ESD related practices of these participants was the need to investigate their strengths and weaknesses which may or may not have facilitated the principles of sustainable development. Participants also had diverse points of strength and weakness which resulted in how they were able to harness the pre-ITP level of ESD knowledge and skill. Their points of strength included their educational background and qualification in the case of ZRP7; and the appropriateness of the use of methods, tools, and technology in the case of ZRP8. This may have enabled or constrained ESD mainstreaming but could only be determined by the outcome of their involvement in the ITP presented in the course of this chapter. With regard to their strengths, this is what they had to say:

My background, especially the courses I attended during my first degree, I found it a little easy to be part of those programmes somehow because I have picked a lot about the environment to the point that when asked to undertake an environmental impact assessment, it was easy for me to play a role ... I may not be so very strong from the physical aspect of the environmental impact assessment but from the social-economic point of view I was strong because we did a lot of that in my first degree, especially those that are related to land and ownership of land and use of land. (ZRP7)

In civil Engineering the approach has been appropriate technology rather than sustainable technology which is beyond the appropriate use of tool, method, material and manpower. (ZRP8)

The other side of the coin, which is what participants considered as their personal challenges or limitations with regard to ESD mainstreaming in their position and practice was also interesting to know. This weak point will determine the extent to which they might have found professional development in ESD useful or not to their careers as university educators. According to ZRP8, the lack of knowledge of sustainable development and ESD was his limitation, while the myopic understanding of sustainable development and ESD was the limitation of ZRP7. These limitations have obviously inhibited the knowledge, awareness, dissemination and interest in issues and concerns about sustainable development at least in the School of Built Environment at Copperbelt University. This thus means that their interest in participating in the ITP would have revolved around the level of capacity they would gain after training in order to condition themselves as better agents of change. The following interview excerpts shed more light:

It was the issue of knowledge, I mean if you don't know, you don't know. It was an area which I thought was necessary or I have heard somewhere. So the limitation was the knowledge, the relevance and how it would be applied within my field. (ZRP8)

I had a very narrow understanding of the environment and most of the things I understood during that time were very directly related to land surveying. My understanding was very narrow, just to that and even my education background and the courses that we did, a lot of what was done were issues of the environment to land survey ... so was very narrow minded in respect of the environment and that in itself was a limitation ... it was like I was put in a box during that time as a land surveyor ... I was not broad minded at all. (ZRP7)

6.8.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme Two: Institutional ESD related problems the participants proposed to address through their participation in the ITP

Apart from the above presented personal and professional development limitations and needs of the participants, Copperbelt University also had gaps which required responses from the institutional change project which was entitled 'Education for Sustainable Development and Global Citizenship (ESDGC)'. The objective of this change project was to provide support to the School of the Built Environment at the Copperbelt University in planning and implementing programmes that would bring environment and sustainability into the mainstream of learning and research. They wanted to create awareness of these global issues and stimulate local responses to them as an institution. ZRP7 was particularly forced to ask and reflect on questions such as 'What are we teaching our students? How are we teaching our students? What about the staff? What is their background? What are their attitudes and values with respect to the environment?' He thought it would be a good idea to see what he could use in his position as Dean. The change project was also born out of an intense exposure to ITP and the role of HE in the struggle to preserve the deteriorating earth. Participants started thinking about the environment and the education that they were giving to students and the impact on the community. They also started looking beyond their immediate environment as architects, land surveyors and civil engineers more broadly to their local, national, regional and global context; hence the change project. Below is a glimpse of their expressed concern.

Our concern was more or less that nobody seems to know, nobody seems to look at ourselves as we are part of larger group, the global citizenship. We as School of Built Environment belong to the Copperbelt University which is located in Kitwe, Zambia and so on moving right up to the globe. Within that [reality], we needed to look at the issue of climate change and environment because we were not taking some of these things into consideration. (ZRP8)

When I was given the opportunity to participate in the ITP I saw there what I didn't expect and I began to ask myself the question 'What's going on in the School in relation to ESD, what's going on? Where are we with environmental issues?' But I can only find out that if I undertake a curriculum evaluation of what is going on in

different parts of the school in respect to mainstreaming education for sustainable development. ... I thought I may have some influence there as a Dean but I wasn't too sure because I have not gone through the programme. (ZRP7)

Their intervention was planned at two distinct levels: the level of colleagues and fellow staff as well as the level of the students they were teaching, having an impact on and who were graduating annually from the School. They wanted to develop a sense of global citizenship in the school community after introducing ESD in their teaching. Hence, right from the onset their concern was not simply awareness but the kind of awareness that revolves around learning and the kind of learning that will lead to practical action. Their words reinforce this point:

I made a decision about my change project being curriculum evaluation of environmental issues and also introducing the staff and students to education for sustainable development. (ZRP7)

For the students, there was one workshop specifically for the students. We also wanted them to be aware of their environment. Our proposed change project was education for sustainable development and global citizenship. It covered quite a lot. We invited all the staff of the School. The attendance was quite good. We had quite a number of staff who came to that workshop. (ZPR8)

6.8.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme Three: The kind of support the ITP participants (and their respective institutions) received through their participation in the ITP/availability of an ESD MESA Chair in their institutions and country

Their participation in the ITP therefore was with great expectation, resolution and optimism to contribute to a better School of Built Environment. Despite their area of specialisation and discipline, I thought it would be insightful to investigate the kind of support the ITP would provide for these participants since ESD is applicable to all spheres of life. Indeed, participants have testified to contextual application of their new knowledge of ESD to their profession as architects, land surveyors, civil engineers and as educators in this field. Their knowledge was increased and broadened by the different expositions, interactions, lectures, field trips and both indoor and outdoor activities during the ITP. Hence the ITP appeared to have been an excellent programme for both novice and well-grounded ESD agents. Below are some of the interview excerpts to this effect.

Quite a lot ... the issues of green construction, preserving the natural environment and in terms of design we looked at how we can be moving away from the use of artificial and synthetic materials and go into natural materials and how these natural materials can be regenerated; for example the use and replanting of timber in order not to lose the forest. In terms of building we learnt how we can design buildings with the use of natural light, sunshine ... rain water harvesting, the design of building in such a way that trap the water so that during the dry season you will be able to reuse that particular water. (ZRP8)

Just being a participant in an international course with people coming from different backgrounds meant a lot. The ITP as somehow grounded in me the principles of Education for Sustainable Development and also broadened my mind on different perspectives, different people from different backgrounds and having the respect for that. (ZRP7)

Learning has been much spoken about during participants' encounter with the ITP. When describing their learning experiences, the increased and deepened knowledge of sustainable development and ESD were often highlighted. Learning from and with the resource persons and colleagues was particularly appreciated. This process of learning, unlearning and relearning has been a challenge but a positive one. Knowledge gained through the course was substantial, challenging and concrete enough to change participants' perceptions and make them resolved to pass on their knowledge to other colleagues and students on return to their institutions. The following interview excerpts show this:

The ITP brought awareness in my mind in the way I am doing things. The ITP made me aware that in whatever I do I should be thinking of all these forces and issues surrounding us, not just here in Zambia but around the world. Hence in my work and field I should look at a project in terms of its impact on the environment and even on the community. That knowledge changed me and the perception of things. Yes I can say there has been some knowledge gained which I can also pass on to my students and even within the projects which I do. (ZRP8)

When I went to the programme, there were a lot of panel beating of the initial change project plan by the resource persons and on my thinking and there were a lot of debate about issue and issues that I also had to thrash out when I came to the school workshop for my change project ... that is where we really encountered real problems, challenges I should say ... it was a real big challenge. (ZRP7)

Participation in the ITP did not simply mandate the development and implementation of an ESD change project, the ITP provided due support. These participants were supported especially during the institutional workshop that was held at the School of Built Environment. They confirmed that the presence of Prof Gitile Naituli was remarkable. Being a respected 'outside figure', the workshop attendees were more inclined to be attentive. Requests around ESD and sustainable development knowledge and practice were responded to by the facilitators rather than the ITP participants. Although after this encounter nothing of substance developed, this kind of initial moral and intellectual support for the establishment and development of ESD and practical global citizenship in this School was considered very enriching to the ITP participants. Below are their words:

It was just at the beginning, the beginning when we had those two workshops. Prof Gitile Naituli did come, he made a presentation during the staff workshop... for the students I think we did it. That was the end, after that I don't think I have heard from anyone, unless there has been some communication with my co-participant. (ZRP8)

We had to request one of our facilitators to come and assist us with the workshop. ...There was a lot of interaction and communication between ITP participants and facilitators. We had Prof Naituli from Kenya. They were very helpful in the content

of the workshop, they were very helpful in the exercises we designed for our workshop attendees that would help them in understanding what we were talking about. They were very helpful in terms of answering questions we could not answer, my co-participant and me. So I think in the introduction of ESD to the School and the running of the workshop, they were very helpful. (ZRP7)

Travelling to other continents, countries and places made participants more knowledgeable about ESD experiences and practices in other regions and countries. It provided participants with concrete examples of best practices they could emulate. It gave them insight into what to do and how to go about their change projects or respond to challenges they might face on their return to their institutions. There was a deliberate and constructive bridging of possible gaps that exist in different education sectors as well as the various fields and disciplines that exist in higher education. Participants' ability to interact, socialise, communicate and co-operate with others was also enhanced through social-cultural interaction with course facilitators and fellow participants. The access and exposure to diverse resource materials were also articulated as well as appreciated forms of support from the ITP facilitators.

Also learning from people from all over Africa and Asia; we listened to people coming from the Philippines, west Africa, east Africa, southern Africa; we all met and shared a lot of experience. I could see that a lot of people coming for that programme were from the Education sector, from universities, from colleges, from polytechnics all coming together and still being grounded at the same level, have a common understand because our facilitators wanted us to have a common understanding. (ZRP7)

Opening the broader world of Education for Sustainable Development, much more broader than what I have been in before. I was exposed to a lot of literature. Our facilitators gave us a lot of literature. (ZRP7)

6.8.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme Four: The post-ITP and post-ITP MESA Chair positions and practices and how these (including the positions and practices of others in their social context) and the ITP shape the ESD learning and change processes in their institutions

Participants' positions and practices started changing even during their participation in the ITP. As noted in the case of Swaziland and the other Zambian cases presented above, there was the tendency for participants to 'quickly' say that their position had not changed but they would then explain what had actually changed. For ZRP8, what changed were his thinking, perception, interaction and communication with students, and his teaching approach. For ZRP7, he realised that he could use his position as the Dean to do better things in terms of sustainability. He realised that in fact he had missed many opportunities because of his narrow thinking that sustainable development issues were socio-economic issues and something he should leave to the experts in that field. He also initially thought that he was not well grounded enough to be a part of a discussion and contribution to curriculum development and revision; meanwhile it was his

responsibility to inform curriculum that could change students, staff and also to some extent the university. ZRP7 also explained that part of his changed position and practice was the realisation that he didn't even have to be Dean to have that sort of influence, as long as he was a senior lecturer. Senior lecturers have considerable authority within the School and within departments. Part of his power, influence and right was the ability to give good examples on values, on small issues like respect, including appropriate respect for students, how the School handles materials it designs, where the School throws papers, how materials are being used, the kind of choices they make for materials required etc. He was now able to see that he could influence the thinking of students, even of members of staff. When junior members of staff observed him and they saw that he was actually walking the talk, then they would often pick up very quickly on propagating ESD practices and mainstreaming. The interview excerpts substantiate this claim:

I don't think there was much change in terms of my position, duties and rights within the University. What I can say would have changed after would be my perception of these courses which I have been teaching. Before the ITP, I was concentrating on the conventional way of doing things but after the ITP there was awareness that there should be another approach to the way we do things here. There was a change in my thinking; there was a change in my approach to teaching, in the way I talk to students. (ZRP8)

I have more power than I envisioned before. In fact being both senior lecturer in the department and then Dean of the School, I could to a very large extent influence curriculum content before it goes to the academic development committee which presents to Senate for approval. I realised that in fact we had missed opportunities before, I was boxed by the thinking ... I realised that I could do a lot more than I used to do before ... I could see more opportunities than before ... as a Senior lecturer and as Dean I could influence the approval processes knowing that what I was doing was going to benefit not only the lecturers, students, myself and the community at large in the short term and in the long term. I also realised that in fact I don't have to be Dean to have that sort of influence, as long as I am senior lecturer because senior lecturers do have a lot of authority within the School and within the Departments. ... I realised that I was very powerful even before but had not used my power and influence, so it was like I blossomed in terms of using my influence. (ZRP7)

There is evidence of social-cultural interaction between both participants. There was technically a form of social interaction between the School of Engineering which now houses the Department of Civil Engineering and the School of Built Environment. This is because of the re-organisation within the University which has structurally prevented both research participants from being in the same School. There is also evidence of interaction between the participants and the Vice Chancellor of Copperbelt University who had initially nominated ZRP7 for the ITP. There has also been social-cultural interaction between the research participants and their colleagues including students in their Schools. One remarkable interaction that contributes to the status of ESD in the School of Built Environment is its interaction with the Practice Office of the School. The coordinator of this office, Mr Mawo, attended the ESD workshop held for staff and was referred to as 'a very good disciple' who 'caught' the ESD vision and thereafter has been thinking about the environment in that office which currently has a very big footprint.

We wanted to pass on what we have learnt in the ITP to the staff and students. What we tried to do with ZRP7 was to see how this ESD can be adopted within the School, not the University. We started with the staff and then the students. For the staff we had a workshop and they took it very well. (ZRP8)

I was nominated by the then Vice Chancellor who thought I could participate in the programme and sent me the forms which were from Sida ... I had a co-participant who is a civil engineer. (ZRP7)

There is also evidence of social interaction between the research participants and a very key ESD stakeholder based in the Copperbelt University namely Professor Shumba. He is a seasoned ESD and sustainable development practitioner, publisher, activist and a strong member of the ESD networks in southern Africa such as EEASA. Unfortunately he was out of the country during my field trip to Zambia even though I planned to interview him to provide some form of insight into the status of ESD in the University and in Zambia from his wealth of experience. His social interaction with ZRP7 was in relation to the EEASA conference that was hosted in Zambia. This conference which required planning, organising and considerable logistics needed agents that had some form of ESD capacity; hence the research participant was consulted for assistance. This led to further interaction between Prof Shumba, ZRP7, other EEASA conference organisers and the Practice Office of the School of Built Environment, particularly Mr Mawo who was the coordinator. Therefore the participation was limited to organising and the School of Built Environment was represented through the Practice Office. The following data provides evidence of this social interaction:

Zambia was giving the opportunity to host a EEASA Conference some years ago 2010 or 2011 and Prof Shumba was very active on that and got the conference to take place at Copperbelt University and because he has heard that I had gone on the ITP programme, he came and said 'could you not even in a small way associate yourself with this'? so I read his brief very quickly and I said 'this is quite a lot, I cannot do much but what I will do that I will find someone from our Practice Office to be a part of this, because our Practice Office was very active...so the Practice Office Coordinator, Mr Mawo represented us and he was very happy. So he went ahead to represent us in the organisation of the conference. (ZRP7)

Of interest to this research is investigating the synergies in the social interaction between the ITP participants and the MESA Chair. This includes the perception of the existence of a MESA Chair at the School of Education, UNZA and the kinds of support (assistance, help, contribution) participants or their departments or institution have received from the existence of a MESA Chair in Zambia. These two ITP participants did not know anything about the MESA Chair. They were not aware of any ESD Chair in Zambia (and this implies the two other MESA Chairs) neither have they received any support with regard to their change project implementation or general ESD mainstreaming or practices at Copperbelt University. Once again, reference was made to Prof Shumba who participants presume may likely have social interaction with the MESA Chair or the School of Education or School of Mathematics where he is based. They were not quite sure. The following interview excerpts shed light on this discourse.

I don't know what Prof Shumba does, is he the MESA Chair? Otherwise, if you are talking about the gentleman in Lusaka, then I was not aware. What I was aware of is that Prof Shumba had something to do with ESD but in terms of the Chair in Lusaka ... Maybe ZRP7 knows something but in my case I don't think it has ... In fact I came to know the gentleman when you were corresponding. I got an sms from him to say that somebody is coming, in fact he actually phoned me to say that there is this lady coming ... otherwise I was completely unaware of him ... I don't even know the terms of reference of the Chair ... Because as far as I know, we came back, Gitile [MESA co-ordinator based in Kenya] did come and that was the end of the story. There has not been any contact except maybe through ZRP7. Now that you are saying there is a Chair in Zambia, in fact that is news to me. So as far as I am concerned it ended her at CBU and in the School of Built Environment, it never went further than that. ... It might have failed because of communication breakdown between the ITP facilitators and the participants. (ZRP8)

When I was going through your interview questions, I started laughing and asking myself 'who is the MESA Chair?' When I perused your questions I said 'wow', what am I going to tell Vanessa here? We hardly have any influence from the MESA Chair, no. ... Right here at the Copperbelt University I think very little. I am being very frank here; very little in as far as I am concerned. To be quite frank, for me it is zero ... We are on our own and we always have been and maybe that makes us strong somehow. We are responsible for our own activities and we keep ourselves going rather than depending on someone bringing something to us. It is very disappointing but if this is the situation that is the situation. Maybe it requires addressing. (ZRP7)

The above discovery raises several questions such as the responsibility of the MESA Chair and his sphere of influence. Whose responsibility was it to establish a relationship between the ITP Alumni, MESA and the MESA Chair? Was it constructive for the MESA Chairs not to be part of the ITP coordination and facilitation of the African component of the ITP? Since the MESA project gave rise to the ITP and the SADC REEP sponsored the MESA Chairs which were inaugurated after the ITP had commenced, what then should have been done or can be done to consolidate this southern African ESD agenda? etc. Nevertheless, despite these participants' lack of knowledge, career or professional alliance with the MESA Chair to date, they seem prepared to be well disposed towards the person, the office and the mandate of the office.

Otherwise when it comes to MESA and having a Chair hmmn, maybe we should be proactive and exploring the possibilities of working with a Chair. That is what I think at the moment because I cannot blame the Chair now. I don't know what it meant to them to be Chair and their responsibility and that is why I don't want to be so unfair with them. But it will be nice to work with the MESA Chair, that's what I think. I love being part of it myself. Where are they based? Where is the MESA Chair? (ZRP7)

Factors that influenced the implementation of ITP alumni's change projects have been specific to participants' positions, practices, personalities and others in their institutional context. The position of ZRP7 as Dean of the School of Built Environment played a key role in the attendance of staff and students, and continued engagement with the change project through the Practice Office of the School. Participants' personalities and disposition such as interest, concern, aspiration, passion and good will influenced the implementation process. Cooperation between

the main participant and the co-participant has also been highlighted. The role of the Vice Chancellor in recommending and financially supporting the workshops was also considered influential. One other factor that influenced the implementation of their change project was the engagement with the Practice Office. Since the School hosts the Office and thus has a history of practice but had not to date been influenced by ESD principles, this was a turning point. The strategy to expand the change project was to 'attack' the Practice Office because the life of the School was channelled through the Practice Office. This resolution and strategy implied that the School of Built Environment through the Practice Office must act on and make sure that whatever project is being proposed and undertaken, the Practice Office is based on the values and principles of ESD. Mr Mawo who heads the Practice Office was part of the change project implementation workshop that was held in the School, making him most appropriate for the appointment. Therefore the social cultural interaction between both participants, with other staff and students is shaping the status of ESD at Copperbelt University constructively.

The interest was there, I know when we come back to Zambia we had the passion and we had things in our mind that we thought we should change ... Prof Shumba has been talking about ESD and when we were doing the workshop we wanted to involve him but I can't remember what happened, maybe ZRP7 will remember. (ZRP8)

I remember the Vice Chancellor gave me that support, to nominate me during that time, and when I went with the budget for the School workshop he also supported that. ... ESD ideas and concepts have been sold in that workshop. That workshop was very key to the success of the change project. And the very fact that we host a Practice Office and we have a history of practice in this School ... That's where we meet, the School Administration and the students all meet there, we all practice in this School. All lecturers are required to be registered members of their professions. If they are architects, they have to be registered architects and we all practice through the Practice Office and we supervise our students on projects through the Practice Offices. (ZRP 7)

When reflecting on factors that may have constrained the implementation of participants' ESD change project, they raised these factors as well as other concerns in relation to the manner of social interaction that took place and probably the associated challenges. Both research participants agreed that the workshop they organised for the staff and students was good but it was not effective enough to build a strong ESD foundation, let alone sustain the building of the agenda in the participating departments. There is therefore the need for several more workshops for follow-up or evaluation of previous workshops; these are currently not being planned. One major constraint to organising more workshops or seminars to this effect is the availability of funding. ZRP7 explained that the university is not able to sponsor more workshops with other issues on campus demanding attention. Workshops can be done in participants' offices using current facilities with no budget. ZRP7 supports this but claimed that there is a limit to what can be done using this no-cost strategy. He argued for the need to go beyond internet communication or interviews, to more 'refresher courses' for people who are coming into the institution and those leaving. ZRP8 also saw the need for follow-up activities for the staff and students participated in the workshops. He added that the students that participated in the workshop that was held in 2009

were obviously no longer in the institution at the time of this interview. This illustrates the need for continual engagement with staff and students on a regular basis apart from the challenge of funding which required time, commitment, manpower and capacity.

The constraining factor, the awareness among lecturers is one of them. One workshop from my point of view can spark things, but to sustain that thinking more and more workshops are required until it becomes like refresher, follow up, evaluation kind or workshop. But we don't see much of that because of the way we are funded. Such refresher workshop will be quite debatable and the university at the moment is so underfunded to the point that it is surviving, barely surviving. One of the biggest constraints I think is funding although we have had debates and will be told even by the Vice Chancellor that funding is not a constraint. We participated in the ITP in 2009, between 2009 and now almost about 25% of the staff is new. So sustainably making it work is one of the biggest constraining factors I think. (ZRP7)

Now the only problem which was there was that there was not follow-up. There were talks about the issue of curriculum ... in terms of the actual implementation I think this is where the issue is; this is where there was no follow-up. ...I don't know if it had to do with the reception from the staff, yes the workshop was well attended but then after that, maybe it is the issue of follow-up. The biggest constraint was time, maybe we concentrated more on other things which we thought were more urgent than this. Maybe we didn't have the mechanism to see how we can continue with it. With the students we thought that they should be able to contribute to the environment within the School. But now we are talking about 2009, it means that all those students are gone we now have a new group. In terms of staff I doubt if some can even remember what went on during that particular time ... the students did embrace it but then that was a group of students and I am sure those students have graduated ... we were also supposed to include the administration but I don't think we went that far. (ZRP8)

In terms of which or whose position and practice has been most influential and constraining with regard to enabling and constraining ESD mainstreaming in participants' department and School, other anti-ideal issues and experiences were raised. The participants of the first workshop for staff were in good positions to enable the mainstreaming of ESD in curriculum and in practice but for professional challenges. The audit of ZRP7 and ZRP8 at the outset to determine the status of ESD and SD in the department in the School of Built Environment showed low engagement and consideration. The staff ESD workshop was also well organised, packed with knowledge and well attended. The most influential agents were required to make a drastic shift from old unsustainable practices to new sustainable practices which was largely uncomfortable. I have been informed that the Department of Architecture and the Practice Office are very influential in terms of enabling ESD, and to a small degree, the Urban and Regional Planning Department. In the construction industry there has been considerable resistance in terms of change in perception because of profit. The monetary consequences of unsustainable practices and the loss of previously enjoyed monetary benefits compromises ESD principles. The following excerpt will explain further:

For me, I think that we have a lot to do. When we were doing the curriculum evaluation to look at each department in order to gain knowledge of the status of ESD and ESD practices and so on, I discovered that it was relatively low. And after the

workshop, of course there was that awareness but they were very enthusiastic. I don't understand why because there are certain clashes between current practices and maybe the shift in practice ... I think to be quite frank, the cadre that I was talking about. They are coming from different orientations and orientations that mostly emphasis profit profit profit rather than sustainability concept in a broad way ... And that is why I was saying that if we had a way of working on the minds of lecturers in order for them to have more awareness of ESD, the teachers, the lecturers, to me that's where you'll see the most negative influence. And students are watching their practice, they take them to study trips to areas where in fact should be the last place to take students to because of the practices there and techniques that are being used there which are not the best techniques from the green point of view. (ZRP7)

The influence of the position and practice of other people in research participants' context was evident. There are influences on ESD mainstreaming and practice from people both higher and lower in the hierarchy which can be considered both positive and negative depending on their practices, context and the circumstance surrounding their actions. It is therefore pertinent that it is not only the position and practice of ESD experts that shape the status of ESD in institutions; the position and practice of the novice can equally and sometimes more effectively shape ESD learning and change. On a final note, ZRP7 alluded to the influence of some external forces that are influencing the sustainable development agenda quite strongly in the School despite the fact that there is no collaboration with the MESA Chair. The following excerpt highlights this:

Right now as a School, it is like you are on your own. ...now we have linked up the ILO, International Labour Organisation in their Green Jobs initiatives and also a programme to design curriculum for students in South Africa and some Universities and Mr Mawo can talk about that with you. So ILO has been brilliant to us. (ZRP7)

6.8.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme Five: Agential elaboration (or reproduction) after participation in the ITP; if any, what they are and what they imply

Agential elaboration is about personal properties or powers that may have emerged as a result of the ITP and the social-cultural interaction that took place at various levels with various people in relation to sustainable development and ESD. For ZRP8, his post, duties and hierarchy of authority in the university after the ITP remained the same. The only remarkable areas of change are his influence as a teacher in teaching his students and his perception about his field and more sustainable ways of operating. According to ZRP7, he has experienced an increase in his powers, places, rights, duties, roles, and influence in the university. He has maintained the positions that he occupied before the ITP but has also gained more, for example, from being a member of the University Council and the Senate. Although there is no assurance that the ITP contributed to this expanded position, ZRP7 reiterated that his old and new positions have placed him in a position of authority and influence as far as ESD and other matters are concerned in the University. The

following interview excerpt highlights what has changed about the position of these research participants after the one-year ITP.

The only influence I can give is as a lecturer. I influence things within my field. ... As an individual, as a person, my perception not necessarily my duties changed. Yes it did change but has my post in the University and its hierarchy changed? No, I don't think anything changed. I am still the same person and I think the university looks at me in the same line. But as a person, as an individual obviously certain things have changed; my perception in looking at things has definitely changed. (ZRP8)

I have been rather fortunate being in my position within the University to have the opportunity to influence students, staff and principal officers within the University, in the sense that I have had academic appointments to position myself as such because currently I am senior lecturer, a Dean of a School, a member of Senate, a member of the University Council ... a year ago I was appointed by the Minister of Education to be on the University Council. With this type of responsibilities and public service type of positions, it does not really matter what type of issue is on the table, be it mainstreaming, gender, research, that School or this School and so on I sit there. (ZRP7)

In relation to the above mentioned change in position (little or great as the case may be) are observed changes in practices. The practices of research participants in all cases have changed in one way or another. What has changed about participants' practices or activities after the one-year ITP, especially with regard to the impact of the ITP, was investigated. This could be in terms of general change in thinking, behaviour, agenda, perception that has transcended to real action and ESD related practices. The change in practice of ZRP8 is not in terms to his disposition and response to the projects and how they must be approached in a sustainable manner with due consideration of the implication to the environment and the societies involved. For ZRP7, the impact of the ITP still lingers in his life. He confessed to having changed in his manner and approach to teaching and relationship with his students by instigating a sustainable lifestyle and practices and discouraging unsustainable behaviours. ZRP7 also alluded to his change in practice with regard to dealing with and responding to his colleagues in the various places and positions he had the opportunity to occupy. He added that some of his colleagues are still nonchalant about sustainability issues and would even loudly utter statements like 'look you are wasting our time' and 'what is this philosophy of thinking that you are bringing?' in an attempt to discourage him. Below are their words to explain further these claims:

For example if I look at a project, in the past it would be just a question of satisfying the terms of reference which has been given, but after the ITP encounter my approach was different. I will look at the terms of reference and say 'maybe this is not what we would require; we would need to look at it in a different light'. So I now question certain things that in the beginning I didn't think was an issue ... in terms of building materials, sources of sand ... before I just carry on, I don't even think twice about what will be the effect on the environment. (ZRP8)

We participated in the ITP quite a long time ago but environmental programmes and what you pick out from there becomes part of your lives.... My practice changed especially teaching. My lectures simply changed... I began to engage my students very differently ... I have changed completely in my class, changed from the person I

was before I attended the ITP ... And I make sure that I am able to contribute with a leaning towards ESD ... and query sometimes why certain things are not happening and also insist that certain things should happen. My method of transmitting information became more democratic in terms of focus group discussion of issues. I started using methodologies that I thought they were not good before ... Those students who saw me in some course earlier and then later; something must have hit them. ... We opened ourselves to debates on how we were teaching. We dared to ask how we were teaching and was that the best approach to teaching. I think that has changed ... Having these opportunities of sitting in these bodies I think position me very well to influence thinking among colleagues because you will be very surprised that you will be sitting with people who are least bothered about what you are trying to say. (ZRP7)

The contribution of the participation in the ITP to the post-ITP positions and ESD related practices or research participants in Zambia has been mostly positive. Participants explained that their duties, rights, places, functions, rules, tasks, influences, and powers, which are defined by position in this thesis, have been influenced positively by their participation in the ITP. Their ESD practices have been greatly enhanced both in and outside their work contexts.

It has contributed quite a lot in terms of my perception, in terms of my how I look at issues, especially construction issue. How I look at the curriculum although we haven't really changed much our curriculum, we have a new programme within the School of Engineering...this programme is not as a result of the ITP ... there was a visiting researcher. (ZRP8)

But I think after the ITP programme I have been very influential in the University but talking about Education for Sustainable development is like flogging an elephant or trying to teach it how to dance, it is difficult, it is difficult. I have learnt the hard way that you mustn't be too ambitious in terms of seeing change even from the School point of view...you negotiate your way through so that you can have certain ingredients or certain principles being accepted ... I feel that I am better positioned now not just that I sit on these bodies because they are just bodies but my contributions at those bodies position me very well. It is just that it is difficult to measure their impact in this matter. (ZRP7)

Apart from agential elaboration in terms of position and practice, there is also evidence of other kinds of elaboration such as strategies of engagement with students and staff, determination, lifestyle etc. The excerpt below shows one of these strategies and approaches that were included after engagement with the ITP.

One of the greatest things that happened to me when I came back is that I started an open door policy. My door is only closed when I am talking confidential or engaging in activities that I do not want the activities here interrupting the secretary or I do not want the activities of the secretary interrupting mine; that is when this door closes literally. But in as far as respect of people can come to our office and access to us, it is open door policy anytime. ...It was not like that before, no it was not like that before. Somehow I was grounded to the appointment thing, which I love but there are people who need my help, our help as a School ... and the consideration of respect. For me, I became very conscious of having a lot of respect for people who come to your office, sharing idea, looking at their views and where they come from and having an influence on them. (ZRP 7)

6.8.6 T3-T4: STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme Six: Structural elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

This section analyses and discusses what has been modified or changed in and about participants' department or faculty or institution or country as a result of their participation in the ITP. In other words, this section tries to analyse what exactly the change project of these participants brought to their institution. Such elaboration may be at the level of changed practice or developed curriculum or new policy in relation to ESD mainstreaming. According to ZRP8, the workshops that were organised and held in the School were the first step towards structural change. These workshops for staff and students were successful in exposing the participants to ESD and global citizenship which was their aim. There was however no plan on the ground to follow-up on the impact and the possible outcome of such a workshop. This the participants have again considered as a flaw. Below is the excerpt to support this notion:

Again it goes back to the workshops and to the change project which we did. We had the workshops and after the workshops there was no follow-up. Maybe Roy will have something different to say but I for one did not make any follow-up to see if what we have done has made any change ... Maybe what we needed was to have a long term plan of revitalising it every year, especially with the new students and so on or some control mechanism or benchmark to see whether what we are doing is taking us anywhere. (ZRP8)

Nevertheless, ZRP7 has argued for other forms of structural elaboration that the ITP and their change project have brought into the School. This form of elaboration which is an unintended consequence has been recorded through the change in activities, approaches and project development in the Practice Office. This structural elaboration now takes due cognisance of the role of the students in decision making, which was not the case before. There has also been further participatory approach with the involvement of different expertise in the development of each project, which was not the case previously.

There is something to show for our participation in the ITP, especially through the Practice Office. We used to approach projects from purely from a professional point of view ... but now there are students involvement than there used to be before ... we say 'let us' not 'let me' ... whenever we have a project, the planners will be part of it and environmentalist will be part of it, the construction economist and real estate manager will be a part of it, architects will be a part of it. We have become more participatory but I think I love that, although some people don't for selfish reasons, they will say 'the team will be too big for this project' and we will say 'no some of their participation will be merely advisory in the sense that the environment has got cut cutting issues... We have also increased the level of participation by students, they are part of the problem solving. (ZRP7)

6.9 CASE INSTITUTION 4 - KASAMA COLLEGE OF EDUCATION⁵⁵

6.9.1 CONTEXT AND HISTORY

Kasama College of Education, currently the only government college of education in the Northern Province of Zambia, was opened in 1966. It was originally called Kasama Teachers' Training College (KTTC) until 2000 when all government-owned teacher training colleges were renamed colleges of education. Kasama College of Education is located in the provincial capital of the Northern Province called Kasama District. The college lies about 3 ½ kilometres south of the post office located in the town centre. Kasama District which is about 850 kilometres from the capital city Lusaka, shares boundaries with Luwingu, Mbala, Mungwi, Mpika and Mporokoso districts. The Government of the Republic of Zambia (GRZ) is the proprietor of Kasama College of Education, through the Ministry of Education, Science, Vocational Training and Early Childhood Education. Since its inception in 1966, Kasama College of Education has been training teachers from the immediate and peripheral communities in the province and in Zambia. The motto of Kasama College of Education is 'Work whilst it's day'.

6.9.2 STRUCTURE AND GOVERNANCE

A Principal heads Kasama College of Education and since its inception it has had 14 principals, all male except for one female. ZRP10 was an Acting Principal during his participation in the ITP. The other ITP co-participant, ZRP9, was a senior Lecturer in Natural Sciences and also the Continuing Professional Development (CPD) Co-ordinator at the College. He was in charge of Environmental Education and ESD issues at the College. Other known officers at the College include members of the Registry, Senior Lecturers, and Lecturers.

6.9.3 SCHOOLS, DEPARTMENT AND PROGRAMMES

The college previously offered certificate courses for primary school teachers such as the Primary Teachers' Certificate (PTC), Zambia Basic Education Course (ZBEC) and the Zambia Teacher Education Course (ZATEC). In 2012 the college introduced the Primary Teachers' Diploma which is a three-year diploma programme underwritten by the University of Zambia. The Zambia Teacher Education Course (ZATEC) was the last certificate course to be offered by the College until 2012 when it was phased out. In 2012 still, the College introduced the Primary Teachers' Diploma by Distance Learning (PTDDL), an in-service distance education programme. An Early Childhood Education programme and the Secondary Teachers' Diploma (Science and Mathematics) were introduced in 2014. The Secondary Teachers' Diploma is by distance learning. Programmes offered include Mathematics Education, Science Education, Expressive Arts (with Music, Art & Design and Physical Education as contributory subjects), Education and Professional Studies (also house Early Childhood Education), Technology Studies (with Industrial Arts and Home Economics as contributory subjects), Integrated Social Sciences,

⁵⁵ Information provided in this section is adapted from <http://kasamacollegeofeducation.wordpress.com/> and http://en.wikipedia.org/wiki/Kasama_College_of_Education

Literacy & Language Education. 218 full-time candidates have been selected for the 2015 Teachers' Diploma, 351 'day school' candidates and 55 have been selected as early childhood education teachers' candidates.⁵⁶

6.10 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT KCoE AND IN ZAMBIA

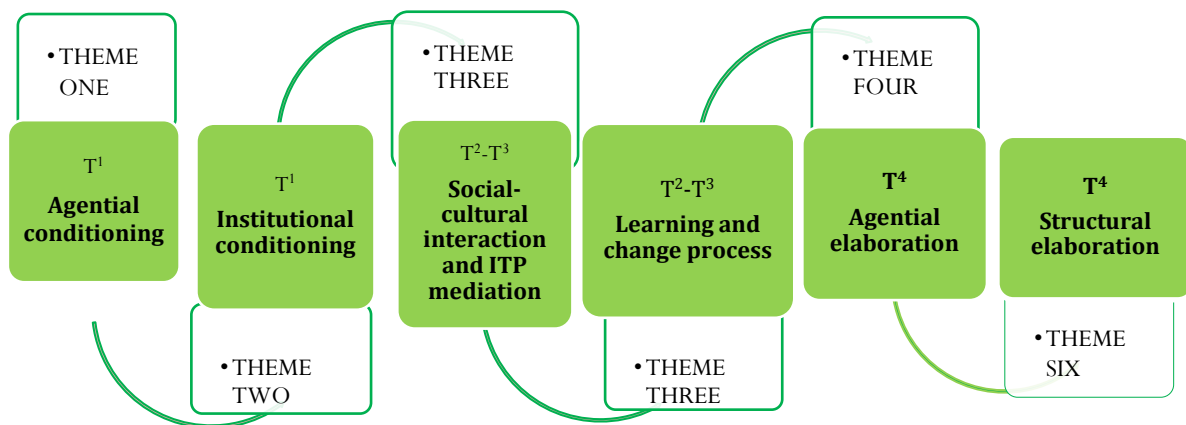


Figure 6.5: Framework for data presentation, analysis and discussion

6.10.1 T1: AGENTIAL CONDITIONING

Theme One: The pre-ITP positions and practices of participants and how these pre-positions and practices shaped the ESD learning and change processes in Kasama College of Education

There were two ITP participants from Kasama College of Education, namely ZRP10 and ZRP9 from the Natural Science Department. Although I was in Zambia, I could not travel north to Kasama District, where these participants and their institution are based. Data presented here are ZRP9's response to the 2013 survey and the interview questions I sent to him via email. Before participation in the ITP, ZRP10 was a senior lecturer as well as the head of the college. ZRP9 was also a senior lecturer and the co-ordinator of Continuing Professional Development (CPD) at the College. ZRP10, being the head of the institution, had all the power and influence decisions and progress made in the College. ZRP9 also had the responsibility of conducting all academic and professional activities in his subject area of specialisation in order to meet training needs of student teachers. The following data excerpt is from ZRP9.

⁵⁶ <http://www.kasamacollegeofeducation.org/index.php/students>

I am a senior Lecturer in Natural Sciences. Before my participation in ITP I was in charge of Continuing Professional Development (CPD) Co-ordination at the College. In addition to that, and maybe more importantly, I was in charge of ESD/EE issues at the College. (ZRP9)

ESD related practices of these participants before their participation in the ITP were also investigated. ZRP10, Head of the College, was involved in the coordination of College activities and teaching. It is however unknown if his practices were ESD related before the ITP. ZRP9 as the Co-ordinator of Continuing Professional Development (CPD) at the College was in charge of ESD/ EE issues at the College. In addition to academic and professional activities, ZRP9 also teaches sustainability effectively and practically, while mainstreaming ESD in courses. When asked about their practice, their influence, rights and ESD related practices before participation in the ITP, ZRP9's response was:

My general practices included holding discussion fora at which ideas and views were exchanged among staff, and also promoted staff awareness in many respects including ESD/ EE matters as a way of keeping them abreast of times. (ZRP9)

On the one hand, the personal strength/technical know-how with regard to ESD mainstreaming, and on the other hand, their personal challenges or limitations about ESD mainstreaming in their department or institution before their participation in the ITP, were investigated. ZRP9 had strengths and weaknesses which resulted in how he was able to harness the pre-ITP level of ESD knowledge and skills he had. Below are what he considered his ESD related strengths and challenges.

My personal strength before ITP was consistence and insistence on the issues I have outlined above; having a sense of duty and the skill to organise others. ... Challenges were many; I failed to push the staff to accept mainstreaming ESD by incorporating ESD issues in the relevant syllabi offered at the College. Timing activities in ESD was an issue given the many activities that are in the College routine. (ZRP9)

6.10.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme Two: Institutional ESD related problems the participants proposed to address through their participation in the ITP

Before participation in the ITP, the institutional or national status of ESD has conditioned (influenced, shaped) ESD mainstreaming and ESD practice in certain ways. These in turn have facilitated the choice of the change project of these participants in an attempt to ameliorate some of these institutional ESD related gaps including the negative attitudes of college community members towards ESD and EE issues and the appearance of the college campus. There was therefore the need to preserve the environment through college community members' changed attitudes and mind-set; to cultivate positive attitudes in the college community members towards preservation of the environment and other ESD issues; to preserve and sustain the college

environment through litter management, landscaping and tree planting; and to integrate ESD in the college curriculum. These were the objectives of the change project of these research participants. Below is a data excerpt from ZRP9 which further explains how Kasama College of Education conditioned ESD mainstreaming and practice.

Before the ITP, it was clear that there was not much concerning ESD mainstreaming but some efforts were done to promote EE with a bias to the environment only. The scope addressed was not that embracing ... [hence] ESD practices were not that prominent in the institution and little efforts were made in this direction. ESD practices did not receive that close attention, and neither were there deliberate routines and moves to sustain the practices. (ZRP9)

From this range of institutional constraints and conditions, research participants decided to initiate projects that would alleviate some of this contextual issues and risks as their agential contribution to the ESD mandate. The following email excerpt illustrates participants' concern and intentionality:

I had the desire to incorporate the ESD issues into the mainstream syllabi or courses offered at the institution, I also wanted to embark on the ways to not only positively change the attitude of the College community towards preserving and conserving their environment but also to increase awareness among them with respect to supporting ESD issues ... Basically my focus was the immediate ecological environment, ensuring that we have clean lawn, little litter, we plant nice flowers around, and classrooms are kept well and all that. (ZRP9)

6.10.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme Three: The kind of support the ITP participants (and their respective institution) have received through their participation in the ITP/availability of an ESD MESA Chair in Kasama College of Education

It can be said that these ITP participants have gained something substantial from their participation in the ITP. This is particularly commendable owing to the fact that there were no formal phase 3 and 5 seminars supported by ITP coordinators due to technical and timing issues and challenges. Nevertheless ZRP9 identified different aspects of the ITP that he found useful and impactful. Learning has been spoken about well during participation in the ITP. When describing his learning experiences, the increased and deepened knowledge of sustainable development and ESD were often highlighted. Learning from and with presenters, ITP coordinators and colleagues was also mentioned. The venue of the African Regional component of the ITP has been referred to as the learning arena. Trips to other countries and places made participants more knowledgeable about ESD experiences and practices in other regions and countries. It provided participants with concrete examples of best practices. It gave them insight into what to do and how to go about their change project. The following data shows the impact of the ITP and the learning experience of ZRP9:

It is not an exaggeration that the ITP changed me almost completely in the way I look at things of ESD. The awareness was excellent. ... My learning experience was exciting, I got exposed to real ESD issues especially that Grahamstown is strategically positioned and is a real place to learn ESD issues from. I also learn a lot from the way institutions kept their surroundings. I saw ESD at play. ... The support that we got from ITP to implement our project was the training that I attended in South Africa. I was given ideas and skills to initiate change. (ZRP9)

Irrespective of the fact that there were no formal phase 3 and 5 seminars supported by ITP coordinators, there was social-cultural interaction in the college which included the holding of a number of internal seminars with different stakeholders in the college such as meeting with the non-academic staff, meeting with the Preventive Maintenance System (PMS) committee, consultation with all academic staff and meetings with the students and occupants of the houses in both the junior and senior compounds. This led to the procurement of necessary materials, tools and equipment by the administration and watering of lands in the dry season with active participation of the PMS committee, students and workers.

6.10.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme Four: The post-ITP positions and practices and how these (including the positions and practices of others in their social context) and the ITP shaped the ESD learning and change processes in Kasama College of Education

Participants' positions and practices started changing during their participation in the ITP. As observed in the case of Swaziland and other Zambian cases, there was the tendency for participants to say 'quickly' that their position had not changed but they would then explain what had actually changed in them. The position of ZRP9 as the coordinator of all EE/ESD activities at the college, coupled with his enhanced capacity through his participation in the ITP may well be attributed to the level of success and overall outcome of this change project, coupled with participants' personal attributes like interest, passion, conviction etc. ZRP9 has testified that firstly, he is able to teach sustainability effectively and practically, and secondly he is able to influence administration to engage the college community in ESD issues:

My position and practices have not changed. My same position and practices are quite effective now as I have enough ideas and skills which enjoy respectability from the College community. This puts me in a better position to drive ESD forward. What I would say changed was influence that I exerted this time, different departments could now listen to me more than ever before, and this is why, when it came to incorporating ESD into the mainstream syllabi, there was no resistance at all...My practices changed dramatically because I became more aggressive in promulgating ESD ideas, I also refined my approach to ESD issues. (ZRP9)

Evidence of social-cultural interaction with others in their institutions and the forms and manner of social interaction was investigated. Interactions were recorded between ITP participants, students and staff members in the college community. The platforms of the interaction were both

formal and informal in the form of meetings, workshops, and consultation. These resulted in awareness of ESD, commitment to ESD, willingness to participate, practical support of ESD mainstreaming and practice. ZRP9 alluded to currently working in conjunction with the Zambia National Commission for UNESCO on ESD and EE issues. He has also seen true changed behaviour in students towards ESD issues as evidenced in their eagerness to participate in issues of sustainability within and outside the college. As he put it, “we no longer talk about picking litter, but students on their own do, this is sustainable. We are able to manage litter for example in a new systematic fashion, students are on board including other people within the college community vicinity. We work with others for example ZNCFU (this is networking), we engage students so much in ESD issues because these are the main targets, and we also integrate ESD in teaching and learning.” Below is an additional excerpt to support this point:

The process was characterised by meetings and workshops and involving students. First there were several sensitisation/lobbying meetings with the Principal and members of staff. When we were satisfied that the community had enough knowledge about what we wanted to do, we lobbied for financial support as well as manpower. Certain things needed money, for example greening the college premises, purchasing rubbish bins, planting of trees and flowers. (ZRP9)

The existence of a MESA Chair at the School of Education, UNZA, including participants outside UNZA has been perceived and experienced differently. To most ITP participants, especially those from outside of UNZA and Lusaka, the existence of the Chair is unknown. The following excerpt supports this:

We have been trying to get connected to MESA as a college but apparently we have not achieved this. We are yet to do this. But it is inspiring to see that MESA is trying to make a difference in our lives in Zambia. (ZRP9)

The existence or the physical presence of a MESA Chair’s influence on the actualisation of ITP alumni’s change project and general ESD mainstreaming in the case institution is of interest. In this case, there was no influence whatsoever. Issues such as proximity, to the MESA Chair may be factors responsible for this reality. When asked about the kinds of support (assistance, help, contribution) participants and Kasama College of Education have received from the existence of a MESA Chair in Zambia, this is what ZRP9 had to say:

I think it is quite difficult to say a lot about MESA Chair in our region. Our college mainly works with UNESCO in the issues of ESD and EE. ... Realisation of our objectives in the change project was not influenced by MESA. (ZRP9)

Factors that influenced the implementation of ITP alumni’s change projects have been specific to participants’ personalities and their peculiar institutional support and contexts. These include co-operation between participants and respective co-participants, colleagues, students, administration and regular meetings.

Enabling factors included co-operation and willingness from members of staff, students and administration. We also had to continue meeting staff during CPD times as well as students to make sure progress is not derailed. (ZRP9)

Although success has been recorded in this change project, there were still some constraining factors that influenced the implementation of the change project negatively. Such factors include lack of time, inadequate resources, lack of willingness by all students and staff.

It was not all rosy, some students and staff were not so keen and willing, besides there was a question of lack of adequate time, as we have a lot of programmes running concurrently. Material, financial resources were equally not enough. (ZRP9)

When asked about which/whose positions and practices have been most influential in terms of enabling ESD mainstreaming in Kasama College of Education, ZRP9 made mention of the main ITP participant who is the head of the institution. It is unfortunate that I was unable to interact with him directly, but this response reflects a considerable amount about the influence of ZRP10 in the ESD mainstreaming practices on campus. The influence of his pre-ITP position and practice, coupled with the effect of his post-ITP position and practice can only be implied. Regarding the influence of the position and practice of other people in research participants' context, a significant amount has been highlighted. Their influence on ESD mainstreaming and practice is both positive and negative, depending on the context and the circumstance. It is clear that it is not only the position and practice of ESD experts that shape the status of ESD in institutions; novices equally and sometimes more effectively shape ESD learning and change. When asked about the influence of the position and practice of others in the shaping of the status of ESD mainstreaming, below is the response of ZRP9:

Yes, others matter as they are a source of help, labour and relevant ideas, in order to implement the project successfully. (ZRP9)

6.10.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme Five: Agential elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

The following interview excerpt highlights exactly what has changed regarding the position of these research participants after the one-year ITP. ZRP9 claimed that his position has not changed but other changes he described were of interest to this research regarding the position-practice system and ESD mainstreaming.

My position has not changed, what has changed is my ability to organise ESD and my influence over others with respect to accepting my ideas and influence over them. They are willing to work with me more readily than before because they realise I have the relevant skills. (ZRP9)

The practices of research participants in all cases have changed in one way or the other. For ZRP9, his agential elaboration can be classified into elaboration at the sub-individual level, individual level and the level of social interaction with others in his institution.

My practices have changed; I am more focused, more goal-oriented, more aggressive, more accommodated. I spend time more effectively now. I marshal activities easily

and I have become more passionate about ESD. Moreover, I walk the talk now. Benefits of my training are seen not only as a contribution to the institution but also in life. I live ESD now. (ZRP9)

The contribution of the participation in the ITP to the post-ITP positions and ESD related practices of ZRP9 have been mostly positive. Participants on the whole all explained that their duties, rights, places, functions, rules, tasks, influences, and powers, which are defined by position in this thesis, have been influenced positively by their participation in the ITP. Their ESD practices have been greatly enhanced both in and outside their work contexts. The change in these participants has propelled change in the lives of others in and outside their institutions, including fellow staff members, students and community members. The following data excerpt also shows ZRP9's elaboration at various laminated levels as well as the link to other laminated systems:

I was only privileged to visit Grahamstown in South Africa. But from the many ESD practical lessons I learnt and the sightseeing conducted, I have influenced our institution in the area of environment preservation and afforestation. Our environment has greatly improved in appearance because I was really amazed by the ability of Rhodes University to keep the environment like that. I have always referred to this university in my lessons as the byword of beauty in Africa. ... I am happy about what has been done as a result of my participation in the ITP. ... There is evidence that some departments are able to influence others in the field of ESD especially those that have mainstreamed ESD in their syllabi. Their influence could also be seen in the responses from students. (ZRP9)

6.10.6 T3-T4: STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme Six: Structural elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

This final sub-section addresses elaboration or transformation beyond the individual's agential elaboration. It investigates what may have been modified or changed in and about the department or faculty or institution or country of these participants, as a result of their participation in the ITP. In other words, this section covers the impact participants' change project has brought to the participant's department or the entire Kasama College of Education. According to ZRP9, the College has experienced enormous structural elaborations such as a comprehensive incorporation of ESD into the college curricula, across all the disciplines; a student-established botanical garden; the planting of over 4 000 trees on the College Farm; procurement of over 20 rubbish bins for proper waste management and litter control; the commencement of a 'special issues club programme' to encourage students to get more involved in local sustainable development issues; and an improved infrastructure in the institution through rebuilding of formerly dilapidated pathways on campus with new concrete. Below is a data excerpt of ZRP9's description of structural elaboration in Kasama College:

The college has planted a lot of trees around. We also have a new plantation of trees away from where the college is; more than 4 000 pine trees have since been planted. Procurement of so many rubbish bins placed in strategic points within college premises, students and the staff are more aware of the benefits of promoting ESD, we have since embarked on self-help projects in construction, cleanliness in classrooms, and litter management has since improved. Good relationships among staff and students well fostered, we constructed walk ways as a result of ITP, and water reticulation within college has improved. The learning environment has a different face now, and so on. Syllabi contain ESD issues. (ZRP9)

Apart from the above commendable achievements in the college, it is interesting to note that participants envisage even greater outcomes with regard to their change project and commitment to ESD mainstreaming and practices, as described in the following excerpt:

We have a bigger dream now. In the next a few years, we wish to double all that we are doing. We want to plant 8 000 trees, we want to be self-sufficient in food production because we have a big farm and we keep animals, we want to impart knowledge to nearby schools in ESD, we want to strengthen collaboration in ESD with other institution including MESA, our premises has to be much greener than it is now. We wish to establish an eco-school and work with it in ESD issues. We are also intending to establish RCEs within our province to be spearheaded by the college. Most importantly, we wish to teach ESD as a stand-alone course in our college. (ZRP9)

6.11 SUMMATIVE DISCUSSION

This discussion section summarises all four case institutions in Zambia including UNZA, NIPA, CBU and KCoE. Chapters Five and Seven are only concerned with one institution so this summary is not necessary in those chapters. The country case records reflect on the position-practice system and sphere of influence of HE educators on ESD mainstreaming. They include experiences and influences of the practices of research participants (and non-research participants) with regard to both national and institutional ESD mainstreaming. Figure 6.6 below is a representation of the key institutional positions that have shaped the status of ESD mainstreaming in Zambia according to the case record presented above.

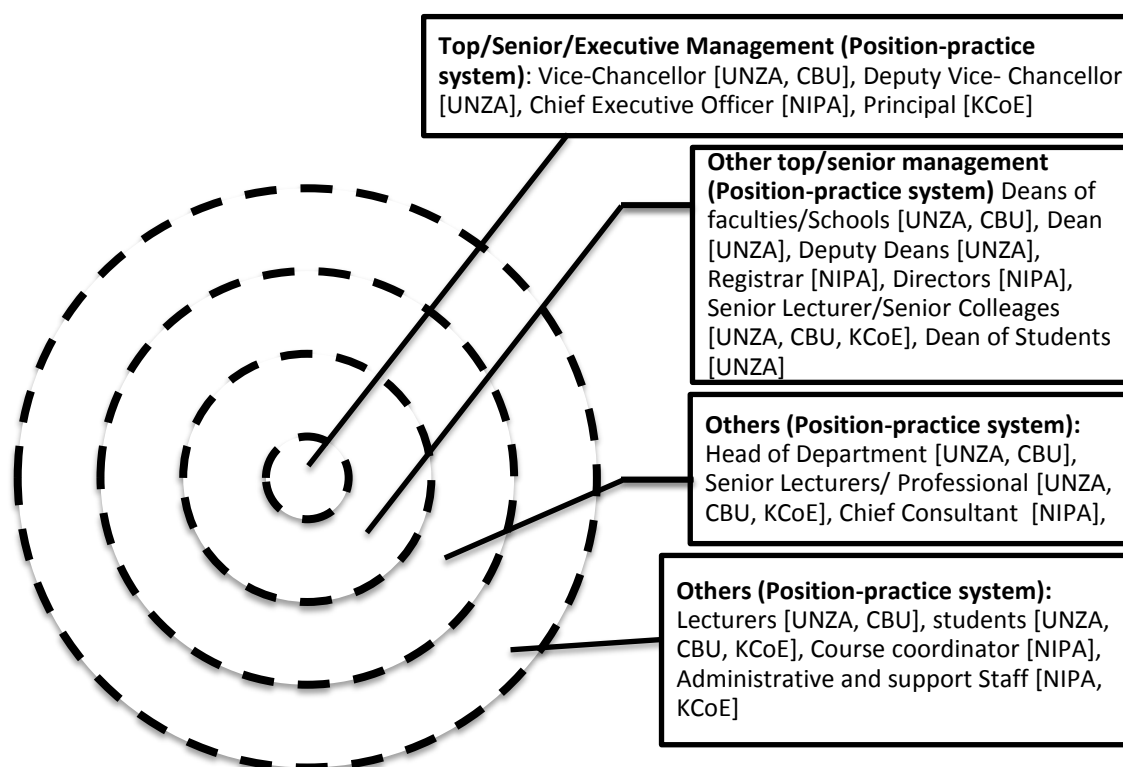


Figure 6.6: Concentric view of the position-practice systems academics in Zambia on ESD mainstreaming

At the level of the position-practice systems within the hierarchy that has influenced the current status of ESD mainstreaming in these institutions is firstly Top/Senior/Executive Management: the Vice-Chancellor (in the case of UNZA, CBU), the Deputy Vice- Chancellor (in the case of UNZA), the Chief Executive Officer (in the case of NIPA)], and the Principal (in the case of KCoE). Other Top/Senior Management position-practice systems include the Deans of faculties/Schools (in the case of UNZA, CBU), the Dean (in the case of UNZA), the Deputy Deans (in the case of UNZA), the Registrar (in the case of NIPA), Directors (in the case of NIPA), and Senior Lecturer/Senior Colleagues (in the case of UNZA, CBU, KCoE). Others include the Heads of Department (in the case of UNZA, CBU), Senior Lecturers/ Professional (in the case of UNZA, CBU, KCoE), the Chief Consultant (in the case of NIPA), lecturers (in the case of UNZA, CBU), students (in the case of UNZA, CBU, KCoE), course coordinator (in the case of NIPA), and administrative and support staff (in the case of NIPA, KCoE).

The morphogenesis of the ESD learning and change process elaborating from individual agential level to institutional structural level and gradually to national structural and socio-cultural-ecological level (where applicable) have also been projected. From the case record presented above, there is evidence of change at the level of participants' individual-professional development, and in their sphere of individual changed practices. There is also evidence of social-cultural interaction, although more can be done to enhance ESD mainstreaming in Zambia. Existing social-cultural interaction has led to institutional structural elaboration in diverse ways. Despite the position-practice systems and sphere of influence of research participants, especially

the MESA Chair, institutional and disciplinary barriers were experienced and were highlighted as a constraining factor for ESD mainstreaming.

Other factors include the lack of a formalised institutionalised platform for individual institutional mainstreaming activities as well as cross-institutional interactions in Zambia. The position-practice systems of others in all case institutions have shaped ESD mainstreaming negatively and positively depending on their forms of interaction and practices. Inter-disciplinary barriers and challenges have also resulted in minimising the flourishing of ESD in case institutions, especially at UNZA. In the midst of the constraining factors, research participants were able to maximise their sphere of influence to mainstream ESD and to bypass the experienced challenges and contribute to a change in the status quo. Others outside the case institutions have also had an influence on the position-practice systems.

6.12 CONCLUSION

This is the Zambian case study record chapter. This chapter contains basic and relevant information about Zambia and the four participating institutions namely UNZA, NIPA, CBU and KCoE. Also included is an in-depth analysis of how the position-practice system of individuals and the ITP on ESD in higher education have shaped the learning and change processes in relation to ESD at these four higher education institutions. I have used the morphogenetic framework to systematically present data and analysis using six themes. These themes encapsulate the experiences and characteristics of the three research participants involved before, during and after the ITP, their institutional context, and their socio-cultural interaction with others in and around their institution with regard to ESD mainstreaming and practice. Finally, I have included a discussion section which provides insight into all four institutional cases records and respective participants. Finally, a group concentric circle view of the position-practice systems of those who have influenced and shaped the status of ESD over the years to its current situation in Zambia according to the case recorded is presented above. More analysis and synthesis of this chapter (including the following chapter) are presented in Chapter 8.

CHAPTER SEVEN

POSITION-PRACTICE SYSTEMS AND THE ITP: MAINSTREAMING ESD IN BOTSWANA



I am a teacher trainer, I teach teachers and teachers go out there to teach children who are supposed to know about these issues, so when you crash my dream you are crashing the dream of the whole country and the whole nation. – ITP participant from Botswana

7.1 INTRODUCTION

This chapter is the third of three chapters of this thesis dedicated to Swaziland, Zambia and Botswana for phase three in-depth case study research.. This chapter, which focuses on Botswana, is a presentation of data collection and analysis according to the methodology and analytical framing of this phase three research. Botswana has six ITP alumni and one MESA chair who is also one of the ITP alumni. They are all from the same institution, University of Botswana. Five of these six participants were successfully interviewed during a field trip to Gaborone, Botswana; one participant was interviewed in South Africa because he now works at the University of KwaZulu-Natal. As in the previous two chapters, data in this chapter broadly responds to the main research question but more specifically to the research sub-questions, which are the themes of the discussion of data in this country case study. This chapter (and the two previous chapters) shed light on: 1) participants' experience in their participation in the ITP; 2) their pre- and post- position and practice; 3. the influence of their position and practice and that of others in and around their institutions on ESD mainstreaming; 4. and the pre- and post-institutional condition. Thick descriptive data presented in this chapter is indexed using BRP for Botswana Research Participant, followed by a number to differentiate one participant from another.

7.2 CASE COUNTRY THREE - BOTSWANA

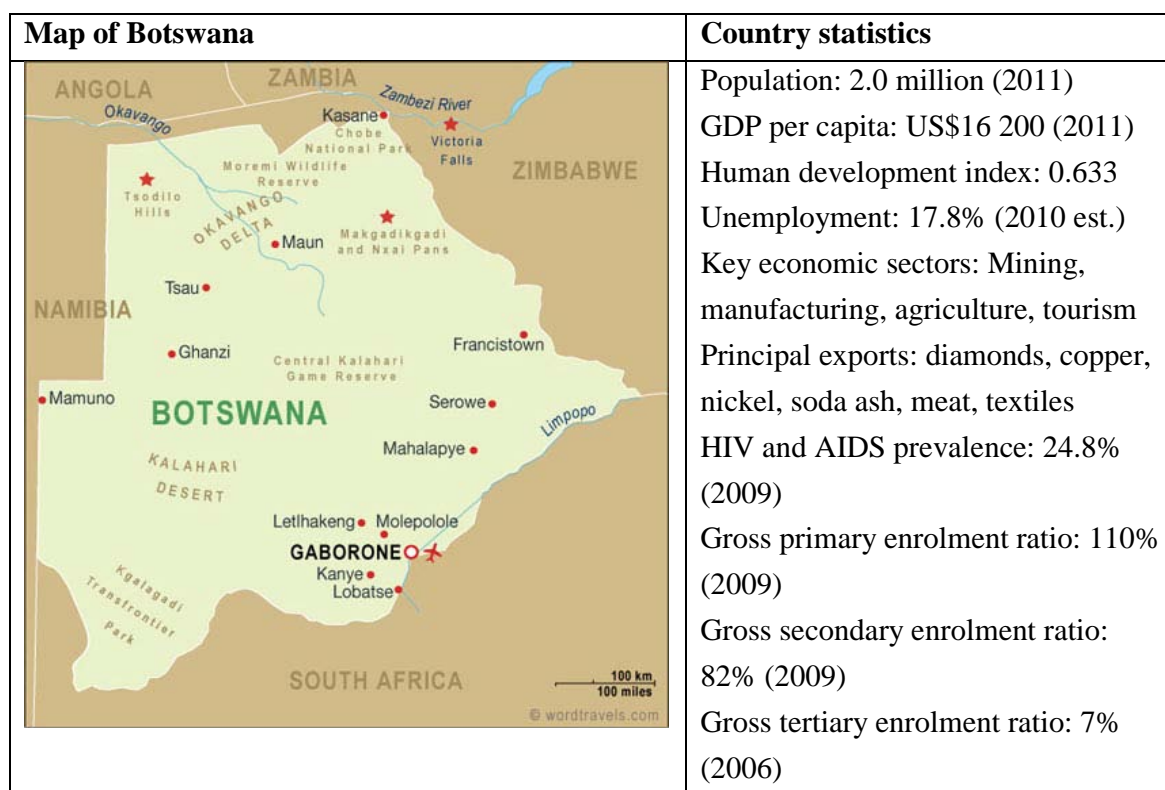


Figure 7.1: Map and statistics of Botswana. Sources: CIA, UNAIDS, UNDP, UNESCO, as cited in SARUA (2012b, p. 13)

7.2.1 BOTSWANA⁵⁷

According to SARUA (2014a, p. 220), Botswana is a landlocked, hot and dry country with highly erratic rainfall patterns. These characteristics, combined with the identified mismatch between skills needs and supply, mean that Botswana's vulnerability to projected climate change is high. Amongst the most severe and wide-ranging impacts are projected water shortages. The significance of these changes is recognised and it is important to plan and act for increased unpredictability and variability. Botswana gained its independence in 1966 after having been a British colony for 81 years. Botswana is recognised globally as an example of a successful African democracy politically, because it has had peaceful elections since independence and has had no record of internal violent conflicts (Jotia, n.d). Botswana gained independence in 1966 and enjoys a stable political environment, based on a representative parliamentary system. The president is head of both state and government. Botswana is a multi-party constitutional democracy where elections since independence in 1966 have been freely and fairly contested and held on schedule. The country has an Independent Electoral Commission whose mission is to facilitate the formation of democratically elected governments by providing transparent, free and

⁵⁷ Source: SARUA (2012b, p. 13), unless otherwise stated

fair elections in accordance with the established legal framework in Botswana and with internationally accepted standards and principles.

Since its independence in 1966, the economy of Botswana has maintained one of the highest growth rates in the world. Despite a drop in growth below five percent in the 2007–2008 financial year and subsequently a sharp negative shift in 2009, the country has one of the most stable growth rates in the region, although the 2009 economic downturn witnessed a near 30 percent fall in overall industry output. Through fiscal discipline and proficient management, Botswana has transformed itself from one of the poorest countries in the world to a middle-income country with an estimated per capita GDP of \$16 200 in 2011 (CIA, 2012). Two major investment services rank Botswana as the best credit risk in Africa. Diamond mining has fuelled much of the expansion and currently accounts for more than one third of GDP (accounting for between 70 and 80 percent of export earnings, and half of the government's revenues).

Botswana's heavy reliance on a single luxury export was a critical factor in the sharp economic contraction of 2009. Tourism, financial services, subsistence farming and animal husbandry are emerging as key sectors. In spite of the significant economic growth, a more holistic picture of Botswana reveals a country faced with numerous social challenges. Botswana was ranked 118 out of 187 countries in the 2011 human development index (HDI). Botswana experienced a drop in HDI ranking in recent years, and this is closely linked to the high HIV prevalence in the country (the second highest in the world). Besides the high HIV/AIDS prevalence, Botswana faces other major social challenges, including high rates of poverty, inequality and unemployment.

The high unemployment rate largely reflects the narrow base of an economy dominated by the mining sector which has only limited linkages with other activities. Improved healthcare has impacted positively on the welfare of the Botswana population. Both infant mortality rates and the number of underweight children below the age of five dropped steadily between 1996 and 2008. The maternal mortality rate also declined substantially, from 326 deaths per 100 000 live births in 1991 to 198 in 2008. Botswana has consistently improved its health service infrastructure and facilities, and has increased the employment of qualified physicians and other medical personnel. The health infrastructure network consists of 31 hospitals, 243 clinics and 340 health centres.

By 2009, more than 95 percent of the population had access to a health facility within a radius of eight kilometres. The proportion of the population with access to potable water and sanitation was 95.8 percent (compared to 79.8 per cent in 2007) with the prospect of further improvement following continued investment in social services (BFHS, 2007). Botswana's economy is largely sustained by the diamonds mined at Orapa and Jwaneng mines, as well as by the tourism and beef industries. Botswana had an estimated gross domestic product (GDP) of US\$17 596 billion in 2012 (International Monetary Fund, 2013 in Jotia, n.d). Botswana is classified as having a medium value on the Human Development Index (HDI), with a score of 0.633 compared to the

highest HDI ranking of 0.943 for Norway (Human Development Report, 2011, p. 128 in Jotia, n.d).

7.2.2 EDUCATIONAL AND ENVIRONMENTAL LEGISLATION IN BOTSWANA

The education system in Botswana is shaped by the 1977 National Commission on Education (NCE) document, commonly known as Education for Kagisano (education for social harmony). The education system has also been shaped by the 1994 Revised National Policy on Education, as well as Vision 2016. Based on the recommendations of the 1977 Botswana National Commission on Education, Botswana refurbished its education system by putting in place policies to expand school provision, recruit and prepare teachers, and so on. The Revised National Policy on Education, adopted in 1994, was an important indication of the government's commitment to improving the status of education in Botswana (Jotia, n.d, p. 7). Botswana's success in development generally and in education particularly could be credited to continuous stable political system and a strong economy, based largely on a vibrant diamond industry (Jotia, n.d, p. 7) as noted above. The Botswana's Vision 2016 lays emphasis on environmental and sustainability issues while the Botswana's Revised National Policy on Education (RNPE) appeals for integration of Environmental Education across the curriculum (Gabatshwane & Kabita, 2013).

7.3 CASE INSTITUTIONS: UNIVERSITY OF BOTSWANA (UB)

7.3.1 CONTEXT AND HISTORY

The University of Botswana (UB), the oldest university in Botswana, was established in July 1982 under the University Act, no. 11 of 1982 (University of Botswana, 2013b). UB is a broad-based institution with a wide range of academic and professional programmes and an increasing number of graduate students (University of Botswana, 2008). Its main campus is 115 hectares and its other campus is 67 hectares (University of Botswana, 2013b). UB has the largest concentration of research-qualified staff and research facilities in Botswana and has an obligation not only to employ but also to develop the full potential of these resources (University of Botswana, 2008). UB continues to provide education and training to generate new knowledge through research and to engage with Government, business and the public (University of Botswana, 2013a). The success of UB is due to the enlightened leaders of the Council, the commitment of academic and support staff and loyalty of the community as well as the support of the Government and hard work of the graduate and undergraduate students (ibid.).

7.3.2 CORE FUNCTIONS, MISSION, VISION AND VALUES OF UB

The vision of UB is 'to be a leading centre for academic excellence in Africa and the world' and the mission is 'to improve economic and social conditions for the nation while advancing itself as a distinctively African university with a regional and international outlook' (University of

Botswana, 2013a; 2013b). There are six key strategic goals University of Botswana plans to attain by the year 2016: (1) Expanding access and participation; (2) Providing relevant and high quality academic programmes; (3) Strengthening engagement; (4) Intensifying research performance; (5) Improving the student experience; (6) Enhancing human resources for excellence in service delivery (University of Botswana, 2013a).

The University of Botswana has certain graduate attributes, namely: critical thinking, technological proficiency, effective communication, competent decision making and problem solving (Gabatshwane & Kabita, 2013). University of Botswana has 13 values namely (1) Students, (2) Staff, (3) Academic freedom, (4) Academic integrity, (5) Cultural authenticity, (6) Internationalisation, (7) Professional and ethical standards, (8) Social responsibility, (9) Equity, (10) Autonomy, (11) Public accountability, (12) Productivity, (13) Environmental sustainability (University of Botswana, 2013b; Gabatshwane & Kabita, 2013).

The last stated value is captured in full and as follows, ensuring “environmental sustainability by deepening awareness and ensuring that environmental issues are incorporated into student learning, teaching and research, the development of environmentally sustainable campus and through contributing to the environmental sustainability agenda in Botswana and beyond” (University of Botswana, 2011, p. 3; Gabatshwane & Kabita, 2013, p. 1699). At the University of Botswana, the aspirations of ESD are aimed to be realised at a global level (through the UNDES, MDGs, SDGs), at the regional level (through the SADC REEP), at a national level (through RNPE and Botswana Vision 2016), and at an institutional level (through its vision and values) (Gabatshwane & Kabita, 2013).

7.3.4 STRUCTURE AND GOVERNANCE

The governance structures of UB were reconstituted under the UB Act 15 of 2008 and mandate the university Council and Senate as the main governing body (University of Botswana, 2013b). The Act also stipulates that the Chancellor, Chairman of the Council, Vice Chancellor and Deputy Vice Chancellors are the principal offices of the University (ibid.). The Vice Chancellor is followed by the Director of Public Affairs, Director of Institutional Planning, Director of Legal Services and the Director of Internal Audit. There are three Deputy Vice Chancellors (DVC), DVC Academic Affairs, DVC Student Affairs and DVC Finance and Administration. Under the DVC Academic Affairs there are Deans of all Faculties, Dean of the School of Graduate Studies and Directors namely Director of Academic Development; Director of Library Services; Director of Continuing Education; Director of the Office of Research and Development; Director of International Education and Partnership; and Director of Okavango Research Institute (University of Botswana, 2013a, p. 25).

7.3.5 SCHOOLS, DEPARTMENTS AND PROGRAMMES

The following are the seven faculties at the University of Botswana: Faculty of Business, Faculty of Education, Faculty of Engineering & Technology, Faculty of Health Sciences, Faculty of Humanities, Faculty of Science, and the Faculty of Social Sciences (University of Botswana, 2008; Gabatshwane & Kabita, 2013). These faculties offer full-time bachelor’s programmes; part-time programmes are offered specifically by the Faculty of Business; and distance-learning programmes are offered by the Faculty of Business and the Faculty of Education (University of Botswana, n.d). There are seven Departments in the Faculty of Education with their respective academic heads of department. Research participants are located in the following departments: Languages and Social Sciences Education Department, Department of Educational Management Department and Early Childhood Education Department.

7.4 PRESENTATION OF IN-DEPTH INTERVIEW DATA OF HOW POSITION-PRACTICE SYSTEM AND THE ITP SHAPE (ENABLE OR CONSTRAIN) EFFECTIVE ESD MAINSTREAMING (ESD LEARNING AND CHANGE PROCESSES) AT UB AND IN BOTSWANA

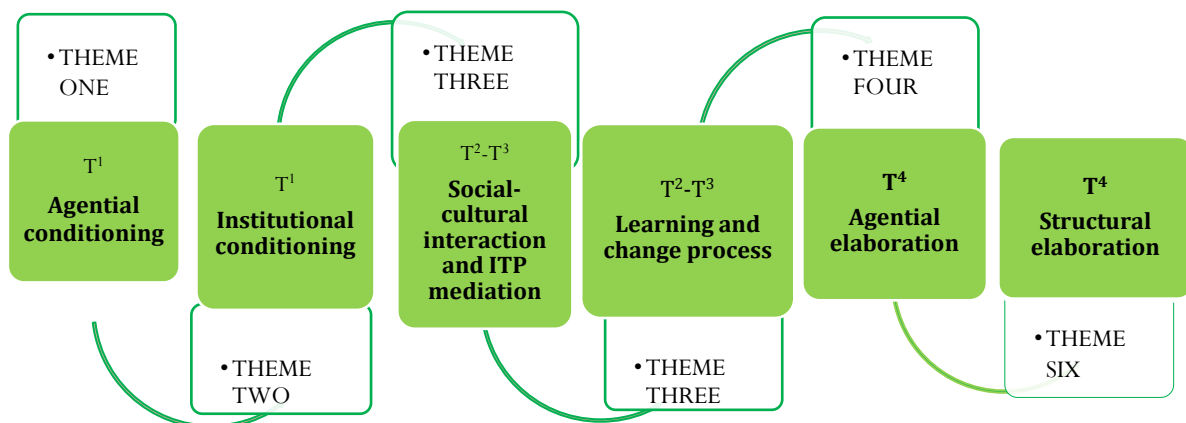


Figure 7.2: Framework for presentation of data and discussion

7.4.1 T1: AGENTIAL CONDITIONING

Theme One: The pre-ITP and pre-ESD MESA Chair positions and practices of participants and how these pre-positions and practices shape the ESD learning and change processes in the University of Botswana

The six ITP participants from Botswana are all at the University of Botswana (UB). They participated in the ITP in 2008, 2009 and 2011 in pairs; accordingly, they proposed and implemented three change projects in pairs. During their participation in the ITP, all six

participants were from the Faculty of Education but in different departments including Languages and Social Sciences Education Department, Department of Educational Management Department and Early Childhood Education Department. Henceforth, I will refer to these research participants as BRP1, BRP2, BRP3, BRP4, BRP5 and BRP6. Before participation in the ITP, BRP1 was a geography teacher, director of Mokolodi Wildlife Foundation, junior lecturer at UB and later became the Head of the Environmental Education Unit at UB. BRP2 has been a lecturer at UB since 1999, specialised in social studies with a background in Geography and acted as coordinator of the social studies unit at one time. BRP4 was a junior lecturer who started as a staff development fellow, while BRP3, BRP5, BRP6 were senior lecturers before their participation in the ITP. BRP3 and BRP5 were once Heads of Departments at UB, while BRP5 was the deputy dean of the Faculty of Education for the second tenure during her participation in the ITP. She was also a secondary school social studies book author and materials developer. The relatively high positions of these ITP alumni from the University of Botswana during the time of their participation placed them in a supposedly high corresponding sphere of influence with regard to facilitating effective ESD learning in change processes. The following interview excerpts illustrate these participants' institutional positions:

I was a junior Lecturer teaching environmental education when I participated in the ITP ... since 1999 I was the first lecturer in environmental education in the University of Botswana. Before coming to the University of Botswana, I was a secondary school teacher teaching geography after doing my environmental science. I moved from there and joined Mokolodi Wildlife Foundation where I was the first environmental education director, then I set up the Environmental Education Centre in Mokolodi. I went back to the Ministry of Education now as the first curriculum development officer. (BRP1)

I am a lecturer, senior lecturer and professor in the Faculty of Education, but my specialisation is educational leadership and management. I have been deputy dean of the Faculty until 30 June 2014 when my term ended after six years. So when I participated in the ITP I was a deputy dean. Before then I was Head of Department for six years. (BRP5)

I was a lecturer. I am a language educator in the department of social sciences education. I started working in UB in August 1995 as a staff development fellow ... I did my MEd and PhD in applied linguistics ... I train language teachers. I am also a warden. (BRP4)

My area of specialisation is social linguistics and language education. Before I came to University of KwaZulu-Natal, I spent eight years at the University of Botswana from 2004 to 2012. I came into UB as senior lecturer and I left as a full professor ... I was heading the department of language and social science education. (BRP3)

Before participation in the ITP, the general practices of these research participants as fellow lecturers in the same faculty were more or less related. They had all been involved in teaching undergraduate, graduate and postgraduate students; supervising research projects and publishing; doing community service related activities and research. For example, BRP1 was responsible for designing and teaching environmental education courses for many years without a colleague.

BRP5, as a key officer in the dean's office, was marked with the responsibility of overseeing students affairs including academic issues, registration, examination, and promotion. Those with exceptional practices were those who were occupying specific institutional posts such as Head of Department or Deputy Dean. Other roles that are associated with the these participants' positions within their institutional job descriptions could arise as a result of what they might be entitled to due to their qualifications, years of experience or recommendations made by others. Such bodies include the senate, council, faculty board, departmental meetings and committees. The positions, rights, powers, influence, places, functions of all these participants obviously mandated certain practices. The following interview excerpts present the general practices of research participants in their own words:

It was mainly teaching, research and participation in community engagement activities ... I designed the courses, I taught the courses, for all pre service and in service teachers, that is what I have been teaching all along, as a lecturer, I was the only lecturer for more than five years alone teaching about 13 courses environmental education and then doing also projects supervision. (BRP1)

I supervise PhD students, currently I have three. I have supervised Masters students before but at the moment I don't. The dean's office is a student affairs office, so most of the students and academic issues, registration, examination were sitting in the deputy deans' office. My activities included assisting students and teachers, attending faculty board, faculty executive, appointment, and promotion, faculty representative at affiliated colleges of education and of course I will stand in when the dean is not there. (BRP5)

I offer methods courses in language, train teachers to go and teach at secondary school. (BRP4)

Before I went for the ITP I was doing teaching and research. At times there will be duties like acting head and for a long time I was coordinator of the social studies unit. Lecturers have powers; they have powers to even change a grade or timetable, and teaching method and access to library and ICT facilities. (BRP2)

An investigation of the ESD related practices of these agents before their participation in the ITP was undertaken as part of this study. This was needful in order to monitor and analyse the changes in practices that may have been largely informed by their participation in the ITP. The experiences of research participants were quite different. For example, BRP3 explained that before he started working at UB in 2004, he had no idea of what the ITP or MESA or sustainability issues were. He said he had heard people talking about environmental and sustainable issues, and to him "they didn't make sense at all." However, when he became the head of department of what he referred to as a multi-disciplinary department, he was "technically forced to start appreciating these various departments", so he opened up. This was how he learnt about the ITP and MESA and their related activities and obligations. Since BRP1 was already a lecturer in EE, he was involved in teaching EE courses and helping in-service programme outside the university.

This outside practice was heralded in 1994 when the government of Botswana introduced environmental education as a cross-cutting course and as an education innovation; therefore teachers needed to receive in-service training in environmental education. The Ministry of Education started an in-service programme and BRP1 was fully involved, working with the teachers training colleges to train teachers in school-based workshops. This position and practice of BRP1 can be said to have enabled him to mainstream ESD in EE courses, promote awareness among teacher trainees, practitioners and university lecturers, and contribute to materials development on ESD. In the case of BRP4, the teaching and learning policy and the university research strategy called for the mainstreaming of environmental issues across courses and interdisciplinarity is key in teaching at UB. Hence she was aware of the need to integrate environmental issues in her teaching but she did not understand the concept of integration or what exactly they were supposed to be integrating. Hence she lacked insight into how the integration should be done before her participation in the ITP. The following are interview excerpts to support the above claim:

There is what is called the clusters; we are also doing the clusters workshops. Then they had the national workshops particularly for education officers. I started what I called participatory in-service training course for educators, a university kind of programme for in-service ... I was also one of the resource persons when it comes to SADC regional environmental education programmes where I used to be invited in Howick Umgeni EE Centre ... at UB I was also given responsibility to spearhead the development of environmental policy, which is the university environmental policy. (BRP1)

I don't think so, except participating in the EEASA conference ... way back before I participated in the ITP. (BRP6)

From my undergraduate I did environmental science and English ... I taught geography in a high school ... I left high school to join the university in 1988 and started writing social studies books which were recommended as core for form one, two and three and in those there will always be environmental issues (BRP5)

Before I got involved in the ITP, the only thing and time I ever got involved in when it comes to mainstreaming environmental issues in the curriculum was because the revised national policy of education actually calls for the integration of environmental issues in all the subjects at secondary school level ... but I just knew about them but I didn't know how. So because we train secondary school teachers we have to try and understand environmental issues and teach them how to integrate it but believe me before I attended the ITP, we never knew what the concept of integration involved. We will just tell them about integration and that it is important to integrate environmental issues into the curriculum but the question is how and what exactly are you integrating? At that stage, I only knew the importance of integrating environmental issues into the curriculum but the how was really a difficult challenge. (BRP4)

Before the ITP I was not doing really much in relation to ESD but after the ITP I was doing much not in teaching but in the area of research and publication. (BRP2)

Before my participation in the ITP in 2008 we had an international conference where I deliberately brought in sustainability issues. I was asked to host the conference of African languages, science and technology ... I was asked to be a convener and to choose our own theme, so I took advantage of that ... and the conference theme was African languages and education for sustainable development ... after the conference I was able to negotiate with UNISA to give us a special issue of a journal... At one point we had to speak to the VC about MESA and I had to accompany SRP1, to do that I had to present it as the HOD, we had to tell the Faculty, we had to tell deputy vice-chancellor, that was a time of influence, telling people what MESA was all about, that was when we realised that there were a lot of ignorance in the system ... so the ITP actually consolidated something that was almost germinating. (BRP3)

The various pre-ITP positions and practices of research participants have determined the kind of agential conditioning that can either enable or constrain effective ESD mainstreaming. Their personal strengths have been investigated as an enabling pre-ITP factor that acted as a bedrock for building participants' ESD foundations and eventual milestones. These include their interest, passion, educational background and qualification, profession, career and opportunities that were available in the evolving field of EE/ESD. According to BRP1, his passion for the environment, his background in environmental education, alongside his employment by the Ministry of Education as a curriculum development officer and later as an environmental education officer was a plus. His strength was therefore the position of influence he was occupying especially his ability to bring education officers and teachers together and mobilise assistance beyond the confines of his job through networks with experts. His previous involvement with SADC REEP, MESA and the SADC Course Development Network (CDN), also strengthened his current position as the MESA Chair and his participation in the ITP. Since BRP5 was an author of social studies books for secondary students before her participation in the ITP, this capacity in the form of dissemination of ESD related information and knowledge has been considered as a strength to effective ESD mainstreaming.

Environmental passion was actually the biggest drive and strength that I had ... It was just my passion, passion and interest. My background in environmental science, my background in environmental studies, and my background in environmental education, because I did my Masters in EE in the UK, University of Glasgow. Yes, the other part was that with my Geography background ... the skills and knowledge that I have acquired through some of these in-service courses interactions with other environmentalists within the region, yes that I would say were my strength. And the other thing there were opportunities, opportunities were very clear; so I can advance in any directions within environmental area or field ... and my strengths were that I was already engaged in mainstreaming ESD through MESA, Curriculum Development Networks and teaching EE. (BRP1)

My ESD related strength before the ITP was to disseminate information through writing of books and this is what I have been doing. Issues of human influence on the environment, sustainable development and environment for form three pupils, environmental challenges, and natural disaster, climate change. (BRP5)

The only strength that a lecturer has is that lecturers read and they try to understand some of these issues through research and reading. (BRP4)

I knew about the environment because I was teaching social studies and geography and the syllabus had to do with environmental management. I was just aware about litter picking, I was also concerned about land degradation and overgrazing, pollution and wild fires, and this was when I was teaching in a secondary school. (BRP2)

Before the ITP, my strength was actually my passion, I was interested in it, it was not something that was imposed upon me but it just grew out of me. I really wanted to understand and know it. ... It was interesting that it was something I was doing for the first time and doing it with passion. (BRP3)

The other side of the coin which could act as both a deterrent to effective ESD mainstreaming, as well as a springboard to learning, change and transformation is the personal limitations of participants. These limitations were sources of frustration that contributed to the move by these participants for capacity building and training in ESD which were provided by the ITP on ESD in higher education. These limitations were personal, professional, institutional and national. Although this section responds to issues related to agent only, broader issues were inevitably referred to. Some of the participants' personal limitations include the lack of knowledge of concepts like sustainable development, ESD and how this can be mainstreamed. Limitations and challenges emerging from the work context and institution include lack of policy, implementation of the few that exist and the disposition of fellow academics to the whole idea or ESD agenda in their units and departments. For BRP1, his biggest challenge was the lack of policy support that he would use to support his EE/ESD related practices. He asked the following questions "How do you mobilise the community? How do you mobilise the education officers, government officers, because these people are implementing policy, and if policy is not there what do they do, what would they implement, how can they implement something that is not government policy?". The actual ability to mainstream ESD in teaching and curriculum was the limitation of BRP6, BRP5, BRP4, BRP2. Below are what participants said about the pre-ITP ESD related limitations and challenges:

My personal limitation was lack of depth on information on ESD. My biggest challenge was the policy, the policy that was not there, when it came in 1994 it wasn't clear that is promoting education for sustainable development ...that is the revised policy on education of 1994. So before 1994 there was nothing in terms of policy mentioning environmental education or education for sustainable development. (BRP1)

I would say that I didn't know how to go about it if I want to do some in ESD but after the ITP I knew the way, I knew the organisations and the bodies and the work that is being done so I can contact them. (BRP6)

I mainstreaming ESD in the curriculum I had a weakness obviously. I teach education and management without necessarily bringing in the issue of climate change, I just teach educational management but the sustainability aspect only. (BRP5)

I would not say much about knowing how to infuse or integrate environmental issues into my courses and this was my limitation. (BRP4)

I did not know much about the terms, sustainability. It is a big term that has been worrying me for a long time ... the content is as important as the learning. Mainstreaming was not my emphasis. (BRP2)

My challenge was being in an academic environment where the issues of environment and sustainability are not appreciated by other academics, so you are pursuing a goal as if you are a mad person, when you are surrounded by people who have no regard for it and just dismiss it. My other challenge and limitation was that I had to personally unpack the notion of ESD, read a lot of literature just to ensure that I am on a par and we were speaking the same language. (BRP3)

7.4.2 T1: STRUCTURAL/CULTURAL CONDITIONING

Theme Two: Institutional esd related problems the participants propose to address through their participation in the ITP/holding an ESD MESA chair

University of Botswana and specifically the Faculty of Education (where all six ITP participants and the MESA Chair are based) have conditioned or shaped ESD mainstreaming in certain ways, both in an enabling or constraining manner as presented below. For example, the stipulated UB graduate attributes have been argued to complement the principles of ESD. The revised national policy on education of 1994, the UB teaching and learning policy, the UB research strategy, environmental charter, and the occupational quality management policy are five essential national and institutional documents that support and complement the ESD agenda. Within the strategic plan of UB, one of the objectives, visions and values of UB is to ensure that there is environmental sustainability by deepening awareness and ensuring environmental issues are incorporated in students' learning, teaching and research. The above are theoretical ESD enabling factors. The above institutional policies can be said to positively condition the ESD mainstreaming and practice at UB and in Botswana. However, the actual practices of academics will determine the extent of the potential in these policies in facilitating effective ESD mainstreaming. At the national level, the media has also been highlighted as an enabling condition for ESD practices among the citizens of Botswana. This has been the medium of translating policies into accessible language for all to understand. On the basis of availability of these policies and other factors, some colleagues of the research participants argued that they were already teaching ESD when their practices were guided by these policies and when they taught to build the stipulated graduate attributes in their students. BRP3 put this into perspective:

There was structural support for environmental issues ... we had an environmental charter for the university and secondly one of the university research thematic areas is environmental and sustainability issues. At national level, environmental and sustainability issues feature very prominently, there was a supportive discourse... Right from the media, the environment is taken serious here in Botswana ... there are notices of 'do not litter', there are notices of species that are protected or you go somewhere and they tell you that you cannot go over this lawn ... those practices

around the university makes you see that this is a worthwhile thing. Apart from the itself, you listen to the radio, you don't go so many day without hearing a caution about environment, you look in the newspaper and see issues of sustainability, so it's in the air ... (BRP3).

Despite the above mentioned structural enabling factors, prevalent constraining factors were also presented by participants. These factors, noted in social-cultural interactions with students and colleagues at least in the Faculty of Education, the rationale behind the choice of the change projects. Each pair of ITP alumni had specific ESD related problems they wanted to address through their participation in the ITP and as a point of exit. These problems are contextual issues that they have seen and experienced due to their years of work in their institutions and within their area of expertise and discipline. These observed institutional unsustainable practices have been highlighted as the basis of the choice of ESD change projects of these ITP participants. For BRP1 and BRP2 who participated in the ITP in 2008, their institutional problem stemmed from the fact that the implementation of UNDES D was minimal at UB and there was no strategy to guide UNDES D implementation in the institution. The aim of their change project was therefore to influence curriculum and policy change by mainstreaming environment and sustainability issues as a contribution to the UNDES D at UB. In other words, this change project was about mainstreaming environment and sustainability issues in general but more precisely involved revising the existing courses and introducing a new Master's programme. The title of the change project of BRP1 and BRP2 is 'Development of framework for MEd in environment and sustainability education course'. BRP1 who was also one of the three SADC MESA Chairs had a clear mission regarding policy and curriculum change and development. Below is an interview excerpt to shed light on the purpose and scope of the project:

As the MESA Chair, when the Chair was set up, three chairs were set up. There were portfolios given to these chairs, and then I was given policy and curriculum development. It was not only policy and curriculum development; our focus was ESD, so the whole purpose was to influence policy change, particularly, curriculum policy change within the region, within the region, not only in Botswana, within the region, that was the whole purpose. (BRP1)

The change project of BRP3 and BRP4 focuses on curriculum innovation in the form of integrating language, literature, Environmental Education (EE) and Education for Sustainable Development (ESD). This project was decided upon and developed because there is little or no course or programme at UB, in Botswana and in Southern Africa where language, literature and ESD are taught together as a course and related research projects supervised. BRP3 and BRP4 wanted to strengthen linkages among natural science, social science and the arts. They also wanted to work across the disciplines and aimed to produce graduates who were well rounded and capable of handling environmental and sustainability issues from a strong foundation and background in their discipline. The aim of the first course on literature and environmental issues is to afford students the opportunity to explore environmental concerns in Botswana from a literary perspective. This is important because viewing environmental concerns with literary lenses will help students to develop the attitude, knowledge, skills and perspectives that will

allow them to play an active role in improving and nurturing the environment. The aim of the second course (on language and sustainable development) is to explore critically links between language and the three spheres of sustainable development. The courses were also developed and planned to be part of the course to be taught in the proposed Masters programme by the first two ITP participants. The change project was entitled 'Integrating language and literature with Environmental Education and ESD.' Below are data excerpts to this effect:

We ended up designing two modules, one module was called language and sustainable development and the other one was literature and environmental issues. At that point I was concerned that environmental and sustainability issues need to be taken more seriously ... I wanted all of us to contribute to the masters programme ... all of us having a shared responsibility so I was very concerned that most of our programmes are so narrow ... I wanted to take people away from their comfort zone. (BRP3)

We have a lecturer of EE within the department. He was intending to introduce a master's course in environmental and sustainability issues. ... that was the intention to come up with those courses and teach them at the master's level. We came up with two course outlines. (BRP4)

According to BRP5 and BRP6, ESD was not fully integrated into all Education Faculty curricula; and students are not very aware of sustainability issues; although some progress has been made in some departments due to previous ITP and MESA activities. Therefore BRP5 and BRP6 proposed a change project entitled 'Integration of ESD into Faculty of Education Modules: In Early Childhood Education (ECD) and Education Leadership and Management (ELM) programmes' which were the departments of these participants. The following interview excerpts shed light on this point:

In any kind of change project you should start from the lowest level and she is in management, so we both thought that early childhood and management are very important so lets put them together and come up with this project. There was one project for early childhood education managers, who will interact with teachers and definitely bring change in their institutions and the teachers and the children will benefit, that is how we started. (BRP6)

We were trying to look at how the faculty can influence the environment within the university. Our concern was the way in which things were done, there are so much litter, broken bottles and lack of students awareness about pollution etc. (BRP5)

7.4.3 T2-T3: SOCIO-CULTURAL INTERACTION (A)

Theme Three: The kind of support the itp participants (and their respective institutions) received through their participation in the ITP/availability of an ESD MESA chair in their institutions and country

All six ITP participants in Botswana successfully attended and completed the ITP. In all six cases the Unit-Based Sustainability Assessment Tool was used to audit the department during the

starting phase of their change project. This audit and the outcome of the audit duly informed the need for and appropriate curriculum revision that participants proposed to undertake as change projects. These participants drew heavily on ideas and approaches to ESD presented in the Swedish and South African ITP sessions and the MESA file materials to guide pedagogical thinking in their modules development. They presented their change projects for further feedback and drew on the SADC MESA network input in South Africa and Gaborone. For example, BRP5 and BRP6 were able to meet with specialists in ECD and ELM (Education Leadership and Management) to refine their change project plans and module outlines during the regional programme in South Africa. The ITP facilitators worked closely with each set of participants and provided the support they had to offer in order for these participants to get the most out of the programme and influence their institutions accordingly. At the end of the one-year ITP, participants had a lot to say about their experiences at various levels and points in the programme. Concerning their general experiences and support received, below are interview excerpts from research participants:

All expenses for my participation were paid for. ... I gained depth on ESD, got insights from other institutions from Africa especially on challenges/solutions, approaches to mainstream and re-assurance that mainstreaming ESD is possible. (BRP1)

A lot of clarifications came up, a lot of confusions were there which were clarified through the ITP and I came to know so much about what is being done around and I really felt so many outreach programmes could be done even in the University of Botswana. (BRP6)

The fact that the main ITP participants were able to go to Sweden to learn about this and then as co-participants we were sponsored to go to Kenya, I think that in itself is a huge thing. We became aware of a lot of things that we couldn't have thought about; it was as if we were blinded and suddenly waking up. We were given a lot of support. (BRP5)

Participants from UB have mentioned specific aspects of the ITP. One of these aspects is the structure of the ITP in terms of the planned trips to Sweden by main participants and the trip to Kenya and South Africa (as the case may be) by co-participants. I gathered that it is not only the visit to the countries that participants found useful, but the specific experiences, presentations, site visits and programmes they encountered in the countries. Below are their words explaining their experiences:

The main participant went to Sweden and we both went to Kenya. In Kenya, I was listening to all those people giving presentations and talks on how they are doing it in their countries. I learnt a lot about the environment and I got extremely excited. (BRP4)

The site visit was dramatic because there is more you can learn from a site visit than what somebody will tell you. I went to Sweden, came back, went to Nairobi with my co-participant. It was within that period that I realised that the ITP was worthwhile, little did we know at the beginning that it was worthwhile. (BRP3)

When we got to Sweden, we were visiting these places where they do renewable energy, that is really sustainable, where they used the sun, leftovers from food. We visited all those places and that really made me think. (BRP5)

The site visits were very helpful, in both Kenya and Sweden. For example in Kenya, we went to Lake Naivasha Game Reserve that was where I really for the first time started appreciating nature. ... it was so amazing. Going to Sweden again, one thing was the issue of technology, which has to be environmentally friendly. People are so conscious about it, about the use of car, electricity. The ITP really helped me beyond academic issues. (BRP3)

Another aspect of the ITP participants appreciated was the access to materials. The material, mostly literature, was received in Sweden, Kenya and in South Africa depending on where participants went to and which year they participated in the ITP. The access to literature in forms of books, articles, papers, hardcopies or softcopies have been said to be enormous, essential, relevant and enlightening. This literature seemed to have responded to the lack of knowledge about ESD related matters expressed by participants before their participation in the ITP.

There were many materials that we received from Sweden and Rhodes University, which were very useful. (BRP5)

The literatures they gave us helped a lot in understanding these issues. (BRP4)

Exposure as an academic, I was able to get lots of literature, we got books, and if I have not gone on the ITP, I would not have gotten that kind of exposure. (BRP3)

Participation in the ITP has facilitated learning for research participants. The way in which the ITP was structured to support learning and change processes in participants (from personal levels to institutional levels and beyond) led participants to acknowledge meaningful learning about key concepts like sustainable development and ESD. There was exposure to and practice with tools for assessing and analysing ESD specifically in higher education. Various environmental issues have also been explored.

Although it's a while ago, but I remember I learnt a few things about my institutions while preparing for ITP and my presentation. I learnt so much about ESD from other participants through formal and informal interaction, from facilitators, and visits at different places conducted. (BRP1)

I gained particularly conceptually that the emphasis is on learning which before I did not know; I was just emphasising on the concept rather than making people learn so that they can change. We had a lot of discussion on different issues ... land degradation, fishing, infusing ESD in law. I also learnt about the tool, the tools for analysing ESD. The learning experience was rich. (BRP2)

BRP5, who is an author, learnt how she could improve her writing. The integration and collaboration between African and Asian participants and resultant exposure to different cultures, perspectives, approaches and responses to ESD, was also highlighted as a source of learning. The following excerpts explain better:

I also realised that even though I have been writing all these books, a lot could still be done because the teachers teaching with these books are reading and transferring, I am not sure they understand and have internalised what all things are. So the training of teachers is very critical. (BRP5)

The learning experience to me was good because the ITP consisted of lectures with guest speakers coming to speak to us. Another aspect was when we shared our experiences from different countries and continents ... it think the idea of bringing Africa and Asia together was great because we were made to understand things from different perspectives. The ITP was an open, flexible programme where you learn so much without knowing that you are learning so much. (BRP3)

Being an ITP alumnus and occupying the position of the MESA Chair have given rise to years and a wealth of learning experience. BRP1 explained:

I have learnt to multitask ... I can develop a new programme, I can teach, look at the MESA programme, look at community service, attend all those meetings, attend to my individual student queries, do the chairing of a number of committees. From inside the university I am operating as if I am not operating outside and from outside I am operating as if I am not operating inside the university. It is something that I have learnt to the extent that when I have less work it is like it is not me. Perseverance is one other thing, the experience of the power of passion. (BRP1)

Participation in the ITP has also helped participants to establish and extend networks and links with colleagues, stakeholders, organisations and experts. BRP3 explained, "The ITP opened a new network of collaboration for, something I had never envisaged before. The ITP opened up new possibilities for me to collaborate with people I would not have and to me that was a very rich experience". Financial support was also appreciated, although many participants appear not to have taken this opportunity; follow-up up with regard to the accountability for such funds from SADC REEP also seems to have been lacking.

We got some financial assistance from SADC REEP from which we developed some papers, two papers. (BRP2)

I applied for a SADC REEP funding and the money came in but unfortunately I could not use, my co-participant and I, it was to look at media coverage of environmental issues. (BRP3)

At some points, the main participant got a seed funding from SADC REEP to conduct research on environmental issues in the media but it never took off. (BRP4)

Of course, the SADC REEP seed funding was also given which we never got to use. (BRP5)

The change in participants' position and practice and the impact on the ESD practices of others in and around their institutions has also been highlighted as their experience during the ITP. When asked about the possibility of any change in position during the ITP, the participants responded in ways cited below:

It did change actually positively. During the one year ITP, I became like an ambassador for ESD. ... I became more invigorated. ... I found myself also being an influence in the sense that I was encouraging other people to apply for the ITP. In my

teaching I found myself making a connection between my course and BRP1's course, making my students realise that what they learnt here is related to that. (BRP3)

I think just the fact that I integrate environmental issues into the courses that I teach, I think one way or the other I am empowering these teachers to go and empower those kids out there, so that they become aware of the kinds of things they can do to nurture their environment. (BRP4)

7.4.4 T2-T3: SOCIO-CULTURAL INTERACTION (B)

Theme Four: The post-ITP and post-ESD MESA chair positions and practices and how these (including the positions and practices of others in their social context) and the ITP shape the ESD learning and change processes in the University of Botswana or its environs

As alluded to in the previous theme, the holistic support provided by the ITP was meant to have an impact beyond the personal and professional life of the ITP participants. The idea of the change project and its implementation process, which is supposed to be institutional, mandates the facilitation of learning and change beyond the individual. It required constructive and effective collaboration between the main participant and the co-participant right from the choice of the change project, the processes of implementation and the outcome of the change project. Right from the involvement of BRP1 and BRP2, who were the very first set of ITP participants from Botswana, the change project initially had strong institutional management support: in time changes in the university administration affected the support needed and eventual pace of implementation.

From my institution I got both the Dean's and HOD's support by endorsing my application and granting me permission to attend the ITP. During the implementation stages I had highest level of cooperation from all staff including administrators. I had access to all university facilities I needed. From the SADC REEP I got the seed funding for MESA Chair activities and managed to carry out training on ESD. (BRP1)

Participants' colleagues were interested in researching sustainable development and this is evident in the number of applications received from UB and the four successive ITP participants admitted. UB has become a focal point for MESA in the southern Africa region, with BRP1 being one of the three MESA Chairs in Southern Africa. Due to the cordial interaction with former ITP participants, BRP3 and BRP4 aimed at contributing to the proposed Masters programme in the change project of BRP1 and BRP2 from the same department. They received appropriate support from the MESA Chair and the Dean of the Faculty.

The outgoing deputy dean is very very interested in these issues of the environment so at least if management is interested in issues like this and they see the need to integrate ESD in the courses in UB especially because they are in the faculty of education, I think it is something. But at the moment it is like people just acknowledge and appreciate that fact that it is important but actually going out of their way to actually make this happen is difficult, I don't know where the problem is. (BRP4)

Worth noting in this Botswana case is the intentional connection between the change projects of all six participants. In other words, the change project of BRP5 and BRP6 was initially planned to contribute to the holistic change project of BRP1 and BRP2. The change project of BRP3 and BRP4 is currently linked to the proposed change project of BRP1 and BRP2. The excerpt below shows this:

We started the development of the courses during the ITP workshops. We were actually planning to develop a course for the Masters programme but since the programme was not there at that time, we decided to concentrate on undergraduate programme. (BRP6)

There was the whole Masters programme which BRP1 was developing and we came up with our two courses which were part of it. (BRP3)

The reason why we decided on courses for master's level was because BRP1 was in the process of developing the masters programme, so we thought why not? (BRP4)

The proposed masters course by BRP1 and BRP2 (the first set of ITP participants in 2008) was a significantly large change project. Both participants worked to develop the programme for which there was support at an individual, departmental and faculty level. Students who heard and read about the programme expressed interest in registering. However, the programme is yet to commence. More details regarding the final approval of the masters programme will be presented later in this chapter. The following interview excerpts shed some light:

I have worked on the masters course with BRP1, it is available, it is a programme what we have developed but up till now it has not been approved, it has not gone through all the stages ... students are hungry for the masters programme, they want it to start today, only to be told that we cannot start because it has not been approved. (BRP2)

The discussion is still on now and our proposal is with population studies people. I made a follow-up some weeks back with the head of department, he said they saw it but they are seeking second opinion. Then we said for how long because it is more than a year. (BRP1)

There is evidence of social interaction between BRP5 and BRP6 as well as interaction and consultation with colleagues in their departments and faculty to enrich the change project development process. The Unit-Based Sustainability Assessment Tool was used to conduct research and the findings contributed to the basis of the change project. At the institutional level, the revised modules in ECD and ELM proposed by BRP5 and BRP6 were deliberated at a number of consultative discussion meetings held within the faculty. Workshops were organised in their department and there was consultation with the MESA Chair. Support was provided by the MESA Chair and the Dean of the Faculty. BRP5 and BRP6 also wrote and published a paper together based on their experiences and findings during the ITP and change project development.

When we came here I went through the course, I met my other colleagues, I even asked them what we should add and got it reviewed through Silo and we made changes and modifications. (BRP6)

The course was on early childhood education and educational management. My co-participant focused on the later while I worked in the former because those were our areas of specialisation. We did some workshops and I was planning workshop with other department. I remember working with BRP1 in adult education, just trying to share what we are doing. As part of the change project, I did a research in the Faculty just to find out how other colleagues were faring in terms of ESD. Later on, my co-participant and me wrote a paper and sent it out for publication. (BRP5)

The change project of BRP3 and BRP4 was not only influenced by the proposed masters course of BRP1 and BRP2. It was also influenced by the fact that they train pre-service and in-service teachers. There was common understanding and interest in the development of the project based on their similar specialisations. Much of what was required for the course including structure, outline, content, objectives, rational was already developed by the end of the ITP; only consultation and social interaction was required.

We decided to come up with two course outlines, literature and language. ... We both sat down to work on the courses, when we came back from Kenya, we already had those two course outlines. (BRP3)

The plan was that when we get here we will sell the idea to other unit members who taught methods courses for Setswana and English but we never got the opportunity to do that, we only talked to them about it informally. ...I think we didn't create the opportunity, we didn't involve them that much. (BRP4)

The involvement of colleagues and other stakeholders in the change project development and implementation process through social-cultural interaction is integral to this study. The investigation and explanation of the institutional ESD learning and change process is as important as the actual change or transformation of the structure experienced in participants' institutions. Since the three change projects of these research participants are curriculum development related, there is need to understand how the modules, courses or programmes are approved in the University of Botswana. The development of a new course has to go through the department, the faculty executive, to the academic programme review committee, which is a wing of the senate. The resource committee also has to review and approve the course or programme. According to BRP5 who was the deputy dean, the many of the projects are terminated at the resource committee stage due to issues related to institutional or infrastructural or human resources. She revealed that "about 12 courses were halted this year" in the Faculty. These courses include the ESD courses developed by the ITP participants.

After that we wrote our paper and sent it out and it got published and I think after that we didn't really do much after that, let me confess. There are plans to work on it and really develop it, but now that I am leaving the deputy dean's office I might have the time so we can sit down together. I am not sure the course can be used for next year, yeah it may be too soon because right now there is a moratorium on new courses

because of finances. There are a lot of other courses which have been developed and have gone up to senate but then they have been shelved because of money. (BRP5)

So we developed two courses: one for early childhood and she developed one for management ... the two course are currently for two different courses ... Now it is a part of our new programme which is going to come, early childhood bachelors programme starting next year. It should have started this August 2014 but due to some infrastructural problems, we are deferring it to next year and when it starts that course will be a part of the new programme. (BRP6)

The current situation of the Botswana ESD ITP change projects as at the time of data collection and analysis is presented below. This stage can still be referred to as the change project implementation process because none of the three change projects has been fully implemented. The projects are all still dependent on approvals or commencement in the near future. BRP3, as the head of department during his employment at UB, was instrumental in the process and remained in close contact with BRP1.

The next stage was the approval process. We took it through the department at departmental level and it was approved. We took it to the faculty level and it is saddening to know the process is truncated because we had advertised it and people were ready to apply for it but the process cannot move. (BRP3)

The master's programme has not started unfortunately; it is still going through the structures. ... But you know the structures of the university you come up with a course and it has to go through all these structures so I don't know how far BRP1's is now. (BRP4)

BRP1 knows the politics of it. He told me about the politics of it. (BRP2)

Several factors have been raised with regard to the delay or termination of the implementation of the change project of BRP1 and BRP2, which is centred on the commencement of a masters programme in environment and sustainability education. One reason for the delay from the university point of view was the need to ensure the avoidance of the duplication of programmes, courses and modules in the institution. There was a call for deliberation with other faculties, especially the Faculty of Environmental Science. This is also a way for the university to control the money spent and to justify spending of funds.

One thing that was said was the need to consult with the department of environmental sciences just to ensure that certain modules are not repeated. (BRP3)

We were thinking that people could infuse ESD into their areas, but I remember when we were talking to one department, they said 'no we already have environmental education ... why do you want us to duplicate what the person are doing ... there is environmental education in language education, there is environmental education in primary education, why should we do it again?' (BRP5)

Another issue raised was the need to diversify and involve other departments and faculties in the development and operationalisation of the masters programme. It was argued that this strategy will help produce students who are well grounded, as they learn from lecturers from different

faculties. This is because the modules in the proposed programme are currently designed by BRP1, BRP2, BRP3 and BRP4 who have contributed two modules with a language and literacy dimension.

There was also a concern that all the modules were designed by BRP1, except the two modules developed by us. (BRP3)

I remember when BRP1 was presenting his masters in ESD, there was tension and tension, 'why are you getting into this thing, we are environmental science'. (BRP5)

Apart from the HOD, the Dean of the Faculty of Education has also been actively involved in the deliberation and negotiation for the commencement of this programme. There have been meetings with key stakeholders and decision makers in the departments such as environmental science and population studies. There have been discussions with representatives of these departments who have raised reasons why the masters programme cannot commence or be approved. Apart from the above reasons such as duplication of modules and diversification of the programme, other arguments have also been put forward. One argument is that environmental sustainability is the jurisdiction of Environmental Science, and any such programme should not be anchored by environmental education. This argument grew to the extent that the head of Department of Environmental Sciences feared that if the proposed masters programme was approved, they would be left without jobs. The following data puts this claim in perspective:

The other issue was local rivalry. Our colleagues in environmental science felt they owned this thing [environmental sustainability] and we are just educators. (BRP3)

The HOD, the Dean and I had a meeting with a professor who represented environmental science. He said environment is their mandate and it does not have anything to do with education. He was suggesting that we remove sustainability from the Masters programme because environmental sustainability is their baby ... He said 'you are taking our job so what are we going to be doing?' That is what he said. 'If you do that it means I have to tell the staff to pack and go' that is what he said as the head of department, those were some of the arguments. (BRP1)

For example, some departments like Environmental Science and Population Studies. Even a professor in Geography Education thought that it is his area. (BRP2)

Another argument that has been raised as justification for hampering the approval of this proposed masters programme is fear that graduates from Environmental Science will apply for the programme and then will be 'lost' or 'taken away' from environmental science. In reality, the Department of Environmental Science produces over 300 undergraduates per annum and only about five students are registered for a master's degree in Environmental Sciences. This obviously means that even without the newly proposed programme, the possibility of having postgraduate enrolments drawing many of the environmental science graduates is slim. BRP2 alluded to the fact that many masters students are registering for other programmes such as Social Studies because the Masters in Environment and Sustainability is not available yet. The excerpts below describe some of the difficulties:

In short, many of the students doing MEd social studies will opt for MEd Environment and Sustainability Education, they are doing Social Studies because it is not there. (BRP2)

In addition he was saying 'our students will not cope taking a master's programme from environmental science, it is going to be difficult for them' and I said in education we don't produce undergraduate environmentalists, those who come for our masters are your products. So if they fail it means you didn't do your Environment Science well, it is not our problem because if they are doing Masters in Environmental Education and they have Environmental Science background, then they can cope at masters level because they have that background. ... And how many of those 300 and something students go into teaching? They are many, they are a lot and those are the people we need to train. That is when he said that we are taking his job and we want to duplicate things by taking his mandate, environment is his mandate. (BRP1)

Similar arguments have been presented by professors in other departments such as Population Studies and Geography Education at UB. Notable among the arguments put forward by a professor in population studies is that the sustainable development discourse started from the population conference that was held around 2000. He is of the opinion that any reference to sustainable development must include the population framework on sustainable development that was produced during the said conference. This argument was presented when BRP1 and other stakeholders in the Faculty of Education had a meeting with the advisory council of UB regarding this change project.

We had another meeting with the advisory council, and Population Studies lecturers were saying that sustainable development as a framework is from the population conference that was held 2000 and something. I said 'no', I did not get it from there, I gave them the history in 1980 with the World Conservation Strategy, 1987 with the Brundtland report, it is as old as that... I said even the population framework on sustainable development you are talking about, I cannot be ridiculed by people using such reference, because they were saying it must be a reference, people will laugh at me, I can't do that, people will laugh at me. They thought I was rude. (BRP1)

The approval committees are just trying to frustrate us and other departments are arguing against it. Some said 'no you are trying to do what we are already doing, you are encroaching in our area, you are duplicating' even if they do not understand. They think environmental management is ESD, these are the reason why they are shooting it down. (BRP2)

There are other areas of concern and sources of frustration discovered by ITP participants through their social interaction with colleagues in their units, departments, faculties and the entire institution. One area is the attitude of high-level academics that seems to reflect a basic lack of understanding and knowledge of ESD. It has also been an expressed concern because these people are prevalent in the committees that are in charge of approving new courses, modules and programmes in the university. This also shows the lack of and the need for capacity building for ESD issues among academics.

The problem of getting things approved in this university it is because they are approved by people who don't understand these things. ... People that approve things are people who don't understand and they don't know anything about ESD and are not ready to find out ... The fighting is a form of sabotage, its lack of support ... they think they know but they do not know, they will say 'what is it about the environment, that is what we are doing everyday'. (BRP2)

I don't think there is support or maybe I should say there is lack of understanding. I remember we went to present at the Oasis Motel once and one of the people who were also doing environmental education exclaimed "how can you be presenting on my area?" the person was very agitated that we are presenting on an area that she is in. Anyway we just left it and when we came back I called the person and said we went for the ITP and we are doing the change project, maybe there is no communication. But besides if we are complementing each other there is nothing wrong. She was agitated and we didn't even know that that person was doing something in that line. (BRP5)

In the midst of the above mentioned issues that have acted as hindrances to the successful implementation of participants' change project, various factors can be said to have been responsible for the success at this level. Some factors that have enabled the implementation of the change project include the support received from colleagues (in the case of BRP6); the availability of the graduate attributes which is believed to resonate well with ESD (in the case of BRP5); the availability of the MESA Chair in participants' department and the availability of institutional policies that support ESD mainstreaming (in the case of BRP3).

When I brought the change project back to my colleagues, the HOD has supported and other colleagues have reviewed ...so from that point of view there is a support. (BRP6)

We have not really implemented our change project except making reference to the University of Botswana graduate attributes. To me they speak a lot about ESD. (BRP5)

Our change project was a success as far as designing the modules and incorporating it into the master's programme. The enabling factor was the MESA Chair itself and the institution itself which put environmental and sustainability issues as part of the top issues. (BRP3)

The implementation of the change project was also constrained by certain factors that were both individual and institutional. Some of them include the negative responses of some participants' colleagues which was the experience of all participants; the frustration they have seen in their colleagues trying to get a course or programme approved has dampened their enthusiasm, in the case of BRP5. BRP3 also agreed that the major setback is when modules developed end up not being approved for use in teaching and assessment. Below are data excerpts to support these points:

Constraints were also there because some colleagues never felt there is a need to have any special course again now ... but it didn't stop us from implementing it. (BRP6)

We have not been able to go all the way to finalise the development of the course and one of the reasons is because we may end up developing and we will not be able to pull it through in terms of approval, so why waste your time. There are courses already lined up and yet to be approved and those will have to be approved first before mine. (BRP5)

The constraining factor is development of modules which actually just lies down and the programme take off is a major setback. We have done it but it is mission incomplete until the programme gets approved ... The constraining factors include institutional structures that are in academia which are rigid. (BRP3)

Although it has been highlighted above that the availability of institutional and national policy is an enabling factor for the ESD mainstreaming, the lack of practical implementation of such policy has also been raised as a constraint to effective ESD in the university. BRP2 has revealed that one way of informing academics about a policy and supporting the implementation of such a policy in the university is by conducting workshops. He argued that the prominent and regular workshops that have been conducted in the University are on research and ICT but there have been no workshops on ESD. He was taken by surprise when I informed him that I was aware that there had been workshops in the department and faculty in relation to the ITP and MESA. For BRP4, the constraint plays out at both a personal and professional level and the institutional level. At the personal level, BRP4 is being overwhelmed or overruled by the content of the course outline which mandates integration of environmental issues in teaching but becomes impossible, and at the institutional level the lack of evidence of shared vision and a clear mission for ESD mainstreaming. The excerpts below present these participants' opinions:

I will not say there is no policy; it is lack of implementation because if it was being implemented, they will conduct workshops to let people know. ... There has never been a workshop on ESD ... as far as I know but now you are saying there have been workshops but I was not aware of that, I don't know why. (BRP2)

The course outline constraints, you have no much time to talk about integration of emerging issues and the course outline is full of other topics, so before you know it the semester is over and you haven't even talked about anything. ... If it just goes at the level of just teaching and nobody else is interested this, it is disheartening. You can only do this if the whole unit or the whole department or the whole faculty share the same vision. It's everybody's baby. (BRP4)

Apart from factors acting as constraint to or enabler of effective mainstreaming of ESD at personal, professional, institutional and national levels, the efficacy of the position-practice system of people is a key factor this research is investigating. At this point, the existence of a MESA Chair as a key position, office and as a personality in the University of Botswana is presented below. There is also an investigation of the social-cultural interaction between this position and other ITP participants with assumed built capacity for ESD related activities and other colleagues who may not have this capacity. When I asked ITP participants about the existence of a MESA Chair in their faculty and university and what this means to them, I got various responses. They said that they are aware of the existence of the office, the Chair as well as

the person holding the office. This awareness is based on the fact that the MESA Chair exists in the Faculty of Education, where all participants are from. It is also because of their affiliation to the ITP and MESA network in one way or the other and at one point or the other.

The reason I am quiet is because I want to be very truthful. I know him definitely because we are in the same department and he is very approachable. (BRP4)

I know BRP1 is there, Silo [BRP1's colleague] is there, I have attended one of the workshops of MESA but MESA Chair as such I really don't think I have been informed or involved in any of those things, so I really don't know much. However, I think BRP5 will be able to give you more idea. As I am saying after the course, after coming back from ITP I have been totally out of it. (BRP6)

It seems many other faculty members are not aware of the office of the MESA Chair, his role, worth and obligation in the University. If members of the same faculty are not familiar with this Chair, then much more will this be the case for colleagues at UB from other faculties. The MESA Chair should herald an era of increased knowledge, impact and capacity in the area of ESD mainstreaming and practice yet this is not quite the case. It was also interesting that factors responsible for this are relatively unknown.

It was a matter of high recognition. For me the coming of the MESA Chair to UB was recognition of the effort that the department was making. (BRP3)

Do you know what? The MESA Chair's existence means something to us but there is not much known about the MESA Chair in the Faculty let alone the whole of UB. There is not much that is happening that is known. I do not know what is responsible for that. I know BRP1 because probably I have attended the ITP and the others who have attended the ITP but I am not sure others know that. (BRP5)

It means that mainstreaming should increase and we should have more ESD impact because we have a MESA Chair but I am not sure what prevents the impact to be felt much. The impact is not felt much in the university. (BRP2)

I investigated the tangible impact of the MESA Chair in the University and the support other ITP participants have received, both personally and for their change projects, from the office of the MESA Chair or in his personal capacity. I did this to provide insight into the social-cultural interaction and synergistic relationship that exists between the MESA Chair and the other ITP participants. This would also provide information on the situation after the appointment of the MESA Chair at UB. When asked about the difference the MESA Chair has made at UB, BRP4 and BRP2 highlighted that he has been actively attending various meetings and interacting with different people.

He is very very active. He tries to meet up with people and empower them about their environment because he is here people can actually learn a lot from him. He attends a lot of meetings both at national level, regional, international and university level. I am not very knowledgeable about what he does personally as a Chair but I should think that he has done a lot like getting involved with the outgoing VC. (BRP4)

Let me say for now it has not made much difference. I don't know maybe there are other ways it is having some impact. ... So not much difference but I cannot say nothing because there are other ways he might be impacting, and also because he

does attend meetings even the Ministry of Education and elsewhere and I am not sure how they are relating with him. (BRP2)

For BRP3, who was the head of department, the account is different and more specific and enlightening. The difference the MESA Chair has made at UB has been expressed from the perspective of the department as a body and a structure that houses the Chair.

I think one thing that the MESA Chair did was to bring more awareness because once the MESA Chair, even at higher level we had to sensitise the dean, the deputy vice chancellor for academic affairs and the vice chancellor himself. After that, we saw quite a number of people coming to the party ... We saw people in their small ways trying to incorporate sustainability issues in their courses here and there ... we saw people writing papers about ESD in their different areas, we were beginning to see some change. I would not talk about it in terms of material support but the very fact that the MESA Chair was now available; there were so many things, which we got from it that we cannot quantify. We got the technical support and the theoretical support from the chair, which otherwise we would not have received. For instance, the MESA Chair acted as a springboard for the Department. ... Also as a department, we are taken very seriously now. (BRP3)

For BRP6 who is in another department, the difference the MESA Chair has made at UB or his department is unknown. She acknowledged that she had been very busy and claimed she had not been informed about any activity of the MESA Chair: “maybe I could have made myself available like today I did for this interview. I am very busy today but I just said, no I owe you something”. She explained further:

No, I really will not be able to answer that. BRP5 will definitely know that. I have not been involved in any of those things also, so I really cannot comment, it will not be fair for me to comment on that unless I participated in that. If you are not doing anything in that line, what support can you get? (BRP6)

When asked about the difference made by the MESA Chair at UB, BRP5 stated, “I don’t know. I cannot say known. I did not attend the ITP through the MESA Chair, I saw the advert, and I applied. In short, there were people who have gone before me and I did not know the people have gone before me.”

Of interest to this study is the synergetic relationship and interaction between the MESA Chair and other ITP participants especially with regard to their change project implementation process in their institution. The influence of the position-practice system of the MESA Chair is of interest here. The outcome of such an investigation would provide insight into the challenges other institutions and countries without MESA Chairs may be faced with, amongst other things. This will also help to understand the realities in institutions and usher in better ways of supporting and effecting ESD mainstreaming and practice in universities. From the responses gathered, some participants have received support and some said they had not received any support. Support received by those who did was in the form of intellectual and professional contributions for the development of their change project. It came in the form of advice through correspondence and social interaction.

Definitely, we got a lot of support from him. He was the one who gave us the advice on how to go about it and that it could work at that level, because he was targeting a particular type of audience so to speak for the master's programme. (BRP4)

It is difficult really to gauge. What the MESA Chair was to strengthen us more being that it was on curriculum development and we were also working on curriculum. It was like partnership, we were sailing on the same boat so to speak. (BPR3)

No, I will be lying if I say yes. I don't like lying. (BRP5)

The SADC REEP supported the launch of the MESA Chairs through a seed fund equivalent to R400 000 for each of the three participating universities. It was hoped that the universities would raise funds to establish full-fledged Chairs to support EE/ESD research, training, community engagement and policy processes in the SADC region. Some ITP participants from Botswana are aware that some funds came with the office of the MESA Chair, although they were not sure where the money came from, how much it was or what it was meant to be used for since.

No I have not received any support from it. And since the chair was established and the money came in, I don't know how the money is being used or maybe they have not found some activities. (BRP2)

Part of the small seed fund [R400 000/\$25 000] over four years, which is being said to have been awarded, was used to conduct two workshops on policy and curriculum development which took place at UB. The workshops were meant for lecturers from the universities within the SADC region and not solely for lecturers at UB alone. There were lecturers from Zambia, Zimbabwe, Lesotho, Mozambique, Namibia, and South Africa. Lecturers from DRC were unable to come due to visa problems. During these two workshops only a few lecturers attended fully. Data below explains more:

I was able to conduct two workshops on policy and curriculum development, at the University of Botswana ... Yes, the seed fund was R400 000, yes, we used that to bring people here, we used that to pay for a number of things including accommodation, meal, and transport for those people. ... All the activities that are actually initiated as a MESA Chair involved universities from the region. (BRP1)

The attendance of lecturers in the university in the workshop has been expressed as poor and unsatisfactory. Although the workshops were originally meant for lecturers in SADC, invitations were also extended to lecturers within the university; the few that attended were not committed to the programme. Hence in each session of each of the workshops there were new faces, each day there were new faces; only a few people, about three or four, were consistently present throughout.

An invitation was extended to lecturers within the university; each workshop, and then I would say it was very poor, yes, it was not pleasing. ... People would come maybe for an hour, and they will disappear claiming that they are going to teach ... it was not good attendance. It was not good I would say ... some never even apologised or showed up. (BRP1)

Although the reasons for the lack of attendance in the workshops were not empirically investigated from other lecturers in the institution, several assumptions have been presented by

ITP participants. These include lack of awareness about the workshop, the attitude of those who were duly informed, and the problem of lecturers working in silos within their own unit or department alone, and lack of interest in other disciplines. A participant explained that often when lecturers read or heard about environmental education or ESD, they were not interested. Their responses would often be: 'I am a maths or science teacher', 'I am a science teacher', 'I am a language teacher', or 'I am a psychologist', or 'I am an administrator', 'a political scientist, what do I do with that?'. Participants also received negative comments from colleagues when there were discussions about ESD mainstreaming. Academics often defensively claim that they are already doing it, so why should they attend the workshop or training session. The other possible reason for the low attendance by lecturers from UB is that in most cases they are more attracted to external activities than the local ones because people normally think, it is of low profile. The department that is organising the programme also seems to determine the attendance of such a programme. When it is education, the attendance is usually low compared to other faculties.

Again it's who is doing it? If you say education, I don't know maybe education is too common and not attractive. That is my suspicion that it is too common, unattractive. So people will say if it is faculty of education inviting, what are they doing? (BRP1)

Apart from the influence of the position-practice system of the MESA Chair, the influence of the position-practice system of others in and around the university with regard to ESD mainstreaming and ESD practices is also substantial. Much has also been raised about the position of senior management, especially in the area of facilitating policy development and most importantly, the implementation of such policies. The availability of environment and sustainability related policies at UB and in Botswana has been expressed as the evidence of the positive role key stakeholders have played in their various offices. These have provided a stepping stone to what agents are willing and able to do. A participant explained that this means that they will encourage people and give them the support, whether it is financial or whatever, for them to be able to go out there and do research and community engagement. See below for data to support these points:

The senior management are the people who implement policies and a policy like environmental policy is being implemented by them. (BRP2)

Just having policies at university level which are approved by the university council is important enough to actually demonstrate that people appreciate and are aware of the importance of mainstreaming environmental issues into the curriculum. (BRP4)

My institution was accommodating innovation, the Vice Chancellor participated in MESA Launch ... Change was slow as institutional procedures dictates consultative process. (BRP1)

Most participants attested to the fact that there have been workshops organised in the department by the MESA Chair by virtue of his position. BRP3 explained that one of the problems encountered was that people within their department had the wrong perception of environment and sustainability issues. The position of BRP3 as the then head of department and his practices in support of the MESA Chair and other ITP participants are considered remarkable. He explained that one of his influences during that time was to actually tell people that there is more to

environmental and sustainability issues than they think. After the presentation of the influence of position-practice systems in influencing ESD mainstreaming and practice, this section focuses on who research participants would consider the most influential person in enabling ESD mainstreaming and practice in the University of Botswana. The investigation and analysis of these individuals are essential because this helps in providing insight into the role of these agents and the consequence for effective ESD mainstreaming. This will also serve as a model for other agents and readers of this thesis for commendation and emulation. BRP1 has given credit to all the ITP participants at UB for the different roles they have played in shaping the current status of ESD in the university. The HOD and the deputy dean for academics (who are fellow ITP alumni) have been mentioned. The Dean of the faculty has also supported the ITP participants.

The HOD and deputy dean (academic) participated in ITP and then had their changed projects that added value to what I was doing. Their participation enabled my ESD practices. In addition, they all had co-participants and all these people are participating in ESD in different ways especially in their teaching and research. (BRP1)

The Head of Department, the Dean attended the final review meeting we had which ITP coordinating assistant come for. (BRP6)

Apart from the above mentioned positions and practices, the former vice chancellor of UB has been presented as a strong supporter of ESD mainstreaming and practice in the university. He has been involved in almost all activities related to environment and sustainability including conferences, meetings, consultations and approval processes. The Government through the Ministry of Education has also been cited because of its role in policy development and implementation. For example, the fact that the revised national policy stipulates that environment and sustainability should be integrated across the curriculum in Botswana. The other way the Government has positively influenced the ESD mandate is through the availability of laws, acts and legislation in Botswana which suggest that environmental issues are taken very seriously from a legal point of view. These acts and laws protect the environment and state punishments for people who violate the law of the environment. The following data supports this information:

The former VC was very proactive in the issues of environment ... he was also very interested in the issue of the environment, he attended the EEASA conference and he has visited many SADC countries a lot. And there has been a lot of conference here and outside which he attends. (BRP4)

In terms of the challenges, when MESA Chair was introduced, my former VC attended the launch and he was so supportive and he even suggested that MESA Chair should be institutionalised so that it gets into the university system and budgeted for. We were still in that process and when the new VC came in he suspended all those new developments ... So I would say I got the support earlier on and now I am not sure of the support. (BRP1)

There was a time, before the money came; BRP1 went with the old Vice Chancellor to South Africa or Howick because he supported him. (BRP2)

I think also the Ministry of Education ... and also the laws of Botswana.(BRP3)

Further, apart from the ITP participants, the Dean and the former vice-chancellor of the University of Botswana, almost all research participants have attested to the notion that the MESA Chair has been the most influential position and practice when it comes to ESD mainstreaming and practice in the department, faculty and the university. He has been abreast with latest information in the field and has regularly shared that information with colleagues even though their responses have not been encouraging. He has been singlehandedly engrossed in the EE/ESD mainstreaming and practice to the extent that he is currently been referred to as 'Mr ESD'. His knowledge, skill, capacity, networks, connections, links, human relations, openness, easy-going lifestyle have been commended by many. A respondent said, "God forbid but I cannot imagine how life will be if BRP1 should die, ESD is in his blood".

I would say BRP1, do you know what happens here, when you talk about environment and sustainability education, the chair will say 'yeah talk to him, he is Mr ESD'. If there is any application, they will say 'BRP1 can you supervise that person'. There was a time BRP1 used to send out information about the newsletters and even about conferences, most people don't respond and they know that he has the information, so he has been very influential. (BRP2)

At the University of Botswana, I think it is BRP1 because BRP1 has done wonders single handedly. If people know about ESD now at UB it has been because of BRP1. On Saturday, on Sunday, BRP1 is in the office writing a proposal ... BRP1 means a lot, he has networks, he has established relationships with people, and he has negotiation skill. BRP1 never writes a proposal which is rejected. No other person apart from BRP1. (BRP3)

Also important to investigate is most influential position in constraining ESD mainstreaming and practice in the University of Botswana. This is equally important because it provides a balanced view and a fair perspective of the situation on ground. Presentation of constraining positions and practices that hamper effective ESD mainstreaming and practice will assist in constructive intervention by stakeholders inside or outside UB. Among the positions and practice of people enlisted in this category are fellow academics. Their nonchalance, lack of reception, refusal to listen and learn, lack of commitment, insistence on what they think and perceive ESD is without adequate knowledge, claiming ownership of the field as disciplinary rather than transdisciplinary, provide evidence of ways they constrain the flourishing of ESD. Colleagues in the same department and faculty as MESA and other ITP participants who are aware of MESA, the MESA Chair and the ITP, have also been found to handle environmental and sustainability issues and risks with levity. Below are a few of participants' explanation of the situation:

That was another challenge. For people just to understand what MESA chair is, it is not an easy thing ... The MESA Chair within my faculty, within department, people know that there is MESA Chair, they know about the duties I am doing, but for them to be on board is not an easy thing. (BRP1)

I think academics themselves are the biggest constraint to ESD mainstreaming. I am saying this because a simple refusal to listen is a proof. As an academic you must be open to knowledge but they refuse even to read it and immediately dismiss it. So mainstreaming does not happen or when it happens people do not give it the

recognition they are supposed to give it because they are not aware that they are it, some are doing it blindly. (BRP3)

Lack of approval of our Masters programme is a big problem. Up till now it is there. BRP1 and the HOD and others are supportive, they go to the appropriate committee, and they are shut down together ... environmental studies, population studies. (BRP2)

The management of the institution including the Vice Chancellor, his deputies, and the Deans of faculties have been cited as position-practice systems that currently inhibit effective ESD mainstreaming and practice at UB. Included in this list is the Organisational Research Department (ORD). Participants lamented that it is simply not adequate for a global mandate like ESD to be appreciated by the management of UB in words alone; they should be at the forefront of the activities. For example, if the Vice Chancellor is meeting with the Deans, faculties and other key institutional stakeholders, ESD should be part of the agenda. However, if ESD is only appreciated at some forums where nobody is listening to the management and stakeholders, people cannot be expected to know whether the university is in support of ESD or not. It was advised that unless management takes initiatives and sells the ideas to other people, by going to the faculty and talking about it so that everybody hears and asks questions in a forum led by the MESA Chair, ESD will be constrained.

The MESA Chair can have all the dreams that he wants to but he can be disappointed by not being given the liberty to actually explore many of the things that he would want to ... by the powers that be. He can be constrained by e.g. lack of funding, lack of interest by people. The management is influencing ESD in a more constraining manner. (BRP4)

In this country and institutional case study, the change in administration has obviously hampered previously strong support for ESD and MESA activities on campus. This led to the suspension of this agenda, which, is yet to be reinstated. The departure of the HOD who was also one of the ITP participants that strongly supported the MESA Chair from UB to UKZN has also affected the progress of things. Another blow was that the DVC of academic affairs who knew about MESA also resigned with the arrival of the new VC. Hence the former VC, the former DVC of academic affairs and the former HOD, three key position-practice systems that understood and supported the cause of MESA at UB, left BRP1 with the task of going to the new VC, the new DVC, the new HOD to brief them about MESA. The following excerpts provide more details:

One thing that I knew was going to be a challenge at the University of Botswana but I do not know how the situation is now, is the change of leadership. That change of leadership actually brought about some challenges because by the time I was leaving there was a new VC and we had not even gone to the new VC to brief him about MESA by the time I was leaving. I cannot rule out my departure from UB too, I am not trying to say I am good but I was supportive. So BRP1 had to deal with a new HOD, new DVC, new VC, so those are some of the things that may have affected things and I am not surprised that the MEd programme has not been approved. (BRP3)

Since the new Vice Chancellor came, I do not know what is happening. I do not know if the current Vice Chancellor is aware of that or what he is doing. (BRP2)

I only console myself with the fact that he is still new and he is still studying somethings. He is spending his third year now. (BRP1)

Apart from the change in management and lack of maximum support from them, the role of the media in broadcasting environmental and sustainability related activities and obligations has also been questioned. It has been observed that although these issues are broadcast through verbal or written mediums, sometimes the language used and the manner in which the messages are presented, constrain people from taking action.

I do not know whether the media here or there have priorities on other areas, I don't know because the impact is not being felt much. (BRP2)

Especially when sharing information about how to nurture the environment, and they are saying it in languages that people don't understand, then a lot of people out there will miss out on information that is very crucial. (BRP4)

There are challenges and issues that have been raised as constraining effective ESD mainstreaming and practice which are not peculiar to any particular position but crosscutting. These issues which equally inhibit socio-cultural interaction, agential and structural elaboration have been experienced by participants after the ITP. Although the professional development training has taken place and there is a hope that the capacities of the attendees have been built and that change can take place in their various institutions, changes are constrained in various ways. According to Botswana research participants as shown here, these challenges include, time, busy schedules, academic responsibility, lack of departmental, faculty and institutional support, structural bureaucracy, lack of sustained interest, motivation, goodwill, and enthusiasm.

I was very excited and motivated but when we came back and we have the other things, other roles and responsibility you tend to forget them or rather keep them at the back and say that you will do it later sometimes. (BRP6)

I learnt a lot about the environment and I got extremely excited but you know you can get excited about these things but when you come back home and then you are constrained by the structures you tend to be demotivated and demoralised. Before you know it you have just gone back to your usual teaching routine ... I did learn a lot and I was excited and I was almost dreaming of the things I was going to do and teach students as a warden and as an academic. I was planning to consult BRP1 on community engagement projects we could. All those dreams and possibilities were there but when there is no institutional support you just fall back to your normal routine and before you know it you have even forgotten about the ITP. (BRP4)

The evidence and extent of socio-cultural interaction between the MESA Chair and colleagues in the EE unit was worth investigating and analysing, especially in the midst of the realities mentioned above. It was pleasing to discover that a few people around the MESA Chair play different supportive roles. He has alluded to recent assistance from some ITP participants. For example, in gender-based research, he is working with a colleague who is also a former ITP co-participant, BRP2. Dr Silo has been helpful in the coordination of the youth wing to youth group under the MESA Chair activities. Another newly employed EE unit staff member, namely Dr Bikutso has been helpful, for example, in attending one of the curriculum development meetings at Howick, which the MESA Chair was supposed attend. This involved the evaluation of the

Swedish-Uppsala Change Project on teacher education, which is still under the umbrella of the MESA Chair. BRP6 had the statement below to say in this regard:

I think they have. They can influence, they are influencing. I hear that they are having this conference and that workshop; at least I have seen BRP1 and his colleague doing a lot. So I think they are definitely using their position. (BRP6)

The existence of a forum for all ITP alumni to interact and brainstorm from the inception of the ITP has not been mentioned until now. This seems to also imply that there is no formal MESA committee involving the MESA Chair, other colleagues in the EE unit and probably all other ITP alumni. Although this has been previously suggested and discussed, unfortunately nothing has developed. Not all ITP alumni thus know all other ITP alumnus, at least not on the basis of the ITP or MESA. Below are two interview excerpts with details on this claim:

We had talked once with BRP1, I remember we talked and said we needed to come together and do something, to come up with a forum but it did not materialise maybe he is doing something about it. As a deputy dean, yeah I have the power but the power dynamics, that I don't even want to go into. I still believe BRP1 has the power as a MESA Chair, he is to be influential as far as I am concerned ... I know we have brainstormed with BRP1 on the need for all the ITP alumni to come together and see what we can do. We had talked about it but we never implemented anything but maybe we can pick it from here now, I hope. Unless if they did it without me knowing but I have not been informed. (BRP5)

I hear that this one has done that and that one has done this but I have never met them, I have heard of BRP4 but I have not met her, I know BRP's colleague, BRP5, BRP1 and I know them not because of the ITP but as staff colleagues ... there is nothing through the ITP for me. I really don't know where and when they got dropped otherwise why is nothing coming? When you and the African ITP coordinator sent the email, I was thinking now me, after two years why? I was lost before reading the email because I am not involved; I am not doing anything in this anymore. I don't know what is happening here, I really don't know. (BRP5)

7.4.5 T3-T4: AGENTIAL ELABORATION OR REPRODUCTION

Theme Five: Agential elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

This theme discusses what the current situation of the ITP participants and the MESA Chair are, in terms of their post-ITP positions and practices. It explores what has probably changed in them, which is elaboration and what has remained the same, which is reproduction years after participation in the ITP and award of certificates. The investigated and presented elaboration or reproduction in this section is in terms of the participants as individuals, as change agents with increased capacity, as professional higher education educators, as adults, as lecturers, as parents and the likes, not as a collective. After years of participation in the MESA and ITP, BRP1 was nominated as one of the three SADC ESD MESA Chairs in Southern Africa. He was later elected as the president of the Environmental Education Association of Southern Africa (EEASA). He

has recently been promoted as associate professor in the University of Botswana. He holds other positions within and outside the university. His change in positions also necessitated his change in practices at different levels of operation. This elaboration of agency gave rise to an increase in the efficiency of ESD mainstreaming and practice. This account can also be said to have contributed somehow to the agential elaboration of others. Below is a glimpse of what he had to say in confirmation of his elaborated position-practice system:

Yes, I currently coordinate MESA activities, M.Ed and PhD programmes as well as the annual ESD Change projects course in the country. Yes, I was able to mainstream ESD in my undergraduate courses, introduce both Master and PhD programmes, facilitate an annual ESD course for educators in Botswana. ... I am able to mainstream ESD, influence the ESD practices in the country and in the region through MESA. Yes, the EE courses changed after mainstreaming ESD. Teaching and learning activities demanded for extra staff members, more students developed interest and enrolled in large numbers. (BRP1)

With regard to BRP6, a professor and senior lecturer, change in position and practice after participation in the ITP can be traced back to the change project, which is the development of a course and publishing of a paper in relation to that. Although she has always been conscious of environmental issues since the ITP, there has been an increase. She explained that whenever she sees something it reminds her of her encounter with the ITP and related activities. This increased consciousness, which is an example of elaboration, has affected her practice in terms of the use of resources like water, electricity, food and paper. Below is an excerpt that provides more of her experience after a couple of years of participation in the ITP:

Those 14 days of enormous [exposure] and so many presentations, so many people talking ... I am reminded. ... Change in activities?. I really do not think so besides developing that course and publishing, I do not think anything has been done, even in the University from the two of us. We just published an article ... The concern is very much there because may be the ITP has made me more conscious but all the time wasting electricity, water, throwing away food, this and that is happening in the University and it bothers me too much. I feel very very bad to throw away things, I feel bad about wastage of resources. Even for printing something, you know I have become more conscious, I don't print out something, except I am going to print the final copy. (BRP6)

Likewise, with regard to her position, which by definition in this study is equivalent to right, power, influence, BRP6 does not consider herself to have elaborated much compared to her colleagues. She is an expatriate with certain limitations to rights, freedom and powers and this may have contributed to this sense. She implied that this may have influenced her lack of continual engagement with the ESD network and activities since the completion of the ITP but also acknowledged that she had been busy with her work. However, one right that she is confident she has as an academic is the right to conduct research, to teach masters students.

My right is to do research as we academicians have, we have those kinds of freedom to do somethings; conduct research, I am teaching mainly the masters students. I am an expatriate so from that point of view certain rights are not there which I do feel many times ... certain rights that are there with colleagues are not there with me ... I

don't think I have power and I do feel that many times because I work very hard. ... The fact that I was there and now I am nowhere that should tell you something isn't it, it's okay, I have many things to do. (BRP6)

BRP5 has recently ceased to be deputy dean after six years in office. After participation in the ITP, her position has remained the same. Apart from the development of the course that is yet to be approved and used in teaching and her publication on her experience in the ITP, little more has been done. She noted some changes in practice following the ITP though these seem linked more to activities at home rather than in the institution. When asked about what had changed about her position and practice, this was her response:

I don't think so, I went back to my old shoes. My practices, maybe at my home, I became quite conscious of using firewood when it is cold ... and the way people cut the firewood. Many people are poor and they cut the wood to sell but in the process, they are contributing to deforestation and there is no replacement for the trees. (BRP5)

For BRP4, who is a senior lecturer and warden, there has been little change in position after several years of participating in the ITP. She regrets the current situation of her change project, which has been hampered by the same delay experienced by the change project of BRP1, and which would have made her active and relevant in ESD mainstreaming.

That is a long time. Its five years ago, you are right and it is unfortunate and I am very much ashamed of this. Five years and I have not done anything. My position has not changed much. I am the same person as far as mainstreaming environmental and sustainability issues are concerned. It would have may be changed a bit if the proposed master's programme has taken off. So I am still the same teacher who integrates environmental issues in B.Ed courses and nothing else ... five years down the line is just a dream that never come through. I am not trying to be very negative; I am trying to be very realistic. ...but I am not as enthusiastic as I thought I was when it comes to environmental issues unfortunately. (BRP4)

As for BRP2, who is proud to still hold the title of a lecturer for personal reasons, change in position has been linked to mainly his improved research capacity and activities. Although his participation in the ITP took place six years ago, change in practice after the ITP has been expressed in relation to change in attitude during the ITP. He has also elaborated in terms of his area of research and publication, from social studies to the area of ESD and other issues. He has testified to change in practice at home and on campus especially in relation to conservation of resources and influencing others to do the same.

Yes it is a long time now, six years ago. I will mention mainly that my task that changed is research only. As far as the course that I am teaching, I have not done much but I have done something; it is not that I have done nothing. My practices are influenced by my attitude, I have not been that bad. I no longer do social studies alone, I also do ESD publications ...My attitude has changed because I am now aware of these things ... on campus and at home. I try to encourage my children at home to switch and turn off things to avoid wastage of resources. ((BRP2)

With regard to teaching students as a lecturer, BRP2 admits to his inability to effectively mainstream ESD in his courses after the ITP, although he does not know the reason for this. The non-approval of the proposed masters programme, which was his change project with BRP1, saddens him.

Regarding my students when I teach, I don't remember influencing them much except in ELC 404 where I have told them that they must use local resources. I have not been able to influence my students, that is where my weakness has been. I have not also infused or emphasised ESD in my courses, I have not done much and I cannot say the reason why I didn't do so. (BRP2)

The case of BRP2 above is similar to that of BRP4 who testified to a change in position and practice during the one-year ITP and over the years has encountered challenges that have hindered her elaboration and proposed elaboration of her students. Regarding her encounter with the ITP vis-à-vis her current position and practice after several years of participation in the ITP, she reported:

I got empowered and enlightened but it is quite unfortunate that the enlightenment was just for me and I could not actually share it with my students which was my main dream. I seem to be only doing it at a very low level at a methods teacher because I have to do it but I do not think I am actually sharing with them what I got during the ITP, I do not think so. (BRP4)

A few years after participation in the ITP, BRP3 now works in South Africa, specifically at the University of KwaZulu-Natal (UKZN). He is the Dean of the School of Education. He has experienced change in position and practice in both institutions. He explained that the ITP has influenced his academic career and personality. He added that before the ITP, there were so many things he took for granted but he has become more sensitive. For example, he is now conscious of the use and reuse of paper and tried to operate paperlessly. At UB, while occupying the office of the head of department, he was teaching and mainstreaming ESD in his lectures quite effectively. But at UKZN he supervises postgraduate students only and thus does not have access to large numbers of students. On arrival at UKZN, he has participated in the planting of trees, which students got from the Lions Club. He has also tried to interact with students through the Students Representative Council (SRC) to facilitate knowledge and action for environment and sustainability issues but to no avail. His current post as the Dean at UKZN has also limited his ability to interact with colleagues. See discussion below for details:

Firstly, teaching, at UB I had access to teaching undergraduates and in my teaching I took every opportunity to explore ESD issues. But coming here, I only supervise, I don't teach, I have never been to the classroom. ... At one point we tried to bring in the SRC through my initiative in collaboration with members of staff, we wanted to inculcate in the respect for sustainability issues but SRC did not come to the party ... they wanted me to buy T-shirts for them. Secondly, I also do not have the same influence like I had at UB when it comes to pushing things at departmental level. At UB I could bulldoze people and encourage them but here I do not have access to modules so my influence here is slightly lower. (BRP3)

This case record sheds light on the impact of academic mobility on effective ESD mainstreaming in higher education. In this case, it is a negative influence but the case would have been different if BRP3 was lecturing or was in charge of development or review of curriculum, or if UKZN had lecturers who had also participated in the ITP in the past. This also shows that the position of an individual is not a determinant for the effective ESD mainstreaming and practice. The case of BRP5 also attests to this. Several other issues or factors can shape performance: personal, institutional, social-ecological. In this case, BRP3 considered his departure from UB a loss when it came to ESD mainstreaming although he is occupying a supposedly higher position in the institutional hierarchy at UKZN.

But my worry now is that I have little impact although I am in a more powerful situation in terms of my being a Dean but I am not on the ground to touch the buttons to say 'let's do this'. Whereas at UB, I was a smaller person but I was right there on the ground with the people ... in terms of MESA activities, my coming here is a loss to me, a big minus. It is like taking a fish out of water. I am now in a compromised position. (BRP3)

All six participants have been able to research and publish papers on the status of environment and sustainability issues at UB, and in relation to their change projects. Although there are obviously delays on the implementation of their change projects, some participants have been able to maximise their sphere of influence and explore other areas where ESD can also be effectively mainstreamed after training. Some participants have not been able to do anything else substantially because of constraints such as: inadequate follow-up after the ITP by coordinators, alumni and MESA Chairs and ITP alumni system, the office of the MESA Chair in their institution after the ITP; inadequate reinforcement or incentives to do something; formal end of the ITP after issuance of certificates without the actual change project implementation, and their own motivation and desire to carry through changes exacerbated by structural constraints as outlined above.

7.4.6 T3-T4: STRUCTURAL-CULTURAL ELABORATION OR REPRODUCTION

Theme Six: Structural elaborations (or reproduction) after participation in the ITP; if any, what they are and what they imply

This section focuses on structural-cultural elaboration. This entails the positive changes or modifications that have been recorded in the institution of research participants as a result of their participation in the ITP and particularly the implementation of their ESD change projects. Concerning the change project of BRP1 and BRP2, the framework and course content of the envisaged masters programme in environment and sustainability education have been developed. These have been submitted and approved at the departmental level. As at the time of data collection, it was awaiting approval at the faculty and institutional level because of the structural issues presented above. Irrespective of these structural constraints on the actual change project implementation, there is now a PhD programme on environment and sustainability education and participants have been receiving expressions of interest and applications from prospective

students. According to BRP1, in addition, the EE unit and departmental course contents, methods of delivery and communities of practice have changed after the ITP. ESD has been revisited in different courses for strengthening and through the introduction of an M.Ed programme, more ESD related content is covered. There are also additional programmes, research topics and service to the community to promote sustainable development. In the last two to three years, there has been an increase in the number of students coming to the University of Botswana, particularly to the Department of Education. About 500 students were admitted to the education department and more than 300 registered for EE in the first year as it is a core course. The Ministry of Education is largely responsible for this increase in students due to the backlog of teachers who need the basic requirements for a teacher in Botswana (a degree instead of diploma), based on a new policy. Hence, teachers with certificates and diplomas had to register for degrees. The choice of EE is, however, made by the students.

There is only one thing that has changed, that we have more students taking environmental education. Last semester, I think we had something like 500 in-service students/teachers ... that is why we have another position. BRP1 is senior lecturer EE, and now we have another lecturer, they are two now. (BRP2)

Let me say the PhD programme has been approved because PhD is faculty wide and for the whole department. It has about 10 areas of specialisation. (BRP2)

My classes kept on increasing ... one course last semester with about 230 and another course about 257. Before around 2010 on the average I would say 60 students. (BRP1)

BRP3 and BRP4 were able to develop the proposed two courses namely (1) Language and Sustainable Development and (2) Literature and Environmental Issues. Their position-practice system afforded the possibility of the development of the modules of these courses. However the lack of commencement of the intended MEd programmes currently limits the use of the course. The connected change projects and the dependence of one on the success of the other pose both enabling and constraining ESD mainstreaming issues. However, despite the temporary delay, there is a difference in the status of ESD in the department based on the evidence of ESD course development expertise shown by BRP3 and BRP4. Apart from the contribution of these two colleagues, ESD mainstreaming is also shaped by the activities of other colleagues in the department, although at various degrees of intensity.

In my department things are the same, things are just the same, apart from the fact that BRP1 is teaching environmental education course across, which is his subject area, just like I am teaching literature and language methods and integrating environmental issues if I want and if I don't want I don't. (BRP4)

In the department, I think there is awareness and not just awareness but participation in ESD issues have shifted from something from being seen as located in BRP1's territory. We now have people from primary education, social studies, in early childhood education, that is one thing for sure that I have seen. Other people come from other unit to join BRP1 in a number of projects, which was not the case. (BRP3)

According to their proposed change project, BRP5 and BRP6 were also able to revise two curriculum modules with a strong focus on ESD, namely, (1) Early Childhood Education (ECE), and (2) Education Leadership and Management (ELM). However, the final version of the revised modules is awaiting senate approval before being used in ongoing teaching in the ECD and ELM Education Faculty Programmes. According to BRP5, ESD principles have also been integrated into the UB's graduate attributes document, which shapes all teaching and learning at the university. Although as at the time of data collection, the Early Childhood Bachelors programme, which included the newly developed course Early Childhood Education (ECE), was yet to commence. When asked about the progress made so far on the project as well as other achievements recorded, below are participants' responses:

It is just the development of that course but that also I cannot say has taken place because it will be only when the new programme starts that it will be part of the programme. I am going to teach the course or I can ask Silo, one of us ... For the time being we are using environmental education as part of this course and that course but not as a separate as such, that is being done by Silo in primary education. (BRP6)

We have not really implemented our change project except making reference to the university of Botswana graduate attributes. To me they speak a lot about ESD. So I am conscious, I have also chaired a committee looking at assessment standards and indicators of performance. So ESD to me made me pay more attention to the graduate attribute when I plan, when I teach and when I give students assignments to do. (BRP5)

Despite most research participants sharing a sense of disappointment in themselves, they did mostly express their continual engagement with ESD principles, expectations and practice. Participants still envisage better and greater contributions to ESD irrespective of structural barriers they may have faced. According to BRP6, her response to her future plans in this regard was "not in any formal way, I don't know maybe we can think of writing another book to make children conscious about environmental issues through play ... and these are local games." According to BRP5, "I am envisaging a situation where we can pick it up from where we left. Because we have thought that the faculty doesn't really have that understanding so maybe we need to come and brainstorm with the faculty so that we have a common understanding." With respect to BRP4, she expressed deep disappointment at the unpleasant influence of senior management on the generations of teachers being trained and the children to come. Below is her story.

I am hoping that one day the management will be more supportive and take a more proactive path and see the need to actually not crush people's dreams about how to do this and empower other people. I am a teacher trainer, I teach teachers and teachers go out there to teach children who are supposed to know about these issues, so when you crash my dream you are crashing the dream of the whole country and the whole nation, when they are supposed to be noisy about issues which are very very important. What kind of children will grow up in an environment where they don't care about anything because somebody out there just made a wrong decision and condition them to think in ways they are not supposed to think. So one wrong move causes a lot of disaster and casualties.(BRP4)

BRP3 tried to maximise his position-practice system by supporting and building the cause of ESD in the department while at UB has left UB for UKZN and expressed his regrets and vision for ESD:

Obviously if I was still in the University of Botswana, I would have gone further, teaching on the masters programme, and doing other things related but now that I am here one thing that I want to do is to write a book about ESD at least from a language point of view ... but I have not had time to think deeply about it ... I will really love to contribute to the literature and scholarship on ESD, I think that is what I can do now. (BRP3)

Notable sustainability measures taken and practices developed at UB were highlighted; interestingly unsustainable practices were also highlighted. I was informed of a lack of funding or sponsorship of printing facilities and equipment. This is strategically imposed to encourage academics to reduce their paper usage on campus and make more use of the computer. If lecturers want to print, they have to print at their own personal cost. Some key institutional documents and annual publications are also not printed but available only online including the UB calendar. Below is an interview excerpt to attest to this:

UB now does not buy paper, even the printers don't have toner. They are saying there is no money so we must reduce printing and reliance on paper and read from our computers. And if you want to apply for leave or salary advance, you don't write on paper, you have to fill in the form on your computer and send and they will respond. (BRP2)

Despite the practice above to limit paper use and reuse, it has also been brought to my attention that the practice of printing voluminous faculty minutes of the meetings which are used every quarter at UB faculty board meetings still persists.

... but the faculty print big minutes of the meetings and they distribute to all of us, about 176 pages, 500 pages for one person, in my department we have 18 people, others are 14, so there is an average of 20 copies each for the 10 departments. They do not have enough money to print for ourselves and students but if it is in a meeting for the faculty, they print this bulk for everyone ... the faculty board meets three times in a year on the average. (BRP2)

7.5 DISCUSSION

The sphere of influence of HE educators on ESD mainstreaming has also been seen in the experiences and practices of participants (and others) presented above. The morphogenesis of the ESD learning and change process elaborating from individual agential level to institutional structural level and gradually to national structural and socio-cultural-ecological level is also evident. Below is a presentation of the concentric circle view of the position-practice system influencing effective ESD mainstreaming at UB, according to the case records presented above:

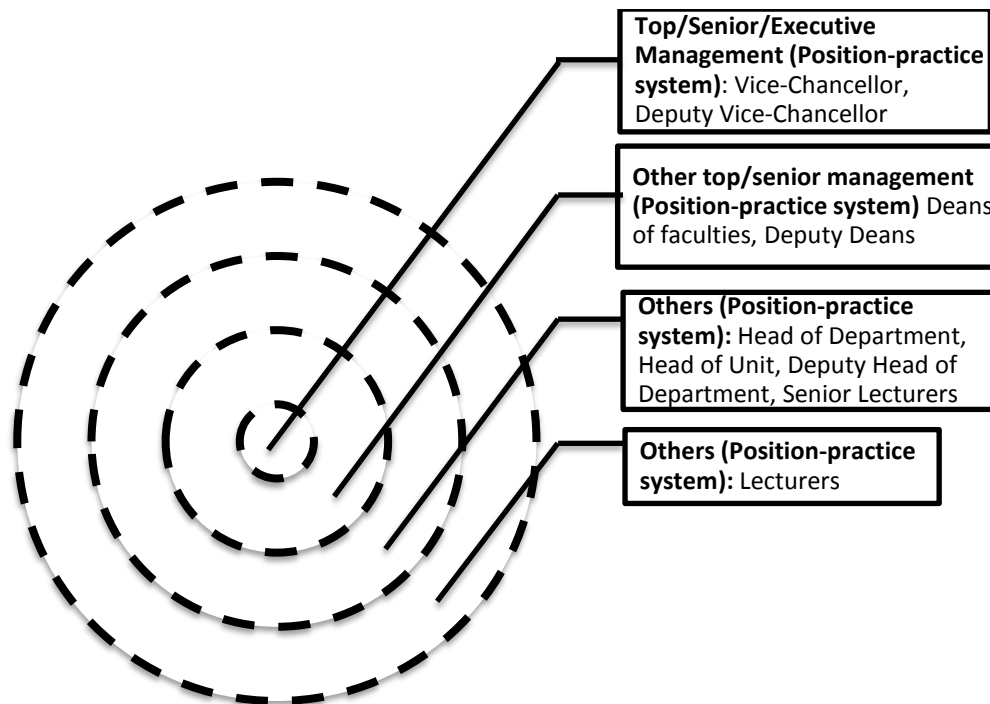


Figure 7.3: Concentric view of the position-practice system of UB on ESD mainstreaming

Figure 7.3 above is a representation of the key institutional positions that have shaped the status of ESD mainstreaming at UB. Insightful information has emerged from this case study. There is evidence of change at the level of participants' individual-professional development, and in their sphere of individual changed practices. Despite the position-practice system of the participants, especially the MESA Chair, institutional and disciplinary barriers were experienced and were responsible for the delay in the commencement of the masters programme and the other developed courses. The position-practice system of others at UB is shaping ESD mainstreaming negatively and positively. In the midst of the constraints, BRP1 was able to maximise his sphere of influence to overcome the obstruction of the commencement of his masters programme by commencing a PhD programme. This can be considered an evidence of professional development and personal emerging properties and powers at individual levels of the laminated system.

However the fact that BRP1 was the SADC ESD MESA Chair and president of Environmental Education Association of Southern Africa, BRP5 the Dean of the Faculty for two terms comprising six years of service, and BRP3 the head of department before leaving UB, did not lead to the approval of the revised modules at the senate level. The levels of the implementation of these change projects and the experienced institutional delay or total obstruction raise the question about the transfactual theory or assumption around position-practice system of academics. This exposes the power relations and the consequence of power relations displayed by the position-practice system of others in and around specific higher education institutions. It raises further questions as to what the situation would have been if there were other ITP participants in UB from other faculties and disciplines such as environmental education, population studies and geography education. Was it effective to have all six ITP alumni from the Faculty of Education? One can reflect on how the situation would have been or what difference it

would have made if the VC or Deputy VC was a part of an ESD related professional development training programme like the ITP. Further thought is required around the consequence of a change in senior management and the sustainability of ESD agendas and activities in institutions or if the supportive leadership system had not changed. The status of ESD mainstreaming has therefore been shaped by the position practice system of the government of Botswana through the Ministry of Education, the past and current vice-chancellor, the past deputy Vice Chancellor, the Dean of the Faculty of Education, the Head of Education Department, the Head of Environmental Science Department, representative of the Department of Population Studies, the Deputy Dean of Education, senior lecturers and lecturers in the Department of Education.

7.6 CONCLUSION

In this chapter, data has been presented in-depth and the position-practice system of individuals and the international training programme on ESD in higher education have been analysed according to how they have shaped the learning and change processes in relation to ESD at UB in Botswana. I have used the morphogenetic framework to systematically present and analyse data collected. I have presented the data and analysis using six themes which encapsulated the experiences and characteristics of research participants, UB, and others in and around UB who have activities related to ESD mainstreaming and practice. Finally, I have provided a list of the position-practice system of those who have influenced and shaped the status of ESD over the years to its current situation at UB according to the case recorded presented above. More analysis and synthesis of this chapter are presented in Chapter 8.

CHAPTER EIGHT

LAMINATED SYSTEM PERSPECTIVES: IMPLICATIONS FOR ESD MAINSTREAMING IN AFRICA

“The concept of sustainable development ... emphasises that everything in the world is connected through space, time and quality of life, and thus necessitates a systems approach to understanding and solving interlinked social, environmental and economic problems” (SARUA, 2014a, p. 56).

8.1 INTRODUCTION

This is the final chapter of this thesis. It encapsulates the seven scalar laminated system perspectives and reflection on this research. It specifically shows the implications of these perspectives for the mainstreaming of ESD globally but particularly in African higher education institutions as presented in Chapter Four and more specifically on the three case countries and respective institutions presented in Chapters Five, Six, and Seven. It comprises a presentation of the laminated system diagram and description of corresponding layers in each case country, namely Swaziland, Zambia and Botswana.

The seven scalar laminated system is discussed and analysed in relation to the ESD professional development training programme (ITP), position-practice system of university educators, morphogenetic social realist theory of change and social learning which have been investigated throughout the study. The relationality of the seven laminated layers in terms of emergence in an open system is foregrounded in the discussion. The presentation of each country's laminated system (with reference to Chapters Five, Six, and Seven) and all African ITP cases (with reference to Chapter Four), is used to provide the key findings of this research. This chapter ends with a presentation of clustered key findings of this research, implications of these findings for ESD mainstreaming in African higher education and corresponding recommendations.

Figure 8.1 that follows is a descriptive representation of the seven scalar laminated system with arrows showing the pattern of emergence relations between layers:

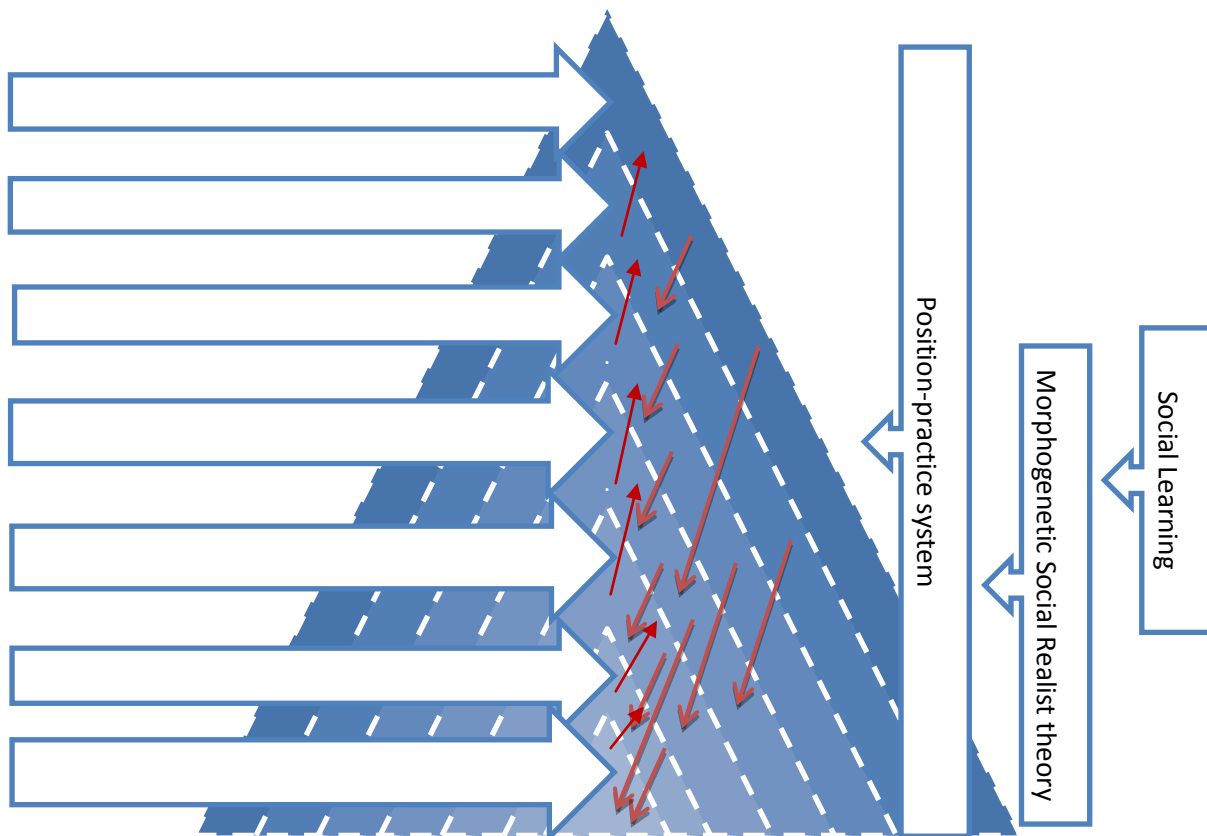


Figure 8.1: Seven scalar laminated system studied and analysed in relation to position-practice system, morphogenetic social realist theory and social learning, with arrows indicating emergence relations between layers

8.2 DISCUSSION OF ESD MAINSTREAMING IN HIGHER EDUCATION USING THE SEVEN SCALAR LAMINATED SYSTEM

8.2.1 LEVEL ONE: THE SUB-INDIVIDUAL PSYCHOLOGICAL LEVEL

This layer is the smallest. It focuses on features of an individual's nature, personality, character and psychology (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). It is often intangible but can be observed by the agent's response and disposition to social issues. Brown referred to this as an individual's "motivation, aptitude and confidence" (2009, p. 24) It is mostly developed through life experiences and exposure from childhood to adulthood. It is studied professionally by psychologists and psychotherapists but can be investigated through the analysis of the discourse and behaviour of individuals by social scientists (Price, 2015). This layer also depicts participants' identity, motives, internal motivation, intentions, concerns, desires, and interests. On the one hand, the features of this level of lamination affect an individual's response to features of other higher laminated levels although these other features gave rise to the emergence of the features of lamination one. On the other hand, the features of the lower laminated levels also have the emergent properties and power capable of reproducing or transforming the higher laminated

levels. With regard to environmental and sustainability issues, the characteristics of this layer can enable or constrain the effective mainstreaming of ESD in time and space, arguably because sub-individual characteristics make up the individuals that transform or reproduce the social space where ESD exists. This level is resonant with and involves personal identity, internal conversation, reflexivity and engagement with ultimate concerns as described by Archer (2003) and Eteläpelto et al., (2013) (see Section 2.3.3b). It also incorporates Bhaskar (1998), Galbraith (1967) and Bourdieu's (1996) notion of motive, motivation, intention, intentionality and intentional human behaviour (see Section 2.3.3b). Seen from the perspective of the morphogenetic approach, this layer concerns agential conditioning and a possibility of agential elaboration through diverse intervening contingencies, for example the influence of professional development training, social learning, imitation or mentoring, life opportunities, cultural upbringing, background and general social context.

8.2.2. LEVEL TWO: THE INDIVIDUAL OR BIOGRAPHICAL LEVEL

This layer of reality is characterised by the material circumstances of the individual that shape or reshape the sub-individual and psychological levels of an agent in the aforementioned laminated level one (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). It includes the state of mind and body of individuals such as being healthy or sick, fatigued or alert, sated or hungry (Brown, 2009). The contextual features of this level as found in this research, include participants' biographical status, academic and professional qualifications, institutional and societal position, capability, experience, affluence, disciplinary expertise, achievement, resources that provide the emergence of enabling or constraining state of mind and body. This level of the laminated system (but not singularly) has the capacity to determine the impact of the individual on social events; and this can be displayed positively or negatively depending on the realities in laminated level one. It therefore has the capacity to deter or inspire the transformation of both the individual's personality and the status of social structures and events, which predate the agent's existence. In the case of ESD mainstreaming, individual agency, the position-practice system and the sphere of influence of individuals are essential when it comes to effective ESD learning and change processes or any kind of transformation. In line with the morphogenetic approach, similarly to level one, this laminated level is equivalent to agential conditioning and a possibility of agential elaboration through diverse intervening contingencies such as promotion, access to resources, participation in professional development training, social learning, imitation or mentoring, capacity development, and affluence.

8.2.3 LEVEL THREE: THE MICRO-LEVEL

This level depicts the realities and occurrences that happen when individuals interact face-to-face with one another in a social context (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). This level comprises the emergence of sociocultural mechanisms that play out in the relationship between the individual and the collective which consequently provides the condition for outcome of the agency of individuals experienced in laminated levels one and two (Brown, 2009). As

found in this research context, this laminated level is characterised by face-to-face interaction between research participants in this study and my exploration of the human interaction that exists between them (if any). The interaction between two or more agents in a social context and the outcome of their interaction is of essence here; hence evidence of collective agency and relational agency through relational expertise in the bid to build common knowledge at boundaries (Edwards, 2011) are analysed. This layer also includes qualitative investigation of the social-cultural interaction that exists between the research participants and other individuals in their institutions and environs. In the context of this research, this level comprises the relationship between ITP participant and the co-participant and possible interaction between all ITP alumni in each institution or country with the MESA Chair. The interaction between these ESD agents and other colleagues in their institutional contexts is also considered here. Their position-practice system and the maximisation of the sphere of influence of all these interacting collectives and their influence on ESD mainstreaming are observed at this level. This level also forms part of Archer's T2-T3 morphogenetic cycle where social-cultural interaction is emphasised (see Section 2.3.3b). Social learning and productive social interaction are essential for transformation of ESD structures and status at this level. When there is social-cultural interaction, there is possibility of elaboration; when there is no social-cultural interaction then reproduction of culture and structure is experienced (Archer, 1995). The impact of the position-practice system of the individuals interacting (or not interacting) is predominantly displayed and felt at this laminated level, as reported in Chapters Four to Seven and shown in Sections 8.3, 8.4 and 8.5 of this chapter. Structures can constrain or enable productive or healthy social-cultural interaction, hence the features of the next higher laminated system discussed below determines the manner or form of interaction that can exist between individuals and collectives in an open system.

8.2.4 LEVEL FOUR: THE MESO-LEVEL

This layer of reality explores factors that give structural justifications for features available in the first three lower laminated layers (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). These factors are generative mechanisms or powers that may be known or unknown, pleasant or unpleasant, constructive or unconstructive, that give rise to individual and collective experiences. This layer features the structural and cultural characteristics of a typical society transformed or reproduced by human agents. In the morphogenetic cycle, this level is found in T1 that marks the social-cultural conditions that pre-exist the socio-cultural interaction (see Chapter Two, Section 2.3.3). In the context of this research, this level refers to the institutional structures and bodies in the higher education system that shape, control and influence institutional operations and policies in relation to sustainable development and ESD. These influential control patterns condition and thus determine the status of ESD at any given time. Although these structures and cultures predate the human agents that operate therein, the status quo is determined by past and current human agents (Archer, 1995). At this laminated level, all six case institutions of the ITP participants are considered here, namely UNISWA, UNZA, NIPA, CBU, KCoE and UB. The corresponding countries (Swaziland, Zambia, and Botswana) are also considered herewith, in

relation to ESD learning and change processes. The characteristics of the broader society in which these institutions exist (country, government, Southern African region and existing organisations) gave rise to the emergence of the features of this laminated level and other lower laminated levels.

8.2.5 LEVEL FIVE: THE MACRO-LEVEL

At this level of lamination, the society as a whole is considered. This layer is orientated towards the understanding of the operation of whole societies or regions (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). This includes the composition, constitution and configuration of the whole society and the implication of these on the experiences of individual agents, collective agents, institutional and national structures and cultures existing in the previous four lower laminated levels in terms of ESD. Contextual examples of this constitution or configuration include the ESD professional communities in and around different countries, especially those that shape the emergence of societal ESD activities in the regions of Africa such as North Africa, West Africa, East Africa, Central Africa, Southern Africa, and Western Indian Ocean Islands. At this level, environmental and sustainability issues and risks that are experienced in these regions of Africa are considered as well. Regional policies and practical responses to the understanding and alleviation of these issues are considered here. Contextual examples of policies and practical responses to sustainable development issues in the southern African region include SADC REEP, EEASA, SADC EE/ESD MESA Chair seed funding, SARUA, RISDP and AAU/MESA network.

This research also considers the position-practice system and the sphere of influence of the individuals and collectives in charge of the operations of these interventions. The impact of their position-practice system and the position-practices of other individuals and collectives in the previous laminated levels are crucial. For example, the position-practice system of the MESA Chair⁵⁸ is supposed to “provide leadership for new knowledge, new approaches, new ethics, new networks, new materials, new systems, new community links, a new sense of motivation and relevance”. The Chair is furthermore expected to provide “new purpose and practice in education and learning in order to shift currently dominant epistemologies and institutional forms, enhance agency, resilience, adaptability and transformability, and sharpen the multi-disciplinary scientific and educational base needed to respond to the critical socio-ecological challenges of the 21st century”. This research considers and analyses the practices of the three MESA Chairs investigated against this kind of broad expectation, given also their constraints, including limited ‘seed funding’ and wider institutional support and UNEP (2008) report framing ESD mainstreaming as background to MESA Chairs.

8.2.6 LEVEL SIX: THE MEGA-LEVEL

This layer is characterised by factors from wider geo-historical trajectories that unavoidably affect what happens in constituting society as a whole (Bhaskar & Danermark, 2006; Bhaskar,

⁵⁸ Adapted from Lotz-Sisitka (2010).

2010; Price, 2015). Included in this level are all the continents of the world, with focus on the peculiarities in each continent. For example, this layer contextually covers Africa being one of the continents of the world and the sustainability issues and risks peculiar to this region. There are therefore specific characteristics of Africa that affect all the regions in Africa and corresponding member states. Inseparable cross border, cross cultural, cross environmental, cross economic and political issues that are prevalent in Africa as well as policy-practice interventions are considered. ESD also has a long history associated with the partnership between UNEP and UNESCO established in the early 1970s to strengthen Environmental Education internationally, especially through the United Nations Decade of ESD (UNDESD). In 2005, the UNDESD was launched to enhance the role of education in promoting SD and United Nations General Assembly declared 2005-2014 the Decade of ESD which was adopted through Resolution 57/254 (UNESCO, 2005). One of the major thrusts of ESD stated in the United Nations Implementation Scheme for the UNDESD is to re-orient education at all levels – including all HEIs (UNEP, 2008; UNEP, 2010).

UNEP's MESA initiative is aimed at resourcing African universities to mainstream environment and sustainability into their core functions in order to encourage a more systematic approach to mainstreaming. MESA is an initiative by UNEP to support the UNDESD in responding to environment, sustainable development and climate change challenges in Africa. This programme, initiated by key higher education partner organisations and structures in 2004 such as AAU, UNU RCEs, and Sida, offers outstanding opportunities to African universities and other HEIs, thereby enhancing their relevance as potential agents of change in society and the continent at large. By 2014, the MESA platform had a membership of over 85 universities in Africa in 30 countries (see Section 1.4.6).

Practical and financial responses provided by Sida through the sponsorship of the ITP ESD in higher education for the African (and Asian) continents and managed by RAMBOL NATURA are also significant at this level. In this layer, the intervention and impact of the position-practice system of MESA as an initiative to support universities in Africa and the position-practice system of the African Regional ITP coordinators have obviously provided a platform for African ESD mainstreaming, although within limitations and constraints. Their collaboration with African higher education in response to regional challenges, and the bid to encourage the integration of ESD in its core functions, is found at this laminated level. Their response to prevailing sustainability issues and risk in Africa in the form of programme development, knowledge acquisition and sharing, exhibition and exposure of best practices to HE educators, have provided the foundation of the recorded change projects as reported in Chapter Four and expanded in Chapters Five, Six, and Seven through MESA and the ITP in Africa.

Included in this laminated level and relevant to this study is the contribution of UNESCO to environmental sustainability in Africa, especially through the United Nations Decade of ESD (UNDESD) being the lead agency. More recently UNESCO's contribution is through the Global

Action Programme (GAP). The GAP on ESD as follow-up to the UNDES after 2014 is endorsed by UNESCO member states. The GAP places emphasis on groups that are vulnerable to the impacts of climate change and unsustainable development. Africa is one of the continents most vulnerable to climate change and is among the three exceptional areas that the GAP has targeted. The continent is expected to face more frequent droughts, desertification, intense storms, food insecurity, water scarcity, rising sea levels in low-lying coastal areas where large numbers of poor people tend to live, in areas considered the most susceptible to climate change impacts. ESD can help address several major needs in the region, especially by developing greater synergies between school and community and re-aligning education with local contexts (UNESCO, 2014b).

Included in this laminated level and relevant to this study is the contribution of UNEP through its African interventions and contributions towards sustainable development and environmental sustainability. For example, the African Ministerial Conference on the Environment (AMCEN) which initiated the Africa Environment Outlook (AEO) reporting process in 2000, which was commissioned at the eighth session of AMCEN. The AEO report is a UNEP flagship report, which analyses the current state of the environment and environmental trends in the region, as well as examining emerging issues. This report continues to inspire dialogue in the region and has been used as the primary background document in the preparation of the NEPAD environmental action plan – showing strong links between environmental assessment and policy-making (UNEP, 2006).

The influence of the position-practice system of relevant officials and stakeholders in these African environmental mediation bodies is contextually considered here in relation to the status of African ESD mainstreaming and practice and the emerging contemporary planetary conditions in laminated level seven below, that is giving rise to these interventions.

8.2.7 LEVEL SEVEN: THE PLANETARY OR COSMOLOGICAL LEVEL

This layer is the widest lamination level because it deals with global issues, trends and risks (Bhaskar & Danermark, 2006; Bhaskar, 2010; Price, 2015). Africa, Asia and Europe, which are continents directly involved in the structure of the ITP are relevant to this research. The evolution of the concepts of sustainable development and ESD being studied applies to this level. Global key areas of sustainable development responses including climate change, biodiversity, disaster risk reduction, sustainable consumption and production, water scarcity, food waste, food insecurity, land degradation, loss of biodiversity feature at this level (UNESCO, 2014). Policy responses through organisations such as United Nations Environment Programme (UNEP); United Nations Educational, Scientific and Cultural Organisation (UNESCO); and United Nations Development Programme (UNDP) and other United Nations campaigns and inter-agency networking feature in this laminated system level as relevant to ESD mainstreaming. In line with this research, the response from UNESCO and UNEP is directly relevant. The Environment

Education Training Unit of the UNEP is in charge of programmes, resource development and training with regard to ESD. The AEO assessment methodology stated in laminated level six is based on the UNEP Global Environment Outlook (GEO) process. UNESCO is the lead agency for ESD, monitoring and evaluating ESD learning and change process in the world. Other position-practice systems operating in higher education related organisations include GUPES and UNU RECs in response to the UNDESD. The influence of the position-practice system of the officials and stakeholders in these global bodies is contextually considered here in relation to the status of global ESD mainstreaming. Global initiatives such as the Millennium Development Goals and Sustainable Development Goals and other international declarations are included here as relevant to the ESD mainstreaming efforts. Key documents such as the IPCC reports, Global Environmental Outlook, Global Action Plan Road Map apply at this laminated level.

8.3 A LAMINATED SYSTEM EXPLANATION OF THE POSITION-PRACTICE SYSTEM AND ITP INFLUENCE ON ESD MAINSTREAMING IN SWAZILAND

This is an account of how the ITP and the position-practice system of ITP participants (and others) influence the status of ESD mainstreaming at UNISWA and in Swaziland.

8.3.1 SWAZILAND'S LAMINATED SYSTEM LEVEL ONE

From the data presentation on this case record in Chapter Five, the three research participants (SRP1, SRP2, and SRP3) had sub-individual psychological characteristics that enabled and contributed to UNISWA's response and contribution to ESD. Previously, SRP1 did not know much about sustainable development and ESD but he had a positive attitude and great interest in learning and making a difference in his faculty which was hitherto dormant. SRP2 and SRP3 were already quite involved in Environmental Education and ESD activities and could mainstream these in their teaching before the ITP and the inauguration of MESA at UNISWA. They however were willing to share and teach others, as well as learn more from other colleagues with better expertise and experience. The increasing level of interest, willingness to learn, and motivation (agential conditioning) can be said to be responsible for morphogenesis (agential elaboration) which would have resulted in morphostasis (agential reproduction) if the reverse was the case. Although part of the motivation, interest and concern of SRP1 and SRP2 could be traced back to their participation in the ITP, the achievement of their personal and institutional desire and concern stemmed from their position-practice system being lecturers. Their sphere of influence on ESD mainstreaming could also be directly linked to their position-practice systems: SRP3 was a senior lecturer and also a member of the university council and the MESA Chair; SRP2 was in the Curriculum Development Network run by SADC REEP and a member of the MESA Implementation Committee; while SRP1 lectured about 300 students per semester and was also a nominated member of the MESA Implementation Committee. These various position-

practice systems are features of the next higher order laminated system level two presented below, which gave rise to this current lamination level one.

8.3.2 SWAZILAND'S LAMINATED SYSTEM LEVEL TWO

From the Swaziland case record (see Chapter Five), the three participants who were lecturers and occupied various positions in their institutions, were able to use their material circumstance and capacity to transform the status of ESD mainstreaming at UNISWA. For example, the prestigious office of a MESA Chair occupied by SRP3 paved the way for access to funds and other institutional resources and support. These enriching material circumstances such as the allocated seed fund to the amount of R400 000 (\$25000), the use of the Vice Chancellor's office when inviting people for MESA related events and activities, and the use of institutional facilities and infrastructure have promoted ESD mainstreaming and practices in and around UNISWA. The office of head of the department of business administration occupied by SRP1 after the ITP and remarkable approach to ESD mainstreaming may not have been possible without SRP's position-practice system and participation in the ITP. Therefore the material circumstance prevalent at this laminated level two, to a great extent, can be perceived as the causal power for transformation or reproduction of structure and agency; in this case, the transformation of the ESD status of UNISWA. The prevalence of the features of this laminated level would not have been possible without its emergence from the higher laminated levels such as level three, four, five and six. Therefore the agential elaboration experienced at this level emerged from the features of other levels of lamination interacting with this level.

8.3.3 SWAZILAND'S LAMINATED SYSTEM MICRO-LEVEL THREE

The human interaction on a small scale, investigated at this level according to this Swaziland research context is the interaction between research participants (SRP1, SPR2 and SRP3) which have been consistent and productive. These participants' interaction with others in their institution is also analysed at this level. The social-cultural interaction with others in their institution, particularly colleagues and students, is evident in the data presented in Chapter Five (Section 5.4.3)]. The individual position-practice system of each participant considered and analysed in relation to the position-practice system of others was constructive. The institution in which they operate which is UNISWA is vital at this level, hence the contribution of their departments, faculties and the university as a whole played a considerable role in conditioning the flourishing of ESD. As reported in Chapter Five, the three participants in the Swaziland case are from different departments and faculties, namely, the Faculty of Commerce, Department of Business Administration (SRP1); Faculty of Education, Department of Curriculum and Teaching, specialising in Geographical Education (SRP2) and Department of Geography, Environmental Science and Planning in the Faculty of Science and Engineering (SRP3). Through their constructive social-cultural interaction, there is evidence of flourishing inter-disciplinarity in the case record presented. The existence of a MESA Implementation Committee (MIC) which includes representatives from different faculties and divisions and units such as the library,

administration of UNISWA and affiliated colleges, has had an impact on the status and elaboration of ESD. The Green Team, which is the student body in charge of sustainability issues and risks among students, is operating in conjunction with and with support of the MIC and MESA Chair to enable practical ESD mainstreaming on campus. The support of the administration in UNISWA has also been found to positively shape effective ESD mainstreaming. The position-practice system of these interrelating change agents, including the Vice Chancellor, the Pro Vice Chancellor, and the Dean of the Faculty of Commerce, also played a remarkable role in shaping the elaboration of ESD at UNISWA at this level of lamination. There is also evidence of productive social-cultural interaction with collectives outside the university which are the features emerging from the next higher laminated level four discussed below.

8.3.4 SWAZILAND'S LAMINATED SYSTEM MESO-LEVEL FOUR

The influence and contribution of the national, provincial or local government to ESD mainstreaming is considered at this level (if any). In this case, the officials of the Ministry of Education, officials from the Swaziland Environmental Association, specifically the acting director of the policy research and information unit, have been reported to have contributed significantly to ESD mainstreaming and practice in Swaziland and at UNISWA. Other affiliated position-practice systems include lecturers from the SADC Southern African Nazarene University (where teachers and nurses are trained), personnel from industries such as Safety Health Environment and Quality Forum, businesses, other universities, colleges and the community at large. Included in this level also were the structures that gave rise to the MESA Chair and the national and institutional mandate or terms of reference. All these structures have played specific roles which could be noted as contributions to ESD learning and change processes in Swaziland. If the support structures were lacking or lagging behind, contextual social-cultural elaboration, which predates and paves way for agential and social-cultural elaboration, would have been truncated.

8.3.5 SWAZILAND'S LAMINATED SYSTEM MACRO-LEVEL FIVE

In this case and at this laminated level, the existence of a vibrant professional community such as SADC REEP, CDN and EEASA, to which individual research participants belong, allowed for access to the structure of the MESA Chair that was accorded to UNISWA and Swaziland. The environmental and socio-economic significance of these wider communities of practice is shared by smaller communities such as countries in the region like Swaziland, higher education institutions like UNISWA and other key organisations like the Regional Centre of Expertise. This society as a whole, particularly the role played by the agents involved, using their positions, practices and sphere of influence, has provided structural support for the recorded mainstreaming activities, programmes and other ESD structures in Swaziland and the SADC region. At a broader level, structures such as UNEP-MESA, AAU, UNU RCEs, and emerging African ESD strategies

that evolved from the UNDESD and UNEP, UNESCO, Sida, RAMBOL NATURA have all contributed to the status of this laminated level five and other lower levels in this case.

8.3.6 SWAZILAND'S LAMINATED SYSTEM MEGA-LEVEL SIX

This layer is characterised by factors from wider geo-historical spaces and trajectories that unavoidably affect what happens in constituting society as a whole. For example, this layer contextually covers Africa as one of the continents of the world and the sustainability issues and risks peculiar to this region. There are therefore specific characteristics of Africa that affect all the regions in Africa and their member states. Inseparable cross border, cross cultural, cross environmental, cross economic issues that are prevalent in Africa as well as policy-practice interventions, are considered here. In this layer, the intervention and impact of the position-practice system of change agents in UNESCO, UNEP, AAU, UNU RCEs, Sida, MESA, RAMBOL NATURA, and ITP in initiatives to support universities in Africa and the position-practice system of the African Regional ITP coordinators, have obviously provided a platform for African ESD mainstreaming. Collaboration with African higher education institutions (at least 85 MESA affiliated institution in Africa) in response to regional challenges and encouraging the integration of ESD in its core functions is found at this laminated level. Their individual and collective responses to prevailing sustainability issues and risk in Africa in the form of programme development, capacity building, knowledge acquisition and sharing, exhibition and exposure of HE educators to best practices have provided the foundation of any recorded activities through these position-practice systems in Africa.

The reality at this laminated system level six is exactly the same with the subsequent two cases; hence this section will not be presented again to avoid unnecessary repetition.

8.3.7 SWAZILAND'S LAMINATED SYSTEM PLANETARY-LEVEL SEVEN

This layer deals with global issues, trends and risks. Global planetary issues such as climate change, water scarcity, food waste, food insecurity, land degradation, loss of biodiversity feature here. The response of the United Nations through bodies like UNESCO and UNEP is the focus e.g. environmental and sustainability partnership with Sida for ITP in African and in Asia, MESA networks South-North and South-South knowledge exchange and UNEP, GUPES. The role of the position-practice system of the officials and stakeholders in these global bodies is contextually significant for the transformation of the status of ESD mainstreaming. The global issues and risk, with corresponding strategic interventions at this level of reality is a determinant of the realities in the other six lower levels of lamination.

The reality at this laminated system level seven is exactly the same with the subsequent Zambian and Botswanan cases; hence this section will not be presented again to avoid unnecessary repetition.

8.4 A LAMINATED SYSTEM EXPLANATION OF THE POSITION-PRACTICE SYSTEM AND ITP INFLUENCE ON ESD MAINSTREAMING IN ZAMBIA

This is an account of how the position-practice system of participants and the ITP influence the status of ESD mainstreaming in case institutions in Zambia. It includes the influence of the position-practice system of others in and beyond the case institutions.

8.4.1 ZAMBIA'S LAMINATED SYSTEM LEVEL ONE

The analysis of the discourse, disposition and behaviour of Zambian participants shows much about this sub-individual and psychological laminated level one, since the layer depicts participants' internal motivation, intention, concern, desire, interest etc. All participants in this case were willing and interested in ESD mainstreaming even though most of them knew little about it before their participation in the ITP. Although these factors can enable or constrain the effective mainstreaming of ESD, this case shows that participants' psychological/sub-individual characteristics level has shaped ESD mainstreaming and practice, mostly positively. For example, ZRP1 had a biological science background, ZRP4 did his PhD in the field of urban expansion with links to climate change and ZRP11 had his masters and PhD in environmental education. These were sources of strength that supported and propelled participants' interest in, positive attitudes towards and motivation for enhancing ESD capacity. These emerging agential elaborations were evident in participants' ability to overcome departmental and contextual challenges in order to contribute to the ESD agenda. It is also worth mentioning that most of their motivation, interest and concern for ESD can be traced back to values and skills gained from their participation in the ITP. In the case of ZRP1 who did not partake in the ITP, his passion, interest, alongside his training, provided him with the needed attributes. Participants' position-practice systems which are features of the next level of lamination discussed below also contributed to the experienced features of this lamination level one.

8.4.2 ZAMBIA'S LAMINATED SYSTEM LEVEL TWO

This layer of reality is marked by the material circumstances of the individual that shape or reshape the sub-individual and psychological level of agents in lamination one as well as other higher levels. According to this Zambian case record, this level encapsulates all participants' biographical status (composed of male and female research participants); academic and professional qualification (most participants holding at least a Master's degree or equivalent qualification); institutional and societal position (such as directors in the case of ZRP5 and ZRP6; HOD, Dean, MESA Chair and Associate professor in the case of ZRP11; Dean in the case of ZRP7); capability (teaching, research and community engagement); years of professional experience (ZRP8 – 27 years and ZRP7 – 25 years); disciplinary expertise (ZRP5 in Management and Legal Study, Biology in ZRP1, Civil Engineering in ZRP8, land survey in ZRP7, Geography in ZRP3 and ZRP4, and EE in ZRP11); and associated resources. These aspects of the laminated

system (but not singularly) have the capacity to determine the impact of the individual in life, that is, its use in personal or individual agency. It therefore has the capacity to deter or inspire the transformation of both the individual's personality and the status of the structure which predates his or her existence. From the Zambian case study (see Chapter Six), all participants who were at least educators in their institutions occupied various positions and were able to use their sphere of influence to transform the status of ESD through their change project development and implementation in their contexts. For example, development of material by ZRP1 and ZRP2, development of a Master's programme by ZRP4 and ZRP5, development of a course by ZRP5 and ZRP6, and campus management by ZRP9 and ZRP10. These various material circumstances were experienced due to their emergence from the features of other laminated levels.

8.4.3 ZAMBIA'S LAMINATED SYSTEM MICRO-LEVEL THREE

This level is characterised by face-to-face interaction with research participants and the exploration of the human interaction that exists between them (if any). In the case, the human interaction investigated at this level is the interaction between ITP participants (ZRP1-10), their interaction with the MESA Chair (ZRP11), and their interaction with others in their institution. As shown in Chapter Six (Sections 6.4.4; 6.6.4; 6.8.4; 6.10.4), there has not been consistency in social interaction between the participants in this case. The interaction that took place was limited to the inception and period of the ITP. The physical distance between participants from different institutions has contributed to this. The lack of a formal or informal forum that allows for the social-interaction between research participants is another factor. The social-cultural interaction with others in their institution, particularly colleagues and students, is evident in the case record. For example, the change project of ZRP1 and ZRP2 which was on student material development, warranted concrete interaction and consultation with students and colleagues for insight, contribution and suggestions, which were recorded. In some cases this interaction with colleagues and students enabled better ESD mainstreaming and practice, while the reverse was the case for others. The interaction of ZRP4 and ZRP5 with senior colleagues in their department towards the implementation of their change project and other ESD activities therein met with some level of resistance. The position-practice system (with sphere of influence) of each participant, considered and analysed in relation to the position-practice system of others, is dependent on the level of the participant in their institutional hierarch. For example, ZRP11 who has occupied various positions at UNZA (such as HOD, Dean and currently an associate professor) was able to develop courses and programmes in the School of Education more easily compared to ZRP3 and ZRP4 who are lecturers. ZRP7, who occupied the office of a HOD and thereafter became a Dean for six years, was able to garner support from junior colleagues in order to facilitate ESD mainstreaming activities. ZRP10 was the Principal of KCoE and ZRP9 was in charge of ESD/EE issues and activities at the college. These ITP participants' position-practice system and sphere of influence largely contributed to the progress they made in the college through their ITP ESD change project. The structure and culture of the institution and faculties in which participants operate is vital at this level, particularly their resistance or reception to change and transformation. The

characteristics and realities recorded at this laminated level are broadly shaped by the next higher level of lamination discussed below.

8.4.4 ZAMBIA'S LAMINATED SYSTEM MESO-LEVEL FOUR

This layer features the structural characteristics of the Zambian society that can either generate ESD enabling or constraining mechanisms and powers. The influence and contribution of the Zambian national, provincial, local government, in collaboration with higher education to enhance ESD mainstreaming, is considered at this level. This level refers to the national structures and bodies that control national activities and policies in relation to sustainable development, EE and ESD which are present in Zambia. From the findings in the case presented in Chapter Six, although there were national policies, there are still certain practical factors related to ESD mainstreaming to take into account. Such factors include the lack of (individual) institutional ESD policy/strategy; lack of institutionally coordinated effort that incorporated all faculties in the bid to ensure sustainability; lack of awareness about ESD and MESA across disciplines and lack of adequate value for the essence of ESD. The financial and material support from UNZA administration to the office of the MESA Chair for continuity purposes has also been lacking (see Chapter Six, Section 6.4.2). Although the availability of environmental legislation in Zambia has conditioned ESD mainstreaming activities positively, before participation in the ITP, the institutional or national status of ESD has conditioned (influenced, shaped) ESD mainstreaming and ESD practice in certain other ways.

According to the findings across this Zambian case, the contribution of Government ministries, especially the Ministry of Education, Ministry of Education and the Ministry of Environment, has not been very commendable in terms of supporting and liaising with higher education for effective ESD. For example, although NIPA is one of the leading providers of high quality professional management and business training, research and consultancy services in Zambia and the SADC region, data presented in Chapter Six, Section 6.6.2 show that the sustainability audit done by ZRP5 and ZRP6 indicated very little attention being given to sustainability issues at NIPA. These structural influences are revealed in the courses available for students, administration, management and teaching practices in the institute. More so, NIPA had conditioned the flourishing of ESD by the lack of institutional ESD policy or strategy; thus there was a lack of institutionally coordinated effort for sustainability that incorporated all sectors and disciplines of NIPA. This led to a general lack of awareness about ESD and MESA at NIPA.

At CBU, although there are ESD agents and activities emerging from certain departments e.g. Mathematics, ZRP7 and ZRP8 observed that there was a lack of awareness about environmental sustainability and global citizenship in the School of the Built Environment, hence their change project which sought to create awareness of these global issues and stimulate local responses to them as an institution. In a similar vein, unfavourable structures at KCoE also facilitated the choice of the change project of ZRP9 and ZRP10 in an attempt to ameliorate some institutional

ESD related gaps including the negative attitudes of college community members towards ESD and EE issues and the appearance of the college campus which was environmentally unsustainable (see Chapter Six, Section 6.10.2).

At UNZA, apart from the lack of institutional ESD policy, strategy or framework and coordinated effort in the institution, participants have raised challenges relating to the traditional practice and hierarchy of senior academics, disciplinary discrimination and apportionment of ESD responsibilities and expertise in certain disciplines or faculties. For example, fellow academics have argued that since education appears in the concept of education for sustainable development, then the mandate of ESD should be left for the School of Education and should not be a concern for other faculties like the Natural Sciences for instance. This gross misunderstanding or misconception of what ESD really means among senior academics has significantly inhibited the flourishing of ESD at UNZA. Still at UNZA, effective ESD mainstreaming has been historically constrained by institutional hierarchical approaches to curriculum and course development. By this I mean that if those proposing the courses are not professors or senior lecturers, they are largely unsupported by senior academics and administration. More so, the few academics that have been trained and thus have the capacity new ESD courses are faced with institutional barriers related to approval processes and the length of time for a programme to be approved.

Included at this laminated level also are the structures that gave rise to the MESA Chair and the national and institutional mandate or terms of reference in which this laminated system emerged from and prevalent in the next higher laminated level presented below. These Southern African regional structures have played specific roles towards facilitating learning and change processes in Zambian higher education such as providing a MESA structure and minimal initial financial support to kick-start institutional ESD mainstreaming activities through the available seed funding.

8.4.5 ZAMBIA'S LAMINATED SYSTEM MACRO-LEVEL FIVE

In this laminated system, the Zambian society as a whole is considered and analysed. This includes the composition, constitution and configuration of the whole society and the implications of these on the experiences of individual agents, collective agents, institutional and national structures existing in the four lower laminated levels. Contextual examples of this constitution and configuration include the ESD professional communities in and around Zambia, especially those that shape the societal ESD activities in the Southern African region. An example is the existence of a vibrant professional community such as MESA, SADC REEP and EEASA to which some of the participants are affiliated. This network has led to the structure of the MESA Chair that was accorded to UNZA and Zambia. This society as a whole and particularly the role played by the agents involved, using their positions, practices and sphere of influence, has been found to provide structural support for the ESD mainstreaming activities that have been recorded. For example, the position-practice system of individuals and collectives operating at a broader

level in existing structures such as UNEP-MESA, AAU, UNU, RCEs, and emerging African ESD strategies that evolved from the UNDESD and UNEP, UNESCO, Sida, RAMBOL NATURA and ITPs' role have all contributed to the status of this laminated level five and other lower levels in this case. More so, emerging contemporary environmental and sustainable issues and risks have also propelled the emergence of these structures in response to and for mitigation of the global and regional challenge.

Laminated system mega-level six and seven here remain the same as those presented in the Swaziland case above.

8.5 A LAMINATED SYSTEM EXPLANATION OF THE POSITION-PRACTICE SYSTEM AND ITP INFLUENCE ON ESD MAINSTREAMING IN BOTSWANA

This is an account of how the ITP and the position-practice system of participants (and others) influence the status of ESD mainstreaming at the University of Botswana and in Botswana.

8.5.1 BOTSWANA'S LAMINATED SYSTEM LEVEL ONE

From the data presentation on this case record in Chapter Seven, the six research participants (BRP1 to BRP6) had sub-individual psychological characteristics that have enabled and contributed to the status of ESD in UB. Although some of their motivation, interest and concern could be traced back to their participation in the ITP, many characteristics of this level existed before their encounter with the ITP. For example, BRP1 had passion and interest in EE and ESD. BRP2 was concerned about the state of the environment, while BRP3 also had the interest and passion for environmental issues and desired to know more about it. All these attributes provided a good foundation for their improved capacity to shape the status of ESD in and around their university positively. There were also other characteristics exhibited by research participants in this laminated level that had the capacity to make or break the prospect of ESD at UB. For example, BRP4's awareness of the need to integrate environmental issues in her teaching but her lack of understanding of the concept of integration or what exactly they were supposed to be integrating as lecturers. The various concerns, attitude and disposition of participants, coupled with their encounter with the ITP and their enabling position-practice systems in UB afforded the emergence of agential elaboration experienced by research participants during and after the ITP. For example, in the area of ESD related research and publication, all UB ITP participants have improved, including a change in personal disposition and response to environmental and sustainability issues and risks. The position-practice system and the corresponding sphere of influence are characteristics of the next laminated level two discussed below which can be said to have given rise to features of this laminated level one.

8.5.2 BOTSWANA'S LAMINATED SYSTEM LEVEL TWO

The material circumstances of the individual that directly shape or reshape the sub-individual level and psychological level one are the factors prevalent at this laminated level two. According to the Botswana case record as reported in Chapter Six, this level (as in the two country cases presented above) encapsulates all participants' biographical status, academic and professional qualifications, institutional and societal positions, capabilities, years of experience, disciplinary expertise, achievement, resources etc. BRP4's access to reading materials and research output and BRP5's ability to write books for secondary school pupils and BRP1's qualification in EE at Bachelors and Masters levels and ESD at PhD level have shaped their disposition to ESD. The availability of the seed funding that came with the MESA Chair office, though small, is a material circumstance that was intended to and has shaped the status of ESD in and around UB constructively. The lack of knowledge about ESD expressed by most participants and the transition into agents with a high level of ESD knowledge and capacity after the ITP, increased the material circumstance of these agents and resulted in better status of ESD at UB. After the ITP, all participants have been able to publish at least one academic paper based on the experience and change project process; this has increased their capacity, influence and professionalism as well as ESD mainstreaming output.

8.5.3 BOTSWANA'S LAMINATED SYSTEM MICRO-LEVEL THREE

In accordance with this research context, this laminated level is characterised by face-to-face interaction between research participants (BRP1-6). From the case record presented in Chapter Seven, there has been social-cultural interaction between ITP participants and the MESA Chair although this has been ad hoc and informal because there is no formal institutionally recognised interdisciplinary ESD structure. One factor that has propelled the experienced level of interaction among participants is the link that exists between their proposed change projects, which is curriculum innovation hinged on the change project of the first set of ITP participants in UB, BRP1 and BRP2. According to the findings of this study, there is also evidence of social interaction between participants and some other colleagues' departments and faculty to enrich the change project development and implementation process. For example, the then HOD and the Dean of the Faculty of Education were actively involved in the deliberation and negotiation for the implementation of the change projects and MESA activities on campus. The former Vice-Chancellor of UB was also very supportive of MESA activities and ESD mainstreaming while he was in the institution. The interaction between the participants' faculty and other faculties in UB has not been cordial in terms of the acceptance and approval of interdisciplinary and transdisciplinary ESD change projects. This has hampered constructive social-cultural interaction that could have led to more concrete structural elaboration, a situation mainly caused by the lack of practical knowledge of ESD as interdisciplinary and transdisciplinary. This reality has resulted in unfounded resistance from other faculties and departments claiming right and ownership of environmental sustainability and other forms of interest. As reported in other country cases, the structure and culture of the institution and faculties in which participants operate, is vital at this

level, particularly their resistance or reception to change and transformation. The characteristics and realities recorded at this laminated level are broadly shaped by the next higher level of lamination discussed below.

8.5.4 BOTSWANA'S LAMINATED SYSTEM MESO-LEVEL FOUR

This layer of reality explores the factors that give structural justification for experiences in the laminated levels one to three above. This layer features the structural characteristics of Botswanan society. In line with this case record and according to the findings from data presented in Chapter Seven, the impact of the change in administration during the course of the change project implementation processes was felt negatively. Other structural features at this level include the influence and contribution of the Government. The Government through the Ministry of Education had influenced ESD through policy development, revision and implementation. For example, the revised national policy stipulates that environment and sustainability should be integrated across the curriculum in Botswana. Another way the Government has positively influenced the ESD mandate is through the availability of laws, acts and legislation of Botswana which suggests that environmental issues are taken very seriously from the legal point of view. These acts, laws and legislation protect the environment and state punishments that will be given to people if they violate the environment protection laws. Although the availability of institutional and national policy has enabled and positively conditioned ESD mainstreaming, the lack of practical implementation of such a policy has also been raised as a constraint to effective ESD in the university. The development of EE/ESD policies in Botswana by agents such as BRP1 has been shaped by broader mechanisms and processes such as affiliation to Southern African EE/ESD networks including EEASA, CDN, and SADC REEP. The sponsoring of the MESA Chairs was largely through the SADC REEP which is discussed in the next higher laminated system below.

8.5.5 BOTSWANA'S LAMINATED SYSTEM MACRO-LEVEL FIVE

From the Botswana case record, there are similarities with the above presented Swaziland and Zambia cases. These similarities are the policies and practical responses to sustainable development issues in the southern African region including SADC REEP, EEASA, SADC EE/ESD MESA Chair seed funding, SARUA, RISDP, ITP through Sida and RAMBOL NATURA emerging from broader UNDESD, UNEP, UNESCO, MESA, RCEs, UNU, AAU propositions and interventions. The position-practice system and the sphere of influence of the individuals and collectives in charge of the operations of these interventions have been commendable and efficient for ESD mainstreaming activities in (at least) African higher education. The nomination of BRP1 (and the other two participants from Zambia and Swaziland) as a MESA Chair, in and around Botswana is a sub-regional move to boost ESD activities in the region. The other EE/ESD related position occupied by BRP1 which is a regional EE/ESD organisation is being the president of the Environmental Education Association of Southern Africa (EEASA).

Laminated system mega-levels six and seven here remain the same as those presented in the Swaziland case above.

8.6 RESEARCH FINDINGS, IMPLICATIONS FOR ESD AND RECOMMENDATIONS

Findings across the study, presented in this section, are clustered into four main categories namely (1) Position-practice system and sphere of influence; (2) Change projects; (3) ITP support, monitoring and evaluation; and (4) Networking and engagement. The implication of each clustered finding for ESD and corresponding recommendations are presented.

8.6.1 POSITION-PRACTICE SYSTEM AND SPHERE OF INFLUENCE

8.6.1.1 Position-practice system and sphere of influence

One key aspect of this thesis is the highlighting of the efficacy of the position and practice of people, in relation to their sphere of influence when it comes to bringing about change in society. The ‘position-practice system’ of course participants is a significant determinant of their ability to facilitate or enable changes in institutions, with most changes occurring either within or right at the edge of participants’ ‘spheres of influence’. This points to the significance of power relations as a structural-cultural emergent property in HEI change processes towards sustainability. Whole institutional change cannot be dependent on individual ITP participants and co-participants occupying relatively low positions in institutions; participants needed to be heads of institutions or hold corresponding positions. For example, Kenyan change project 2 of 9 in Strathmore University (see Chapter Four, Section 4.3.1.2) was doable and successful because the agent was a key stakeholder in the MESA programme.

Participants without concrete and continuous institutional support struggle alone when they get back to their institutions and sometimes give up. Therefore, maximising ESD agents’ position-practice system and associated sphere of influence is essential for effective ESD mainstreaming in higher education. In other words, the manner and extent of institutional, policy or curriculum changes possible by ESD agents, are dependent on their position-practice system and associated sphere of influence. The lower the agents’ positions in institutional positional hierarchy, the more their dependence on the positions in higher institutional positional hierarchy, except where their change projects are within their sphere of influence. This does not mean that they cannot bring about significant changes but rather that these are reliant on strong relational and support ties with the hierarchy of authority or structural support system. This can be seen in the case study of South African change project 3 of 3 featuring Nelson Mandela Metropolitan University (NMMU) (see Chapter Four, Section 4.5.4.3). In this, case the already existing Green Campus Initiative, largely driven by the management and academic staff, provided a good support structure for the

establishment of a student driven society for sustainability practice on the NMMU campus facilitated by a lecturer, the head of campus and a student.

IMPLICATION

Only certain forms or manner of institutional change and transformation can be easily achieved by certain position-practice systems without reference or dependence on others.

RECOMMENDATION

Change proposed by agents (for instance during change oriented professional and academic development training programmes) should be considered and supported with due consideration given to agents' position-practice system and sphere of influence in higher education. Professional development programmes may also support participants to reflexively review both limitations and possibilities associated with their position-practice systems/sphere of influence and how these can be rationally and materially expanded.

8.6.1.2 Position-practice system and sphere of influence of others

Another finding of this study is that not only research participants have shaped the status of ESD but also non-participants in research contexts. The position-practice system and associated sphere of influence of agents' colleagues and stakeholders in and around their institution and the manner of socio-cultural interaction that exists, is vital for the commencement and progress of learning and change processes in higher education. These other position-practice systems are either enablers or constrainers of ESD mainstreaming and practice in participants' institutions. An example of constraining position-practice systems in operation is when senior colleagues of ITP participants without ESD capacity and training and those from other faculties without the appropriate knowledge of ESD as inter/transdisciplinary, constitute a threat to younger colleagues that have undertaken ESD training such as the ITP. This is evident in five of the six institutional cases presented in Chapters Five, Six and Seven. There are also many case records which have revealed the supportive role played by other position-practice systems in ESD learning and change processes as revealed in the Ethiopian change project 6 of 11 of Gondar University where the Vice President for Academic and Research and the Heads of the College supported the change project (see Chapter Four, Section 4.3.3.6). This is also evident in the Swaziland case in Chapter Five where the Vice Chancellor facilitated the institutional MESA implementation committee which provided a strong structure for the change project of the two ITP participants in the institution.

IMPLICATION

If only certain forms or manner of institutional change and transformation can be easily achieved by certain position-practice systems without reference or dependence on others, planning for change processes must take into full consideration how others' sphere of influence can either

enable or constrain intended change processes (as much as one can envisage in an unpredictable open system).

RECOMMENDATION

After adequate consideration of agents' position-practice system and sphere of influence in higher education (recommendation above), proper thought should be given to the influence of the position-practice system of others, since this can either inhibit or make possible the implementation of such change project. This contextual reality should inform the choice of other participants and stakeholders that must be involved in the project with likely positive sphere of influence.

8.6.2 CHANGE PROJECTS

8.6.2.1 Agential and structural elaboration after the ITP

This study has revealed that the number of ITP participants in a country or institution is not a guarantee for greater impact; a small number of participants should not be mistaken for little national or institutional impact. Rather, a number of factors are responsible for the rate and level of impact with institutions and countries. There is evidence of personal emergent properties and powers (agential elaboration) and structural emergent properties and powers (structural elaboration) after participation in the ITP. There is evidence of morphogenesis in almost all case records presented in Chapters Four, Five, Six and Seven. Indeed, there was a morphogenetic intent within the curriculum development of the ITP (see Chapter One, Section 1.6). This was to provide a platform for the ITP participants to use their positions to exercise their agency and be able to overcome limitations to ESD and frustrations they face when pursuing ESD related institutional changes (structural elaboration).

Contextual examples of the above mentioned 'frustrations' and 'limitations' that are addressed through social interaction during and after participation in the ITP through change project implementation processes include lack of policy frameworks to support EE, ESD and sustainable development; non-existence of ESD in university curricula across disciplines; lack of knowledge about ESD among co-lecturers and students; non or unsatisfactory implementation of national or institutional policies related to sustainable development and ESD; meeting structural/cultural demands of sustainably; non-availability of infrastructure to cater for effective ESD; and lack of keen interest in sustainable development.

From the brief African case record presented in Chapter Four, it is clear that the ITP has propelled and catalysed several change processes in participating institutions such as curriculum innovation (programmes and courses), campus management (greening and waste management), ESD management strategies and policy development, student empowerment and material development. Of the 81 change projects and participating 66 institutions in Africa, only a few

have been found to result in morphostasis. From the longitudinal case study done and presented in Chapter Four, this may be as a result of lack or sufficient recent data from these recipients and not the confirmation of reproduction of agency, culture and structure. From the in-depth case records presented in Chapters Five, Six and Seven, it is evident that all ITP participants that were interviewed had substantial expanded personal emergent properties and powers as well as expanded structural and cultural properties and powers after their encounter with the ITP. Changes recorded as a result of the participation in the ITP correspond with personal professional level, institutional level and changes in university-social ecological relations as reported in NIRAS (2015).

IMPLICATION

The urgent need for professional development of academic and non- academic staff in African higher education institutions cannot be ignored nor overemphasised. The ITP has considerable potential in building participants' ESD capacity and facilitating learning and change process at the personal professional level, institutional level and university social-ecological levels. These changes are dependent on pre- and post- agential and socio-cultural conditions as well as successful mid social-cultural interaction, which can only give rise to agential and socio-cultural elaboration. Factors capable of enabling learning and change processes must be maximised and factors capable of hampering transformation need to be identified and strategically overcome through a mix of individual, collective and network/structural effort.

RECOMMENDATION

Opportunities for ESD professional development training and capacity building should be provided to educators in more institutions and countries, especially those who have hitherto lacked such opportunities. As part of the support received from the ITP/MESA facilitators, close attention should be given to agential and structural conditioning from the onset of projects. Some of the structural conditioning in university contexts, as observed in the ITP so far, include issues such as disciplinary structures, institutional history and culture, power relations, available material and non-material resources etc. Agential conditions range from a state of having no knowledge of ESD, a little bit or a significant amount, depending on the participant. Contextual limitations, barriers and institutional challenges and ways of overcoming them should be addressed to afford actual implementation and 'completion' of projects. The current framework for reporting change project reflects two kinds of changes: 1) actual changes that are currently evident based on analysis of ITP portfolio's; and 2) catalytic changes that are emerging, or that may result from implementation of the actual changes that have already occurred. There is need for more contextual appraisal of challenges participants may be going through.

8.6.2.2 Institutional and national EE/ESD related policies

The existence of institutional and national EE/ESD related policies, strategies and practice seems to assist agents establishing their change projects, convincing colleagues and administration to

support ESD projects. When the reverse is the case, agents are confronted with related challenges because of lack of adequate policies. The availability and existence of EE/ESD policies however does not automatically imply EE/ESD practices and mainstreaming. There are possibilities of available national and institutional policies without the compliance envisaged for ESD practices and mainstreaming.

IMPLICATION

The availability of institutional and national EE/ESD related policy frameworks and strategies have and further can support effective ESD mainstreaming. Lack of such policies or their lack of practical individual and structural implementation have and further can constrain and inhibit effective ESD mainstreaming.

RECOMMENDATION

Institutions and countries without clear EE/ESD policies and strategies should endeavour to develop these and ensure that there is concrete implementation and long term monitoring of the implementation of such policies across all levels of education and sectors. Policy makers should recognise the essence of professional development programmes like the ITP for sustainable development enhanced by universities and provide support for policy development and implementation.

8.6.2.3 Continual engagement and support of senior management and colleagues

Findings across the study show that ESD change projects have more impact and are more grounded when the Deans, Vice Chancellors or Deputy Vice Chancellors or senior management agents in higher education are aware, convinced, knowledgeable and in support of ESD. For example, see Section 4.3.1.7, the case of Kenyan change project 7 of 9: Masinde Muliro University of Science and Technology (MMUST) and Section 4.3.3.4 for Ethiopian change project 4 of 11: Wondo Genet College of Forestry and Natural Resources (WGCF-NR)). When the reverse is the case, progress seems to be either slow or truncated. Continual formal engagement with colleagues on ESD issues and change projects by ITP participants was observed to positively influence awareness, support and buy-in of colleagues. This was achieved by organising more than one institutional workshop and inviting colleagues from all faculties and departments. The mandatory involvement of Deans of faculties in such forums by either the Vice Chancellor or Deputy Vice Chancellor and insistence of reporting back on progress, have proven effective for ESD mainstreaming [as in the Swaziland case in Chapter Five]. The existence of a well informed and knowledgeable senate structure that is ready to approve ESD related programmes and curriculum is needed in higher education. Although many participants are able to surmount the challenges they may be faced with, some are not. Those that are not are still however hopeful that things will not remain the way they are. Below is an interview excerpt from a participant that hopes for the best:

All is not lost. In as much as nothing seems to be happening now I still feel that one day it will happen because people appreciate these things, it is just that nobody is taking a proactive measure. Maybe one day we will have a Dean who is more proactive about the issues of the environment, and the Vice Chancellor and other people who can influence. May be one day I will become the Vice Chancellor in my dreams. (BRP4)

IMPLICATION

Effective and sustainable ESD mainstreaming and practice in higher education require continual engagement and support of senior management and colleagues in institutions. The level of support and engagement needed is linked to the level of knowledge of ESD that is known by these key stakeholders. Limited or lack of ESD knowledge and capacity building hinders progress.

RECOMMENDATION

There should be internal, continual formal engagement with colleagues on ESD issues and change projects by ITP alumni. Professional development training programmes should target top university officials in ESD capacity building. MESA, UNEP and UNESCO should encourage and support institutionalisation of ESD in all institutions in African by strategically engaging institutional heads and other stakeholders such as Government and Government ministries. University management should recognise the efficacy of professional development programmes like the ITP and provide adequate financial, moral and material support.

8.6.2.4 Cross-faculty curriculum dialogue and capacity development

The ability of research participants to catalyse cross-faculty curriculum dialogue on ESD and a ‘common cause or common good’ has been noticed across institutions based on the findings of this study. For example, see Section 4.6.3.2 for Nigerian change project 2 of 7: Bayero University and Section 4.3.3.1 for Ethiopian change project 1 of 11: Bahir Dar University. This approach or strategy has been found to shape the status of ESD positively and constructively. This strategic engagement with academics from different faculties can potentially reduce or totally prevent the usual transdisciplinary and interdisciplinary ESD mainstreaming constraints that many academics experience (also see Section 4.3.3.5 for Ethiopian change project 5 of 11: Haramaya University where more than 100 cross-faculty staff members were successfully and sustainably trained in the area of ESD). The successful achievement of this approach (for example, incorporating ESD into the curriculum of every department in the university) will of necessity depend on the position-practice system of the agents directly involved and their corresponding sphere of influence; including those of others in their institutions. Substantial knowledge building, social learning, capacity building and orientation constitute however a prerequisite for such a level of support and buy-in from academics and non-academics (see Section 4.3.5.2 for Ugandan change project 2 of 6: Uganda Martyrs University).

IMPLICATION

Cross-faculty curriculum dialogue and capacity development approach to ESD is in line with MESA's strategy. Capacity building of and strategic engagement with academics from different faculties can potentially reduce or totally prevent the commonplace transdisciplinary and interdisciplinary ESD mainstreaming constraints that many academics experience during change processes. If this is not included, institutional ESD learning and change processes will be slow or completely impossible in the short and long term.

RECOMMENDATION

Cross-faculty curriculum dialogue and capacity development strategy should be employed when proposing the development of cross-faculty curricula. The position-practice system of change agents proposing ESD projects should be those with the sphere of influence across and above faculties in higher education such as top members of the senate, deputy Vice-Chancellors, registrar and Vice-Chancellors.

8.6.2.5 Ability to negotiate and secure additional resources in institutions

As shown by the data in some cases presented in Chapter Four and the Swaziland case in Chapter Five, participants' ability to negotiate for, and source additional resources, including human, material or financial resources seems to be important for effective ESD mainstreaming. For example, in South African change project 1 of 3: University of Cape Town, two new staff members, both with tenured positions, were approved. This ensured the longer term sustainability of the change project initiative (see also Section 4.5.4.1 and Section 4.3.5.2 for Ugandan change project 2 of 6: Uganda Martyrs University). In the Zambian case presented in Chapter Six, EE graduates were recruited as assistant lecturers to teach the increasing number of EE students in the School. The Swaziland case in Chapter Five provided evidence of managing the seed funding provided to the office of the MESA Chair by soliciting and receiving non-monetary support through the use of university facilities and infrastructure for meetings and activities, instead of paying for them. The involvement of more than one person in the institution (apart from ITP participants) with the responsibility of implementing and sustaining the project, is effective. These resources are able to better propel the operationalisation of ESD projects and activities.

IMPLICATION

Non availability or insufficient resources (financial, material, human) are often cited as problem or challenge faced by agents when mainstreaming ESD in institutions. Strategically planning to limit this challenge by negotiating for and sourcing additional resources both within and outside the institution can make ESD less difficult.

RECOMMENDATION

Part of capacity development that agents should be provided with is the strategic ability to negotiate and secure additional resources in and outside their institutions. Change oriented

professional and academic development training programmes should make this approach to ESD a part of the course content. Examples of best practices may help to strengthen knowledge.

8.6.2.6 Change or modification of change project to align with realities on ground

There was substantial progress in almost all cases where participants either changed or modified their initially proposed change projects due to realities they faced in their institutions. Many change projects were modified from initially proposed institution wide or faculty wide intervention, to course-based, unit-based or department-based interventions in order to ensure the doability and feasibility of projects. (For example, see Section 4.5.5.2 for Tanzanian change project 2 of 5: Dar Es Salaam University College of Education; Botswanan case of ZRP5 and ZRP6; Section 4.3.4.3 for Rwandan change project 3 of 3: Kigali Institution of Education; and Section 4.3.5.4 for Ugandan change project 4 of 6: Makerere University).

IMPLICATION

Since realities in open systems are unpredictable and cannot be predetermined, this flexibility is necessary. However it can be avoided or reduced if there is sufficient initial consideration of the position-practice system and sphere of influence of change agents vis-à-vis the intended kind of change during the project development phase.

RECOMMENDATION

Critical planning before the commencement of change projects and flexibility and freedom to modify projects when faced with unforeseen unpleasant circumstances are needed for effective ESD mainstreaming in higher education.

8.6.2.7 Limited evidence of changes at social-ecological level

From the overall case records presented in this thesis, there seems to be little or no concrete evidence of changes at the level of social-ecological conditions, except in some cases where multiple-actors were involved in the change projects. This would not have been the case if there were substantial case records that provided evidence of a close alignment between the change projects successfully implemented which are directly linked to alleviating social-ecological issues, risks and realities in universities and countries. Such change projects will include successful innovations of university curricula and programmes that respond to available national policy that respond to contextual social-ecological issues, risks and realities. These trio-dynamics are at least necessary for orientation towards sustainable development of society at national as well as international levels through higher education. In as much as there are EE/ESD related policy and ESD agents who propose programmes, curriculum, pedagogical approaches, student initiatives, community engagement initiatives that can begin to address and respond to social-ecological issues and risks from the university level but are hampered by university structures (e.g. senate approval, financial budget), changes at social-ecological level which is the ultimate aim of sustainable development and ESD, will remain an unfulfilled dream. I acknowledge that

the ITP is an education intervention and not a SD intervention, hence the expected change and transformation is indirect and often for the longer term.

IMPLICATION

The possibility for changes at national, African and global levels of social-ecological conditions that can emanate from professional development and ESD change agents requires the engagement of other multi-stakeholders in capacity development, apart from educators in higher education.

RECOMMENDATION

The initiation of an EE/ESD capacity development for policy makers, government officials (local, provincial, national and federal), and community leaders, who can operate at the sphere of influence of developing regional/national/local strategies, policies and activities that are oriented towards sustainable development, should be considered. EE/ESD change projects involving multi-stakeholder groups could, based on their diverse position-practice system and sphere of influence could potentially directly include climate change, pollution reduction, waste reduction, poverty alleviation, food security, food resource management, water resource management, national greenery, community engagement projects, entrepreneurial projects, erosion control, wildlife conservation, land conservation and the likes. (Examples from Chapter Four where this was the case include Section 4.3.5.2 Ugandan change project 2 of 6: Uganda Martyrs University, Section 4.3.1.7 Kenyan change project 7 of 9: Masinde Muliro University of Science and Technology (MMUST) and others.)

8.6.3 ITP SUPPORT, MONITORING AND EVALUATION

8.6.3.1 The necessity of continual engagement of ITP organizers with ITP alumni for follow-up, monitoring and evaluation of learning and change processes

Findings across this study show that the lack of or insufficient continual engagement and formal or informal correspondence with the ESD community of practice and facilitators of the ITP, tends to hamper learning and change processes that are felt directly at both individual and institutional levels. This is also linked to the need for a structured monitoring system for change processes, as shown by the results in the data collected during the ITP alumni seminar and monograph report (Lotz-Sisitka et al., 2015). The fact that there is no recent, little or no information about participants' change processes and outcomes, does not mean there has been no change in participants' practices and their institutions, as shown in some of the MESA book chapters which show ongoing change long after the ITP ends.

In reality, the full implementation of change projects in participants' institutions is almost impossible by the end of phase 5, which marks the official end of the ITP and award of

certificates. In reality, many courses and programmes developed are only approved after two to five years for various reasons. The ITP therefore can mainly ‘seed’ longer term changes. To fully understand the change processes, there is need for a pre-determined structured format of periodic formative evaluation, to take place after phase 5 of the ITP. The format of pre-planned mode or strategy or standard format for systematic and periodic evaluation should be made clear to participants from the onset. Follow-up from the facilitators of the ITP, together with a long-term benchmark where ITP participants could be required to report occasionally on change project implementation processes may facilitate this. Another option is the use of information communication technology which creates platforms for participants to share ideas and their change project experiences, within and across institutions and countries. Many participants expressed a desire for follow-up such as the one below:

Perhaps what will be more interesting will be the follow-ups, the follow-ups on the implementation of the change projects; and where we could get support from the programme. Because it is like after the programme then they say ‘OK, there you go, you can fly’ and that assumption is reasonable but a comeback to see where you are, will be quite helpful and this should not be too long from the period of participation. (ZRP7)

IMPLICATION

The lack of or insufficient continual formal or informal engagement and correspondence with ESD professional development training programme participants after the course, leaves the change processes unsupported, primarily because the outcomes and impact of the educational interventions appears to be not immediate but long term. Investing in an international programme like the ITP without ensuring a sustainable structure of continuous monitoring of change processes and engagement with change agents, can therefore be seen to be somewhat counterproductive.

RECOMMENDATION

Reliable and sustainable strategies and mechanisms for continual engagement with change agents by ESD programme organisers for follow-up, monitoring and evaluation of learning and change processes should be developed and implemented. In phase one of this research, I experienced challenges in relation to synthesising the voluminous available data. I therefore recommend that further ITP programmes should commence with the development of an Excel spreadsheet database which is pre-designed with essential information about participants and their institutions. The database should include name of participant, name of co-participant, year of participation, region, country, institution and department, email address and alternatives, phone numbers (office, home, cell), physical address, designation, institutional context, problem that warrants change, change project title (options for modification), kind of contribution, aim of project, starting point, changes/modification made, implementation process, stakeholders/others contributors (enablers and constrainers of change), actual change and modification in institution, challenges and limitations for complete implementation of change project, relevance

to short and long term objective of the ITP, futuristic plan/catalytic effect. This would assist with future tracking and monitoring processes. Since the programme must formally come to an end at a particular point and learning change processes catalysed by the ITP continue, I further propose the appointment of an ITP/ESD evaluation or monitoring office/officer in Africa, specially constituted for that purpose, or integration of the ITP learning and change processes into other relevant regional structures or networks.

In addition, since participants are HE educators, change project process and outcome may be linked to a publication from the onset. The requirements for the paper could include a structure outlining what was done, could have been done better or could not be done or challenges and limitations. Expectations for the actual and continuous implementation of change projects must be emphasised. The onus should be placed on participants and institutions to ‘deliver’ or make a commitment to ESD before, during and after participation. Participation should not be based on personal interest or academic or professional promotion alone. BRP4 highlighted factors that may be responsible for reproduction or morphostasis even after successful participation in the ITP:

To tell the truth the ITP was good. I don’t think the problem is with the organisers. I think the problem is with the participants. ... people have different agendas, I might go for the ITP just because I want promotion and I want to write articles after that but I might not necessarily be going there for the soul reason that I am passionate about environmental issues. So unless the participants have the passion for what they are going there to be empowered for and how they are supposed to come back and change, not only themselves but others. (BRP4)

8.6.4 NETWORKING AND ENGAGEMENT

8.6.4.1 Cooperation between participants and co-participants

The anchoring of ESD change projects by at least two participants has proven to be effective for start-up, build-up and sustenance of ESD learning and change processes in higher education as described in Chapters Four to Seven. Only in a few cases have there been conflicts of interest between participants and co-participants. Most participants have worked harmoniously together and in cases where one participant is unavailable, the project is sustained by the other participant (see, for example, Section 4.3.4.3 for Rwandan change project 3 of 3: Kigali Institution of Education; Section 4.4.3.1 for Sudanese change project: University of Juba; Section 4.5.5.1 for Tanzanian change project 1 of 5: University of Zanzibar). The following interview excerpt attests to this:

The ITP has contributed to my current position and practice in others ways because the ITP was also about leadership. The idea of having a co-participant technically placed a responsibility in us to work with somebody and in my case it was a junior person. That is mentorship. ... In that respect I would say the ITP forced me to work with somebody and also mentor that person. It prepared me for leadership.

...Concerning my leaving ... if the Masters programme commences today, my co-participant is there to take the courses. (BRP3)

It is however also interesting to discover that while the main ITP participant is dependent on the co-participant for the sustenance of a change project, the co-participant in some cases may feel he or she does not always fully own the project. The excerpt below explains better:

As far as the change project was concerned I always thought it was not my 'baby'. You know when you are a co-participant you always feel that this is not your project and somebody else's project, so because of this the kind of enthusiasm that is supposed to come with the project is not as much as it would have been if it has not been like that, that is one constraint ... I never actually owned it, I was always thinking it was somebody else's project. (BRP4)

IMPLICATION

From the overall appraisal of the cases presented in Chapters Four and Five, many recorded successful higher education ITP change projects could have been truncated if only one participant was involved. The involvement of the co-participant from the onset of the programme, which seems to be productive in many cases, also seems to attract some other unintended consequences arising from conflicts of interests between participants that may impede the implementation of projects.

RECOMMENDATION

Participants should be encouraged to handle change projects collectively and cooperatively with equal rights to and ownership of project explicitly communicated to participants by the programme organisers. The choice, nomination and involvement of co-participants in the ITP (or any other change oriented professional development programme) and change project proposal from the onset of the programme should continue. If possible, both participants should be fully involved in all phases of the programme. In the case of the HESD ITP, both participants should go to Sweden (to date only the main participant made this trip) as well as participate in the regional trips in Africa (Kenya or South Africa). Access to all parts of the programme should be given to both participants equally. This will enhance co or equal ownership of the project and ensure commitment to and sustainability of the implementation process and outcome.

8.6.4.2 Interaction between MESA chairs and ITP participants

A strong social-cultural interaction between MESA Chairs and ITP participants has only been confirmed in one of the three in-depth country case records. In the other two cases there have been communication and correspondence glitches among these ESD agents. In one case there was a formal, structured regular forum of engagement among ITP participants and the MESA Chair. Some of the factors which account for the success observed are linked to previous MESA activities in the institution before the ITP and the good support received from senior management

with regard to ESD activities. Also, all change agents are in one university and they were all part of the institutionalised MESA implementation committee. In the cases where there was little or no social-cultural interaction between MESA Chair and ITP alumni (especially after the ITP), factors that had an influence included: the physical distance between participants (especially when participants are from different faculties and institutions or even provinces); lack of an institutionally interdisciplinary recognised MESA structure; and lack of initiation of such formal or informal forum of engagement by participants themselves or ITP coordinators or SADC REEP or MESA or UNEP. An ITP alumnus shared the following concerning this issue:

It is just something wrong when you are a Chair and you are not in contact and the participants are not in contact with you; for all of us, I am not just talking about the Chair. When I saw your questions, I was saying 'why am I not in contact with the Chair? Why are there no activities between the Chair and us? Why is there no rapport between the Chair and us? I think that is what is missing there. I think I will find out about the Chair, probe the Chair, may be one way or the other we can start talking and we can establish a link; that will be beautiful. But since we came back from the programme there has been absolutely nothing. I feel a sense of guilt that should it have been us for him who should have initiated the communication and dialogue? So I am not too sure about that, so if that can be clear and defined. What are the activities of the Chair and how can we be part of those activities? I think those are some of the questions we need answers to from the Chair, because they are our Chair and what is their role? And we can be very helpful in keeping the Chair active. (ZRP7)

IMPLICATION

When there is little or no interaction between ESD agents of change in institutions and countries, efforts towards effective ESD mainstreaming and practice are diminished. A regular forum of networking and engagement has the capacity to strengthen individual good practices, encourage others and provide avenues for exchange of ideas and challenges. Individual ESD activities, projects and efforts can be shared with others. Moral, material and financial help and assistance can be offered in such fora as well as referrals and recommendations. When such formal or informal, regular or irregular social-cultural interactions are lacking, change agents work in silos and struggle alone helplessly, a situation which should be prevented.

RECOMMENDATION

Part of the activities and strategies of MESA are to establish and encourage regular social-cultural interaction among national and institutional ESD agents in Africa. MESA Chairs who do not have such a forum of engagement and collaboration should endeavour to establish one in order to enhance national and institutional efforts towards effective ESD. Regions and countries without MESA Chairs but which have more than one ITP participant can emulate the staff of Obafemi Awolowo University who formed the 'Obafemi Awolowo University MESA Group' after their participation in the ITP. The OAU MESA group became a platform for the MESA project in the university and beyond (see Section 4.6.3.3 for Nigerian change project 3 of 7: Obafemi Awolowo University)

8.6.4.3 Network structures and multi-level stakeholder engagement

The existence of ESD related institutionally recognised and accepted international, regional and national structures like MESA, SADC REEP, UNEP, UNESCO, provides a strong foundation for ESD learning and change processes in higher education (see for example Section 4.3.5.6 for Ugandan change project 6 of 6: Busitema University). Network structures that are aligned with the objectives of the change oriented ESD initiatives, can also greatly facilitate change oriented praxis in HEIs as these provide an enabling mechanism for deliberating changes. This shows that social and cultural processes are also important determinants of change oriented learning and ESD change processes in HEIs.

IMPLICATION

Findings from data presented in Chapters Four to Seven show that effective ESD mainstreaming requires more than one, two or three position-practice systems. Multi-stakeholder networking, engagement and involvement in change processes seem to lead to great impacts. For example, empowerment and engagement of the position-practice system of university administration, community members and students is required for both efficiency and sustainability of ESD change projects in higher education (see Section 4.3.1.7, the case of Kenyan change project 7 of 9: Masinde Muliro University of Science and Technology (MMUST)) The involvement and engagement of position-practice system of community members and leaders can propel effective and sustainable ESD learning and change processes. The involvement and support of governmental agencies and ministries, non-governmental organisations, development partners and international organisations tend to affirm the bases and sustenance of change projects. Collaboration with global, African and regional ESD networks including GUPES, HESI, AAU, UNU RCEs, MESA, ITP, EEASA, Rhodes University/SADC REEP, SADC/EEASA, East African MESA networks, Central/West African ESD networks, North African ESD networks, over time helps concretise learning and change processes. This multi-stakeholder approach debunks the prominent claim that a top-down approach is more effective than a bottom-up approach. A multi-stakeholder approach to ESD acknowledges the indispensable properties and powers, position-practice system and sphere of influence of all stakeholders (management, teachers, farmers, students, cleaners, gardeners, national government, provincial government, municipal government, local government, all sectors, NGOs, security agents, lecturers, publishers, media personnel etc.) in ensuring progressing and effective ESD for all (for example, the involvement of teachers and colleges in Zambia).

RECOMMENDATION

Available ESD network structures and multi-level stakeholder engagements which are effective and productive for effective ESD mainstreaming should be identified and maximised. The position-practice system and sphere of influence of various networks and stakeholders should be taken into account when developing change and transformation strategies.

8.7 ESD MAINSTREAMING: IMPLICATION FOR SOCIAL LEARNING

As discussed earlier in Chapter Two, Tábara's (2005) model depicts social learning as an open-ended, reflexive and sequential process of structural change induced by agency. Social learning as a concept and the analytical framework entails reflexive relationships and interconnectedness that exist between agency, context, change and structure. Action, context, change, structure (and culture) which are integral to social learning are different aspects that have been fully explored in this study using Archer's morphogenetic framework and Danermark and Bhaskar's laminated system. The link between these four concepts (and culture) which has been integral to this study has been proven to also resonate with Bhaskar's (1979) and Archer's (1995) emphasis on the interplay between positions and practices, structure, culture and agency. The crux of this study has involved the decoupling of these perspectives in empirical and analytical work to understand the actual changes and change processes that occur in open systems through agency and after participation in change oriented professional development training for capacity building towards ESD mainstreaming.

According to Tábara's (2005) proposition that whenever or wherever social learning really occurs, there must be some sort of change in the social structure of society, it can be said that the evidence of structural elaboration (which occurs after agential elaboration which is experienced as a result of ESD professional development of the ITP) in case records presented in Chapters Four to Seven of this thesis, are evidence of the occurrence of social learning. Tábara (2005) further argued that social learning occurs in different stages of the framework (action, context, change, structure) and is initiated by actions taken either by particular individuals or institutions when confronted with the conditions peculiar to particular contexts. Action taken by particular individuals are only taken and possible within their sphere of influence provided by their position-practice systems. The social context in which action, individual, collective or structural change occurs is in an open and dynamic laminated system. Hence, action, context, change, structure and culture are key features of the laminated system in which social learning, with each feature emerging from and emergent from other lower or higher systems one to seven.

The context or condition provides the initial (constraining or enabling) conditions and resources (Archer's agential and structural conditioning); then, if actions are successful through engagement with the ITP, between participants and other stakeholders within and around institutions (Archer's socio-cultural interaction), they will be able to (through their ESD change projects) change specific frames, boundaries, interests, strategies, networks, knowledge production processes, perceptions or discourses in the desired or expected manner (Archer's agential elaboration/morphogenesis tending towards the possibility of structural elaboration). This claim therefore confirms the transfactual theory or assumption around the position-practice system of academics and the power relations and the consequence of power relations displayed by the position-practice system of others in and around specific higher education institutions in

the context of ESD learning, change and transformation. Tábara (2005) explained that it may be difficult to find examples of social learning and to assess whether a whole society learns or not on a particular issue or case; however, some social processes of change can be understood to be the product of social learning which can be conclusively referred to as products of social interaction or potentially catalysed consequences of further open-ended social interaction which have the capacity to produce elaboration at different levels of the laminated system.

8.8 CONCLUSION

This research sought to investigate how the position-practice system and the ITP shape (enable or constrain) effective ESD mainstreaming (ESD learning and change processes) in case countries and institutions and how the morphogenetic approach and laminated system can be used to understand and explain these dynamics. The study which was done in three phases commenced from the investigation of all ITP ESD in higher education alumni who were Asian and African participants from the inception of the ITP to its completion, over a six-year period (2008-2013). The outcome of phase one of the research is only included in this thesis as an appendix (see Appendix 3). This phase has formed the foundational data that was expanded in phases two and three for the purpose of this study.

Phase two of this research concentrated on a less broad population of research participants comprising only all African ITP alumni, from the five main regions in Africa. The aim was to investigate and provide a morphogenetic explanation of their change projects and how the relationship between participants' positions and practices (and that of others) may influence the mainstreaming ESD in universities. The outcome of this investigation is presented in Chapter Four.

In phase three, (nested) case studies of Swaziland, Zambia, and Botswana, which comprises of all the ESD ITP participants therein and the three corresponding ESD/EE MESA Chairs, were developed. Unlike phase two, this phase was characterised by a field trip to these countries and in-depth data collection and analysis in order to investigate and deepen the morphogenic explanations of their change projects and how the relationship between participants' positions and practices (and that of others) have indeed influenced the ESD mainstreaming in universities. The outcome of this phase three research has been presented in Chapters Five, Six and Seven.

This final chapter focuses on the seven scalar laminated system perspective and reflections on this research and discussion of the implication of these perspectives for supporting the mainstreaming of ESD globally but particularly in African higher education institutions and more specifically in the three case countries and respective institutions presented in Chapters Five, Six, and Seven. The seven scalar laminated system was presented in relation to the position-practice system, morphogenetic social realist theory and social learning. This chapter ends with a presentation of key findings of this research, and corresponding recommendations.

The outcome of the theoretical exploration underpinning this study provided a potential model for understanding ESD learning and change processes that are facilitated by professional development training programmes in the context of ESD in HE. The study also provides a model for appraising educational changes in time and in space, especially in relation to ESD, or the types of changes that can be brought about by professional development interventions such as those provided by the ITP and how they can be tracked, monitored and documented. This study further provides a language of description for explaining interrelated systems and how change emerges from structure, via social interaction and reflexive deliberations and how new practices emerge through a process of supported reflexive practice in the professional learning environments. For the field of ESD in higher education, this study has shown that the nexus between learning and change processes facilitated by professional development training and change agents needs to include a strong consideration of the position-practice system of agents and related stakeholders. It further sheds light on factors that contextually constrain and/or enable effective ESD mainstreaming at individual, collective, institutional, national, regional and global levels from perspectives gained from the analysed seven scalar laminated system. Implications of responding to these factors (or not) with corresponding recommendations have been provided.

REFERENCES

- African Union Commission. (2015). *Agenda 2063: The Africa we want*. Addis Ababa: African Union Commission.
- Agbedahin, A. V. (2012a). *Identifying expansive learning opportunities to foster a more sustainable food economy: A case study of Rhodes University dining halls*. Unpublished masters thesis, Rhodes University, Grahamstown.
- Agbedahin, K. (2012b). *Young veterans, not always social misfits: A sociological discourse of Liberian transmogrification experiences*. Unpublished doctoral thesis, Rhodes University, Grahamstown.
- Agbedahin, A. V., & Lotz-Sisitka, H. (2015, February). *HESD ITP change project tracking project*. Unpublished report, Rhodes University, Grahamstown, South Africa.
- Archer, M. S. (1995). *Realist social theory: The morphogenetic approach*. New York: Cambridge University Press.
- Archer, M. (1998). Realism and morphogenesis. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & N. Alan (Eds.), *Critical realism: Essential readings*. London: Routledge.
- Archer, M. (2003). *Structure, agency and the internal conversation*. Cambridge: Cambridge University Press.
- Archer, M. (2004). *Being human: The problem of agency*. Cambridge: Cambridge University Press.
- Archer, M. (2010). Morphogenesis versus structuration: On combining structure and action. *The British Journal of Sociology*, 225-252.
- Barnett, R. (2013). *Imagining the university*. Oxon: Routledge.
- Bassey, M. (1999). *Case study research in educational settings*. Buckingham: Open University Press.
- Bhaskar, R. (1975, 1978). *The realist theory of science*. Sussex: Harvester Press.
- Bhaskar, R. (1979, 1989, 1998). *The possibility of naturalism* (1st, 2nd, 3rd ed.). Sussex; Hemel Hempstead; New York: Harvester Press; Harvester Press; Routledge.
- Bhaskar, R. (2008). *Dialectic: The pulse of freedom*. New York: Routledge.
- Bhaskar, R. (2010). Contexts of interdisciplinarity: Interdisciplinarity and climate change. In R. Bhaskar, C. Frank, K. G. Hoyer, P. Næss, & P. Jenneth (Eds.), *Interdisciplinary and climate change: Transforming knowledge and practice for our global future* (pp. 1-23). Abingdon, Oxon: Routledge.
- Bhaskar, R., & Danermark, B. (2006). Metatheory, interdisciplinarity and disability research: A critical realist perspective. *Scandinavian Journal of Disability Research*, 8(4), 278-297.
- Bhaskar, R., & Norrie, A. (1998). Introduction: Dialectic and dialectical critical realism. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & N. Alan (Eds.), *Critical realism: Essential readings* (pp. 561-574). London: Routledge.

- Bhaskar, R., & Parker, J. (2010). Introduction. In R. Bhaskar, C. Frank, K. G. Hoyer, P. Næss, & P. Jenneth (Eds.), *Interdisciplinarity and climate change: Transforming knowledge and practice for our global future* (pp. vii-xiii). Oxon: Routledge.
- Bhaskar, R., Frank, C., Hoyer, K. G., Næss, P., & Jenneth, P. (Eds.). (2010). *Interdisciplinary and climate change: Transforming knowledge and practice for our global future*. Abingdon: Routledge.
- Blackmore, C., Chabay, I., Collins, K., Gutscher, H., Lotz-Sisitka, H., McCauley, S., . . . van Eijndhoven, J. (2011, September 4). *Knowledge, learning, and social change: Finding paths to a sustainable future*. KLSC Science Plan version 2.9 submitted to the International Human Dimensions Programme on Global Environmental Change (IHDP).
- Boko, M., Niang, I., Nyong, A., Vogel, C., Githeko, A., Medany, M., . . . Yanda, P. (2007). Africa Climate Change 2007: Impacts, Adaptation and Vulnerability. In M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, & C. E. Hanson (Eds.), *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental panel on climate change*. Cambridge, UK: Cambridge University Press.
- Boughey, C. (2007). Educational development in South Africa: From social reproduction to capitalist expansion? *Higher Education Policy*, 20, 5-18.
- Bourdieu, P. (1989). *The state nobility: Elite schools in the field of power*. California: Stanford University Press.
- Bourdieu, P. (1996). *The rules of art: Genesis and structure of the literary field*. Cambridge: Polity Press.
- Bourdieu, P. (2003). Participant objectivation. *Journal of the Royal Anthropological Institute*, 9(2), 281-294.
- Bourdieu, P. (2004). *Science of science and reflexivity*. Cambridge: Polity Press.
- Bourdieu, P., & Wacquant, L. (1992). *An invitation to reflexive sociology*. Chicago: The University of Chicago.
- Brown, G. (2004). The ontology of learning environments. *Paper presented at the IACR Annual Conference in Cambridge*, 1-10.
- Brown, G. (2009). The ontological turn in education: The place of the learning environment. *Journal of Critical Realism*, 8(1), 5-34.
- Certini, G., & Scalenghe, R. (2014). Is the Anthropocene really worthy of a formal geologic definition? *The Anthropocene Review*. 1-4. DOI: 10.1177/2053019614563840.
- Coad, A. F., & Glyptis, L. G. (2014). Structuration: A position-practice perspective and an illustrative study. *Critical Perspectives on Accounting*, 25, 142-161.
- Cohen, I. J. (1989). *Structuration theory: Anthony Giddens and the constitution of social life*. London: Macmillan.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). New York: Routledge Taylor & Francis Group.
- Creswell, W. (2008). *Research design: Qualitative, quantitative and mixed methods approaches* (2nd ed.). Thousand Oak: Sage.

- Cruikshank, J. (2003). *Realism and sociology: Anti-foundationalism, ontology and social research*. London: Routledge.
- Cutter, A., Osborn, D., Romano, J., & Ullah, F. (2015). *Sustainable development goals and integration: Achieving a better balance between the economic, social and environmental dimensions*. A study commissioned by the German Council for Sustainable Development: Stakeholder Forum.
- Danermark, B. Ekstrom, M. & Jacobsen, L. (2002) *Explaining society: Critical realism in the social sciences*. London: Routledge.
- Darling-Hammond. (2009). Teaching and the change wars: The professionalism hypothesis. In A. Hargreaves, & M. Fullan (Eds.), *Change wars* (pp. 45-68). Bloomington: Solution Tree.
- Denzin, N., & Lincoln, Y. (Eds.). (1994). *Handbook of qualitative research*. Thousand Oaks: Sage.
- Dunn, S. P. (2011). *The economics of John Kenneth Galbraith: Introduction, persuasion and rehabilitation*. Cambridge: Cambridge University Press.
- Edwards, A. (2011). Building common knowledge at the boundaries between professional practices: Relational agency and relational expertise in systems of distributed expertise. *International Journal of Educational Research*, 50, 33-39.
- Edwards, P., O'Mahoney, J., & Vincent, S. (2014). Critical realism and ethnography . In P. Edwards, J. O'Mahoney, & S. Vincent, *Studying organizations using critical realism: A practical guide* (pp. 1-15). Oxford: Oxford Scholarship Online.
- Elder-Vass, D. (2005). Emergence and the realist account of cause. *Journal of Critical Realism*, 4(2), 315-335.
- Elder-Vass, D. (2011). The causal power of discourse. *Journal for the Theory of Social Behaviour*, 41(2), 143-160.
- Eteläpelto, A., Vähäsantanen, K., Hökkä, P., & Paloniemi, S. (2013). What is agency? Conceptualizing professional agency at work . *Educational Research Review*, 10, 45-65.
- Fincham, R., Georg, S., & Neilsen, E. (Eds.). (2004). *Sustainable development and the university: New strategies for research teaching and practice*. Howick: Brevitas.
- Flick, U. (2007). *Designing qualitative research*. London: Sage.
- Gabatshwane, T., & Kabita, B. (2013). Education for sustainable development in the faculty of education, views from faculty members: University of Botswana . *Educational Research and Reviews*, 1698-1708.
- Galbraith, J. K. (1958). *The affluent society*. Great Britain: Hamish Hamilton.
- Galbraith, J. K. (1967). *The new industrial state*. Great Britain: Hamish Hamilton.
- Galbraith, J. K. (2011). Foreword. In S. P. Dunn, *The economics of Kenneth Galbraith: Introduction, persuasion and rehabilitation* (pp. xii-xiii). Cambridge: Cambridge University Press.
- Gibbs, G. (2013). Reflections on the changing nature of educational development. *International Journal for Academic Development*, 13, 83-85.
- Giddens, A. (1984). *The constitution of society*. Cambridge: Polity Press.

- Government of Swaziland. (1999, December 15). *National Development Strategy – Vision 2022: Key macro and sectoral strategies*. Mbabane: Ministry of Economic Planning and Development, Government of Swaziland. Retrieved from <http://www.tralac.org>: <http://www.tralac.org/files/2012/12/The-National-Development-Strategy.pdf>
- Government of Swaziland. (2013). *Swaziland: A framework for national development strategy (NDS) review*. Mbabane: Poverty Reduction, Monitoring and Evaluation Division (PRMD) and Ministry of Economic Planning and Development (MEPD).
- Guba, E., & Lincoln, Y. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- GUNI (Global University Network for Innovation) . (2011). *Higher education in the world 4: Higher education's commitment to sustainability: from understanding to action (GUNI series on the commitment of universities)*. Palgrave Macmillan.
- Hargreaves, A., & Fullan, M. (2009). Change wars: A hopeful struggle. In A. Hargreaves, & M. Fullan (Eds.), *Change wars* (pp. 1-10). Bloomington: Solution Tree.
- Harland, T. (2014, May 23). *Learning about case study methodology to research higher*. Retrieved from Higher Education Research & Development: <http://dx.doi.org/10.1080/07294360.2014.911253>
- Hartwig, M. (Ed.). (2007). *Dictionary of critical realism*. London: Routledge.
- Hattingh, J. (2002). On the imperative of sustainable development: a philosophical and ethical appraisal. In E. Janse van Rensburg, H. Lotz-Sisitka, & R. O'Donoghue (Eds.), *Environmental education, ethics and action in Southern Africa* (pp. 5-16). Pretoria: Human Sciences Research Council (HSRC).
- IPCC (Intergovernmental Panel on Climate Change). (2014a). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and sectoral aspects. Contribution of working group II to the fifth assessment report of the Intergovernmental Panel on Climate Change*. (C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, . . . L. L. White, Eds.) Cambridge: Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (2014b). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional aspects. Contribution of working group II to the fifth assessment report of the Intergovernmental Panel on Climate Change*. (C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, . . . L. L. White, Eds.) Cambridge: Cambridge University Press.
- IPCC (Intergovernmental Panel on Climate Change). (2014c). *Climate Change 2014: Impacts, Adaptation, and Vulnerability - Summary for policymakers*. (C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, . . . L. L. White, Eds.) Cambridge: Cambridge University Press.
- Janse van Rensburg, E. (2001). "They say size doesn't matter"....Criteria for judging the validity of knowledge claims in resarch. *Criteria for Judging Research Validity*. Rhodes University Environmental Education Unit Research Methods Course, Grahamstown.
- Johnson, R., & Waterfield, J. (2004). Making words count:The value of qualitative research. *Physiotherapy Research International*, 9(3), 121-131.

- Jotia, A. L. (n.d.). *Perspectives on practice and policy: Success increasing access and retention in primary education in Botswana*. Gaborone: Educate a Child.
- Judd, D. (2003). *Critical realism and composition theory*. London: Routledge.
- Kaidesoja, T. (2007). The concept of social structure in Roy Bhaskar's critical realism. *Sociologia*, 79-94.
- Keen, M., Brown, V., & Dyball, R. (Eds.). (2005). *Social learning in environmental management towards a sustainable future*. London: Earthscan.
- Khumalo, T. F. (2013). *Swaziland effective delivery of public education services: A review by AfriMAP and the Open Society Initiative for Southern Africa*. Johannesburg : Open Society Initiative for Southern Africa.
- Lather, P. (1986). Research as praxis. *Harvard Educational Review*, 56(3), 257-277.
- Lather, P. (2013). Methodology-21: What do we do in the afterward? *International Journal of Qualitative Studies in Education*, 26(6), 634-645.
- Lave, J. (1991). Situated learning in communities of practice. In L. B. Resnick, J. M. Levine, & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 63-82). Washington, DC: American Psychological Association.
- Lawson, T. (1998). The nature of post keynesianism and its links to other traditions. In D. L. Prychitko (Ed.), *Why economists disagree: An introduction to the alternative schools of thoughts* (pp. 115-152). Albany: State University of New York Press.
- Leeuw, E. D., & Hox, J. (2008). Mixing data collection methods: Lessons from social survey research. In M. M. Bergman (Ed.), *Advances in mixed methods research* (pp. 138-149). London: Sage.
- Lietz, C. A., Langer, C. L., & Furman, R. (2006). Establishing trustworthiness in qualitative research in social work: Implications from a study regarding spirituality. *Qualitative Social Work*, 5(4), 441-458.
- Lotz, H. (1999). *Curriculum frameworks for environmental education professional development: A sourcebook*. Howick: Share-Net.
- Lotz-Sisitka, H. (2005, October 3-7). Engaging ambivalence: A critical examination of a rights-based environmental education discourse in South Africa's new national curriculum statements. Paper presented at the 3rd World Environmental Education Congress in Turino, Italy.
- Lotz-Sisitka, H. (2010). The Work of an EE/ESD Chair in socio-ecological space: challenges, tasks, questions. Powerpoint presentation at the MESA Chair Launch and workshop at the University of Swaziland Main Conference Room March 24 – 25, 2010.
- Lotz-Sisitka, H. (2011). The 'Event' of the modern sustainable development and universities in africa. In GUNI, *Higher education in the world 4: Higher education's commitment to sustainability: from understanding to action (Guni series on the commitment of universities)* (pp. 41-68). Palgrave Macmillan.
- Lotz-Sisitka, H. B., & Hlengwa, A. (2012b, July). Seeding change: The socio-ecological condition and professional development of university teachers. Paper presented at the

- International Association of Critical Realism Conference, Rhodes University, South Africa.
- Lotz-Sisitka, H., & Hlengwa, A. (2012a). *International Training Programme: Education for Sustainable Development in Higher Education*. Grahamstown: Unpublished report.
- Lotz-Sisitka, H., & Lupele, J. (2006). Curriculum transformation in higher education institutions: Some perspectives from Africa. In J. Holmberg, & B. E. Samuelsson (Eds.), *Drivers and barriers for implementing sustainable development in higher education* (pp. 49-54). Paris: UNESCO.
- Lotz-Sisitka, H., & Ramsarup, P. (2015, January 22). Ben Parker memorial lecture: Learning pathways in a transforming society. Rhodes University, South Africa: Unpublished paper.
- Lotz-Sisitka, H., & Raven, G. (2004). Learning through cases: Adopting a nested approach to case-study work in the Gold Fields participatory course initiative. *Environmental Education Research*, 10(1), 67-87.
- Lotz-Sisitka, H., Agbedahin, A. V., Hlengwa, A., & Neeser, M. (2015). 'Seeding change': Developing a change-oriented model for professional learning and ESD in higher education institutions in Africa . *In press*.
- Lotz-Sisitka, H., Naituli, G., Hlengwa, A., Ward, M., Salami, A., Ogbuigwe, A., . . . Lauriks, S. (Eds.). (2015). *Mainstreaming environment and sustainability in African universities: Stories of change*. Grahamstown: Rhodes University Environmental Learning Research Centre.
- Lupele, J., & Lotz-Sisitka, H. B. (2012). *Learning today for tomorrow: Sustainable development learning process in Sub-Saharan African*. Howick: SADC REEP.
- Lynton, R., & Pareek, U. (2000). *Training for organizational transformation- Part 1: For policy makers and change managers*. New Delhi: Sage.
- Maton, K. (2004). *The field of higher education: A sociology of reproduction, transformation, change and the conditions of emergence for cultural studies*. Unpublished doctoral thesis, St John's College, University of Cambridge .
- Maton, K. (2005). A question of autonomy: Bourdieu's field approach and higher education policy. *Journal of Education Policy*, 20(6), 687-704.
- Maxwell, J. A. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, 62(3).
- Mbegnougua, M. (2009). Logical controversy of African universities in the promotion of sustainable development: The universities, in between protective theories and destructive practices of the environment - A case of UCAD's waste management. In AAU, *Sustainable development in Africa: The role of higher education* (pp. 79-91). Abuja: Association of African Universities 12th general conference papers.
- McDonald, J., & Stockley, D. (2008). Pathways to the profession of educational development: An international perspective. *International Journal for Academic Development*, 13, 213-218.
- McKenna, S. (2013). Introduction. In *Kagisano Number 9: The aims of higher education* (pp. 1-4). Pretoria: Council on Higher Education.

- McMillan, J. H., & Schumacher, S. (2006). *Research in education: Evidence-based inquiry* (6th ed.). Boston: Pearson Education.
- MoE&T (Ministry of Education and Training). (2011). *The Swaziland education and training sector policy*. Mbabane: Ministry of Education and Training.
- Mutch, A. (2004). Constraints on the internal conversation: Margaret Archer and the structural shaping of thought. *Journal for the Theory of Social Behaviour*, 34(4), 429-445.
- Næss, P. (2010). The dangerous climate of disciplinary tunnel visit. In R. Bhaskar, C. Frank, K. G. Hoyer, P. Næss, & P. Jenneth (Eds.), *Interdisciplinarity and climate change: Transforming knowledge and practice for our global future* (pp. 54-84). Oxon: Routledge.
- Nicholls, W. L., Baker, R. P., & Martin, J. (1997). The effect of new data collection technologies on survey data quality. In L. Lyberg, P. Biemer, M. Collins, E. Leeuw, C. Dippo, N. Schwarz, & D. Trewin (Eds.), *Survey measurement and process quality* (pp. 221-248). New York: John Wiley & Sons.
- Nicolaides, A. (2006). The implementation of environmental management towards sustainable universities and education for sustainable development as an ethical imperative. *International Journal of Sustainability in Higher Education*, 7(4), 414-424.
- NIPA (National Institute of Public Administration). (2010). *Outreach Programmes Division*. Lusaka: NIPA.
- NIPA (National Institute of Public Administration). (2011). *2011 annual report*. Lusaka: NIPA.
- NIRAS. (2015). *Final Report 2008-2013 International Training Programmes ESD in Higher Education*. Stockholm: NIRAS Natura AB.
- Nunez, I. (2014). *Critical realist activity theory: An engagement with critical realism and cultural-historical activity theory*. Oxon: Routledge.
- O'Brien, K., & Sygna, L. (2013). Responding to climate change: The three spheres of transformation. In *Proceedings of transformation in a changing climate, June 19-21, Oslo, Norway* (pp. 16-23). Norway: University of Oslo.
- O'Leary, Z. (2010). *The essential guide to doing your research project*. Thousand Oaks: Sage.
- Open Working Group. (2014). *Open Working Group proposal for Sustainable Development Goals*. United Nations.
- Padgett, D. K. (1998). *Qualitative research in social work research: Challenges and rewards*. Thousand Oaks, CA: Sage.
- Patton, M. (2001). *Qualitative research and evaluation methods*. Thousand Oaks: Sage.
- Pillay, P. (2011, March 6). *Africa: Lessons in universities and development*. Retrieved from universityworldnews website:
<http://www.universityworldnews.com/article.php?story=20110306101311545&query=pillay>
- Porpora, D. (1989). Four concepts of social structure. *Journal for the Theory of Social Behaviour*, 195-211.

- Porpora, D. V. (1998). Four concepts of social structure. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & N. Alan (Eds.), *Critical realism: Essential readings* (pp. 339-355). London: Routledge.
- Price, L. (2014). Critical realist versus mainstream interdisciplinarity. *Journal of Critical Realism*, 13(1), 52-76.
- Price, L. (2015). Caring, healing and befriending: An interdisciplinary critical realist approach to reducing oppression and violence against women in southern Africa . *Paper presented at the Critical Realist Reading Group, Institute of Education, University College London*, 1-23.
- Quinn, L., & Vorster, J.-A. (2014). Isn't it time to start thinking about 'developing' academic developers in a more systematic way? *International Journal for Academic Development*, 1-4.
- Ramboll Natura AB. (2008). *ESD in Higher Education (257B) Report*. Stockholm: Ramboll Natura AB.
- Rio +20 Treaty. (2012). *Rio +20 Treaty on higher Education*. www.hetreatyrio20.com.
- SADC. (2012). *About SADC*. Retrieved from www.sadc.int: <http://www.sadc.int/about-sadc>
- Sakala, E., & Chibamba, D. (2012). *Mainstreaming sustainability concepts in the proposed new MSc. environmental and natural resource management programme to be offered by the Department of Geography, School of Natural Sciences, the University of Zambia*. Lusaka: Unpublished ITP final report.
- Salami, A. T. (2008). *International Training Programme (ITP) on ESD in higher education 2008: West and Central Africa*. Ile-Ife: Unpublished ITP report submitted on behalf of Obafemi Awolowo University.
- Sánchez, R. (1995). *Telling identities: The Californio testimonios*. Minneapolis: University of Minnesota Press.
- SAQA (South African Qualifications Authority). (2010). *SAQA's research model and agenda*. Pretoria: Compiled and distributed by Directorate: Strategic Support, SAQA.
- SARUA. (2012a). *A profile of higher education in southern Africa - Volume 1: A regional perspective*. (P. Kotecha, M. Wilson-Strydom, & S. N. Fongwa, Eds.) Johannesburg: SARUA.
- SARUA. (2012b). *A profile of higher education in southern Africa – Volume 2: National perspective*. (P. Kotecha, M. Wilson-Strydom, & S. N. Fongwa, Eds.) Johannesburg: SARUA.
- SARUA. (2014a). *SARUA climate change counts mapping study: Knowledge co-production framework (Volume 1)*. Johannesburg: SARUA.
- SARUA. (2014b). *SARUA climate change counts: Swaziland country report*. Johannesburg: SARUA.
- Schutt, R. K. (2012). *Investigating the social world: The process and practice of research* (7th ed.). Thousand Oaks: Sage.
- Scott, D. (2010). *Education, epistemology and critical realism*. London: Routledge.

- Sewell, W. (1992, July). *A theory of structure: Duality, agency, and transformation*. Retrieved from <http://www.bsos.umd.edu/socy/alan/stats/network-grad/summaries/sewell-a%20theory%20of%20structure-1992-burnett.pdf>
- Singh, M. (2001). Re-inserting the 'public good' into higher education transformation. *Council on Higher Education Discussion Series 1*, 7-21.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks: Sage.
- Stake, R. E. (1999). Case studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236-247). Thousand Oaks: Sage.
- Stones, R. (2005). *Structuration theory*. Basingstoke: Palgrave Macmillan.
- Tàbara, D. J. (2005). *Sustainability learning for river basin management and planning in Europe: HarmoniCOP integrated report*. Barcelona: European Commission.
- Taylor, J. (2014). Shaping the GAP: Ideas for the UNESCO Post-2014 ESD Agenda. *Journal of Education for Sustainable Development*, 8(2), 133-141.
- Tilbury, D. (2010). Are we learning to change? Mapping global progress in Education for Sustainable Development in the lead up to 'Rio Plus 20'. *Global Environmental Research*, 101-107.
- Togo, M. (2009). *A systems approach to mainstreaming environment and sustainability in universities: A case of Rhodes University, South Africa*. Unpublished doctoral thesis, Rhodes University, Grahamstown.
- Togo, M., & Lotz-Sisitka, H. (2009). *Unit-based sustainability assessment tool. A resource book to complement the UNEP Mainstreaming Environment and Sustainability in African Universities Partnership*. Howick: Share Net.
- UE4SD (University Educators for Sustainable Development) (2015). *Leading Practice Publication: Professional development of university educators on Education for Sustainable Development in European countries*. Editors: D. Kapitulčinová, J. Dlouhá, A. Ryan, J. Dlouhý, A. Barton, M. Mader... et al., Prague: Charles University.
- UNEP (United Nations Environment Programme) (2006). *Environmental reporting for African journalists: A handbook of key environmental issues and concepts*. Nairobi: UNEP.
- UNEP. (2008). *Mainstreaming Environment and Sustainability in African Universities Partnership (2004-2008 report)*. Nairobi: UNEP in collaboration with the Environmental Education & Sustainability Unit, Rhodes University.
- UNEP. (2010). Education for Sustainable Development (ESD) innovations programmes for universities in Africa. *Mainstreaming Environment and Sustainability in African Universities (MESA)*. Nairobi, Kenya: United Nations Environment Programme.
- UNEP. (2012). *21 issues for the 21st century: Results of the UNEP foresight process on emerging environmental issues*. Nairobi: UNEP.
- UNEP. (2013). *Africa Environment Outlook 3: Summary for Policy Makers*. Nairobi: UNEP.
- UNEP. (n.d.). *Global Universities Partnership on Environment and Sustainability (GUPES)*. Retrieved December 30, 2012, from <http://www.unep.org/training/programmes/gupes.asp>

- UNESCO (United Nations Educational, Scientific and Cultural Organization). (1998). *World Conference on Higher Education: Higher education in the twenty-first century vision and action*. Paris: UNESCO.
- UNESCO. (2002). *From Rio to Johannesburg: Lessons learnt from a decade of commitment*. Johannesburg: UNESCO.
- UNESCO. (2005, October). *United Nations Decade of Education for Sustainable Development (2005-2014): International implementation scheme*. Retrieved January 12, 2012, from <http://unesdoc.unesco.org/images/0014/001486/148654e.pdf>
- UNESCO. (2007). *The UN Decade of Education for Sustainable Development (DESD 2005-2014): The first two years*. Paris: UNESCO.
- UNESCO. (2011). *Education for Sustainable Development: An expert review of processes and learning*. Paris: UNESCO.
- UNESCO. (2014a). *Shaping the Future We Want: UN Decade of Education for Sustainable Development (2005-2014) Final Report*. Paris: UNESCO.
- UNESCO. (2014b). *UNESCO Roadmap for implementing the Global Action Programme on Education for Sustainable Development*. Paris: UNESCO.
- UNESCO. (2014c). *Aichi-Nagoya Declaration on Education for Sustainable Development*. Okayama: UNESCO.
- UNESCO. (2015). *Rethinking education: Towards a global common good?* Paris: UNESCO.
- UNESCO. (n.d.). *Brief on education for sustainable development*. Paris: UNESCO.
- UNISWA. (2010). MESA Chair Launch and Workshop. *UNISWA News*, 6-7.
- United Nations. (1987). *Report of the World Commission on Environment and Development: Our common future*. www.un-documents.net/our-common-future.pdf: United Nations - WCED-World Commission on Environment and Development.
- United Nations. (2014). *Report of the open working group of the general assembly on sustainable development goals*. United Nations.
- United Nations Department of Economic and Social Affairs (UNDESA). (Issue 1- July 2013). *Sustainable development in action: Special report of the SD in action newsletter*. United Nations.
- University of Botswana. (2008). *University of Botswana research strategy: approved by Senate*. Gaborone: University Press.
- University of Botswana. (2011). *University of Botswana undergraduate calendar*. Gaborone: University of Botswana.
- University of Botswana. (2013a). *2013/2014 University of Botswana orientation*. Gaborone: University of Botswana.
- University of Botswana. (2013b). *University of Botswana annual report 2012-2013*. Gaborone: University of Botswana.
- University of Botswana. (n.d.). *List of undergraduate study programmes and their entry requirements*. Gaborone: University of Botswana.

- University of Swaziland (UNISWA). (2014). *University of Swaziland calendar 2014/2015*. Mbabane: Corporate Affairs Office, University of Swaziland.
- University of Zambia. (2012b). *Strategic Plan 2013-2017*. Lusaka: University of Zambia.
- Van Dam-Mieras, R. (2006). Learning for Sustainable Development: Is it possible within the established higher education structures? In J. Holmberg, & B. E. Samuelsson (Eds.), *Drivers and barriers for implementing sustainable development in higher education* (pp. 11-18). Paris: UNESCO.
- Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable Development: A Bird's Eye View. *Sustainability*, 3, 1637-1661.
- Walmsley, B., & Patel, S. (2011). *SADC environmental legislation handbook 2012* (3rd ed.). Pretoria: Development Bank of Southern Africa (DBSA) in collaboration with the Southern African Institute for Environmental Assessment (SAIEA).
- Wals, A. E. (2007). Learning in a changing world and changing in a learning world: Reflexively fumbling towards sustainability. *Southern African Journal of Environmental Education*, 24, 35-45.
- Wals, A. E., & van der Leij, T. (2007). Introduction. In A. E. Wals (Ed.), *Social learning towards a sustainable world: Principles, perspectives, and praxis* (pp. 17-32). The Netherlands: Wageningen Academic Publishers.
- Wals, A. E., van der Hoeven, N., & Blanken, H. (2009). *The acoustics of social learning: Designing learning processes that contribute to a more sustainable world*. The Netherlands: Wageningen Academic Publishers.
- Waswala, B., Pradhan, M., & Ayombi, M. (2015). Mainstreaming Environment and Sustainability in African Universities Partnership (MESA). In H. Lotz-Sisitka, G. Naituli, A. Hlengwa, M. Ward, A. Salami, A. Ogbuigwe, . . . S. Lauriks (Eds.), *Mainstreaming environment and sustainability in African universities: Stories of change* (pp. 5-15). Grahamstown: Rhodes University Environmental Learning Research Centre.
- Yin, R. K. (2012). *Applications of case study research* (3rd ed.). Washington, DC: Sage.
- Zeuner, L. (1999). Margaret Archer on structural and cultural morphogenesis. *ACTA Sociologica*, 42, 79-86.

APPENDICES

Appendix 1: MESA countries and universities

AFRICA	COUNTRY	UNIVERSITY
CENTRAL AFRICA	Angola	Universidade de Lusiada of Angola
	Cameroon	University of Buea
		University of Dschang
		University of Yaoundé
		University of Yaoundé II
	Congo	University of Kinshasa
University of Kisangani		
EASTERN AFRICA	Burundi	Université du Burundi
		Université de Ngozi
	Djibouti	University of Djibouti
	Ethiopia	Addis Ababa University
		Bahir Dar University
		Mekelle University
		Wolle University
		University of Gondar
	Kenya	Aga Khan University
		Catholic University
		Daystar University
		Egerton University
		University of Eldoret
		Jomo Kenyatta University of Agriculture & Technology
		Kenyatta University
		Technical University of Kenya
		Masinde Muliro University
		Maseno University
		Mount Kenya University
		Multi Media University College of Kenya
		Oshwal College
	Strathmore University	
	Rwanda	Kigali Institute of Science and Technology (KIST)
		National University of Rwanda
	Tanzania	Mzumbe University
		St. Augustine University of Tanzania
		University of Zanzibar
Cavendish University		
Uganda	Makerere University	
	Mbarara University of Science and Technology	
	Uganda Martyrs University	
	Uganda Pentecostal University	
NORTHERN AFRICA	Egypt	Cairo University
		Suez Canal University
	Morocco	Cadi Ayyad University
		University Hassan 1 st
	Sudan	Sudan National Academy

		Omdurman Ahlia University
		University of Juba
SOUTHERN AFRICA	Botswana	University of Botswana
	Lesotho	Lesotho Agricultural College
		National University of Lesotho
	Madagascar	University of Antananarivo
	Malawi	Lilongwe University of Agriculture and Natural Resources
		Chancellor College
		University of Malawi
	Mauritius	University of Mauritius
	Mozambique	Universidade Eduardo Mondlane
	Namibia	International University of Management
		University of Namibia
	Seychelles	University of Seychelles
	South Africa	Nelson Mandela Metropolitan University
		Rhodes University
		University of Cape Town
		University of Pretoria
		University of South Africa
		University of the Western Cape
	Vaal University of Technology	
Swaziland	University of Swaziland	
Zambia	University of Zambia	
Zimbabwe	African University	
	Mlezu College of Agriculture	
	University of Zimbabwe	
	Zimbabwe Open University	
WESTERN AFRICA	Cote d'Ivoire	Université d'Abobo-Adjame
	Ghana	Kwame Nkrumah College of Science and Technology
		University of Education
		University of Ghana
	Liberia	Cuttington University
		Salem University
		Stella Maris Polytechnic
		United Methodist University
	Nigeria	University of Liberia
		Bayero University
		Delta State University
		Federal College of Education
		Obafemi Awolowo University Ile-Ife
		Rivers State University of Science and Technology, Port Harcourt
		University of Agriculture
University of Ilorin		
University of Ibadan		
Senegal	Université Cheikh Anta Diop (UCAD)	

Appendix 2: MESA sub-regional partners / focal points

CENTRAL AFRICA	Congo	The National Centre of Information about the Environment (CNIE), The Ministry of Environment, Nature Conservation and Tourism (MECNT)
EASTERN AFRICA	Ethiopia	Horn of Africa-Regional Environmental Centre and Network
	Kenya	Hanss Seidel Foundation, Nairobi, Kenya
		Industrial Ecology Institute
		Kenya School of Government
Uganda	National Environment Management Authority	
SOUTHERN AFRICA	Mauritius	Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)
	South Africa	Mauritius Institute of Education
		Leadership for Africa (LFA)
		SADC- Regional Environmental Education Programme (REEP)
WESTERN AFRICA	Ghana	Association of African Universities (AAU)

HESD ITP CHANGE PROJECT TRACKING PROJECT

Compiled by Mrs Adesuwa Vanessa Agbedahin,
with support from Professor Heila Lotz-Sisitka

Rhodes University, South Africa

for NIRAS Natura

February 2015

**INTERNATIONAL TRAINING PROGRAMME
EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION
(ITP HESD)**

Short-term objectives of the ITP (To measure and analyse outputs and outcomes - the concrete change project and its implementation):

1. To deepen understanding of the environmental, socio-cultural and economic dimensions of sustainable development;
2. To enhance the teaching, learning, research, community involvement and management of higher education institutions with regard to ESD; and
3. To build and strengthen networks in the field of ESD in higher education.

Long-term objectives of the ITP (To measure and analyse the effects and impacts):

1. Contribute to poverty reduction and sustainable development;
2. Contribute to capacity development and change processes in participants' institutions and home countries;
3. Contribute to strengthening of methods, processes and monitoring to enable relevant quality education;
4. Contribute to increasing the awareness of the importance of effective ESD in the higher education sector;
5. Contribute to improved institutional infrastructure for ESD; and
6. Contribute to the enhancement and sustainability of networks in the field of higher education.

**COMPILATION OF ITP COUNTRIES, INSTITUTIONS, PARTICIPANTS,
CHANGE PROJECTS AND RELEVANCE TO THE OBJECTIVES OF THE ITP**

	TOTAL	AFRICA	ASIA
COUNTRIES	35	23	12
INSTITUTIONS	106	66	39
PARTICIPANTS	280	162	118
CHANGE PROJECTS	139	81	58

SOURCE OF INFORMATION IN THIS DOCUMENT

1. ITP reports (2008-2013)
2. Computer assisted survey questionnaire (2013 – Africa and Asia Participants)
3. individual interviews (2012 – participants at Rhodes; 2014 – Swaziland, Zambia, Botswana)
4. Self-administered semi-structured questionnaires (2013 participants in SA)
5. University websites and the internet

CATEGORIES OF INNOVATION/CONTRIBUTIONS:

Category A: New Policies and Strategies

Category B: New Management Practices

Category C: New Tools and Methods



Category D: New Programmes and Courses


In addition to Category A-D:




Category E: New structures and networks




Category F: internationalisation

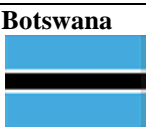
NB: Information compiled herewith concerning participants' institutions, titles and designations only applies to the period this report was compiled. I acknowledge that some participants would have changed work places, gained higher academic qualifications as well as changed designations. I have also intentionally left out writing titles where I have no confirmation of the participant's title.



S N	SN of Country	Country	Name of Institutions, Year of Participation in the ITP, Participant's and Co-Participant's Name	Category of Change Project, Title of Change Project, Contextual Information, Starting Points, Change Project Process and Outcome, Relevance to Objectives of the ITP
1.	1	Bangladesh 	INSTITUTION: Ministry of Education 2012 Participants: Taslima Begum and Dil Afroz Bint-E-Asir	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods; Category E: New structures and networks</p> <p>TITLE OF CHANGE PROJECT: Participatory Approach as Teaching-Learning Strategies for ESD in Higher Education (in Teacher Education)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from the Ministry of Education, Bangladesh, specifically the Directorate of Secondary and Higher Education. Prof Taslima Begum is the Chairperson of the Board of intermediate and Secondary Education, Dhaka and Dil Afroz is the Assistant Director (P&D) of the Directorate of Secondary and Higher Education. The ministry has the vision to build a sustainable nation with educated, skilled and morally sound human resource through general, vocational and science & technology based education. The main objectives of this change project are: (1) raise awareness of teacher trainer towards ESD; (2) include ESD content in B.Ed curriculum; (3) motivate teacher trainer for introducing participatory approach for ESD in their training sessions; (4) improve teaching quality through capacity building of teachers. This change project was expected to be a starting point to establish a network of teacher trainers in relation to ESD at national level.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was meant to introduce ESD and focus on the effectiveness of the teaching and learning approaches in teacher education. The USAT tool was used with key stakeholders. A workshop to present the change project was conducted for school teachers and teacher trainers. The workshop comprised of a mix of presentations and group discussions in order to create an opportunity for concrete comments and suggestions to the change project proposal of the participants by the audience. The participants of the workshop were very active and the discussions were very useful and constructive. The outcome of this change project as at 2012 includes sharing of knowledge on the participatory teaching methods with participants in Dhaka Teachers Training College; use of the USAT tool with main stakeholders; organisation of institutional seminar with focus on practical demonstrations; development of a participatory teachers training manual on ESD; promotion of a nationwide ESD teacher network.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
2.		Bangladesh 	INSTITUTION: Ministry of Education 2012 Participants: Md. Helal Uddin	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: introducing a Customised Training Module on Climate Change issues for Teachers trained at Higher Secondary Teachers Training institution (HSTTI), Mymensingh</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from the development wing of the Ministry of Education, Bangladesh. Md. Alamgir is the Director of the Department of Environment, Ministry of Environment and forest and Helal Uddin</p>



		<p>and Md. Alamgir</p>	<p>is the Deputy Secretary (Training) at the Ministry of Education, People's Republic of Bangladesh. Bangladesh is vulnerable to climate induced effects of rising sea level, salinity, flood, cyclone, tornado, drought etc and has a weak economy and large population. Bangladesh had not taken effective responses from educational perspective however; it is an active member and supporter of all international movement with regard to climate change related issues. Teachers are the most influential change agents in the society and they have great influence on students, parents and communities in motivating them for an issue like climate change.</p> <p>The focus of the change project is on climate change since there is no training module for teachers of teachers training institutes in Bangladesh. A specialised module on climate change issues for teachers would enrich their knowledge which can be useful to other teachers and therefore to students and communities. The main objectives of this change project are: (1) to develop a customised training module on climate change issues for teacher trained at HSTTI by February 2013; (2) to inform and orient 20 teachers of HSTTI and another 200 teachers trained at HSTTI about climate issues; (3) to include the customised module as regular module of HSTTI by March 2013.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: This change project was designed to introduce the topic of climate change into teachers training as a pilot programme and also to refine it as a regular course for more teachers. A seminar was organised and the Chairman of the National Curriculum and Textbook Board, Ministry of Education and participants from NAEM, HSTTI and some other institutions attended the seminar. Consent has been obtained from the main stakeholders including Ministry of Education, teachers of HSTTI and curriculum experts. Core teams have been set up and arrangements made for financial resources and to organise an institutional workshop. A draft module was developed and a pilot training was conducted. The training module was refined and was recommended to be part of the regular teachers' training programme. Currently, teachers have become more aware of climate change issues and play an important role in disseminating the knowledge to fellow colleagues, students and communities. The Ministry of Education has realised the necessity to promote ESD in Higher Education. Part of the aim of the change project is to make people aware of the need to protect their own environment and nature. To do this they are encouraged to plant and protect trees and also introduce appropriate technology for agriculture, which helps with social upliftment.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
3.	<p>Bangladesh</p> 	<p>INSTITUTION: University Grants Commission of Bangladesh (UGC)</p> <p>2012 Participants: Md Khaled and Muhammad Nazmul islam</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Adoption of A Plan of Action for Sustainable Development in Higher Education - A Project for Positive Change in Bangladesh</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from University Grants Commission (UGC) of Bangladesh. Md. Khaled is a Secretary and Muhammad Nazmul is a Senior Assistant Secretary. Their change project aimed to institutionalise the Quality Assurance (QA) instrument for better quality of higher education in Bangladesh. The main objectives of the change project are: (1) To enhance/ensure quality of higher education in Higher Education institutions through EQA system (accreditation of programme/institution and by monitoring through QA cell of the UGC) and IQA System (IQA cell at universities); (2) integrating environmental and Millennium Development Goals issues in the Education Act/Rules of Bangladesh. Responsible for supervising and promoting university education, UGC plays a key role in the policy-making process for Higher Education in Bangladesh.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was to formulate an action plan to set up a QA mechanism which</p>



			<p>was considered an important instrument to improve the quality of higher education in Bangladesh. Change project implementation has faced challenges related to convincing the stakeholders and ensuring the actual integration of ESD ideas/values into QA establishment. Achievements to date however include: spreading of ESD concepts and identification of the potential to introduce ESD perspectives into higher education policy-making process; review and evaluation of selected existing education policies in terms of the possible inclusion of ESD into education law/rules.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
4.	<p>Bangladesh</p> 	<p>INSTITUTION: Ministry of Education</p> <p>2013 Participants: Ahmed Kabir and Md. Mofakkharul islam (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Establishing ICT Based Education System for Sustainable Development through Ensuring Quality Education.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Ahmed Kabir is the Deputy Secretary of the Ministry of Education, People’s Republic of Bangladesh and Md. Mofakkharul islam is a Senior System Analyst at the same Ministry of Education.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
5.	<p>Bangladesh</p> 	<p>INSTITUTION: Ministry of Environment and forests (Department of Environment)</p> <p>2013 Participants: Alamgir Md and Md. Abul Monsur (Co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Piloting and Promoting Green Campus and Green Lifestyle initiatives among Faculty and Students of Eden Girls University College in Dhaka.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Md. Alamgir and Md. Abul are both Directors at the Department of Environment, Ministry of Environment and forest.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
6.	<p>Bangladesh</p> 	<p>INSTITUTION: University Grants Commission (UGC)</p> <p>2013 Participants:</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses (and community engagement)</p> <p>TITLE OF CHANGE PROJECT: institutionalization of Community Service Through The Environmental Education Program for Slum Children By Undergraduate Students of A Selective University.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Sultan Mahmud Bhuiyan is an Additional Director and Md. Kamal Hossain is the Deputy Secretary and both work for the HE Policy Planning</p>



			Bhuiyan Mahmud Sultan and Md. Kamal Hossain (co)	and Management, University Grant Commission (UGC). CHANGE PROJECT PROCESS AND OUTCOME: RELEVANCE TO OBJECTIVES OF THE ITP:
7.		Bangladesh 	INSTITUTION: Ministry of Education, Directorate of Secondary and Higher Education, Planning & Development Wing 2013 Participants: Bint-E-Asir Dil Afroz and Md. Abdul Quddus Sikder (co)	CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies TITLE OF CHANGE PROJECT: Peer-Learning Approach for ESD in Higher Education in Bangladesh CONTEXTUAL INFORMATION AND STARTING POINTS: Dil Afroz Bint-E-Asir is the Assistant Director (P & D) of the Directorate of Secondary and Higher Education, at the Bangladesh Ministry of Education. Md. Abdul Quddus Sikder is the Assistant Director (Training) at the Ministry of Education. CHANGE PROJECT PROCESS AND OUTCOME: RELEVANCE TO OBJECTIVES OF THE ITP:
8.		Bangladesh 	INSTITUTION: Daffodil international University 2013 Participants: Hasan Kabul Mohammad and Amena Akhter (Co)	CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods TITLE OF CHANGE PROJECT: Building Awareness for a Focus towards Competency in Sustainable Development Ideas and Initiatives. CONTEXTUAL INFORMATION AND STARTING POINTS: Hasan Kabul Mohammad is the Director of the Bangladesh Skill Development institute and Amena Akhter is a Senior officer (international Department) and Special Assistant to the Chairman (BoT), Daffodil International University (DIU) CHANGE PROJECT PROCESS AND OUTCOME: RELEVANCE TO OBJECTIVES OF THE ITP:
9.	2	Botswana 	INSTITUTION: University of Botswana 2008 Participants:	CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses TITLE OF CHANGE PROJECT: Development of Framework for M.Ed in Environment and Sustainability Education Course (Faculty of Education) CONTEXTUAL INFORMATION AND STARTING POINTS:



		Mphemelang Joseph Ketlhoilwe and Koketso Jeremiah (co)	<p>Dr Ketlhoilwe and Dr Jeremiah both work at the University of Botswana (UB). Dr Ketlhoilwe is the first lecturer in Environmental Education (EE) at UB and the Head of the EE Unit. At UB, implementation of UNDESD was minimal and there was no strategy to guide UN DESD implementation. MESA has been accepted in UB and UB is a focal point for MESA in the southern Africa region, with Dr Ketlhoilwe being one of the three MESA Chairs in Southern Africa. The aims of the change project were therefore to influence curriculum and policy change by mainstreaming environment and sustainability issues as a contribution to the UN DESD at UB. The change project was about mainstreaming environment and sustainability issues more specifically by revising the existing courses and introducing a new Master's and PhD programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project has strong institutional management support and is likely to be integrated into the university structure; although recent change in the University administration has somehow affected the pace. The framework and course content of the envisaged Masters programme in environment and sustainability education has been developed. The Masters programme is yet to actually take off because of approval process that has not yet been finalised and there has been some other institutional disciplinary opposition. The change project is ongoing and participants have also been able to research and publish papers on the status of environment and sustainability issues at UB. Most of the participants' colleagues are now infusing ESD into their lectures. More applications for PhD studies in environment and sustainability education are being received by participants. Some Faculty members are developing interest in researching sustainable development. In Botswana, there is now an annual ESD change projects course. one of the participants' research projects was on poverty reduction and is linked to their teaching related courses in their graduate and undergraduate courses. They have now incorporated climate change impact on poverty, quality education and social learning aspects.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
10.		<p>INSTITUTION: University of Botswana</p> <p>2009 Participants: Gregory Kamwendo and Tshiamiso V. Moumakwa (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating Language and Literature with Environmental Education & ESD (Faculty of Education)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Kamwendo who was formally a Senior Lecturer at UB is now the Dean and HOD of the School of Education, University of KwaZulu-Natal in South Africa. Dr Moumakwa is a Senior Lecturer at the Faculty of Education, UB. The change project is based in the Department of Languages and Social Sciences Education in the Faculty of Education at the University of Botswana., Environmental Education, Language Education, Social Studies Education, Religious & Moral Education, Geography The Department offers courses and programmes to secondary school teachers in the following areas: Business Education Education, and History Education.</p> <p>Their change project focuses on curriculum innovation in the form of integrating language, literature, Environmental Education (EE) and Education for Sustainable Development (ESD). This choice of this kind of project was made because there is little or no course or programme at UB and Southern Africa where language, literature and ESD is taught and supervised. The project was also aimed to be part of the participants' contribution to the proposed Masters programme of the two ITP participants from UB and the same department.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The end products of the change project were two courses. The first course is called 'Language and Sustainable Development' and the second</p>



			<p>is called 'Literature and Environmental Issues'. These two courses were planned to feed into already developed M. Ed programme in EE by the ITP participants of the previous year as stated above. This initiative has strong institutional support and is integrated into the university structure.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector. 	
11.		<p>Botswana</p> 	<p>INSTITUTION: University of Botswana</p> <p>2011 Participants: Gabatshwane Tsayang and Kabita Bose (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integration of ESD into Faculty of Education Modules in Early Childhood Education (ECD) and Education Leadership and Management (ELM) programmes</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Bose and Prof Tsayang are from the Education Faculty, UB. Prof Tsayang was once an HOD and has been the Dean for six years and teaches Educational Management among other courses. Prof Bose is in Early Childhood Education. The USAT was employed and the auditing of the courses at UB was completed. This auditing process informed appropriate curriculum revision.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Two curriculum modules, namely 'Early Childhood Development' (ECD) and 'Education Leadership and Management' (ELM) with a strong ESD focus have been revised and completed. The revised modules in ECD and ELM have been deliberated on at a number of consultative discussion meetings held within the Faculty. Support has been provided by the MESA Chair and the Dean of the Faculty. The project has been integrated into the Faculty work plan. The final versions of the revised modules are awaiting Senate approval before being used in ongoing teaching in the ECD and ELM Education Faculty programmes. ESD principles have also been integrated into the UB's graduate attributes document (which shape all teaching and learning at the university).</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries.
12.	3	<p>Cambodia</p> 	<p>INSTITUTION: Ministry of Environment</p> <p>2009 Participants: Nhim Sakun and Roath Sith</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of Pilot Training Programme on ESD</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participants work at the Cambodia Ministry of Education and they wanted to develop and conduct a Pilot Pre-Service and in-Service Teacher Training Programme on ESD. The programme is to be delivered by the Cambodia Ministry of Environment.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A regional workshop was organised and held. The first objective of the change project, which was to develop a training course on ESD, was achieved with the technical assistance of Resource Persons during the regional workshop. This can be considered a commendable output. Nevertheless, the participants could not test the developed course through a training programme and this is primarily because of the lack of required funds. But communication with Sida (SENSA) has been ongoing, as well as discussions with UNESCO.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>


				<ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
13.		<p>Cambodia</p> 	<p>INSTITUTION: Bright Hope Institute (BHI)</p> <p>2012 Participants: Seng Sintha and Kong Sedth</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Sustainable Development Course at Bright Hope Institute</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from Bright Hope Institute in Cambodia, which was established in 2006. BHI is a small non-profit HE institution with simple facilities in a rural area. It offers rural youth the opportunity to access higher education and skills training by providing scholarships and dormitory accommodation, as well as assisting them to seek and create employment opportunities. Most students enrolled there are from the local community. Sintha is the Director of BHI and is very dedicated to integrating ESD ideas into the institution Development Strategy. The main objective of this change project is to provide greater focus on sustainable development in courses at Bright Hope institute. The core of the change project is an action plan. It is aimed to provide the current curriculum in BHI with more focus on sustainable development by integrating topics such as Climate Change Adaptation and Environmental Transition, and to conduct teacher training, academic research and to engage the local community.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The USAT was used to assess the current situation of ESD at BHI and to formulate action plan. Achievements so far include the reality that stakeholders now have a basic understanding on ESD in the local context, at least; BHI curriculum have been reviewed using the USAT tool; the main issue, challenges and potential responses have been identified; a framework for an action plan has been finalised and some pilot programmes have been identified.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
14.		<p>Cambodia</p> 	<p>INSTITUTION: Ministry of Education, Youth and Sport</p> <p>2012 Participants: Sam Sopheaktry and Hean Nimol (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Strategies for DHE to integrate ESD in Decision Making Process</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Department of Higher Education, Ministry of Education, Youth and Sport. They focused their change project on promoting the decision making process with ESD issues, therefore the main objective of their change project is to integrate ESD in decision making processes and key DHE strategies. This change project is expected to build the leaders' and staffs' capacity on integrating ESD into the policy-making process in DHE.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Since the change project concentrated on internal capacity building on ESD, participants in the implementation of the project were from the different offices inside the Department of Higher Education. These are also meant to be the potential target audiences for the ESD training. Directors and colleagues from different offices within the DHE were involved in building basic understanding of ESD. A proposal was finalised by consulting with main stakeholders and submitted to the director of DHE.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.




15.	<p>Cambodia</p> 	<p>INSTITUTION: Ministry of Education, Youth and Sports</p> <p>2012</p> <p>Participants: Sao Thou and Nget Kimsan</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Establishment of internal Quality Assurance Structure within HEIs in Cambodia</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the government office, Department of Higher Education, Ministry of Education, Youth and Sport in Cambodia. The main objectives of this change project are: (1) to establish their own internal Quality Assurance (IQA) office/division within their organisation structure; (2) to develop DHE-IQA guidelines by including ESD concepts for HEIs; (3) objectives and functions identification, human and financial resources allocation, assessments and monitoring mechanisms.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was part of Sao's daily responsibility in the DHE to guide the universities around the country to establish an IQA mechanism. The main stakeholders in the change project implementation process were from five different types of universities, with some already having a well-established IQA and some with very little in this regard. The change project proposal has not been well received and the main challenge was how to convince stakeholders on the integration of ESD ideas/values into already existing IQA establishments. However, outcomes of the project so far include: compilation of experiences and lessons from some universities' IQA; early ideas on the contents of the guideline drafted; three universities for pilot implementation of the draft guideline selected; recommendations made in the draft guideline is to introduce ESD as one of the core values in the higher education policy-making process.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.</p>
16.	<p>Cambodia</p> 	<p>INSTITUTION: Bright Hope Institute (BHI)</p> <p>2013</p> <p>Participants: Kong Sedth and Dith Sophana (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Review of IQA Structure and Manual for Education for Sustainable Development at BHI.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: BHI was established operating HE service in 2007 with about 35 students and currently there are 978 students who have studied for the specific careers of Agriculture Science & Rural Development, Eco-Tourism & Business Management, and Education Science & Art for Associate/Bachelor degree. and then in 2009 the IQA desk committee was set up to ensure quality in BHI but the existing structure is not functioning well and IQA staff still have limited capacity. The management of BHI wish to address some aspects of staff gap capacity on quality assurance and quality management in order for BHI to be a healthy institute. The reduction of inadequate quality of teaching, quality study and research of students is also paramount on the management's agenda. Through this change project, BHI intends to further review the IQA committee and update existing materials or develop a new protocol guideline as guidance materials for use.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: As part of the objective and proposed outcome of this change project, IQA Committee has been constituted to engage in regular appraisal, reflection and innovation. The operation manual which contained guidelines for Quality of Teaching; Quality of Study; Action Research Study has also been developed and used. Further change project implementation process will be: to involve staff/lecturers, senior management and IQA Committee for IQA Framework in BHI; to revise the existing manual operation policy and protocol guideline quality in the standard of research, teaching and studying with consistent reality situation of BHI; to review structure and enlist resource persons for the IQA desk; to ensure sustainable the quality in Bright Hope institute; to circulate IQA operation guidelines to stakeholders implement quality in providing training transition services for higher education in Bright Hope institute.</p>


			<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
17.		<p>INSTITUTION: Ministry of Education, Youth and Sport</p> <p>2013 Participants: Nget Kimsan and Peng Yiti (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Set-up of New Monitoring Tools</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The HE System in Cambodia was established in the 1940s but it was significantly developed in the 1960s. In the 1970s, the HE System was eliminated but by the 1980s the HE System had been restored. The 1990s marked the start of privatisation of Higher Education, with 9 HEIs (1 private). In 2003, the Accreditation Committee of Cambodia (ACC) was established as an external body to assess and provide accreditation to HEIs and by 2012, 97 HEIs (38 public HEIs) had been supervised by 14 different ministries. This project focuses on how to create the monitoring tools to evaluate the HEIs in order to assure the sustainable quality development of teaching, learning and research. This will be achieved by integrating the concept of ESD into HEIs in order to improve the sustainable quality of higher education in consistent with the minimum standard of the Accreditation Committee of Cambodia (ACC) and in harmony with ASEAN University Network standards.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: As part of the change project implementation process, monitoring tools were set up and finalised. A workshop/training was organised in China to implement the monitoring tools. The purpose of this is to oblige all HEIs to conduct their own IQA within their organisation structure and to encourage all HEIs to apply the ESD concept.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.
18.		<p>INSTITUTION: Bright Hope institute (BHI)</p> <p>2013 Participants: Sien Sreynet and Yan Piseth (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies and Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: To link Higher Education with community development.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The rationale for this change project is to empower the rural youth, enrich Higher Education (specifically BHI); to include ESD in curricula and community development projects; to address green campus, poverty concerns; to enhance good citizenship with qualification. Environment and SD appear to not yet be closely linked and the plan was to create a course book on Ecosystem Management (including waste management and green economy). A further aim is to integrate this new course book into the undergraduate programmes in the department of rural development; and to make BHI a green compound.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A course book on "Ecosystem Management" has been created (Khmer version). A training course on "Research Methodology" was presented to staff and teachers. Research on Climate Change Adaptation project has been undertaken (finished this June). -The Community Saving through Credit Union (CSCU) Research Project proposal (with a total budget US\$50 000) was approved from Ministry of Education, Youth,</p>



			<p>and Sport. Two more dormitory rooms for students from remote areas have been being built. Received support from ECF/AusAID to provide scholarship 40% of study fee to 100 poor students every year. Most students are showing positive attitudes by sharing garbage cans and understanding the importance of a green compound. Most staff and some students are now involved in doing research on the approved project proposals. Climate Change Adaptation towards Curriculum Development project is active implementing by BHI Development Committee. The green compound plan was set up. Workshops on “Curriculum Development and Teaching Methodology” were often conducted.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector 	
19.	4	<p>Cameroon</p> 	<p>INSTITUTION: University of Yaounde II</p> <p>2008</p> <p>Participants: Tamasang Christopher Funwie and Alban B. Lukong</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Capacity Building of Teachers To Mainstream ESD in Teaching and Research</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Tamasang Christopher is at the Faculty of Laws and Political Science, University of Yaounde II. He is a Law Lecturer. This was a country wide project. The main objective of the change project was to organise a series of workshops in Cameroon to expose teachers to innovations in teaching and research through transformative approaches to learning. The workshops will also encourage students to take on new roles, and teachers to rethink their teaching in different ways in the learning process.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: During the Regional workshop in Nigeria Tamasang Christopher made a presentation on “Mainstreaming ESD into Land Law in Cameroon.” As part of the change project, a provisional support centre <u>will be</u> set up to provide the following services: information and guidance on ESD and SD; reference materials; constitute a think-tank on improving the implementation process of the product; constitute a lobbying task force for ESD and SD and; managing all other ESD and SD related activities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to improved institutional infrastructure for ESD.
20.	5	<p>China</p> 	<p>INSTITUTION: Ministry of Environmental Protection (CEEC)</p> <p>2011</p> <p>Participants: Hu Tianrong and Dong Wenxuan</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Guideline Development for Green Universities in China</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from the Centre for Environmental Education and Communications (CEEC) of Ministry of Environmental Protection of China. CEEC is important in that it actively and powerfully promotes environmental education and ESD in China and recently developed an evaluation system for green universities in China. The change project is aimed at the development of a guideline for evaluating the many universities in the country that are interested in green development. Qinghua University was the first to be nominated as green university in 1998. Since then, some 60 universities have been making efforts to become green universities.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>




			<p>With the change project, investigation and workshops were organised to review the situation of green university development. Based on the review, it was found that the main part of a green university includes green education, green research, green campus and green service (to community). The first draft of the evaluation guideline was developed. The draft includes the following ten key points: 1) Rationale to integrate with eco-civilization initiative of China; 2) Curriculum reform along green development; 3) Capacity building and teacher's training; 4) Social service related to green development; 5) Promote green technology innovations; 6) Promote research on sustainable development; 7) Science and technological transfer from universities to the society; 8) Green campus culture; 9) Energy saving and emission reduction with campus infrastructure; 10) University leadership on green development. Further development of this change project involves official discussion with the Ministry of Environmental Protection and Ministry of Education.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
21.	<p>China</p> 	<p>INSTITUTION: ESD Centre of inner Mongolia Normal University</p> <p>2011 Participants: Wei Zhiyong and Chang Hongmei</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Develop a Course: Mongolian Traditional Ecological Culture and Sustainable Development</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Inner Mongolia is located in the northern part of China. Traditionally the economy is based on nomadism and agriculture. Recently economic development has been at the forefront of the country. Industry and mining have emerged quickly with some drawbacks. Therefore, within the aspects for sustainable development, this change project aims to develop a course that emphasises the traditional ecological culture and sustainable development for the Mongolian minority.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project involves a course design with four parts, (1) Mongolian traditional ecological cultural significance and value, (2) The status of Mongolian traditional ecological culture issues; (3) Utilisation and protection of Mongolian traditional ecological culture ways; and (4) The balance of Mongolian traditional ecological culture and modern region economic development strategy. The curriculum has been designed and the courses have already been offered to students since September 2011.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
22.	<p>China</p> 	<p>INSTITUTION: Sichuan University</p> <p>2011 Participants: Yan Jiong and Zhou Jin</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Adaptation of Global ESD Practices into Sichuan University (1)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. Yan Jiong and Associate Prof. Zhou are both founding members of the Sustainability Research and Education Centre (SREC) of Sichuan University. SREC is an active group formed by seven staff members in 2009. This is a young and energetic group aiming towards ESD in the University and Chengdu City. Since its foundation, SREC has carried out two major research projects and collaboration with two well-known NGOs. The main objective of this change project is therefore to strengthen and develop SREC to promote ESD in the university and the community so as to help ESD in the country.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Dr. Yan Jiong has adapted ESD practices for four environmental education courses at</p>


			<p>Sichuan University with Dr. Lu Hongyan and Associate Prof. Zhou Jin in 2012. Through the efforts of Dr. Yan Jiong, the ESD programme had built a platform for SREC to improve the efficiency of environmental education at Sichuan University and increased the communication opportunities with international and domestic experts in the field of ESD. Sharing best practices and other resources collected from the ESD programme with three other environmental educators at Sichuan University; extending the practices of ESD beyond the wall of classrooms. Curriculum improvement and innovation; integrating ESD training inspirations into seven ESD classes at Sichuan University. Team building: increasing team cooperation and capacity building of ESD team of Sichuan University by implementing change project. Networking development: developing ESD cooperating with other organisations and experiments to create mutual exchanges between university ESD and real projects.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to improved institutional infrastructure for ESD; and - Contribution to the enhancement and sustainability of networks in the field of higher education.
23.	<p>China</p> 	<p>INSTITUTION: Sichuan University</p> <p>2012 Participants: Zhou Jin and Yang Zhishan</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Adaptation of Global ESD Practices into Sichuan University (2)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participants are from the Sustainability Research and Education Centre (SREC) at Sichuan University. The centre has carried out several SD projects in the past and has a strong collaboration with many NGOs. The main objective of this part two change project is to build a core team of active students: (1) by teaching several elective courses which are opened in the university and establishing a core student team to advocate for a sustainable lifestyle of the youths in the campus; (2) fostering the leadership for the core team students and pass on the sustainable idea to other students; (3) opening the door for active students to take action beyond the classes. This change project is like a seed project at Sichuan University. It is aimed to train more and more students through the core team students and to implement ESD over the whole Sichuan university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: As at April 2013, there has been curriculum improvements done by integrating local ESD related tradition and value into curriculum. for instance “Learning, Reflecting and Action: Sustainable lifestyle for the undergraduates in the city”. Their ESD achievement won the official prize from the teaching bureau in Sichuan University and also got praise from NGOs running ESD programmes in communities. Participants have initiated “Green University” for Sichuan University. They have enhanced the two levels – “Green Education” and “Green Value System” according to “the 4 levels of Green University”. They set up the Green Education Structure in Sichuan University and fostered the Green Culture on campus. Associate Prof. Jin Zhou has been invited to join the National Committee of establishing “Green Universities System” and now has a better platform to promote “Green University” for Sichuan University as well as research work about ESD which is ongoing. There are plans to set up “Green Life” for the undergraduates at Sichuan University. This is meant to be done by focussing on Community Supported Agriculture (CSA) as a research field. This is a new field in China and is significant for the sustainable development. CSA could establish direct relationships of trust and mutual aid between urban consumers and farmers, which is the best way for the undergraduates to learn. They can reflect on “Green Life” through the participation in the development of CSA. The outcome of this change project can best be described as ‘new tools and methods, new structures and networks, new and revised programmes’.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education;


				<ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
24.		<p>China</p> 	<p>INSTITUTION: Ministry of Environmental Protection (CEEC)</p> <p>2012 Participants: Zhu Zhenxu and Tang Yujia</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Green University Program on ESD in Higher Education</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Centre for Environmental Education and Communications (CEEC), Ministry of Environmental Protection of China, which powerfully promotes environmental education and ESD in China. The main objectives of the change project are: (1) to formulate a guideline for Green Universities in China; (2) to promote the establishment of the planning of Green University by national policies.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The implementation of the project commenced by collecting data from and investigation of more than 30 universities in China. Seminars among government officials were organised and a report on the ‘Current Situation of the Development of Green University in China’ was written and completed. By collaborating with the Ministry of Education, CEEC planned to launch an evaluation system for Green Universities in China in 2013.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
25.		<p>China</p> 	<p>INSTITUTION: UNEP-Tongji institute of Environment for Sustainable Development</p> <p>2012 Participants: Yanyun Yang</p>	<p>CATEGORY OF CHANGE PROJECT:</p> <p>TITLE OF CHANGE PROJECT:</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
26.		<p>China</p> 	<p>INSTITUTION: Nanjing University (NJU)</p> <p>2013 Participants: Shen Pingping and</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Curriculum innovation by integrating ESD with the “3,3” system at Nanjing University.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Participants are from Nanjing University (NJU), Shen Pingping is from the School of Life Sciences and Yan Shen is at the State Key Laboratory of Pharmaceutical Biotechnology, School of Life Sciences. Nanjing University, one of China’s key comprehensive universities under the direct supervision of the Ministry of Education, dates from 1902. Since 1979, it has established academic links with more than 200</p>


		Yan Shen	<p>universities and research institutes in 70 countries worldwide. With its multi-disciplinary programmes and distinguished faculty, NJU leads the institutions of higher education in China.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project implementation process started by investigating the number of Science students who took a General Biology course from diverse schools of Nanjing University in 2013. Outcomes of the change project included the development of a training mode for “Three-three System” General education for 1-1.5 years, with professional elective courses, professional required courses, academic training for undergraduate and graduate students (professional degrees, enrolment by a higher level institute) professional education for 1.5-2 years, including interdisciplinary courses, elective courses and academic training (professional or double major, interdisciplinary degrees) pluralistic education for 1-1.5 years, including open elective courses, professional training for employment and entrepreneurship, internship and practice (professional degrees employment and entrepreneurship). Future implementation plans include to 1. perform problem-based learning approaches in biologic and ecologic education; 2. To enhance inter- and trans-disciplinary linkage in ESD curriculum implementation; 3. To further propel the implementation of ESD-related student training projects; 4. Use of new and optimal learning models in curriculum innovation Establishment of the ESD assessment and evaluation; 5. Process of stakeholder participation, student research projects and social practices.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
27.		<p>China</p> <p>INSTITUTION: National Institute of Educational Sciences</p> <p>2013 Participants: Wang Shu and Du Yunying</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Green Performance Evaluation of Key Universities in China: A Pilot Study</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Participants are from the Research Centre for Higher Education, National Institute of Educational Sciences, China. Their initial change project was “A case study on the effectiveness, practices and resource allocation of ESD in Chinese HEIs”. The revised one is “Green Performance Evaluation of Key Universities in China: A Pilot Study.” The revision of the project was inspired by: 1) Dr. Chen’s lecture on Green Campus initiative in China and her work on Campus Energy Management System (CEMS) and 2) The concept of Green GDP, which is an index of economic growth with the environmental consequences of that growth factored into a country's conventional GDP. To move from Traditional Performance Evaluation to Green Performance Evaluation, there is the need to calculate the green performance score of a university, which requires that net natural capital consumption be subtracted from traditional performance score.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Data was generated from 10 key universities, Statistical Yearbook, and campus energy management system (CEMS). Traditional performance evaluation: Output/input Green performance evaluation: (Output – Natural Resources Consumption)/ input indicators : Output (18): teaching outcomes, research outcomes, social service outcomes; input (12): human resource, financial investment, physical resources; Natural Resources Consumption (3): water consumption, waste consumption, carbon dioxide emission. Outcomes of the change project: introducing and integrating SD indicators into the performance evaluation of key universities in China; building up collaboration with SD professionals in Tongji University; applying a new independent research project sponsored by NIES; composing a research paper which will be included in the annual report of performance evaluation of China’s key university. Future change project implementation plans include: refining the methods and indicators; conducting the green performance evaluation annually, publishing the results as a national report annually and providing the institutional report to each university; continuing collaboration with China Green University network and Tongji University in</p>


			<p>ESD and SD; applying a national funded research project on green performance evaluation and sustainable development of university in late 2014.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
28.		<p>China</p>  <p>INSTITUTION: Zhejiang University of Science and Technology (ZUST)</p> <p>2013 Participants: Zheng Youqu and Hu Guilin</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Establishment of a new Bachelor's Degree Program Titled "Energy and Environment System Engineering"</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. Zheng and Dr. Hu are from Zhejiang University of Science and Technology. Zhejiang provincial committee of Energy and Environment Protection was hosted in ZUST and Dr. Zheng was elected as Vice Director. The change project is meant to establish a new bachelor's degree programme called "Energy and Environment System Engineering." It is aimed at cultivating talents with knowledge about energy and environment issues that are critical to the sustainable development of China and meet the requirement of development of ZUST. The change project started with an interdisciplinary forum that took place at the institute for Sustainable Development. There, discussions and activities revolved around: energy and environment; sustainable economic and social development; different kinds of green campus activities; revising the training plan for the programme and; further modification of the pedagogy for course teaching.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: (1) The new major bachelor's degree programme titled "Energy and Environment System Engineering" was approved by Ministry of Education. The special training plan, teaching outline and methodology for the courses were completed and 60 students enrolled for the course in September, 2013. (2) 4.2 million RMB experimental equipment was purchased and 500m² special laboratories were prepared. (3) "Fundamentals for Sustainable Development" as an elective course for the whole school were selected by over 100 students last semester, which is taught by four teachers. This course is becoming one of the most popular courses at ZUST. (4) School of Sino-Germ Engineer was contracted to build at another campus: Anji Campus, this programme was selected as the example. (5) Student Union of Sustainable Development was established – many activities have been done to improve the idea of sustainable development for society, economic and themselves. (6) The department teachers will focus their research on the new energy, clean combustion and environment protection.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to (energy) poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
29.	6	<p>DPR Korea</p>  <p>INSTITUTION: Education Commission</p> <p>2013 Participants: Ri Hui Son and</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: National Educational Policy Implementation throughout the country</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Education Commission, DPR Korea is a National governmental organ, National educational policy implementer throughout the country, and Supervisor and Controller of all national and provincial educational institutions. Awareness of ESD in DPR Korea is from governmental level, ministerial level, academic level and teachers' level. The change project commenced by exploring the educational situation of ESD in</p>


			Yang Kon Suk	<p>higher education curriculum development in order to appropriately integrate ESD into the institution.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The process of implementation involved decision with regard to the ‘participants’ and the ‘content’. Plans are for ‘participants’ to include government, ministry, universities, educational academic institutions, and teachers, while ‘contents’ will include objectives, principles, outcomes, assessment. The future plan is to continue the programme from different levels.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
30.	7	Egypt 	<p>INSTITUTION: Suez Canal University</p> <p>2008 Participants: Yahia Youssef Mosleh and Abdelrehim Ahmed Ali (Co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Programme to develop Sustainable Agriculture Curriculum in Universities (Faculty of Agriculture)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Yahia Youssef Mosleh is from the Plant Protection Department, Suez Canal University while Abdelrehim Ahmed Ali is in the Faculty of Agriculture, Suez Canal University. During the course of the change project implementation, Dr Yahia Mosleh left Suez Canal University in September for another university. Full proposal developed to strengthen sustainable agriculture in all Egyptian universities. Following workshop in Sweden project became more focussed to centre on own University (and not all Universities in Egypt) as original plans were seen to be too ambitious.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A framework for courses developed for sustainable agriculture during the regional workshop component. Workshop planned but could not take place within the project time frame. Planned to present at MESA conference in November, and will ask ANAFE network to follow up, given the sustainable agriculture focus. The responsibility for the project has been picked up by the co-participant. Further support for this team is needed. It was recommended that this project be supported by ANAFE in future if it continues in the absence of Dr Yahia Mosleh.</p>
31.		Egypt 	<p>INSTITUTION: Alexandria University</p> <p>2009 Participants: Zeyad El Sayad and ingi Elcherif</p>	<p>CATEGORY OF CHANGE PROJECT:</p> <p>TITLE OF CHANGE PROJECT:</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
32.		Egypt 	<p>INSTITUTION: Alexandria University</p> <p>2009 Participants:</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: To promote Sustainable Development Practices in Higher Education (Particularly Waste Paper Management)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p>


			<p>Dina M. Sameh Taha</p> <p>Dina is from the Faculty of Engineering, Department of Architecture. The main objective of change project is to promote sustainable development practices in higher education, and hence in the community, particularly with regard to waste paper management practices. This is to be achieved by an awareness raising campaign within the Faculty of Engineering, as a pilot campus for Alexandria University. The complete plan intends to develop the campus of the Faculty of Engineering into a green campus. The planned tasks will be undertaken in three phases.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: By starting with a focus on the management of waste paper and paper reuse/ recycling the participants have a phased plan to work towards a green campus initiative. Two workshops have been held that mobilised substantial interest and waste paper management in the Engineering faculty has started. In addition the raised interest in sustainable development from the change project has resulted in the introduction of courses incorporating environmental engineering in other departments in the Faculty of Engineering.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
33.		<p>Egypt</p>  <p>INSTITUTION: Alexandria University</p> <p>2012 Participants: Mona Sharaf Abdelgalil and Amel Khattab</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of the Household Management Curriculum (Family Sustainable Development)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Home Economics Department, Faculty of Specific Education at Alexandria University. They are responsible for the household management curriculum. By 1952 Alexandria University had grown since its inception in 1938. The University has three branches: in Chad, Southern Sudan and Matrouh. This change project is situated within the Faculty of Specific Education in the Home Economics Department. Their change project is focussed on re-orientating and developing the curriculum of household management and family sciences, especially some courses for undergraduate and postgraduate students to provide greater focus on sustainable development and sustainable innovation in courses.</p> <p>The project started with the need to identify the modules into which ESD could be infused and where there were opportunities for new modules to be introduced. A level of ESD was prevalent in the faculty largely in the form of either introducing students to ideas on how to recycle leftover material from projects into artwork. The Arts department has long pioneered this in their curriculum. The Home Economics department used the USAT and discover how little SD there was in the programmes offered. Other departments at their faculty have now started applying sustainable development related issues in their courses and the Department of Art Education has integrate ecosystems and climate change subjects in some art courses.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Initially, the objective of this change project was to implement the idea of sustainability in household management education at the Faculty of Specific Education in Alexandria University within some courses of under and postgraduate students. However, after meeting with the dean, vice dean and staff member they decided to: (1) Integrate the concept of sustainable development in the scientific research plan of the department titled "Management of Family Resources and Sustainable Development in Home Economics" (2) Reorient some course contents to be integrated with sustainability issues which are "Family Health and Family Economics and Consumer Guidance" addressed to undergraduate students, and a course for the masters degree titled "Family Health and the Environment" by involving the sustainability issues and some relevant skills and activities. Then another objective is to reorient the curriculum of household management</p>



			<p>by adding a new course to Grade 4 titled “Strategies for Sustainable Living and Family Well-being”. The outcome of this change project can be seen at the departmental level and the faculty level.</p> <p>Department level:</p> <p>1) Change in the courses content; 2) Sustainability involved in scientific research plans; 3) Presentation at the 6th IFHE Africa region conference about sustainable consumption; 4) Five theses for masters and PhD were approved by the department council on the subject of sustainable living e.g. early marriage, making bread, responsibility and time management; 5) A new course was developed for home economics (Strategies for Sustainable Living) and art education (Sustainability in Art).</p> <p>Faculty level:</p> <p>1) Human water rights was taught by Dr. Mona Sharaf in the human rights course for students in Grade one; 2) A cultural symposium about sustainable development was offered to the faculty students through the activities of cultural committee; 3) A competition was developed on how to manage the domestic waste between the students; 4) Cooperation between the department of home economics and art education on ecosystems when making some sweets by the students of grade 4, they used different natural colours in drawing the nature on the top of the tart.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
34.	<p>Egypt</p> 	<p>INSTITUTION: Alexandria University</p> <p>2012</p> <p>Participants: Boshra Salem and Ahmed Elsayed Rashed</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Development of Teaching Toolkit to Improve Undergraduate and Post-Graduate Students’ Enjoyment in Learning Processes in Environmental Sciences</p> <p>Title of change project from report: Linking Learning with Happiness: Towards ESD Implementation</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Faculty of Science, Department of Environmental Science which is a small department within the Faculty. Dr Salem is a senior professor, and the co-participant is a graduate scholar leader working with her on the pedagogical innovation programme. By 1952 Alexandria University had grown since its inception in 1938. The University has three branches one in Chad, Southern Sudan and Matrouh. This change project is situated within the Faculty of Science in the Environmental Science Department. Within the Faculty of Science, there are nine departments, the newest of which is the Department of Environmental Sciences. The Department of Environmental Sciences is already adopting a multi and interdisciplinary approach taking into consideration ecological, social, economic and legislative aspects. The main goal of the department is to offer a quality educational system in environmental studies through which students become highly capable of dealing rationally with contemporary environmental issues. Moreover, the department provides sound and effective solutions necessary for protecting the environment through advanced and non-traditional educational and scientific research programmes. These programmes are based on interdisciplinary and multidisciplinary approaches providing necessary basic knowledge and needed applied skills. The main factor that influenced the choice of this change project is the fact that their department is focusing on multidisciplinary and interdisciplinary courses, and ESD is a perfect fit to the mission of the department. More so, the concept of ESD was not encountered as an approach for teaching. The current project has been a very good opportunity to fine-tune the teaching methodologies towards sustainable development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>



			<p>The main objective of the change project is to infuse ESD in curricula, resulting in an educational kit to be used in official curriculum of undergraduate programme of Environmental Science degree. The project also aims to train graduate students who teach the undergraduates to adopt ESD in their teaching methodologies. There have been more interactive, transformative approaches to teaching, with a toolkit of materials and trained postgraduate scholars able to assist with interactive teaching. The change project started with the development of an initial toolkit based on a review of previous teaching approaches, with emphasis on interactive, transformative teaching and learning approaches and approved course objectives. From April 2013, ESD as tools and methods has been implemented and the assessment/evaluation tools which were developed have been tested and proven to improve students' performance. Some courses in the curriculum have been modified to fit with the ESD approaches.</p> <p>Students who have engaged in hands-on activities have implemented interesting activities with younger learners. This allowed them to learn with happiness, and use these skills to develop their personalities and well-being while teaching the younger learners. This was achieved by Masters students engaged with the curriculum using the kits so that they could tutor students in the department in the lower levels of study. In turn the undergraduate students learn skills on how to engage with communities and younger learners with concepts of sustainable development.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development: the curriculum activities focus on the surrounding poverty stricken areas. Introducing the change project gradually in each semester will help in a long term process of poverty reduction. - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector: joint initiatives across faculty as well as draw attention to these at national and international arenas. - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education
35.	<p>Egypt</p> 	<p>INSTITUTION: Sohag University</p> <p>2012</p> <p>Participants: Lobna Abdel-Mohsen Ebaid Nassr and Ahmed Aziz Abdel Moneim</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integration of SD in Teaching Curriculum in Sohag University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>The participant and co-participant are from the Faculty of Science, Sohag University. Sohag University was established in 2006, with one campus consisting of ten faculties. The change project is situated in the Faculty of Science consisting of six academic departments. The number of the enrolled students as recorded in 2012 is around 30 000 students and the number of staff is 1 580 members. The university is located in Upper Egypt midway between Cairo and Aswan. The university is situated in a deeply rural setting which impacts on the relationship between the university and its surrounding communities. The analysis drawn from the data generated by using USAT indicated the change project could provide a greater focus on SD and encourage innovation and engagement of the stakeholders in curriculum review. The main objective of the change project is to integrate Sustainable Development into curricula at Sohag University; re-orientate and update the curriculum – some courses for undergraduate and postgraduate students (sustainable development topics related to the main content of each course), and; addition of a new course in the new credit hours bylaw (under establishment) covering SD issues.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>Outcomes of the change project include the development of measurement tools to ascertain the changed attitudes and knowledge of students and staff attitudes engaged in SD activities. This was achieved using focus group discussions, questionnaires and documentation of the updated courses, exams, and student scores. Members of Science Faculty were asked to nominate two staff members to represent each department during the implementation of the ESD programme and to help in the implementation of the project. Staff members from different faculties expressed their willingness to participate in the project, which resulted in 25 modules that were re-orientated during the</p>


			<p>implementation of the change project. The 25 modules are based in four different faculties.</p> <p>Action plan and way forward: 1) Continue the activities of the project dissemination into the other university faculties. 2) Addition of SD course in the credit-hours bylaws. 3) Preparing of a book about the implemented programme (stages activities – courses). 4) More involvement of the vice-president for students’ affairs will be needed in the next stage to take the project forward in the other university faculties. 5) The logistic and financial support of the university leaders is important for the project sustainability especially to the establishment of sustainable Development and Environmental Monitoring Centre (SDEMC) in the university in cooperation with Ministry of Environmental Affairs in Egypt.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development: The close working relationship between the university and it’s community partners is a structure that is used to contribute to poverty reduction; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector: The open support given by the President of the university is an important indicator for the future of ESD in Sohag University.
36.	<p>Egypt</p> 	<p>INSTITUTION: Mansoura University</p> <p>2012</p> <p>Participants: Mostafa, Asmaa Mahoud and Shaza Mohamed</p> <p>and El Nabi Hammand</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Developing the Strategic Plan of Mansoura University based on Sustainability Development</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>The participant and co-participant are from the Quality Assurance and Performance Evaluation Centre at Mansoura University. Mansoura University was founded in 1972 in Mansoura city. It has one main campus with 15 faculties. There are further five more faculties which are not on the main campus as well as additional 8 faculties in Damietta campus. The change project is based in the Quality Assurance Programme Unit. The participant Dr Mostafa identified using the USAT that sustainable development is a neglected component in Mansoura University and something this project could usefully address. The structure adopted at Mansura University is to have directors of quality assurance in each faculty and jointly all directors’ form a committee of advisors to lead the work of ensuring quality programmes at the university. The development of a strategic plan of Mansoura University to articulate the university’s commitment to sustainable development is the aim of the change project.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>During the implementation of the project, different groups with the relevant knowledge of specific policies undertook different areas of the policy review task simultaneously. The reviews were shown on flip charts and collated on a wall. This allowed for feedback and helped to identify contradictions and tensions in policy, which are important spaces for new strategic plan development or for policy changes. It was also possible to identify which areas of policy are most powerful and which are relatively marginal in an institutional perspective. The strategic plan review was also interrogated in terms of links to global developments and issues, to see whether university policy is responding adequately to issues such as climate change, biodiversity loss, poverty alleviation, international human rights, or food insecurity, for example. A presentation of the comprehensive change project and an institutional audit was done using the USAT tool. This provided the Dr Asmaa’s Quality Assurance team with indicators of the status of sustainability in Mansura University. The team have also developed a clear framework that will be used to track progress made in the change project. A draft vision and mission statement of the university based on consultative processes has been drafted, and some of the tools for evaluation have been developed.</p> <p>Main outcomes: The change project promoted institution-wide discussion on ESD and development of an institution wide ‘Strategic Plan’ for ESD. Discussions ensued as a result of the ESD USAT results. The strategic plan helped promote understanding and momentum for ESD</p>



			<p>across colleges and departments especially curriculum development and teacher education. The change project brought together stakeholders from across sectors and the developed a strategic plan promoted a more holistic picture of the education system in the university, linking macro- and micro-levels; it brought together stakeholders from across sectors (student affairs, higher studies and environment and community service) to collaborate on ESD and identify education challenges and strategies for moving forward in an effort to mainstream learning for sustainable development into all sectors. The strategic plan also assisted in the review of the college's development plans and encouraged discussion on a holistic approach to sustainable development, including an emphasis on the value and role of culture and the need for environmental protection. It further provided a framework for ESD integration, learning and achievement. The strategic plan offers a framework of ideas to guide learning for sustainable development and, depending on implementation, it can be used as a parameter to assess the level of achievement of ESD (i.e. as a basis for developing monitoring and evaluation tools).</p> <p>Action plan and way forward: At the end of Phase 5 the directors of quality assurance proposed an open session for formative feedback. This session aimed to help the project team members to conceptualise what they were doing at the grassroots level, and to help education policy makers and administrators have a better picture of ESD and how grassroots activities link to the overall policy of the university. An open session for formative feedback is recommended.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries: the structure of having directors of quality assurance in each faculty is an effective way to build capacity in ESD. - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector: the national quality assurance committee has established an office in Mansura. Regional meetings will be conducted here and therefore an opportunity for Mansura to showcase best ESD practice.
37.	<p>Egypt</p> 	<p>INSTITUTION: Helwan University</p> <p>2012</p> <p>Participants: Shaza Gamal Md Ismail and Aly Omar Abdallah</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Infusion of SD Concepts in the Curriculum of the Tour Guidance Department at the Faculty of Tourism and Hotel Management</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Ismail and Dr Abdullah are from the Faculty of Tourism at Helwan University. Dr Abdullah was the former Dean of the Faculty and former Vice President at Helwan University. Helwan University was established in 1975 and comprises of 20 faculties, 50 research centres with a student population of almost 75 000. The change project is situated in the Faculty of Tourism and Hotel Management, which has three departments. USAT data analysis indicated that there was no real focus on sustainable development except for the tourism department, which focused in some courses on sustainable development in tourism. As for other departments in the faculty there was no discussion of sustainability even in 'obvious' departments such as Hotel Management where one might expect this. The aim of the change project was to infuse SD concepts in the curriculum of the Tour Guidance Department at the Faculty of Tourism and Hotel Management.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: An intensive USAT analysis was conducted and the USAT tool has been used to develop applied ESD content and principles to five basic courses in the guidance department which are being revised. The curricula in two departments have been revised and a strategy to continue revisions of the faculty curricula is in place. Sustainable development in tourism education is one of the major concepts of improving both the student qualifications and the economic/social resources, which might maintain a continuous source of income through various types of tourism and cultural heritage. These are both renewable resources, which have different approaches that people can work with for generations and creating new sources of local incomes, new jobs without affecting the existing historical/archaeological or cultural resources. Therefore</p>



			<p>the change project concentrated on developing five new modules that will address sustainable development.</p> <p>Main outcomes: in principle the faculty has accepted the proposal of infusion of SD into five existing modules and mandated Dr Ismali and her co-participant Dr Abdullah to develop these. Three of the modules are complete and the other two, namely Tour Guide Techniques, Cultural Heritage Tourism will be complete by July 2013. Later this year (2013) the amended modules will be tabled at the National Tourism Council for approval to offer them in 2014.</p> <p>Action plan and way forward: Academic staff in the faculty have requested that Dr Ismali and Dr Abdullah help them conceptualise infusion of SD in the courses that do not form part of the five already identified. The HoD of Hotel Management has already indicated serious intent to develop joint modules with the Tourism department; discussions leading to this joint teaching are already underway.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development: The qualified tour guide graduates bring their tourists to landmarks and this also provides people living near the attractions to be employed. - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector: The decision to involve the faculty as a whole right from the start was strategic so as to spread the awareness of ESD further than just the department of tourism. - Contribution to capacity development and change processes in participants' institutions and home countries.
38.	8	<p>Ethiopia</p> 	<p>INSTITUTION: Bahir Dar University</p> <p>2008 Participants: Mulugeta Kibret Azene and Firew Tegegne Amogne (co)</p> <p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Development of University Mainstreaming Process</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from the Faculty of Education, Bahir Dar University. Bahir Dar University is a university in the city of Bahir Dar, the capital of the Amhara National Regional State in Ethiopia. It was founded in 2001 and has over 40 000 students, and over 2 000 education students, with 60 lecturers in the Faculty of Education in 2012.</p> <p>To start the process, an institutional workshop was organised at the University of Bahir Dar in Ethiopia. The workshop involved 30 staff members from different faculties, and the acting Vice Chancellor. The workshop was supported by the Sida funded Institute of Land Administration. The workshop started with an overview of the MESA initiative, and what was being achieved in other African universities. This was followed by a presentation of the USAT audit results to the university, and various presentations on the need for ESD were made. The workshop also addressed the topic of how ESD can be integrated into curriculum, teaching and research, and offered an excellent presentation on the need for enhancing research in the university. A case study on 'society relevant' curriculum development was also presented.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Outcomes of the workshop included stronger institutional support for mainstreaming of environment and sustainability into the university and the university ESD initiative has been integrated into the development objectives of the institution. A 'champions working group' now exists, and they have developed a strategy and framework to take mainstreaming forward in the university, and regular activities to raise awareness of mainstreaming have been planned for over the next three years. The Acting Vice Chancellor indicated her support for the initiative, and is also interested in developing a gender institute at the university. Follow-up staff development workshops are planned for next year. This is a significant development given the fact that the university supports 45 000 students.</p>


				<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
39.		<p>Ethiopia</p> 	<p>INSTITUTION: Addis Ababa University</p> <p>2009 Participants: Demoz Nigatu Asfaw and Fekadu Mulugeta</p>	<p>CATEGORY OF CHANGE PROJECT:</p> <p>TITLE OF CHANGE PROJECT:</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Demoz and Fekadu were both from the office of Continuing and Distance Education, Addis Ababa University.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
40.		<p>Ethiopia</p> 	<p>INSTITUTION: Addis Ababa University</p> <p>2011 Participants: Dereje Hailu Asfaw and Abeyu Shiferaw Yilma</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integration of ESD Principles and Focus (Environment, Society, Economy) into 16 Modules of the integrated River Basin Management (IRBM) MSc Programme</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Addis Ababa University (AAU), which was established in 1950 as the University College of Addis Ababa (UCAA), is the oldest and the largest higher learning and research institution in Ethiopia. Since its inception, the University has been the leading centre in teaching-learning, research and community services. Beginning with enrolment capacity of 33 students in 1950, AAU now has 48 673 students (33 940 undergraduate, 13 000 graduate and 1 733 PhD students) and 6 043 staff (2 408 academics and 3 635 support staff). On its 14 campuses, the University runs 70 undergraduate and 293 graduate programmes (72 PhD and 221 Masters), and various specialisations in Health Sciences. Over 222 000 students have graduated from AAU since its establishment. The objective of the change project is to integrate the principles of ESD and its environmental, societal, and economic dimension of ESD into 16 modules of the integrated River Basin Management (IRBM) MSc programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Using a stakeholder approach to curriculum design, issues of Environment, Economy and Society were integrated into 10 of the 16 modules; and inclusion of local SD challenges (emerging from stakeholder consultations on the modules). A further key output of the change project was a document on Strategies for Teaching in an 'ESD way' within the IRBM MSc Programme. This involved outlining how interactive; problem-based; experiential learning and group work/projects could be used as strategies for teaching on the programme. This was to be used in ongoing staff development within the programme. Outcomes of the internal consultation process was agreement that the materials and ESD approaches should be used more widely in the university, and that this would be integrated into the university MESA programme initiatives.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
41.		<p>Ethiopia</p>	<p>INSTITUTION: Wondo Genet</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p>


			<p>College of forestry and Natural Resources - Hawassa University</p> <p>2011 Participants: Gessese Dessie and Menfese Tadesse Eirgete</p>	<p>TITLE OF CHANGE PROJECT: Improve the Rigour and Relevance of Forestry Education with Principles of ESD</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Wondo Genet College of Forestry and Natural Resources (WGCF-NR), part of Hawassa University, was established in 1978 to train forestry professionals, through technical and financial assistance from the Swedish international Development Agency (Sida). Over the years the WGCF-NR has grown into one of the foremost educational centres in the country providing BSc, MSc and PhD training programmes in areas related to forestry, natural resource and wildlife management. It is the only forestry training institute in the country and the majority of forestry professionals in Ethiopia have been educated at the WGCF-NR. The purpose of the change project is to increase the rigour and relevance of forestry Education with the principles of Education for Sustainable Development. The USAT was used to audit the situation of ESD in the College. The USAT audit results were then used in strategic meetings to discuss the direction of the change project. Senior level support was provided for internal workshops with Heads of Units, Deans of Faculties and Heads of Departments in the university. Funding was provided by the community services office for the interactions associated with the change project's development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Outputs include an academic paper on Forestry Education, submitted to the Southern African Journal of Environmental Education; and the curriculum guidelines which have been presented to colleagues and stakeholders during the Phase 5 workshop. The project has successfully described the epistemological foundations for FE and the guidelines for curriculum have been deliberated with stakeholders. This included giving attention to clarity on occupational competences, associated knowledge mixes and behavioural qualities of Forestry graduates. Furthermore it sought epistemological clarity on forests, forestry and forester in the Ethiopian context, and what they mean for Forestry Education. At an institutional level, guidelines for ESD have been developed to provide orientation to all lecturers. A national workshop is now being planned. Progress has also been made on preparing a regional research and action proposal, and the participants have been linked up with the MESA Ethiopia initiative on Climate Change in Higher Education.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
42.		<p>Ethiopia</p> 	<p>INSTITUTION: Haramaya University</p> <p>2011 Participants: Anteneh Belayneh Desta and Tassew Mezgebu Gebrehiwot</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of an ESD Module for the Post-Graduate Diploma in Higher Education Teaching (PGDHET)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Haramaya University was formerly known as Alemaya University. It is one of the oldest universities in Ethiopia. The university was founded with the help of Oklahoma State University (OSU), accepting its first students in 1954, and the new campus was opened in January 1958. Haramaya University was promoted from a college within Addis Ababa University in May 1985 to an independent university. For many years the university had been limited to only an agricultural curriculum, but in 1996 the university was given permission to open other faculties and departments. The aim of the change project is to raise awareness of the emergence of the concept of ESD in Higher Education in Haramaya University and to move towards integration of sustainability contents in the future curriculum reform.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>


			<p>The project started with the development of a draft ESD Module for the Post-Graduate Diploma in Higher Education (7th module in the course). The module drew heavily on materials and ideas presented in the course, and was reviewed twice in the university; involving a number of faculties, departments and deans. The module was seen to be important for wider use (not only in the PGDHET). The module improved substantively through feedback. Its use and integration in the PGDHET and beyond was to be tabled at Senate for approval. It led to discussions on the possibility of introducing a common course on SD for all university students. It was agreed that all faculties should send staff for training using the module; and a strategy to this end should be submitted to Senate for consideration and approval. As at April 2012, more than 100 faculty staff members have been trained in the area of ESD and the training has been successfully and in a sustainable manner and the ESD module has been added as one new training course material.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
43.	<p>Ethiopia</p> 	<p>INSTITUTION: University of Gondar</p> <p>2011 Participants: Desalegn Wagari Kifle and Haimanot Gebrehiwot Moges; and Solomon Meseret (additional co-participant)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Development of University Guidelines for integrating ESD into University Curricula.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The University of Gondar is one of the oldest universities in Ethiopia. It was established in 1954 as a Public Health College and Training Centre. The University has steadily grown and evolved into one of the top education institutions in Ethiopia with four campuses now and one under construction. With 21 636 undergraduate and 1 829 postgraduate students, University of Gondar provides a wide range of subjects including 56 undergraduate and 64 postgraduate programmes. With over 25 000 past graduates, the goal of the university is to deliver societal needs tailored education in order to contribute to the sustainable socio-economic development of Ethiopia. The change project of these ITP participants is aimed at developing university wide guidelines for integrating ESD into university curricula. A USAT analysis of 5 faculties was done and results were shared across the institution. The project involved various institutional mobilisation processes, including a set of strategic meetings with different bodies of the University (Vice President for Academic and Research, Heads of the College, Faculties, Departments and students).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Two internal meetings were held where the project was discussed, and it was reported at a national conference on Quality Education held at the university. Additional funding from the research and community services core process office was secured for the development of the guidelines. A draft document on 'Guidelines for integrating ESD into University Curricula' was produced. The university is preparing itself for large scale curriculum re-orientation under a modularisation system, and the ESD guidelines will be used in this context. A sustainability unit was established by the Vice President of the University, involving the three participants from the ITP, and was mandated to take the ESD project forward in the university.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
44.	Ethiopia	<p>INSTITUTION: Dire Dawa</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p>



			<p>University</p> <p>2013 Participants: Alemu Yonas Tadesse and Abeya Degeje Terfassa</p>	<p>TITLE OF CHANGE PROJECT: Integrating ESD into the Post-Graduate Higher Education Certificate Course: Module Development.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dire Dawa University is a young public institution in Ethiopia. It was established and started its academic activities in the 2006/07 academic year. The establishment of the University is in line with the government's policy of expanding quality higher education and ensuring its equitable distribution across Ethiopia. Dire Dawa University is a university with approximately 9 000 regular students with 7 departments with the total of 205 academic staff. Alemu Yonas Tadesse is the Associate Dean in the School of Social Science and Humanity. He is the coordinator of the teachers development programme (TDP) at the Department of Geography and Environmental studies and lectures students in courses related to environment such as environment and development, environmental impact assessment, hydrology etc. Abeya Degeje is the Dean of the Social Science and Humanities. He is responsible for planning, monitoring, evaluating all activities pertaining to the university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project is a curriculum development project which entails the development of a module for the University's Higher Education Diploma with an emphasis on the use of ESD teaching methodologies in different disciplines. From the concepts and ideas that the participants have been exposed to in 2 weeks in South Africa, they have been able to sketch the framework of their project, developed the contents, formulated the objectives of their module, and developed the chapters. They are only left with a few chapters to be completed at home and implement them by mainstreaming it in the already existing modules.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
45.		<p>Ethiopia</p> 	<p>INSTITUTION: University of Gondar</p> <p>2013 Participants: Woreta Hiwot Kassa and Nega Mihret Alazbih</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Strengthen Sustainability Unit and integrating Sustainability issues into different Research Thematic Areas in the University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Institutional information about the University of Gondar provided above applies here. Woreta Hiwot Kassa is a lecturer in the Nursing Department, Health Sciences Faculty at the University of Gondar. She has been appointed as the secretary of the sustainability unit by the vice-president of research and community service basically because of her participation in the ITP and her recent sustainability concerns and contribution. Nega Mihret Alazbih is the Head of Department of Population studies. Before the ITP, she and her colleagues have included the course 'sustainable development' and 'population and environment' in the curriculum but sustainability issues have not been integrated in the field.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Hiwot made use of the USAT tool for investigating ESD in the research and community engagement processes of the university. She then established a committee to focus on ESD issues in the university. This was achieved with the support of the Research and Community Service Vice Dean of the university - Dr Afework Kassu. Through this work, a letter has been submitted to the Vice Dean to consider the integration of sustainability in the University thematic research areas (of which they currently have 20) or to make sustainability one independent, additional theme. Before Woreta and Nega visited South Africa they have developed a draft guideline for the sustainability unit. They finalised this guideline by adding and modifying some contents. The guideline includes the rationale, vision, mission, goal, objective, strategy</p>


			<p>and framework of the unit. They plan to present this guideline to the sustainability unit committee members and submit the final document to the research and community service unit.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
46.	<p>Ethiopia</p> 	<p>INSTITUTION: Bahir Dar University</p> <p>2013 Participants: Wondem Dereje Taye and Asrat Dereb Ebessa</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Develop an ESD Module for the Postgraduate Diploma in Teaching in Ethiopia</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Contextual information about Bahir Dar University presented above applies here. Dr Wondem Dereje Taye is a lecturer in the Faculty of Education, Bahir Dar University. As a teacher educator, he offers courses and supervising students during teaching practices. He is also a part-time consultant at the Ministry of Education on the National Teachers Development Programme. As a consultant he is involved in the revision of teacher education curriculum at all levels. Asrat Dereb Ebessa is the Dean of the Faculty of Educational and Behavioural Science and lectures in the educational planning and management programme. The aim of their change project is to develop an ESD module for teaching postgraduate diploma courses in their institution. They used the USAT tool to see the extent to which environmental education was being included in the teacher education curriculum. They selected teaching and curriculum approach sections and has used it to evaluate 11 programmes (secondary school teacher education programmes); Geography, Civics, History, Math, Physics, Chemistry, Biology, English, Amharic, Sport Science, PGDT (Education). Dereje collected recent modularized versions of these curricula to review them. He defined topics to do the review (e.g. environmental philosophy, population, women and development, urban ecology and social justice, appropriate technologies, environment and development etc.).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Dereje has also interviewed a few lecturers for more information about the teaching approaches used. Both participants during phase 4 have decided to use a multi-dimensional approach to introduce ESD into their teacher education programme at Bahir Dar University and their decision is based on their realisation that there is no one best approach to ESD mainstreaming. They plan to develop one core module that all teacher education students will take, and other small modules specific to each programme that can be combined into the specific teaching methodology courses. Regarding the core module, they have outlined the major themes of the module including: Teaching and Learning for Sustainability in a changing context; ESD in teacher education: Conceptual Clarifications; Major Teaching Approaches in Teaching ESD; and Assessment for ESD Learning and Outcomes. The content of specific modules will be decided once the school curriculum is reviewed and the specific ESD topics included in each school subject are identified. In addition, they have decided to initiate an ESD student club to support students with ESD activities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.
47.	<p>Ethiopia</p> 	<p>INSTITUTION: Minister's Office, Ministry of Communication,</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Framework for Cleaner Production, Framework for Implementation, Framework for International Workshop by integrating the 'Kaizen principles' into University Education.</p>

		<p>Information and Technology and Ethiopian Institute of Technology, Mekelle University</p> <p>2013 Participants: Hagoss Weldegebriel Abraha and Hadush Berhe Asgedom</p>	<p>CONTEXTUAL INFORMATION AND STARTING POINTS: Mekelle Institute of Technology (MIT) is located in the southern outskirts of Mekelle. It was established in 2002 and devoted exclusively to science and technology education and research. Hadush Berhe Asgedom is a Lecturer and Deputy Managing Director, Engineering Department Ethiopian institute of Technology, Mekelle University. Hagoss Weldegebriel Abraha is the Assistant Head of the Ministry of Communication, information and Technology. He is a higher education expert in Ethiopian Ministry of Education. This change project is about the integration of the ‘Kaizen principles’ into their institution. The introduction of Kaizen philosophy into the universities is to address issues including lack of skilled manpower, research and development, poor working environment, infrastructures, best practice management etc. The Kaizen philosophy is based on principles of continuous improvement – improve working procedures, productivity, quality and other parameters continuously.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The concepts and tools have already been introduced in Industrial Engineering in Mekelle University and an MSc degree has been announced using Kaizen philosophy. During phase 4, participants have achieved the following: 1. Developed a guideline for the Kaizen management principles implementation process and this document is ready for the next implementation activity work; 2. Developed questionnaires for the pilot manufacturing industries in Ethiopia to know their challenges, constraints and opportunities; 3. Developed a proposal for the integration of the Kaizen management practices with environment for sustainability and cleaner production; 4. Planned pre-workshop activities, designed and developed concept note on the way to go about it, the objectives, considerations, and the related budget breakdown needed for doing the research; 5. Planned activities, the required resources for running the workshop, and other necessary preparation.</p> <p>The change project is being implemented through seven stages, and good progress has been made (up to stage 4 already in Mekelle University where it is being tested). It involves the specific objective of introducing and promoting philosophy across all levels of management; and use of methodologies – questionnaires, discussion with stakeholders, national workshops, assessment from industries, universities, public and private organisations for clearly understanding the demand. There were already positive outcomes found through the implementation of the programme in Mekelle University up to stage four including: Improvements in working conditions; Improved clean working environments; improved team work and motivation of workers, health and occupational safety of workers, lower level workers suggesting improvements in working environments; and knowledge on how to meet quick delivery and improvements. A proposal to scale this up has been presented to top university management, and the concept is being extended through extending the knowledge and awareness of the concept by launching an M.Sc Programme – in the programme of the industrial engineering. The curriculum has been developed and the programme started in October 2013 – with a focus on training of professionals.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.</p>
48.	<p>Ethiopia</p> 	<p>INSTITUTION: Addis Ababa University</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies (Community Engagement)</p> <p>TITLE OF CHANGE PROJECT: Local Problem solving Community Engagement initiative involving Women’s Livelihoods and Firewood Collection in Addis Ababa for a Sustainable Future</p>



			<p>2013 Participants: Debebe Yilma Netsanet and Sofonias Yosef Abebe</p>	<p>CONTEXTUAL INFORMATION AND STARTING POINTS: Institutional information about the Addis Ababa University provided above applies here. Debebe Netsanet is the Head of the communications office of Addis Ababa University located in the office of the university president. Sofonias Yosef Abebe is a communication officer in the same office. They both work on media related issues, events organisation, develop publications and documentation on the website and media. They acts as links between the university and the community and have the right and power to decide what is broadcasted or not. Their change project is on community engagement and tailored towards ensuring a sustainable future, particularly for women’s livelihoods and firewood collection in Addis Ababa.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: During phase 4, participants made some progress with the development of the concept note to be submitted to the University Community Services office. They have contributed substantially to a draft proposal to undertake the project, one which is considering volunteers and engaging students as service learners. They have learnt that what matters in community engagement is not the volume of the work done, but the proper follow-up, outcome and sustainability of the project. They propose to finalise the concept note for the community services office, Addis Ababa University (AAU), and the draft proposal and submit it to the AAU central administration for approval by mid-November 2013.</p> <p>On 3 October 2013 a workshop was held at Addis Ababa university which was attended by the Ministry of Education, the community engagement office, the international office, and a number of students and some staff from the Horn of Africa Regional Environmental Programme; and by Professor Sisitka. Netsanet Yilma made a presentation which reported on the early exploratory work that he had done to conceptualise a community engagement project for the university.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants’ institutions and home countries.</p>
49.	9	<p>Gambia</p> 	<p>INSTITUTION: Department of State for Higher Education, Research, Science and Technology (DOSHERT)</p> <p>2008 Participants: Bintou Dibba and Musa I. Touray</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Capacity Building in Sustainable Management, Quality Assurance, Monitoring and Evaluation for Staff of the Higher Education Directorate of the Department of State for Higher Education, Research, Science and Technology (DOSHERST), The Gambia (National institution)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are in the Department of State for Higher Education, Research, Science and Technology (DOSHERT). The Ministry of Higher Education, Research, Science and Technology (MoHERST) was establishment in 2007. The ministry's departments are the Directorate of Higher Education, Directorate of Research and Planning and the Science and Technology Directorate. The mission of the ministry is to: provide access to relevant and high quality education; provide high quality higher education services; make science & technology the engine of growth; ensure gender equity in education; promote the principle of lifelong learning; promote innovation in science and technology; promote research in science and technology; ensure sustainable environmental growth.</p> <p>Bintou Dibba is a Higher Education officer. During the regional workshop in Nigeria, Musa Touray made a presentation on “The Gambian Response to the Challenges of ESD.” The aim of this change project is to develop the human resource capacity of the Higher Education Directorate of the DOSHERST to enable it to better manage and co-ordinate tertiary institutions within the higher education sector in the Gambia. The specific objective is to improve the knowledge, skills and competences of the staff of the Higher Education Directorate of the</p>



			<p>DOSHERST in sustainable management, quality assurance; monitoring and evaluation.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: This project has produced a curriculum consisting of six modules including:</p> <ol style="list-style-type: none"> 1. Understanding Sustainable Development; 2. Leadership and Management with regards to ESD in Higher Education; 3. Management Ethics for ESD; 4. Systems Approach and Management; 5. Quality Assurance; and 6. Evaluation. <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
50.	10	<p>India</p> 	<p>INSTITUTION: Centre for Environment Education (CEE)</p> <p>2009 Participants: Avinash K. Madhale and Santosh Raghunath Sutar</p> <p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p> <p>TITLE OF CHANGE PROJECT: Enhanced Quality of Regional Centres of Expertise (RCE) through the Development of an Operation Manual (National NGO)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Avinash Madhale and Santosh Raghunath Sutar both work at the Centre for Environment Education (CEE), India. CEE was established in August 1984 as a Centre of Excellence supported by the Ministry of Environment and forests, Government of India. CEE is a national institution with its headquarters in Ahmedabad which has a mandate to promote environmental awareness nationwide. CEE is committed to ensuring that due recognition is given to the role of education in the promotion of sustainable development. The objective of this change project was to facilitate the articulation of a shared vision and understanding among CEE colleagues about the CEE-facilitated RCE programmes. The aim of the RCE is to create local forum for discussion and conceptualisation of ideas and projects which can help evolve ESD needs of various regions. The proposed Operation Manual was therefore a process guide for the facilitation process.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The development of the Operating Manual is currently underway. Substantial support for this initiative has been secured from both the Director of CEE and the participants' direct supervisors. The Operation Manual has also been shared with other Regional Centres of Expertise and will thus support other initiatives in this global network. The manual as process guide to facilitate an RCE helped in engaging students as interns with the CEE as well as partners NGOs. This was a flagship programme of RCE Pune and this has helped student get field level experience. The project helped in building institutional partnerships and has given rise to networking and institutionalises the process of collaboration on issues of mutual concerns. A number of interns working on Environment Education and ESD are evolving.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development: Although this change project does not have a direct influence on poverty reduction, some projects have helped their interns to develop better understanding of how to look at poverty and processes of poverty eradication programmes of the Government of India; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education. - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.



51.		<p>India</p> 	<p>INSTITUTION: Ministry of Health & Family Welfare</p> <p>2012 Participants: Amit Srivastava and Pradeep Srivastavab</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Centre for Integrated Health Education: A Policy Paper</p> <p>CONTEXTUAL INFORMATION AND STARTIG POINTS: The participant and co-participant are from the Ministry of Health & Family Welfare which comprises the following three departments, each of which is headed by a secretary to the government of India: Departments of Health & Family Welfare; Department of AYUSH; Department of Health Research.</p> <p>The main objectives of this change project are: 1) to strengthen the existing system of medical education; 2) to submit a policy document to the Centre for integrated Health Education; 3) to promote Millennium Development Goal of Universal Health Coverage. This change project strives to promote a government document for ESD in the Ministry of Health & Family Welfare and to develop the ESD concept among the medical systems in india.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Outcomes of the change project implementation process include: 1. Reports for introducing an ESD system in the India medical system; 2. Final project report submission to the Ministry of Health & Family Welfare, Government of India for consideration; 3. Follow up with competent authorities for adoption and subsequent implementation of the report.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.</p>
52.		<p>India</p> 	<p>INSTITUTION: Carmel College of Art, Science & Commerce for Women: Goa University</p> <p>2012 Participants: Manoj Ramakant Borkar and Sujeetkumar M. Dongre</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming Concerns related to Environmental Impact Assessment (EIA) of Mining Industry through the Portals of Formal Curriculum of HE in Goa</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Zoology & Environmental Biology unit of Goa in India, and have a focus on biodiversity and EIA (Environmental Impact Assessment) issues. In Goa, which is a small maritime state in India, mining is an important source of revenue for the government, but it is not sustainable and negatively impacts the environment. Goa derives significant revenue through mining, but as a part of the Western Ghats state's consortium, the biodiversity potential is rich and under severe pressure.</p> <p>The ESD change project therefore focusses on mainstreaming these concerns in the curriculum and building the capacity of the stakeholders through academic portals. Manoj R. Borkar is a member of Board of studies in Zoology, Environmental Sciences and thus reviews curricula in this capacity as well as advises the state government by working on statutory committees of the state government as an expert in Biodiversity and Ecology. The main objectives of this change project are: 1) To sensitise stakeholders through academic portals of formal education and encourage an eco-conscious and sustainability driven citizenry; 2) To package and mainstream mining related EIA issues; 3) To introduce EIA concerns and responses in a comprehensive curriculum module into the HE curriculum of Goa University; and 4) To foster sustainable mining in Goa and in India.</p>


			<p>CHANGE PROJECT PROCESS AND OUTCOME: The starting point of the project was to analyse the existing curricula which is devoid of discrete EIA, EC and EMP components. There has been involvement of the Boards of Study at Goa University for linkages and infusion; classroom teaching and learning process developed specific to the module; plans to revise syllabus for infusion before the academic year 2013-14; evaluation as reflected in examinations; raised levels of EIA awareness among academic stakeholders. The changes proposed by the participants have been evaluated through 3 workshops involving students, faculty and Boards of Study. The teaching faculty and the Board of Study have endorsed the changes and infusions of EIA content. The syllabus with thematic focus on EIA and sustainability shall be implemented from the academic year 2014, as the existing syllabus has to complete a three-year cycle. Manoj R. Borkar has been able to share the learning and insights from the ITP interaction with the Government of Goa and they may soon adopt some of the models. There has been excellent networking with Asian colleagues especially after visiting Tongji university.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
53.		<p>India</p> 	<p>INSTITUTION: The Energy and Resources Institute (TERI)</p> <p>2012 Participants: Supriya Gulati and Aditi Pathak</p> <p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Sensitisation Programme on ESD for Pre-Service Teacher Education Programmes</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from The Energy and Resources institute (TERI) and from the department of 'Educating Youth for Sustainable Development'. TERI has a well-established network of school teachers and faculty with institutes of higher learning and teacher capacity building programmes are organised at regular intervals. The main objectives of this change project are: 1) to sensitise prospective teachers about key concepts and issues concerning environment and sustainability; 2) to build their capacity for implementation and integration of sustainability issues into their teaching-learning practice; 3) to focus on 20-25 pilot student teachers pursuing courses as BEd / MEd / BEIED.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project has recently been concluded. Two workshops were organised. The programme was implemented at the Department of Education, Panjab University which has expressed their interest in including this programme for their students on a regular basis from the next academic session (2013-2014). An increased number of student teachers who were able to integrate concepts and tools of ESD in their lesson plans; analysis of lesson plans developed by student teachers to assess the integration of concepts and issues related to sustainability; integration of methods and development of tools for ESD in lesson plans.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
54.	11	Indonesia	<p>INSTITUTION: Gadjah Mada University</p> <p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: integrating Sustainable Development into Master</p>



			<p>of Management Programme</p> <p>2009 Participants: Wawan Budianto</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Universitas Gadjah Mada (UGM), internationally known as Gadjah Mada University is an Indonesian public research university located in Yogyakarta, Indonesia. UGM was founded in December 1949, hence the oldest and largest (360 acres) institution of higher learning in Indonesia. The university comprises of 18 faculties, 68 undergraduate study programmes, 23 diploma study programmes, 104 masters and specialist study programme, and 43 doctorate study programmes. It has approximately 55 000 students, 1 187 foreign students and 2 500 faculty members currently. The ITP participant is from the School of Business Management, Faculty of Economics and Business, UGM. In the School there has been no tradition of incorporating aspects of environmental and social sustainability at the School of Business Management at GM University. This project aims to bring in these aspects into the core curriculum, while working with management to change the profile of the Master of Management Programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The curriculum of three core courses will be revised, so as to include SD aspects: Strategic Management, Business Ethics and General Business Environment. Focus is placed on developing the pedagogy of teaching, drawing in case work and “outbound training” as key elements.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants’ institutions and home countries.</p>
55.		<p>Indonesia</p> <p></p> <p>2009 Participants: Dwikorita Karnawati and Hani Handoko</p>	<p>INSTITUTION: Gadjah Mada University</p> <p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Enhancement of Research Based Learning Strategy and Methods in Environmental Geology</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The institutional information on Gadjah Mada University above applies here too. Dwikorita Karnawati is from the Faculty of Engineering, Geological Engineering Department while Hani Handoko is from the Chemical Engineering Department, Gadjah Mada University. Their change project has both institutional support as well as financial support from a local mining operation.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: So far there has been extended and strengthened network of institutions concerned with ESD as well as a revised Environmental Geology course syllabus that addresses SD concerns. Strong linkages are made between this project and the project “strengthening ESD based student community service”.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to the enhancement and sustainability of networks in the field of higher education.</p>
56.		<p>Indonesia</p> <p></p> <p>2009 Participants: Eko Agus Suyono and Irkham Widiyono</p>	<p>INSTITUTION: Gadjah Mada University</p> <p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Strengthening ESD based Student Community Service</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The institutional information on Gadjah Mada University above applies here too. Eko Agus Suyono and Irkham Widiyono are both from the Institute for Research and Community Services. The objective of this whole university change initiative is to introduce a stronger focus on sustainable development in the community service learning component of university programmes. The practice of community service learning is already well integrated into the university structures and has been since the 1970s.</p>



			<p>CHANGE PROJECT PROCESS AND OUTCOME: The achievement recorded in the implementation of this change project has been the reorientation of the service learning. A manual for SD oriented community services has been developed. Several field supervisors have been trained in ESD. Revised guidelines for community services proposal development and review as well as implementation, reporting, and monitoring and evaluation have been developed. The first batch of students participating in the revised community service learning programme has completed the programme.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.</p>
57.	Indonesia 	<p>INSTITUTION: University of Gadjah Mada</p> <p>2009 Participants: Hargo Utomo and Setiyono T. Miharjo (Master of Management Programme)</p>	<p>CATEGORY OF CHANGE PROJECT:</p> <p>TITLE OF CHANGE PROJECT:</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
58.	Indonesia 	<p>INSTITUTION: Universitas Pembangunan Nasional "Veteran" Yogyakarta</p> <p>2013 Participants: Brotodjojo Rukmowati and Sari Virgawati (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD Concerns into Curriculum of The Department of Agrotechnology</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Brotodjojo Rukmowati and Sari Virgawati are from the Faculty of Agriculture, Universitas Pembangunan Nasional "Veteran" Yogyakarta. The Ministry of National Education of the Republic Indonesia is committed to include the values of sustainable development in the curriculum of early childhood education to higher education to make sustainable development as a way of life. Education should therefore promote an insight of the significance of sustainability and ecosystem balance and recognition of humans as members of ecosystem. The entire academic community of Universitas Pembangunan Nasional "Veteran" Yogyakarta is expected to be able to serve as an advocate and pioneer of sustainable development covering all aspects of society, the nation and the state. The participants are from the Faculty of Agriculture, Department of Agrotechnology. The aim of their change project is to revise the curriculum, so that sustainability concerns are incorporated into the study programme. The USAT was used to investigate the status of ESD and the results showed poor performance in some aspects; ESD values actually have been applied in the implementation of academic activities, research and community services in the department of Agrotechnology; however, the ESD values have not explicitly been documented in the academic paper.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The following are the outcomes of the change project, in terms of ESD courses, concepts, values and concerns integrated into the curriculum of the Department of Agrotechnology: 1) Introduction to Agriculture; 2) Agroclimate; 3) Agroecology; 4) Plant Nutrition; 5) Fertilisation Technology; 6) Water & Soil Conservation; 7) Sustainable Agriculture; 8) Student Community Service; 9) Wimaya; 10) Civics Education; 11) Pancasila.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>


				<ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
59.		Indonesia 	INSTITUTION: Gadjah Mada University 2013 Participants: Sancayaningsih Peni Retno and Puji Astuti (co)	CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses TITLE OF CHANGE PROJECT: Acceleration Programme on ESD Integration into Higher Education Curricula of Gadjah Mada University. CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from Gadjah Mada University (UGM) but Sancayaningsih Peni Retno is from the Department of Biology while Puji Astuti is from the Institute for Research and Community Services. In addition to the institutional information provided above, UGM has a total of 60 000 – 70 000 student, with 18 faculties, 2 schools and mobilises 5 000 – 8 000 students to villages through SCS-CEL with more than 150 thematic programmes. The RCE in Yogyakarta was established in 2007 and a member of ProSPeRNet. UGM employs resource persons from the RCE and Centre for Education Development in UGM (CIHE). CHANGE PROJECT PROCESS AND OUTCOME: As part of the change project implementation, participants deliberated and shared ideas with their partner such as the RCE and the Center for Education Development, CIHE-UGM. Together they taught through the project and collaborated in the organisation of the workshops and in using the USAT tool. There was a teaching grant for an ESD based teaching plan and successful workshops to construct guidelines for building an ESD-based teaching plan and TOT for selected teachers. The main outcomes of the change project included ESD-based teaching and ESD-based research; community empowerment in Bone Bolango through agribusiness and eco-tourism from upstream to downstream and; introduction of the project to Local Authority about Agribusiness and Ecotourism. There is continuous commitment to accelerate the process into higher education curricula and expand its range and area. RELEVANCE TO OBJECTIVES OF THE ITP: <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
60.		Indonesia 	INSTITUTION: Sepuluh Nopember institute of Technology 2013 Participants: Setiawan Rulli Pratiwi and Eko Budi Santoso (co)	CATEGORY OF CHANGE PROJECT: Category A: New Policies and Strategies and Category B: New Management Practices TITLE OF CHANGE PROJECT: Creating a Real Eco-Campus through Partnership among Students, Lecturers and Staff CONTEXTUAL INFORMATION AND STARTING POINTS: Setiawan Rulli Pratiwi is from the Faculty of Civil Engineering and Planning, Department of Urban and Regional Planning, Sepuluh Nopember institute of Technology and Eko Budi Santoso, the co-participant is from the same Institute. The institute is aware of environmental issues such as global climate change, preservation of green areas, waste management, reduction of water consumption, energy saving, efficient use of transportation which need major attention, including life on campus. Management of the campus needs to be carried out in a sustainable way. Ecocampus is set as part of current Working Plan of ITS (2011-2015). The programme needs to be supported by each department/unit all over the institute as well as the lecturers, staffs and students (civitas academica). Based on UI-Greenmetric World University Ranking 2012: rating for ITS (106/215 uni-49 countries), 2011 (52/178 uni-42 countries), 2010 (18/95 uni). CHANGE PROJECT PROCESS AND OUTCOME: The outcomes of change project implementation include: <ul style="list-style-type: none"> - Create awareness of student community, construct student initiatives - Small project on solid waste management


			<ul style="list-style-type: none"> - Involve EcoCampus Unit, Cleaning and Park Department in the city, Environmental Agency - Without cooperation from the campus community, the programme will not be successfully achieved. - It will adapt the use of USAT Part B: Operations and Management and USAT Part C: Student Involvement. The way forward on the project is to continue to involve more students, lecturers and staffs in more universities with the project. <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
61.		<p>Indonesia</p> 	<p>INSTITUTION: Bandung Institute of Technology</p> <p>2013 Participants: Yuniati Yuniati and Rofiq Iqbal</p> <p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Campus Sustainability and Best Practice with Student Initiative Project in Water Efficiency.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Yuniati Yuniati is from the Department of Environmental Engineering, Bandung Institute of Technology and Rofiq Iqbal, the co-participant is from the Faculty of Civil and Environmental Engineering, in the same institute. Inefficient water consumption and management is a serious problem in a large campus such as institute of Technology Bandung (ITB). Bandung has high rain intensity (1000 – 3500 mm per year), yet ITB does not have a rain water harvesting programme, hence about 70% of rainfall goes to drainage systems. If rain falls heavily for more than two hours, it creates large puddles around the campus and in the city. The change project was conceptualised based on the above as well as the realisation by the participants that universities have to lead ESD programmes and student initiatives can provide a powerful resources for implementation of ESD practices in a universities. The change project implementation started out by developing a water efficiency programme with the aim of decreasing water consumption, facilitating rain water harvesting and recycling water (treatment of rain water and grey water).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The following are the action plans and way forward of the change project:</p> <ul style="list-style-type: none"> - Increase awareness of students - Building partnership with students and student union who are interested - Develop of a pilot project in decreasing water consumption - Working with the stakeholders on campus (including the decision makers) - Development of a pilot project of rain water harvesting - Promoting and hosting the results on social media (blogs, face book, website such as eco-campus or u-green) - Organising seminars, workshops, discussions in green campus forum, students forum, faculty forum, etc. <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
62.	12	<p>Kenya</p> 	<p>INSTITUTION: University of Nairobi</p> <p>2008 Participants: Fred I. Mugivane and</p> <p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Re-Structuring of Courses in the Department of Agricultural Economics to include Critical Thinking and Environmental Focus (Department of Agricultural Economics)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The University of Nairobi is a key university in Kenya, offering agricultural education and training. At the start of the programme, the agricultural curriculum had almost no emphasis on environmental concerns. The USAT tool was used to audit ESD practices in the Faculty of</p>


		Rose Helen Adhiambo Nyikal	<p>Agriculture (across a number of departments). Findings indicated poor integration of environmental concerns into curricula, and a need for addressing sustainability issues from this perspective, as well as from teaching, research, examination, community engagement and assessment perspectives, with emphasis on the need to develop capacity for critical thinking within the curriculum.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Stakeholders (mainly colleagues in the Department) were consulted at an institutional workshop (attended by Prof Naituli), and through other research strategies and networks. Structures concerned with curriculum changes were consulted, and the change project finally centred on the design and development of a Certificate in Environmental and Agricultural Community Education to be offered by the University. A curriculum framework was produced for this course. The University was visited by Prof Naituli in Phase 1, when an institutional workshop was held to consult with other staff on the direction of the change project. Follow-up data indicates that the course has since been actively used.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: Integration of SD into agricultural training is highly relevant to the SD of Africa due to the following: - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
63.	Kenya 	<p>INSTITUTION: Strathmore University</p> <p>2008 Participant: Joseph Gitile Naituli</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p> <p>TITLE OF CHANGE PROJECT: Development of an East and North African MESA Cluster Network</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Gitile Naituli was from the host institution in Kenya in 2009, Strathmore University. He was an ITP participant as well as a resource person. He is currently the Deputy Vice Chancellor of Multimedia University in Kenya, and has been a driving force in sustaining the MESA activities in Africa, particularly East Africa. His change project was initiated to support the East and North African cluster of the MESA programme and specifically for the HESD ITP process, which was supported and implemented by Strathmore University in 2009.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A framework document was developed to guide the establishment of this network, which was deliberated and discussed by HESD ITP participants. Links between this initiative and the West African ESD network, and the SADC/EEASA networks were discussed. This was included as an item on the agenda for the MESA International Conference that was held in November 2008, and an East African network for MESA was established which remains relatively active (although this depends on available resources and capacity). The last meeting of this network was hosted in Addis Ababa in 2013, with support from UNEP.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education: strengthening south-south networking and partnership building. - Contribution to capacity development and change processes in participants' institutions and home countries and Africa.</p>
64.	Kenya	<p>INSTITUTION: UNEP MESA</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p>


			<p>Universities Partnership</p> <p>2008 Participant: Akpezi Ogbuigwe</p>	<p>TITLE OF CHANGE PROJECT: First MESA International Conference</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Akpezi Ogbuigwe was the Director of Environmental Education at the United Nations Environment Programme during her participation in the ITP. She is currently the Chairperson of Anpez Centre for Environment and Development in Nigeria. The project was developed to strengthen and extend the contribution and influence of the MESA Universities Partnership, and to prepare African contributions to the World ESD Congress that was held in Bonn in 2008.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: During the ITP the conference programme framework was drafted, and other logistical elements were put in place. Swedish universities participating in the HESD ITP were all invited to participate in the MESA Conference, in an effort to extend the North-South dialogue started during the programme. A report on the MESA initiative (2004-2008) was developed as a key output of this project, which was presented at the MESA International Conference. This report includes the various activities and projects of the HESD ITP participants, and extends knowledge of mainstreaming of environment and sustainability into African Universities. The MESA Conference was held as planned, and a conference proceedings report was produced and distributed. This initial involvement of UNEP also led to a strong partnership between the ITP programme and UNEP for the last three years of the programme (2011-2013).</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: Expansion of mainstreaming of environment and sustainability in African universities.</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions, home countries and Africa; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education; - Contribution to improved institutional infrastructure for ESD.
65.		<p>Kenya</p> 	<p>INSTITUTION: World Agroforestry Centre (ICRAF)</p> <p>2008 Participants: August Basil Temu and Sebastian Chakeredza</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structure</p> <p>TITLE OF CHANGE PROJECT: Strengthening Africa's Strategic Agricultural Capacity for Impact on Development (whole region)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Temu is from ICRAF, which is the World Agroforestry Centre (known as the International Centre for Research in Agroforestry, ICRAF before 2002). ICRAF is an international institute headquartered in Nairobi, Kenya, and founded in 1978. The Centre specialises in the sustainable management, protection and regulation of tropical rainforest and natural reserves. It is one of 15 agricultural research centres which make up the global network known as the CGIAR (Consultative Group on International Agricultural Research). The Centre conducts research in agroforestry, in partnership with national agricultural research systems with a view to developing more sustainable and productive land use.</p> <p>Prof Temu is the Director of Capacity Building at the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE). ANAFE comprises of African colleges and universities teaching agriculture and natural resource sciences. ANAFE is supported by the World Agroforestry Centre (ICRAF) in Nairobi, Kenya, The network was established in 1993 and is currently made up of 134 member institutions (universities and colleges) in 35 African countries. The ANAFE Secretariat is based in Nairobi, Kenya and supports the networking functions.</p>

			<p>CHANGE PROJECT PROCESS AND OUTCOME: Dr Temu worked directly with over 30% of the universities in Africa on sustainable development issues. He was nominated by the Swedish Embassy in Nairobi after the initial selection of ITP participants had been finalised and was thus included as an additional participant.</p> <p>The ANAFE change project was developed through an in-depth review of the state of agriculture and agricultural education in tertiary institutions in Africa (involving 100 such institutions). Issues influencing agricultural education and training (including aspects such as biotechnology and climate change) were identified as key areas for intervention to improve the quality and content of agricultural education in Africa. The project has a set of 7 objectives (focussing on various aspects of capacity building, including curriculum, materials and methodology development for agricultural education and training). During the HESD ITP various strategies for the different objectives were developed, including strategies and approaches for producing context relevant materials and curricula to guide and support agricultural education and training in tertiary institutions.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: Integration of SD into agricultural education is a critical dimension of achieving SD in Africa, since there is considerable dependence on agriculture in Africa.</p>
66.	<p>Kenya</p> 	<p>INSTITUTION: National Environment Management Authority (NEMA)</p> <p>2009 Participants: Josey Njoki Mukiri and Patricia M. Wambua</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Monitoring the implementation of ESD in institutions of higher Learning (National Government)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This change project had as its main objective as the development of ESD, developing an ESD implementation strategy for Kenya and the provision of a mechanism for adopting a holistic approach to sustainable development by engaging all sectors and stakeholders. The Strategy provides an opportunity for educating the Kenyan people on the importance of sustainable development and the contribution of various stakeholders. It provides an overall framework based on which other specific strategies for various sectors and stakeholders will be developed. The Strategy aimed to influence peoples' views and attitudes towards sustainable development. The strategic objectives of the document will guide specific sectoral activities towards enhancing the attainment of sustainable development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
67.	<p>Kenya</p> 	<p>INSTITUTION: Kenya School of Government</p> <p>2012 Participants: Charles Onkundi and Frederick Mukabi Khaunya</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses, Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Development of a Leadership Programme on Environment and Sustainable Development</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The Kenya School of Government (KSoG), formerly Government Training Institute, is a Kenya Vision 2030 Flagship Project. It is a public institution mandated to among other functions provide training, consultancy and research services designed to inform public policy, promote national development and standards of competence, and integrity in the Public Service. Within this mandate is the effort towards the realisation of environmental and sustainable development practices in the Kenyan public service. Their target audiences include the core civil service, parastatal bodies and the local government officers.</p>



				<p>A large amount of Kenyans are depending on cultivation for their livelihoods and the adverse climatic conditions and excessive destruction of forests has been a national concern. The Kenya School of Government is an institute with a training mandate of reaching out to all ministries and departments in the entire civil service sector of in Kenya. It is influencing policy formation through research and its operations are driven by emerging national challenges a way of facilitating the Kenyan community development. Hence community participation and engagement is crucial to achieving its national vision and goals.</p> <p>After several review and consultation, the participants' change project interest was focused on developing leaders in the public service to champion environmental issues for economic and social development of Kenya. The aim of the project was to increase the level of awareness among public officers in the understanding of the relationship between environment and sustainable socio-economic development in order to enable them make a contribution toward this end through their respective public offices.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: By the end of the ITP programme, the project already had the approval of the school's management. There is great optimism by the participant that the project will be implemented as one of the programmes of training starting by the new financial year (July 2013). The institute has shown interest and willingness for the ESD programme to be implemented. By April 2013, a short curriculum (one month's training programme) on leadership on Environment and Sustainable Development had been developed. There is potential to establish a full department on environment and sustainable development with funding from national government.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education; - Contribution to improved institutional infrastructure for ESD.
68.		<p>Kenya</p> 	<p>INSTITUTION: Masinde Muliro University of Science and Technology (MMUST)</p> <p>2012 Participants: Patricia Kariaga and Mary Goretti Kariaga Ohanya</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks, Category A: New Policies and Strategies</p> <p>TITLE OF CHANGE PROJECT: Establishing a networked multidisciplinary ESD Community of Practice for sustainability engagements within and beyond the university.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participants are in the Department of Criminology and Social Work and department of Sugar Technology and at Masinde Muliro University of Science and Technology (MMUST). MMUST is a public university in Western Kenya. It is a new university, and has rapidly expanded to multiple sites mainly in the Western Province of Kenya. Environmental Education and ESD are new areas of study in the university that most members of staff are not familiar with. However, there is a lot of interest in it from across disciplines. The limited conceptual understanding and awareness of EE and ESD is linked to lack of structures and networks for EE and ESD in the university and with other EE and ESD networks outside the university system. The specific programme developed out of the ITP change project process responds to the need to establish and/or improve institutional infrastructure for ESD in MMUST; and to increase awareness of the importance of effective ESD in the higher education sector, and specifically in MMUST. Further, as a next step, the participants intend to focus on capacity development and change processes in MMUST.</p> <p>Additionally, at MMUST, there are a number of undergraduate and postgraduate studies, but most of these do not have a strong environment and sustainability orientation as evidenced in the results of the USAT audit conducted in Feb/March 2011. There has also been insensitivity towards environmental issues and lack of discipline in basic environmental etiquette e.g. waste management on campus at MMUST which</p>



				<p>prompted this change project. The major objective of the project is to rate the current level/status of ESD issues in MMUST and to have ESD incorporated into the curriculum by introducing a university-wide common course</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was initially designed as a curriculum review process i.e to develop one common course, then infuse into all university courses. This was to fall under the New Programmes and Courses category. However, following the results of the USAT audit and subsequent consultations, it was agreed that it was necessary to first start with establishing new structures and networks for ESD, then move on to the new policies and strategies so as to ensure more focused and coordinated action for greater ESD impact in MMUST. Other options that were considered included greening the campus and community engagement.</p> <p>Election issues in Kenya have had an impact on the implementation of this project. However, the participants have assessed the university curriculum in 40 departments in MMUST using the given procedures and tools from the ITP, in order to find out whether teaching approaches and student activities reflected knowledge of ESD. A paper was written on the current status of the university, including the findings. An ESD committee was set up and an agreement was made that writing new programmes may not be as effective as sensitisation of the whole university teaching fraternity. Infusion of ESD into the current programmes was chosen. The need to overhaul the current Vision and Mission statements of MMUST to accommodate ESD was agreed upon. There are plans to hold a seminar to educate administrators, lecturers and middle grade workers on the status of the university based on the USAT audit. Members of the participants' ESD committee have already changed their approaches and ways of delivering lectures and there has been very fruitful liaison with community projects and partners. Networks with PALWEKO, UNEP and various government ministries have been established and it is hoped that the MESA Chair will introduce the Centre of Environment Science.</p> <p>Action plan and way forward: Plans are underway to develop a university-wide policy on ESD, as well as an environment and sustainability policy for the university in compliance with the policy regulatory requirements by the National Environment Management Authority (NEMA) in Kenya and the performance contracting system of the Government of Kenya.</p> <p>Other considerations for the way forward include: Establishing a functional MESA chair at MMUST to enhance networking with a focus on appropriate technologies and skills for SD through participatory approaches/community engaged learning, and to address environment and sustainability issues such as the water hyacinth menace in Lake Victoria; training and capacity building of ESD committee, members, top and mid-level university management and the teaching and non-teaching staff; developing outdoor learning sites to support action learning in schools, universities and communities and; enhancing engagement, collaboration and partnerships with the private sector.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
69.		<p>Kenya</p> 	<p>INSTITUTION: Ministry of Higher Education, Science and Technology (MHEST)</p> <p>2012</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Competence-based curriculum development for artisan training to contribute to sustainable development of Kenya</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Kenya has some 50 TVET Colleges that fall under the jurisdiction of the MHEST, with approximately 80 000 students enrolled in the</p>



		<p>Participants: Johnson Wechuli Nanjakululu and Zachary Ooke and Janet Mbwaya</p>	<p>institutions. The TVET Colleges have previously been working with a content-based curriculum, and innovation in curriculum in these institutions has been a neglected area of Kenya's development. This change project addresses this gap in the national development path of Kenya. The change project was developed from an analysis of the history of TVET education in Kenya. It was identified in this review that the content-based approach and the 'old' curriculum contents were not furthering sustainable development objectives of Kenya. Initially it was felt that a curriculum development change project would be too extensive for the ITP, and participants decided to support sustainability innovation in the annual TVET fair. From here, Ministry officials identified the CBET approach (competence-based approach) to TVET as a suitable approach. Workshops to sensitise TVET college heads on CBET approaches were held in Mombasa in April 2013. It was decided to start with planning CBET curricula for two artisan streams that were particularly important to sustainable development outcomes: plumbers and electricians.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Meetings were held with stakeholders from the industries to design the main competence areas for the curriculum. Environment and sustainability concerns were integrated into these competence-based curriculum designs. Two TVET curriculum frameworks for artisan training were completed, with a sustainable development focus. The outcome of the project was displayed at the national Science and Technology Fair, and will be used as a model for further curriculum development. Further action plans include that the principles of environment and sustainable development integration will be taken forward into future CBET curriculum frameworks for other artisan programmes. These will be used in the training of trainers and will re-shape the way that TVET is offered in Kenya's 50 TVET centres under the ministerial purview (reaching some 80 000 learners in these colleges). Further work on artisan training for the Green Economy would be taken forward.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
70.	<p>Kenya</p> 	<p>INSTITUTION: Mount Kenya University</p> <p>2012 Participants: Nemwel Obi isaac Okeiga and Kennedy Mutundu and Joshua Mogare Ateka</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of a Master of Arts in Environmental Security and Sustainable Development</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Mount Kenya is a private university in Kenya. It is a new university, and has rapidly expanded to multiple sites across the country, and is also expanding to Somalia, Rwanda and other countries. The specific programme developed from the ITP change project process responds to global and national concerns associated with environmental security. At Mount Kenya there are a number of undergraduate studies in environment and sustainability areas. None of these however lead to postgraduate studies in environmental security and sustainable development. This change project started with a vision of establishing a multi-disciplinary approach to environment and sustainability education at Mount Kenya University. During the phase 3 workshop a multi-disciplinary concept of ESD was introduced and deliberated. This was later refined to include acceptance of an ESD unit and programme at the Mount Kenya University.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>




			<p>A ‘flagship’ programme within the wider intentions to develop ESD was established, namely a Master of Arts in Environmental Security and Sustainable Development. During the ITP the curriculum for this flagship programme was developed and introduced at university level. It was presented before Senate and was approved and is ready to be implemented. The main aim of this programme is to equip learners with knowledge of environmental security. The programme will run over two semesters. After the first semester, students go to the field and identify an environmental security issue that they have an interest in, which needs to be researched. The idea is developed through field-based and course-based interactions; it foregrounds participatory identification of research problems at community level, introducing a community-based approach to research design. The programme also seeks to incorporate a transformative approach to learning that addresses real field-based needs and issues.</p> <p>Way forward: The curriculum of the programme has been approved, and the course has been advertised. If there are enough applications, the programme will be run in the next academic year, as a ‘pilot year’. Additionally, there will be a need to further develop the curriculum with stakeholder inputs as the programme is piloted, and reflected on in its first year of implementation.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development: the theme of the programme ‘environmental security and sustainable development’ addresses the interface between poverty and sustainable development in Kenya, especially relevant to grassroots environmental security issues. - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
71.	13	<p>Kyrgyzstan</p> 	<p>INSTITUTION: Issyk-kul State University (IKSU)</p> <p>2012 Participants: Sagyntay kyzy Elvira and Umetalieva Munara and Gulmira Sariyeva (one additional participant)</p> <p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: University Management Strategy for Sustainable Development</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from Issyk-Kul State University. Issyk-Kul State University named after K. Tynystanov is an institution of higher professional education of the Kyrgyz Republic. As the largest and fastest-growing institution of the Issyk-Kul region, the university is a leader by most indicators of human potential, intellectual capacity and research, training and certification of scientific and teaching staff. The university possesses faculties, departments, centres and laboratories. Total number of students at the university, including graduate students, doctors of sciences and PhD students is about 6 000 people. The main objectives of this change project are: 1) to disseminate knowledge about SD; 2) to develop a concrete strategy of SD for 2013-2015. The strategy for Sustainable Development of IKSU lies in the context of the National Strategy for SD of Kyrgyz Republic.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: ESD seminars and training for university staff and students; providing information and policy on SD to citizens, city administration, SME, companies/organisations, etc.; internationalisation of the university on ESD and SD basis; fundraising for SD implementation. After the ITP, the University of Kyrgyzstan became a member of GUPES (Global Universities Partnership for Environment Sustainability) and the Rector attended the first meeting and received motivation for working on SD at the university. This means greater administrative support. An international conference with the theme "Science and Education for Sustainable Development" is underway and scheduled for May 2013. The objective of the conference is to evaluate innovative approaches towards ESD, modernisation of science and higher education via a prism of strategy of sustainable development. During the Academic Board meeting holding during the conference, the resolution and strategy for the</p>


				<p>change project will be discussed. The outcomes of the change project are listed below:</p> <p>University management</p> <ul style="list-style-type: none"> • expansion of democratic governance; • consideration of aspects of sustainable development into the orientation of new employees; • creation of a body responsible for the sustainable development of the University including students and young scientists; • foundation of trustee Council; • involvement and promotion of personnel for activities related to sustainable development; • consideration of aspects of sustainable development by institutional planning. <p>Educational activities</p> <ul style="list-style-type: none"> • implementation of the methods and principles of sustainable development in educational and training activities of the university; • introduction of the course "Sustainable Development" as compulsory in the curriculum for all bachelor directions; • cross-faculty collaboration in teaching process the course "Sustainable Development"; • display in the curriculum for SD global and local problems, ways of their solutions, the existing models of SD; • the method of teaching the course "Sustainable development" should focus on instilling in students a sense of responsibility for decision-making, critical thinking, the perception of the views of others, to learn to solve integral problems of SD; <p>Scientific - innovative activity</p> <ul style="list-style-type: none"> • development of interdisciplinary innovation projects on SD; • cooperation of the University with other objects, agencies and stakeholders in the search for a solution to the problems of sustainability; • active involvement of students and young scientists in scientific-research work; • improving the system of protection of intellectual property; • development of infrastructure for the modern scientific research. <p>2.4. Socially-oriented activities and educational work</p> <ul style="list-style-type: none"> • promotion of the principles of sustainable development through the celebration of environmental days (for example, the day of forests, water week, etc.); • dissemination of the ideas of SD among the local population; • popularisation of healthy way of life, bicycling and pedestrian culture among students and teachers; • realisation of programmes of social protection, gender equality, improvement of the quality of life for the remote and hard-to-reach areas; • improving the outlook of personnel in the field of SD; • creation of conditions and the observance of the principles of sustainability in building the university and the students' dormitory; • involvement of students in volunteer activities in the field of environmental protection; • involvement of students in the management of the University in the field of SD; • provision of staff and student information about replacing plastic bags with reusable bags and paper bags. <p>International activities</p> <ul style="list-style-type: none"> • development of interdisciplinary innovation projects on SD • strengthening and expanding cooperation with leading foreign universities and other educational and research centres, international educational organisations in SD; • active involvement of students and young scientists in scientific-research work on SD; • development of cooperation with international and local partners on SD; • expansion of the academic mobility of students, teachers and researchers; • expanding the range of international scientific programmes and projects implemented in the framework of the Bologna process. <p>Activities with information</p> <ul style="list-style-type: none"> • increase the quantity and quality of the equipment of the University for informatisation and the implementation of new educational technologies; • ensuring the availability of educational and scientific information resources for faculty, staff and students through telecommunications networks; • creation and support by means of information technology in a meaningful way. <p>Infrastructure and logistics development</p> <ul style="list-style-type: none"> • increased funding from various sources by expanding the range of proposed educational, research and other services; • reduce the volume and focus on recycling of waste paper; • improved indoor air quality by replacing the windows on high-tech glazing; • step-by-step
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			<p>replacement of incandescent light bulbs with energy saving or touch; • replacement of taps on the touch screen; • reduction of the volume of runoff water in the sewer; • improvement of lawns with efficient irrigation. The mind of some students and teachers of our university started to change. One student and one PhD student from the Faculty of natural sciences are going to participate in the 2013 International Student Conference on Environment and Sustainability (ISCES) in Shanghai in June 2013 and in 2013 Asia-Pacific Leadership Programme on Environment for Sustainable Development. This will help to involve our young people in the process of positive changes of region.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: This project is a pilot in Issyk-Kul state university. The developed strategy for SD can be a model for other organisations in the region. The implementation of strategy will reflect in a short run on education quality and social situation in the university. in the long run the change project will contribute to a positive change in the minds of young people, students and teachers. The cooperation with other universities working on ESD will further develop and progress. The organised conference at the university should have a positive impact at the regional and country level. Hopefully it will influence other sectors of life in Kyrgyzstan. Networks with GUPES and plans to network with Tongji institute of Environment for Sustainable Development.</p>
72.	<p>Kyrgyzstan</p> 	<p>INSTITUTION: Osh State University</p> <p>2012 Participants: Sabyrkul Kalygulova and Svetlana Alymkulova</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: ESD Curriculum innovation At Osh State University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from Osh State University in Kyrgyzstan, which was founded in 1951, has more than 27 000 students and has an important role in education in the country. The main objectives of this change project are: 1) curriculum innovations for ESD at Osh State University; 2) a course “Introduction to Sustainable Development” for students of undergraduate programmes. The project will encourage teaching staff and students to research and participate in specific projects related to sustainable development in Kyrgyzstan.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: There has been an increased number of undergraduate programmes integrating ESD concepts; change of mission and policy of the university towards sustainable development; promotion of research and projects on sustainable development; development of an ESD Toolkit; increased community engagement on SD.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
73.	<p>Liberia</p> 	<p>INSTITUTION: Ministry of Education, National Commission on Higher Education</p> <p>2008 Participants: Michael P. Slawon</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming Education for Sustainable Development through Service Learning and National Youth Service Programs in Liberia (National Programme)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Saaim W. Naame is the Secretary General of the Association of Liberian Universities. During the Regional Workshop held in Nigeria in July 2008, Dr Michael Slawon, Director-General, National Commission on Higher Education (NCHE) teamed up with Dr. Saaim W. Naame in Nigeria during the second phase of the training in Africa to formulate this change project. All baccalaureate degree granting institutions in Liberia need to incorporate service learning in their programmes.</p>



			and Saaam W. Naame (Association of Liberian Universities)	<p>Liberia is emerging from 14 years of devastating civil war which left massive destruction of the infrastructure and trained manpower. Therefore, in post war Liberia, there is an urgent need for sustainable development to Liberia during the recovery process. This can only be achieved if the Universities and Colleges are providing adequate trained manpower that are to provide services that will bring sustained development in Liberia.</p> <p>Dr Slawon made a presentation titled “The Liberian Roadmap for integrating ESD into Higher Education.” He was also elected as the Chairman of NESDIWECA (Network for Environmental Education and Sustainable Development innovations in West and Central Africa) during the regional workshop.</p> <p>This project aims at initiating a process of mainstreaming environment and sustainability concerns into research and community engagement in Liberia. Students will be assigned to various communities to work and mobilise the resources and human knowledge in promoting Education for Sustainable Development in Liberia during their junior and senior years. Also, the project will create awareness among rural dwellers of sustainable living and development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
74.		Liberia 	<p>INSTITUTION: Ministry of Education, National Commission on Higher Education</p> <p>2009 Participant: David S. Dahn</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Implementation of Mainstreaming ESD Through Learning and National Youth Volunteer Service Programme in Liberia (National Government)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This change project builds on a project from the 2008 ESD in Higher Education ITP. It seeks firstly to build understanding of ESD, to mainstream ESD in national policy and to operationalise ESD through the service learning programme in Liberia. The support of the Director-General, National Commission on Higher Education (who represented Liberia in the 2008 ITP programme) is ensuring that this project has substantial status in national government. The project relies on international funding and is currently receiving support through UN structures.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
75.		Liberia 	<p>INSTITUTION: Stella Maris Polytechnic</p> <p>2009 Participants: Patrick Jagba Nah</p>	<p>CATEGORY OF CHANGE PROJECT:</p> <p>TITLE OF CHANGE PROJECT:</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
76.	15	Madagascar	<p>INSTITUTION: Ecole Normale Superieure</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Introducing Environmental Education into the MENSr Curriculum for Primary and Secondary Teacher</p>



		<p>d'Antananarivo</p> <p>2008 Participants: Rémi Rakotondradona and Zara N. Razafiarimanga</p>	<p>Education (Faculty of Education)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Rémi Rakotondradona and Ms Zara N. Razafiarimanga are both from the Faculty of Education, Ecole Normale Supérieure d'Antananarivo. The change project was motivated by extreme environmental degradation in Madagascar, particularly deforestation and land degradation conditions.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The first stage of the project was to develop a toolkit for primary educators, and to review the use and implementation of this in schools. This review informed the second phase of the programme (which was also the change project for the HESD ITP), focussing on the development of a toolkit and strategy for introducing environmental education into the secondary teacher education programme at MENS. This involved developing activities and methodologies for a secondary teacher education toolkit, and a proposal for implementation and review. The programme was designed in five parts, and provides an overview of the history and causes of environmental issues in Madagascar, as well as practical activities to integrate into the school curriculum. The programme design and strategy were developed during Phase 4 of the programme, to be implemented in Phase 5. A workshop was planned for Madagascar, but due to timing it was not feasible to run the workshop before October. It was recommended that this project be integrated into the SADC REEP teacher education activities as it is ongoing, and can be further supported by the SADC REEP.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: -Improving the relevance of teacher education - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
77.		<p>Malawi</p> <p>INSTITUTION: Natural Resources College of Malawi</p> <p>2009 Participants: Feston Kaupa and Kingsley Mikwamba</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p> <p>TITLE OF CHANGE PROJECT: Integrated Agriculture Learning Centre (College)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The Ministry of Agriculture and Food Security (MoAFS) has a 15-ha piece of land next to the Natural Resources College campus at Likuni about 17 km west of Lilongwe city, which was used as demonstration garden for horticultural production, by the Agricultural Mission of the Republic of China (Taiwan), who have since left the country since the diplomatic relationship between Malawi and the Republic of China ended in 2007. The garden is adjacent to the perennial Likuni River, which can provide water for irrigation when required. Most of the equipment used to support production was removed by the Taiwanese Agricultural mission at the time of departure. The MoAFS is maintaining the 5-6 year established grove of exotic fruits, herbs and vegetables in the garden of the 15ha of land, the horticulture centre only occupies 4ha and the remaining 11ha is unused. This land can be put to good use for demonstrating the use of already available technology in order to improve farm productivity. This initiative will complement existing strategies used by the MoAFS to generate and disseminate technologies.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The objective of this change project is to establish an integrated Agriculture Learning Centre on a 15-ha piece of land next to the Natural Resources College campus. The main objective of this centre is to showcase how productivity can be enhanced, in a sustainable way, by the use of simple, relevant and practical technologies. A very comprehensive concept note and project proposal has been developed in collaboration with the Ministry of Agriculture and Food Security. This plan has been supported by two visits by the ESD in Higher Education ITP regional co-ordinator. Given the scale of this initiative it will require national government and international support. Negotiations with potential funders are quite advanced.</p>


				<p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
78.	17	<p>Mauritius</p> 	<p>INSTITUTION: University of Mauritius</p> <p>2008 Participants: Geeta D. Unmar and Hema Ramsurn - Aulum</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Development of an Eco-Campus Initiative involving Composting Research and Activities (Faculty of Engineering and whole campus)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The change project was motivated for by the Vice Chancellor who was in support of green campus development. He requested the engineering faculty to take this on as a research and development focus. This change project was located in the Faculty of Engineering, and hence is an initiative of the Vice Chancellor of the university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The project involved conducting research into composting technologies. The research indicated that high levels of heavy metals were present in the composting waste as a result of the ink used on the paper. This led to a second round of research to address this problem. The change project was also broadened to include an energy conservation project, and the development and introduction of a General Environmental Management module for all students. It was recommended that this project also be integrated into the SADC REEP MESA network.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: -Improving campus management and SD practices on campus, research to develop new technological processes for SD.</p>
79.	18	<p>Mongolia</p> 	<p>INSTITUTION: Mongolian State University of Education</p> <p>2009 Participants: Jadambaa Badrakh and Tungalag Baljir and Gansukh Tumur</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: incorporating ESD principles into English Language Education (Department of University)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Education for Sustainable Development can take place through many subjects and the objective of this change project was to infuse ESD principles and content into the English programmes at the university. With the strong support of the Vice Chancellor of the university, the project leader secured support from Faculty of Language for implementation of the project as was evident from participation of faculty members in workshops and seminars.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: To date achievements include: the revision of the English Language Education curriculum to contain ESD components; the publication of an English Language text book containing ESD principles that is now being used for teaching in the University.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
80.		<p>Mongolia</p> 	<p>INSTITUTION: Ministry of Education, Culture and Science and Ministry of</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Education for Sustainable Development in the TVET sector in Mongolia</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from two government offices, the Ministry of Labour (formerly known as Agency of TVET), and the Ministry of Education, Culture and Science in Mongolia. Their change</p>

		<p>Labour and</p> <p>The Ministry of Labour (formerly known as Agency of TVET)</p> <p>2012 Participants: Narangerel Dogsronjav & Altantuya Yura</p>	<p>project is about planning and implementation of the Monitoring and Evaluation (M&E) of the policies of the TVET sector of Mongolia regarding SD and presenting the M&E results, conclusions and recommendations on the changes and improvements in the sector' strategies and policies in terms of the SD.</p> <p>A new era for TVET has started in Mongolia since the adaptation of a 'Vocational Education Law of Mongolia'. The Technical, Vocational Education and Training (TVET) Agency was established in 2010. By 2012, there was no strategic plan for monitoring and evaluation activities in the TVET sector in Mongolia. The strategic plan development team was formed in April 2012 and Narangerel Dogsronjav is in the team. The main objectives of this change project are monitoring and evaluation of technical and vocational education policies of Mongolia and to ensure SD issues are reflected in the upcoming strategic plan of the sector.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: By April 2013, the main achievement of the change project has been the integration of ESD issues into the draft of the strategic plan of the TVET sector, Mongolia. There has also been innovation in professional education, training standards and programme (competency based) training. The programme covers the following abilities:</p> <ol style="list-style-type: none"> 1. Basic ability: Ecology and environmental protection were defined and produced the programme to attend all students and trainees who study in vocational education and training organisations. 2. Core ability: An ergonomic subject was included and it contains green technology and work safety required in the workplace. For example, analysing and surveying harmful and dangerous substances for the workplace and avoiding building materials with harmful and dangerous substances. 3. Specialisation ability: Professional programme and standard including foresters, natural guardians, gardener, water constrictions and mining restoration may be used in the training. 4. Elective ability: Additional subjects will be included in professional education related to the environment and ecology in accordance with their activity with participation of the governmental organisations. <p>RELEVANCE TO OBJECTIVES OF THE ITP: Networks with Sida, UNEP, NIRAS, Uppsala, Chalmers and Tongji universities, Stockholm+40 Partnership Forum for Sustainable Development and Chongming Island, Horenborg Lake have been strengthened.</p> <p>The development of TVET in Mongolia is currently progressive. Through the change project, TVET development needs will be identified and reflected upon. This process of ensuring SD in this sector ultimately contributes to the eradication of poverty in Mongolia as more young people are trained.</p>
81.	<p>Mongolia</p> 	<p>INSTITUTION: Mongolian State University of Education</p> <p>2012 Participants: Bolortuya Baljir and Erdenechimeg Sanjaa</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD principles into Curriculum of Pre-school Education</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The participant and co-participant are from the Mongolian State University of Education, which is the largest teacher training institution in Mongolia. It includes 10 campus, more than 10 000 students and trains teachers and specialists in 40 different professions.</p> <p>The main objectives of this change project are: 1) to provide teachers and students with increased understanding about ESD; 2) to integrate ESD principles into curriculum of general disciplines. This change project focuses on development of ESD within pre-school education in Mongolia, by training leaders of kindergartens and teachers and setting principles of ESD for pre-school education.</p>

			<p>CHANGE PROJECT PROCESS AND OUTCOME: Main achievements to date include: increased understanding and awareness about the role and importance of ESD; curriculum design for a general discipline; textbook on ESD.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>	
82.		<p>Mongolia</p> 	<p>INSTITUTION: National University of Mongolia (NUM)</p> <p>2012 Participants: Tsagaach Geleg and Jambaljav Baigalimaa</p> <p>2013 Participants: Lefdaoui Youssef</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Establishment of interdisciplinary Minor Programme on Sustainable Development (SD) at National University of Mongolia (NUM)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Economically, the GDP of Mongolia is growing fast; however the country is facing many problems related to SD, and there is poor public knowledge of sustainable development. More so, EE, ESD and SD issues specifically in relation to higher education are quite new in the country and there is no major or minor programme on SD at universities. The participant and co-participant are from National University of Mongolia (NUM), which has a good reputation regarding quality of academic services in Mongolia and acts as a leader of sustainable development education. The main objective of their change project is to establish an interdisciplinary minor programme on SD at NUM. This change project aims to promote diversification of students' knowledge and skills and increased education of SD at NUM.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project implementation started with an evaluation of needs and possibilities of opening minor SD programmes at NUM. Academic regulations and policy for establishing both minor and interdisciplinary programmes at NUM were developed. Thereafter the curriculum for a minor programme on SD was developed. By April 2013, both minor and interdisciplinary programmes at National University of Mongolia had been initiated.</p> <p>The National University of Mongolia has started to devote itself to educating its students in line with the curriculum through the diversity of major and minor programmes. That will enable their students to possess diversified knowledge and skills; the inter or multidisciplinary curriculum will be strengthened by teaching not only a wide range of essential knowledge but also the important theoretical and research-related skills that accompany it.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: Through the ITP, participants and their institution have been able to create a network of people who are working in universities and educational ministries in different developing countries. This change project is at organisational level only. However, there is potential for other universities in Mongolia to initiate and implement this kind of project.</p>
83.	19	<p>Morocco</p> 	<p>INSTITUTION: University Mohammed V Agdal, High School of Technology</p> <p>2013 Participants: Lefdaoui Youssef</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Teaching capacity building based on interactive approach pedagogy, content and ICT</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Lefdaoui Youssef is a lecturer at the High School of Technology, University Mohammed V Agdal. Abderrazak Khohmimidi is a lecturer in the Department of Management, same university and teaches second year students.</p> <p>Participants have a clear idea of how to implement ESD in their university and how to deal with the potential obstacles that could emerge during the process of implementing their change project.</p>

			and Abderrazak Khohmimidi	<p>CHANGE PROJECT PROCESS AND OUTCOME: They have changed their change project from ‘Training of technicians’ to ‘Teaching capacity building based on interactive approach pedagogy, content and ICT’. They have developed an action plan and framework. They propose to continue with the analysis of their USAT tool results and organise thematic workshops that will be based on the content of the analysis of the USAT results. A final workshop will be held to highlight the results of their change project.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
84.		Morocco 	<p>INSTITUTION: Cadi Ayyad University</p> <p>2013 Participants: Aboussalah Mohamed and Youssef El Amraoui</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Promoting awareness and good practice for sustainable development in Morocco’s higher education (national programme)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Aboussalah Mohamed was the Dean of the Faculty of Science and Technology at Cadi Ayyad University Marrakesh, Morocco before his participation in the ITP. Later he became the Director of Higher Education at the Ministry of HE in Morocco. Youssef El Amraoui is now the Dean of the Faculty of Science and Technology</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Participatns have developed a draft charter. Part of the strategies included in the proposed charter ensuring good practices and problem solving in universities at Morocco include: 1. Organising awareness campaign on waste sorting, renewable etc.; 2. Organising ESD workshops; and 3. Establishing action plans.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
85.		Morocco 	<p>INSTITUTION: Cadi Ayyad University, Faculty of Letters</p> <p>2013 Participants: Bouabdelli Fatima and Fatima Zahra Touzani</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating SD within the English Department Curriculum</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Bouabdelli Fatima is a senior lecturer and Head of Department of English as well as a member of the faculty council (dealing with budget issues/pedagogical and research issues). Fatima Zahra Touzani is a Professor in the Department of English who teaches, coordinates modules as well as plays sn active role in the Department’s council and in student supervision.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Participants have reflected on and writtin a good description of their change project and the possible ways of implementing it as well as ESD assessment. They plan to commence in the first semester (S) of 2014 with for example S1 module 4, a course entitled ‘introduction to humanities’ (which is an introductory course for all year ones); world literature; and argumentative writing. S1 module 10 is a course on public speaking and SI module 12 is a course introducing Moroccan culture.</p>

				<p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
86.	20	<p>Mozambique</p> 	<p>INSTITUTION: Ministry of Education and Culture (Directorate of Higher Education)</p> <p>2009 Participants: Garciano Francisco Cumaio and Emelina Ana Khossa</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Strategy plan for the development and adoption of ESD policy for Mozambique (National Government)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: In 1995 the Government of Mozambique approved the National Programme for Environmental Management, which outlines the bases for action, the objectives, the activities and means of implementation of the Agenda 21 as well as the National Environmental Policy in Mozambique. International cooperation is essential for Mozambique for complementing the national efforts directed towards the implementation of development programmes aimed at eradicating extreme poverty and promoting sustainable development.</p> <p>This initiative is working within government structures to raise the profile of ESD generally in Mozambique. Particular emphasis is being placed on Higher Education and Prof Heila Sisitka of South Africa is supporting this process. The election in Mozambique during the 2009 project implementation process has substantially slowed progress on this initiative. It is hoped that the new government will take up this initiative within the approved National Programme for Environmental Management.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The election in Mozambique during the 2009 project implementation process has substantially slowed progress on this initiative. It is hoped that the new government will take up this initiative within the approved National Programme for Environmental Management.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
87.		<p>Mozambique</p> 	<p>INSTITUTION: University of Eduardo Mondlane</p> <p>2012 Participants: Aguiar Baquete and Amado Albino</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Development of Interactive Instructional Teaching and Learning Approaches and Materials on Education for Sustainable Development for a B.Ed Environmental Education Programme</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: UEM is the oldest and largest university in Mozambique. It has a well-established education faculty that offers support and leadership to other education faculties in the country. The country has, since independence, increased the numbers of higher education institutions from 1 to 44. Environmental Education and ESD are new areas of study in the university, but there is agreement that they reflect national priorities. The teaching and learning in most of Mozambican educational institution is largely theoretical and does not develop action competence. Most of the time, the lack of competence in key aspects of teaching is also linked to weaknesses in conceptual understanding.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was designed to cover three main areas: Education – curriculum innovation and green campus; Training and Outreach – leadership programmes and community engagement, and Research – research partnerships and capacity building. Initially, the project proposal was for the outreach component, focusing on institutional developments especially student participation in green campus development. The change project was re-oriented more towards curriculum development in the Bachelors of Environmental Education Degree where it would have a stronger impact.</p>

			<p>Main outcomes: A number of internal consultations were held regarding the change project. This led to selection of 4 of their 22 modules for piloting change methods. The focus was on improving learner-centred approaches to EE/ESD in the following modules: Introduction of Environmental Education; Psycho-pedagogy; Climate Change; and Development of Didactic materials. All four modules have been substantively improved. Additionally, workshops have been held in the Education Faculty to strengthen a common understanding of concepts related to: Education and Education for Sustainability; Sustainability and Sustainable Development; Principles of Sustainable Education and the role of higher education institutions in Education for Sustainability. Much work has been done in developing the philosophical understandings of ESD as well, in response to the core problem encountered, namely conceptual understanding. Various student activities have taken place, and have contributed to greening of the campus, and to demonstration programmes for ESD in schools.</p> <p>Action plan and way forward: Plans are in place to extend the pedagogical, philosophical and conceptual innovations tried and tested in the four modules to the other modules. Staff and students are willing to take this forward. Additionally, the programme is informing the design of a Masters Degree in Environmental Education at UEM which will work with a multi-disciplinary approach.</p> <p>RELEVANCE TO BROADER OBJECTIVES OF THE PROGRAMME:</p> <ul style="list-style-type: none"> - Capacity development and change processes in participants' institutions and home countries: the initiative has supported capacity development amongst colleagues in the Faculty of Education at UEM, beyond the two course participants and has included the whole faculty to develop a deeper understanding of new methodologies and the concept of ESD. - Strengthening of methods, processes and monitoring to enable relevant quality education: The project has developed new methods for teaching that are contributing to ESD.
88.	<p>Mozambique</p> 	<p>INSTITUTION: Catholic University of Mozambique</p> <p>2012 Participants: António dos Anjos Luis and Ali Ahamed Puna Atumane</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD in a BSc Agriculture Science and ensuring Green Campus at Catholic University of Mozambique</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Participants are from the Faculty of Agriculture and the aim of their change project is to reorient the BSc curriculum toward environmental sustainability issues and also to involve students in sustainable activities on campus. The purpose and programmes of the Faculty of Agriculture in the University and its location in a rural area prompted the choice of this change project.</p> <p>The Catholic University of Mozambique is a private university owned by the Bishop's Council of Mozambique. At the national level, Mozambique is engaged with sustainability concerns at policy level through a collaborative initiative between the Governments of Japan and Mozambique. Specifically, the Ministry of Foreign Affairs of Japan has been promoting ESD through integration of ESD policies and practices. Despite the fact that no national ESD strategy has been developed yet, there have been some innovations such as the introduction of 20% local content into the curriculum of primary and secondary school level. However, at the level of higher education, not much support has been provided to support sustainability programmes.</p> <p>The Catholic University of Mozambique has 11 campuses in 8 cities and its headquarters is located in the city of Beira. The University has 8 faculties, one of which is the Faculty of Agriculture in which the ITP change project was implemented. The Faculty of Agriculture is located in Cuamba and has 4 academic programmes namely: Bachelor in Agriculture Sciences, Bachelor in Education Management and Administration, Bachelor in Public Administration, and Master in Education Management and Administration.</p>

The change project developed out of the concern that the current curricula and courses in the Faculty of Agriculture needed to be further reviewed and reoriented towards sustainable development. Additionally, there was need to green the university and transform it towards a green and sustainable campus. The findings of the USAT audit further justified this change project.

CHANGE PROJECT PROCESS AND OUTCOME:

Starting out: The change project was designed to integrate ESD content into the BSc in Agriculture Science and to green the campus at Faculty of Agriculture. The Faculty was then assessed on the extent to which sustainability concerns had been integrated into the curriculum with a view to strengthening and further reorienting programmes towards sustainability and improving the sustainability performance of the faculty and campus.

Main outcomes: Several consultative meetings were held to plan the implementation of the change project. Using the Unit-based Sustainability Assessment Tool (USAT), the Faculty was then assessed on the extent to which sustainability concerns had been integrated in four categories namely: a) the teaching, research and community service; b) operations and management; c) student's involvement; and d) policy and written statements. Following the audit results, it was agreed that focus should be on reorienting the curriculum towards sustainability and greening of the Cuamba campus that hosts the Faculty of Agriculture. A framework was then developed to guide the integration of sustainability thinking across the different department of the BSc in Agriculture Science and create possibilities for managing sustainability issues within the Faculty units. The component of greening the university was assigned to the students' association so as to enhance students' involvement in sustainability activities in the university through their annual planning.



Actual implementation outcomes can be summarised to include the following: Awareness creation in sustainability concerns (for Faculty board of directors, lecturers, and students guided by the USAT audit findings); Evaluation of integration of sustainable concerns at the faculty; Reorientation of the curriculum of the BSc in Agriculture Science toward sustainability; and, Implementation of green campus project.



Action plan and way forward: Plans are in place to have the revised curriculum adopted by the University Council and to fully roll out reoriented curriculum from October 2013, and enhance greening activities in the university. The action plan and way forward for curriculum reorientation will involve: Finalising the curriculum review process and submitting it to the Scientific Council and University Council for approval and then implementing the new curriculum. on greening the Cuamba campus. Plans are underway to conduct training in waste management, and to enhance the following: gardening and planting trees in the campus; waste management activities with emphasis on waste reduction; energy conservation practices in classrooms, laboratories and library; improving indoor air quality standard and practices; as well as celebrating international days, especially those of relevance to the identified sustainability concerns.



Although the change project is incomplete and ongoing, there has been more awareness on environmental sustainable issues among lecturers and students at the Faculty. More involvement of student in activities within the faculty and in the community has been recorded, for example the students association has contributed to management practices through the green campus project by identifying and advising management to solve problems or use new practices to address certain problems. Additionally, there is new infrastructure being created as demand for ESD implementation increases, such as improvement of rooms recommended by students.



RELEVANCE TO OBJECTIVES OF THE ITP:



- Strengthening of methods, processes and monitoring to enable relevant quality education: The project has revised and developed a new curriculum that fully integrates sustainability concerns and this will be implemented using new methods for teaching so as to enhance action competence for practical problem solving in agriculture thereby contributing to ESD.
- Capacity development and change processes in participants' institutions and home countries: The Greening campus initiative has supported


			<p>capacity development amongst students and staff (beyond the two course participants) in the Faculty of Agriculture, and has enhanced the capacity and value for greening the campus and all the attendant university practices and operations.</p> <p>- Increasing awareness of the importance of effective ESD in the higher education sector: Awareness creation in sustainability concerns that was conducted for faculty board of directors, lecturers, and students served to increase awareness of the importance of effective ESD in the higher education sector.</p> <p>There have been strengthened networks at various levels: locally – local government and other stakeholders (city municipality and farming company in Cuamba to implement greening project); nationally – between universities (Eduardo Mondlane University and Catholic University of Mozambique in curriculum development project); internationally – collaboration between students of Faculty of Agriculture and students from other universities who participated in the ITP for the implementation of green campus projects and other environmental sustainable activities. Ongoing infrastructural refurbishment.</p>
89.	<p>Mozambique</p> 	<p>INSTITUTION: Catholic University of Mozambique</p> <p>2013 Participants: Niquisse Moises Sérgio and Albertina Ribaug</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming sustainability concepts in the Master of Science Programme in Regional and development planning in Faculty of Economics and Management at Catholic University of Mozambique</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Albertina Ribaug is the pedagogical director, deputy Dean of Faculty of Economic and management and a member of the academic council. Niquisse Sérgio is the coordinator of the department of SIG and regional planning in the same Faculty.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Participants have achieved two main aims. Firstly, they have outlined the contents of a new module on Sustainable Resource Management in Master Programme in Regional Development Planning. Secondly, they have realised that it could be better to concentrate their efforts on mainstreaming SD concepts in specific modules that already exist such as Natural Resources Evaluation and Management but they are still working on the outlined contents to introduce a new transversal module about sustainable development for bachelor degrees.</p> <p>Outcome:</p> <ul style="list-style-type: none"> - Faculty awareness about environmental problems and the importance of ESD - Introduction of SD related concepts to three already existing courses - Organised annual conference called “Mozambique, towards sustainable development” - Development of new Bachelor degree in Climate Change and Sustainability in progress <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
90.	<p>Mozambique</p> 	<p>INSTITUTION: Lúrio University</p> <p>2013 Participants: Ismael Abdulcarimo and</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies (community engagement)</p> <p>TITLE OF CHANGE PROJECT: Strengthening SD perspectives in ‘One Student – One Family’ programme (promoting awareness in SD among young professionals in the community)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Abdulcarimo Ismael is in the Vice-Chancellors’ office and is involved in teaching, learning, curriculum development, training and resource development at Lurio University.</p>



			<p>Fatima Jamal Ismael</p> <p>Before the ITP, Fatima Ismael was a lecturer but during the course of the programme she was promoted to the position of Deputy Dean in her faculty</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Participants have achieved the following:</p> <ol style="list-style-type: none"> 1. Clearly identified the areas of intervention for awareness change, including agricultural practices, water and forestry resources. 2. Identified types of intervention or activities within the students and community including open day workshop with the community at campus, radio programmes, SD contents in four selected subjects, theatre exhibitions, work and live with farming families and three plantation programme 'one community member, one tree'. 3. Set up a detailed agenda for preparation, process and evaluation, including the M&E workshop in Unango, phase 5 of ITP. 4. Set up tentative dates for a country ESD-SD seminar in Unango for 17-22 March 2014. 5. Set up big challenges for themselves and they are committed to progress. <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
91.		<p>Mozambique</p>  <p>Ministry of Education, Directorate of Higher Education</p> <p>2013 Participants: Omar Farizana and Sansao Jaime Xerinda</p>	<p>INSTITUTION: Ministry of Education, Directorate of Higher Education</p> <p>2013 Participants: Omar Farizana and Sansao Jaime Xerinda</p> <p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Curriculum and Research Development Fund for ESD in Mozambique</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Omar Farizana is the Manager of the Management Department of the institutional fund development unit of the Ministry of Education (Higher Education). She is in charge of approving and financing of projects as well as monitoring and evaluating the implementation of those projects. Sansao Jaime Xerinda works in the Ministry of Education, Directorate for coordination of Higher Education at the Academic Department, where he deals with analysis of ordering processes/proposals for accreditation of new higher education institutions, programmes and courses. In addition to the already existing four windows within the Institutional Development Fund (IDF) in the Ministry of Education, Directorate of Higher Education, a new window (window 5) has been established and is called 'Curriculum Development and Research on ESD Financial Assistance'.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: During their course, participants planned to work on the following areas: Water, Waste, Energy, Climate Change, Agriculture and Forest. To operationalise the above they developed a draft strategy proposal.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
92.	21	<p>Namibia</p>  <p>University of Namibia</p> <p>2009 Participants:</p>	<p>INSTITUTION: University of Namibia</p> <p>2009 Participants:</p> <p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: University of Namibia Education for Sustainable Development Policy</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Cornelia Shimwooshili Shaimemanya and Dr Alex T. Kanyimba are both from the Faculty of Education, University of Namibia. Dr Kanyimba in the Department of Lifelong Learning and Community Education with a Masters degree in Environmental Education from</p>


			<p>Cornelia Shimwooshili Shaimemanya and Alex T. Kanyimba</p>	<p>UNISA and a Masters of Science in policy and sustainable development from Boulogne and then a PhD in environmental education from UNISA. The USAT tool was used to conduct an audit.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The project was initially aimed at developing an ESD policy for the University of Namibia. The co-participant worked on a separate change project related to curriculum development and has been in contact with Rhodes University to develop this project further. Despite working on different projects, it does appear that substantial work is being done towards the implementation of ESD in the university.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
93.	22	<p>Nepal</p> 	<p>INSTITUTION: Ministry of Education</p> <p>2009 Participants: Manju K. Adhikari and Tulasi Prasad Acharya</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD into Monitoring and Evaluation System of the Ministry of Education</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The aims of the change project were to develop ESD friendly monitoring tools, to implement the tools and to revise existing tools from the perspective of ESD. This change project involved using the monitoring and evaluation (M&E) systems of the Ministry of Education to support and ensure the integration of ESD into the national education system.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The initiative was accepted and supported by the Ministry of Education. A participatory follow-up mechanism was formed comprising the participants, co participant, ESD coordinator, expert team and other supporting staff of M&E division. All the colleagues of the ITP participants are aware of ESD and they are very conscious of making their curricula and textbook ESD-friendly. By April 2013, the curriculum and textbooks of the Ministry of Education were audited from the perspective of ESD and an agreement was made to revise the existing M & E tools.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; the positive attitude towards the implementation of the change project and the proliferation of the tenets and concept of ESD at an organisation and institutional level is of great potential. - Contribution to capacity development and change processes in participants' institutions and home countries; at the national level, children and adults will be taught and they will learn the knowledge and skills regarding ESD.</p>
94.		<p>Nepal</p> 	<p>INSTITUTION: Nepal Engineering College, Pokhara University</p> <p>2009 Participants: Rajendra Prasad Adhikari and Robert Dongol</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating Sustainable Development into Natural Resource Management Curriculum</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Rajendra Prasad Adhikari was the Principal of Nepal Engineering College (NEC). NEC is an affiliate college of Pokhara University, which offers an MSc in Natural Resource Management (NRM) for the University. This factor therefore influenced the choice of the change project which was implemented by the subject committee decision of Pokhara University. The objective of this change project was to design a new course structure for the MSc programme that would support the integration of sustainable development concerns into the Natural Resource Management (NRM) curriculum of Pokhara University. Although by April 2013, Rajendra Prasad Adhikari was no longer at the Nepal Engineering College, the change project was continued by the institution and a major part of the change project is incorporated in the various courses designed/revised. There has been strong institutional support for integrating new elements of ESD into the Natural Resource</p>


			<p>Management curriculum as the participant himself was the Principal of NEC.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The syllabi of two new courses, namely, Natural Resources and Sustainable Development (I) and Natural Resources and Sustainable Development (II) have been finalised and approved by the College. The courses have been offered since 2010. Before the participant left the institution, the change project focused on both curriculum and practice which is evident in the formation of a voluntary group comprising of students for keeping environment clean within the college premises. The level of the awareness of ESD in the institution is a major achievement of the change project.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to the enhancement and sustainability of networks in the field of higher education; a wide network throughout the globe has been strengthened by the participants' involvement with the ITP. An example is a paper written and presented jointly with a Mongolian participant at an ESD conference held in Mongolia.</p>
95.	 <p>Nepal</p>	<p>INSTITUTION: Tribhuvan University, Mahendra Ratna Campus</p> <p>2009 Participants: Devi Prasad Adhikari and Aprof Raju Aryal</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Infusion of ESD into Solid Waste Management Practice (Whole University)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This project will set up a campus task force towards the set-up and management of a solid waste segregation and management system at the campus.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p>
96.	 <p>Nepal</p>	<p>INSTITUTION: Ministry of Education</p> <p>2011 Participants: Divya Dawadi and Neera Shakya</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Facilitating To formulate Gender Equal Policy in Education</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Nepal is a small country in Asia and relatively undeveloped. Among the development issues, women rights are one of the factors that block social development. This project is on gender equity in education. The objectives are to: - Find out the gaps in gender equity and equality in education - Share the gaps with the stakeholders particularly with those who are directly involved in process of plans and policies formulation - Lobby and recommend equitable policies and plans in terms of gender equality The project aimed to replicate the national policy of 33 percent women's representation in educational planning and management and in recruiting female teachers through necessary amendments in education acts and regulations.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The outcome of the project is a proposal to ensure 33 percent women's representation in school management committees, parent teacher</p>



			<p>associations, village education committees and district education committees as well as each of the educational boards the education act. The bill is in the process of approval from parliament.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries.</p>
97.	<p>Nepal</p> 	<p>INSTITUTION: University Grants Commission</p> <p>2011 Participants: Subash Chandra Dhungel and Dinesh Mani Ghimire (Central Department of Management Tribhuvan University)</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Environmental Guidelines for Sustainable Development in Nepalese Higher Education institutions</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Higher education in Nepal faces four challenges: climate change and response related education, advanced information and communication, globalisation involved education approaches and contents, and economic benefits of higher education. The change project is to develop environmental guidelines for sustainable development, adapt the USAT tool for Nepal, and extend the concept and practice to TU, PoU, KU and PU as well as 58 public colleges. Outcomes include: – Environmental guidelines apply in all higher education institutions and will create a healthy environment for stakeholders; climate change issues have also been addressed through these guidelines. – Number of universities will increase, grants will distribute to public colleges who will initiate to adopt environmental guidelines. – Empower all universities and their affiliated colleges to formulate their own environmental policy linkage with quality. A Quality Assurance and Accreditation certificate will be awarded after endorsement of environmental guidelines by those universities and colleges.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
98.	<p>Nepal</p> 	<p>INSTITUTION: Ministry of Education (National Centre for Educational Development)</p> <p>2011/2012 Participants: Kul Prasad Khanal and Renuka Pandey</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Developing a Teacher Professional Development (TPD) Manual with integrated ESD Features/integration of ESD in teacher training programme</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Kul Prasad Khanal and Renuka Pandey are from the National Centre for Educational Development (NCED) within the Ministry of Education. The Centre is responsible for developing human resources required for education and for the capacity development of personnel working under the Ministry. It needs to update training programmes and the delivery modality according to the needs of the trainees. With USAT, it was evident that the teacher training section was weak in ESD. The aim of the project therefore is to integrate ESD in the teacher training programme. The change project was implemented through the following steps: 1) formed a community of practice for assessment and content mapping of training manual from ESD perspectives as well as in management training course for G-II officers; 2) developed a training manual; 3) conducted the first phase of training with the ESD feature-based training manual focusing on 41 districts of the country; 4) conducted ESD related activities like orientation to district level teachers, trainers and school supervisors, and also incorporated ESD related research questions in the study entitled 'Leadership for sustainability: A study on the leadership style of DEOs in Nepal'.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Outcomes of the project include 1) revision and update of existing curriculum and training manual with ESD features; 2) training activities; 3) use of locally available training/teaching materials in the classroom demonstrated; 4) leadership capacity development schemes for</p>



			<p>educational managers based on ESD features recommended; 5) more than 100 trainers were trained; 6) maintenance and renovation of existing structures. Further extension of this change project is to launch ESD based management training for education managers, conduct ESD based SHNP based training for all trainers followed by teacher training; development of a reference material on ESD for trainers/teachers. The participant also envisages the development of an intensive Training Course on ESD and sustainable development aiming to develop the capacity of school teachers, head-teachers and school management committee members including the parents.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to the enhancement and sustainability of networks in the field of higher education; Networks of ESD alumni, trainers working in various Educational Training Centres under the NCED across the country as well as the head teachers, school supervisors and District Education officers have been strengthened; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
99.	23	<p>Nigeria</p> 	<p>INSTITUTION: National Universities Commission</p> <p>2008 Participants: Olamide Esther Adesina and Muhammed Asuku Audu</p> <p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming Environment and Sustainability into Nigerian Universities' Curriculum (National Programme for 93 universities)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Muhammed Asuku Audu is the Assistant Chief Academic Standards officer at the National Universities Commission. This project is aimed at sensitising the Nigerian University System community regarding Environment and Sustainability issues through formal education, thus preparing them for effective advocacy and appropriate decision making. Specifically, this project will:</p> <ol style="list-style-type: none"> 1. expose students to key environmental and sustainability issues; 2. prepare students to become advocates for sustainable development; 3. equip students to formulate and implement policies which are in line with sustainable development in future; 4. address environmental issues through an entrepreneurial approach; and 5. sensitise and train university lecturers in sustainability principles, values and pedagogy <p>This project therefore seeks to achieve the set objectives through production of prototype curriculum on environment, economy and social (sustainability) issues as well as training of the teachers in ESD pedagogy. Meetings, workshops and fine-tuning of the curriculum by experts will be the major activities of the project.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: National Universities Commission (NUC) Nigeria scheduled a stakeholders' forum on ESD for November 18, 2008 with the following key objectives:</p> <ol style="list-style-type: none"> 1. to discuss the need for ESD in Nigerian universities as in other African countries; 2. to sensitise the university communities on the need to mainstream environment and sustainability concerns into the teaching, research, community engagement and management of Universities in Nigeria; 3. to sensitise universities on the importance of the interface of environment, society and economy; and 4. to seek further support of government agencies, development partners and international organisations for sustainable development in Nigerian universities. <p>All 93 universities as well as UNESCO and Sida were invited to the workshop.</p>


			<p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
100	<p>Nigeria</p> 	<p>INSTITUTION: Bayero University, Kano</p> <p>2008 Participants: Suraj Salihu Duwa and Hamisu Mai-Unguwa</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of a Curriculum and Implementation Plan for a General ESD Course for all students (university wide)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. Hamisu Mai-unguwa is a Senior Lecturer in the Department of Physics, Bayero University. This project seeks to influence the Strategic Plan of Bayero University Kano, by incorporating ESD into the curriculum of every Department in the University.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: In designing this curriculum the following options were considered: (i) introduce a new General Studies (GS) course on ESD; (ii) add ESD topics into existing GS courses; (iii) integrate ESD across all departments; (iv) integrate it in some courses; and (v) a combination (i) – (iv).</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
101	<p>Nigeria</p> 	<p>INSTITUTION: Obafemi Awolowo University</p> <p>2008 Participants: Chris Ukachukwu Manus and William O. Idowu</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming Education for Sustainable Development (ESD) in the Humanities Curriculum</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. William Idowu is a Lecturer in the Department of Philosophy, Faculty of Humanities, Obafemi Awolowo University, Ile-Ife. This project provides examples of mainstreaming ESD into the curriculum of four programmes in the humanities, namely Religious Studies, Philosophy, History and Sociology at Obafemi Awolowo University, Nigeria.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The issues to be addressed through this initiative can be summarised as follows: <ol style="list-style-type: none"> 1. Educating and empowering faculty to recognise the values inherent in interdisciplinary courses or programmes. 2. Greening the curriculum so that the theme of environmental sustainability is introduced and reinforced throughout the learners' educational experiences. 3. Educating students in all courses of study in the humanities about the holistic implications of environmental sustainability in their chosen careers. 4. Empowering students with the tools they can take into future leadership roles; namely knowledge acquisition, problem-solving techniques, and instilling in them the desire to make a difference. 5. Introducing environmental sustainability issues to our campus and applying our knowledge towards campus stewardship. 6. Working within our communities at various levels: the town, the local government areas, the state, the region, the nation and at the </p>


			<p>level of the international communities, whenever possible, to encourage and achieve environmental sustainability in our contexts.</p> <p>7. Providing resource materials to achieve the above goals through the intervention of the humanities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
102	<p>Nigeria</p> 	<p>INSTITUTION: Rivers State University of Science and Technology</p> <p>2008 Participants: Iyemi Ibimina Kakulu and Dumo O. Mac-Barango</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p> <p>TITLE OF CHANGE PROJECT: Lifelong Learning Centre for Sustainable Development (CSD) (university wide)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dumo Mac-Barango is the Head of Department of the Department of Quantity Surveying, Faculty of Environmental Sciences, Rivers State University of Science and Technology, Port-Harcourt. He presented a talk on “ESD and the Built Environment in Nigeria” during the regional workshop held in Nigeria. This project aimed at establishing a centre for continual training and re-training of staff of governmental institutions, community setups and corporate organisations towards meeting their social responsibilities as they relate to sustainable development, capacity building and empowerment with respect to social and economical sustenance.</p> <p>The centre will have the following as machinery to regulate, administer and engage in the day to day running of the centre.</p> <ol style="list-style-type: none"> 1. A board of trustees, members of which shall be chosen by the technical board of the centre. Such members shall be members of the public with integrity and strong moral character. They shall also have appreciable experience in their chosen fields or endeavour and have a propensity to be ESD friendly. 2. A technical board to consist of the following officers – Coordinator (Chairman), Vice Chairman, Secretary of board, Project Manager, Logistics/Organising officer, Project officers, Associate/Project Secretariat support staff. The day to day running of the centre shall be vested in the hands of the members of the technical board. 3. The centre shall also have linkage arrangements with other national, regional and international centres of sustainable development. <p>CHANGE PROJECT PROCESS AND OUTCOME: - Participation of the Vice Chancellor, Prof B.B. Fakae, at the First MESA Conference in Nairobi, November 2008 - One-day MESA workshop organised with full sponsorship of all lecturers and leaders of all higher educational institutions in Rivers State in 2009 - Institution sponsored the workshop entitled ‘Mainstreaming Climate Change and Sustainable Development in Higher Education in Rivers State, 30 April, 2009 with support from UNEP EETU, Nairobi which led to a commitment to ‘green’ the academic syllabus - Presentation by the Vice Chancellor Prof B.B. Fakae and Dr I.I. Kakulu I.I. on Sustainability compliance in higher education at the 12th AAU Conference, Abuja and commitment to SD. - Greening of syllabus in several departments at RSUST and the introduction of Environmental Management and ICT courses - Improved awareness on wastewater management in Nigeria following the delivery of nine capacity building programmes organised in collaboration with UNEP-GPA 2008-2010 - Catalyst to the development of the first city-wide wastewater treatment facility by the Government of Rivers State - MSc Real Estate programme has been approved at RSUST with an option on Land Management and Sustainable Development.</p> <p>Although a dedicated Lifelong Learning Centre was not established as perceived at inception, the vision was fully actualised through the RSUST/UNEP Technical Collaboration in several capacity building programmes with UNEP/GPA, UNEP/PCDMB and the support of</p>



			<p>UNEP/EETU.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
103	<p>Nigeria</p> 	<p>INSTITUTION: National Commission for Colleges of Education (Federal College of Education Kano State)</p> <p>2008 Participants: Rabi Jibrilla Muhammad and Fatimah Muhammed Palmer</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Fish Farming and Entrepreneurship Training Scheme of Work for Nigerian Certificate in Education (NCE) Trainees (Teacher Education Faculty)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. Fatimah Mohammed Palmer is the Head of Department of the Department of Fine and Applied Arts, Federal College of Education. The Federal College of Education Kano State is a teacher training institution at a tertiary level. Unemployment of teachers and the low income of the fortunately employed teachers influenced the choice of this change project. At a point, trained teachers had started abandoning their teaching jobs for better paid jobs at banks, media houses, custom, immigration etc. Fish farming was chosen as a side business for the teachers because it would not take the teacher out of the classroom, yet the teacher could supplement his or her income from a fish farm. One of the objectives of the project was to help graduates of the teacher training institutions have a source of livelihood while waiting for government employment.</p> <p>This change project addresses the issue of vocational skill acquisition in a professional teacher education programme. The project seeks to achieve poverty alleviation while inculcating the benefits of Environmental Education and Sustainable Development.</p> <p>The initiative aims at producing professional teachers who would:</p> <ol style="list-style-type: none"> 1. Take advantage of the vocational skill acquired to remain in teaching profession; 2. Contribute to the alleviation of hunger and poverty through fish farming; 3. Contribute to environmental sustainability through conservation of natural aquatic life; 4. Avoid environment pollution through proper disposal of fish pond waste; and 5. Acquire entrepreneurial skills and initiatives that would impact positively on their school children. <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project has been implemented. The College now has a farm where fish and other livestock are raised and entrepreneurship is taught as a general studies course. The large farm is an institutional structure for ESD which is now available for training and demonstration alongside farming implements. The headship of the organisation by one of the participants and wide unemployment has contributed immensely to the acceptance and successful implementation of the change project.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: The change project contributes to poverty alleviation by way of integrating entrepreneurship skills alongside other professional training, specifically fish farming, which was chosen as a good additional business for professional teachers to earn a better living. At the national level there has been reduction of unemployment and at the organisational level, self-reliant teachers who also employ labour have also been produced.</p>



104	<p>Nigeria</p> 	<p>INSTITUTION: Obafemi Awolowo University</p> <p>2008 Participants: Simisola Mercy Odeyinka and Sylvanus B. Odunsi</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks</p> <p>TITLE OF CHANGE PROJECT: Establishment of Sustainable Development Centre at Obafemi Awolowo University (OAU), Ile- Ife, Nigeria (University wide)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Sylvanus B. Odunsi is a Senior Lecturer and Head of Department in the Department of Business Law, Obafemi Awolowo University, Ile-Ife. The results of the international collaboration drive between Obafemi Awolowo University and the international partners included an appreciation of the challenges of environmentally sustainable development in Africa and beyond. The importance and need for the above named Centre was underscored by the following research findings: many departments and units did not integrate sustainability issues into their curricula; teaching approaches of many departments and units have not adequately addressed sustainability concerns; the university lagged behind in the area of in-depth research in sustainability issues and challenges; the university's examinations did not satisfactorily assess sustainability topics; and the university's staff expertise in view of the local and global challenges of sustainability was inadequate. The objectives of the change project were to: (1) Have an impact on knowledge and develop skills among university students, scholars, professionals and other deserving groups through provision of Education for Sustainable Development; (2) Influence capacity building through the provision of academic programmes and high quality inputs to academic curricula and training in the area of ESD; (3) To provide inter- and trans-disciplinary research that integrates social science, the humanities and natural sciences; and (4) To create a forum for national and international ESD practice and policy dialogues relating to ESD.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: As at April 2013, the change project has been partially implemented. The proposal was sent to the university administration and it went through the various organs/committees responsible for approving the establishment of new units and departments. esd has been incorporated into university's students` colloquium. All the Deans of Faculties were mandated to include environmental issues among the topics to teach students during the colloquium and members of MESA were nominated to handle them. Many lecturers have mainstreamed ESD into their teaching. A compulsory course that addresses environmental and sustainability issues has been introduced and the university is now championing the revision of curricula in consonance with global trends.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: Through this change project, the university's network with MESA has been strengthened. - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
105	<p>Nigeria</p> 	<p>INSTITUTION: Obafemi Awolowo University (OAU)</p> <p>2008 Participants: Dorothy Ekua</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Development of Obafemi Awolowo University Students as Change Agents for the Environment (Maintenance of clean and beautiful environment)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof. Lara O. Orafidiya is the Dean, Faculty of Pharmacy, Department of Pharmaceutics, Faculty of Pharmacy, Obafemi Awolowo University, Ile-Ife. The project developed a product for the take-off of Green Campus Movement (GRECAM) at Obafemi Awolowo</p>


			Salami and Lara O. Orafidiya	<p>University. GRECAM is a student driven initiative with the following objectives among others:</p> <ol style="list-style-type: none"> 1. Reduction of consumption of resources and improved management of the university's grounds and facilities. 2. Encouraging attitudinal change to sustainability issues and accepting responsibility for actions. 3. Organisation of skill acquisition programmes for members as well as workshops using case studies. <p>The aim of the change project was to draw attention to the degradation of the immediate environment of OAU campus; to design change strategies; to effect positive changes; and to involve members of the community in the change process. Policies that will help relocate the shanty market on campus and design a better structure were also envisaged.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: By April 2013, the participants were able to convince the university management of the need to relocate the shanty market on campus and to build a new well planned market. They were also able to get the market relocated despite much resistance by marketers and community. They received full support of the university authority irrespective of the threats of the marketers. A new market over which university management has more effective financial and sanitation control has therefore emerged. The new market is well laid out with more effective amenities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to poverty reduction and sustainable development; shops owners have a means of livelihood to cater for they needs. They currently construct their own shops and thus are free from paying monthly rental fees. - Contribution to capacity development and change processes in participants' institutions and home countries; the new OAU market environment will serve as a reference point and source of inspiration for other institutions who want to have a market on their campuses.</p>
106	24	Philippines 	<p>INSTITUTION: Central Mindanao University (CMU)</p> <p>2009 Participants: Annie L. Deriada and Maria Luisa R. Soliven</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Incorporating Sustainable into Resource Management Course in Agribusiness Management Course</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This change project aims to infuse both appropriate educational methods and sustainable development content into the study and service learning components of the Resource Management course at the university. The change project has support from the College Executive Council, the Dept. of Agribusiness Management and the Coordinators of the Bayan-Anihan programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Thus far the Resource Management course syllabus addressing dimensions of SD has been developed and course instruction material has been produced. The process of learning about SD through class discussions and community services is part of the revised Resource Management course offered from the beginning of 2010.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
107		Philippines 	<p>INSTITUTION: University of the Philippines, Visayas</p>	<p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Capacity Development Programme on Interlinking Health and Solid Waste Management Practices towards Sustainable Development (Community Outreach)</p>


			<p>2009 Participants: Joy C. Lizada and Jeanette S. Deslate</p>	<p>CONTEXTUAL INFORMATION AND STARTING POINTS: University of the Philippines is a National University with a tri-partite function including teaching, research and public service. The problem of solid waste and the implementation of the Solid Waste Management Act which has implications for climate change and disaster management necessitated this change project. The general objective of the project is to provide and enhance outreach service to communities to facilitate change towards sustainable development and at the same time develop capacity to engage in transformative education for sustainable development. Specifically, the project aims to:</p> <ol style="list-style-type: none"> 1) Develop the capacity of the community in putting into practice the principles of sustainable development, particularly in interlinking health and waste management practices in Brgy. Buenavista, Municipality of Tubungan, Province of Iloilo, Central Philippines; 2) Foster integrated learning activities to draw out knowledge, skills and values for sustainable development among faculty, staff, and students of the University of the Philippines Visayas that would lead to transformation; and 3) Undertake the monitoring and evaluation case studies to document appropriate practices of interlinking solid waste management and human health, lessons learned, challenges and opportunities of education for sustainable development. <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project has secured support from both senior university management and from the authorities of the Municipality of Tubungan where the project is being implemented. The project action plan has been developed and the project implementation area identified. Mechanisms for the implementation of the project, done jointly by the college and the Municipality have also been developed. As part of this change project, the participants assisted the local government of the Province of Iloilo, Philippines in the implementation of the Solid Waste Management Act. Hence this ongoing change project has expanded from the local level to a provincial. The change project has enabled Prof Lizada to network with ESD practitioners in an international conference in Monrovia 2010 and more recently during the international Conference on Solid Waste Management in Philadelphia, USA in March 2013, where she presented a paper on this change project. There is potential for this change project to expand its implementation to the national level, thereby influencing policies and laws on solid waste management.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to improved institutional infrastructure for ESD; the institutional infrastructure for ESD has improved as a result of the better management of solid waste in the college; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries.
108		<p>Philippines</p> 	<p>INSTITUTION: University of the Philippines, Manila</p> <p>2009 Participants: Teresita C. Mendoza and Tristan N. C. Ramos</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: One Clean and Healthy University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The aim of the change project was to formulate clear policies on waste management at the university level. To conduct information education campaign and to install materials recovery facilities for solid, toxic/hazardous and medical waste. The change project was further aimed at greening the campus through a focus on waste management and health. This project is consistent with the university policy of creating a healthy university environment and has strong support from the university Chancellor who constituted a committee on health and other high ranking officials. The created committee was tasked to draw and implement activities to promote the health of the constituents through health education and environmental health campaigns and programmes and to promote environmental awareness among the constituents. Seed funds have been provided by the university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>



			<p>The change project has been implemented and some of the remarkable achievements include the formulation of a policy regarding no use of plastic and styropore in the university as well as an information education campaign. There has also been improved waste management; colour coded waste bins are now installed in all units and offices; a workshop about waste management was conducted with representatives from all units; the concept of waste management is included as a topic in the course which the National Service Training Programme offers to all first year students in the university of the Philippines, Manila. There has also been increased consciousness for re-use of plastic since the policy is strictly enforced including food stalls operating on campus. The above progress was recorded before the university's administration was changed leading to the current dormancy of the Committee of Health and Environment.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; the recycling of materials in the university community will help the poor to have some income by producing products/items from the recyclable materials (e.g. bags, compost). - Contribution to capacity development and change processes in participants' institutions and home countries; this change project and its outcome have the potential to influence other health science campuses to adapt the concept of a clean and healthy university. - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; more so to influence the Department of Education to review how the concept of sustainable development can be incorporated at different levels of education beginning at the primary schools and increasing coverage.
109	<p>Philippines</p> 	<p>INSTITUTION: Central Mindanao University</p> <p>2011 Participants: Anthony M. Penaso and Luzviminda T. Simborio</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Green Research and Extension for Environmental Sustainability and Enhanced Resilience</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Central Mindanao University (CMU) of 100 years, is located in Musuan Maramag, Bukidnon, on the Mindanao island of the Philippines. CMU is traditionally strong in agriculture education and has extended to the fields of veterinary medicine, engineering, forestry education, nutrition and dietetics and teacher education. The well-known university commitment for excellence is not only in instruction but also in research, extension and production, and is enhanced by its collaboration with government and non-government agencies. The change project is in response a call from the local government regarding "Green Research and Extension for Environmental Sustainability and Enhanced Resilience."</p> <p>The objectives were: 1) To build not only a culture of excellence in research and extension, but also of sustainability; 2) To review institutional policies on research, development and extension (RDE) and realign them with sustainable development goals; 3) To formulate University Strategic Research and Extension Plan highlighting the RDE agenda, thrusts, priorities and sustainability focus; 4) To design need-based priority RDE programmes and projects considering the three dimensions of sustainable development – economic, socio-cultural, and ecological; 5) To infuse sustainable development in research designs as well as extension delivery mechanisms and modalities; 6) To revitalise the integration of education for sustainable development in its training and other capacity-building programmes.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project was carried out focusing on Green Research and Extension (R & E), developing an integrated R & E agenda. Aims included: develop quality and relevant R & E proposals; institutionalise linkages and collaboration; upgrade R & E facilities; promote publication of R & E outputs; and enhance R & E Management. Accordingly, R & E will focus on climate change and wider environmental processes; local environmental conditions associated risks and management, and strategies for disaster risk reduction. As part of the outcome of the change project, a strategic plan on R & E has been formulated. Several research projects are being implemented. One is a solid waste management project for greening CMU.</p>


			<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
110	<p>Philippines</p> 	<p>INSTITUTION: University of the Philippines, Baguio</p> <p>2011 Participants: Raymundo D. Rovillos and Romeo Marquez Dizon</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Advancing ESD at University of the Philippines</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: University of Philippines Baguio is a branch of the University in northern Philippines. Prof. Rovillos, Dean of the College of Social Sciences, organised several university level workshops for the change project. The objectives are to integrate ESD principles, methodologies and concepts in the existing evaluation design of the University and to develop evaluation instruments for teaching, research and extension.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The project was initially focused broadly on climate change research then modified to revitalisation of the Balili River system, and finally to 'Advancing ESD at UP Baguio' with the abovementioned as long term research activities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
111	<p>Philippines</p> 	<p>INSTITUTION: Mapua institute of Technology</p> <p>2011 Participants: Delia B. Senoro and Francis Aldrine A. Uy</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks; Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Establishment of ESD Centre at Mapua Institute of Technology</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof. Senoro is the Department Head of Environmental Engineering and the Director of the Centre of Sustainability Research. Mapua Institute of Technology (MIT) is a leading/primary engineering institution in the Philippines. It is the biggest producer of engineers in the Philippines. Hence, incorporating SD in the curriculum means producing majority of engineers in the Philippines with knowledge in SD theories and concepts. The change project is based on USAT applications firstly for the College of Environmental Engineering, and later extended to other departments including Electrical Engineering.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A 'Sustainable Development Research office' which caters for SD related research and development has been established. Several important workshops and forums have been organised. A new course entitled 'Sustainable Development' is being taught by Prof. Senoro. A carbon footprint reduction (CFR) initiative in the institution is being spearheaded by Prof. Senoro. Apart from incorporating SD in the curriculum (teaching and learning), the institute initiated a 'carbon footprint' reduction; became a member of GUPES, and participated/mentoring in a 'sustainable communities' training group with participants from Finland and Africa. Networks including UNEP-EETU, GUPES, Sustainable Communities (international), VTT of Finland, local educational institution networks have been initiated and strengthened. Mapua Institute of Technology hosted two conferences (1) Sustainable Environmental Technologies, (2) Sustainable Building. The latter international conference held in 2013 had the theme: "Education and Training for the Uptake of Sustainable Environmental Technologies - Enhancing Knowledge Base for Non-Toxic Environment and Poverty Alleviation" and the UNEP-EETU head, Mahesh Pradhan was the Plenary Speaker. There is a possibility of collaboration with VTT of Finland regarding a regional project in 'sustainable communities' regeneration</p>



				and development.' RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education; - Contribution to improved institutional infrastructure for ESD.
112	25	Rwanda 	INSTITUTION: Kigali Institute of Science and Technology (KIST) 2009 Participants: Kaneza Florence and Sano Anselme	CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods TITLE OF CHANGE PROJECT: Training of Teaching Staff in Teaching and Learning Methods while Building their Capacity in ESD: A Shift from Teacher Centred Learning (TCL) to Student Centred Learning (SCL) CONTEXTUAL INFORMATION AND STARTING POINTS: The main objective of this change project is to develop the teachers' skills in learning and teaching in Higher Education, while developing practical skills leading to Sustainable Development. They will also be encouraged to shift from Teacher Centred Learning (TCL) to Student Centred Learning (STL). This will be achieved through the proposed change project. The change project was established as an integral part of the KIST Teaching and Learning Strategy, and is designed to align with the requirements of relevant professional bodies. Participants who successfully complete the course will be awarded a Certificate in teaching and learning in Higher Education. This is a substantial project that has been well integrated into existing systems and it would be important to follow up on it. CHANGE PROJECT PROCESS AND OUTCOME: RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
113		Rwanda 	INSTITUTION: Kigali institution of Education (KIE) 2012 Participants: Dorothy Tukahabwa and Gaparayi Gaspard	CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods TITLE OF CHANGE PROJECT: Improving the Teaching of Environmental Education at the Undergraduate level in KIE: Efforts towards Sustainable Development CONTEXTUAL INFORMATION AND STARTING POINTS: Kigali Institution of Education (KIE) was established in 1999. This relatively young institution has made strides in ensuring that students receive quality education. The University is spread over one campus located in Kigali City, consisting of four faculties (Education, Science, Arts and Languages, Social Science and Business Studies). KIE's mandate is to train teachers who are urgently needed to fill the gaps in schools, many of which have taken on untrained teachers. The change project is located within the Education Faculty consisting of three departments: Educational Psychology, Curriculum and Teaching, Educational Foundation and Management. USAT data analysis indicated that aspects of sustainable development are referred to in modules; however a more formalised and focused effort appears necessary. This change project started out with a vision of introducing into the teacher education curriculum, practical ways to promote integration and sustainability issues into teaching, research, and community engagement. CHANGE PROJECT PROCESS AND OUTCOME:



				<p>The participant, in consultation with her co-participant and members of the faculty, identified Fundamental Life Skills for Teachers (FED 101) as a cross-cutting module which includes a topic on environmental issues, as the focus of implementation of the change project. This module was chosen to incorporate social and economic aspects in a more balanced way with a more holistic view of sustainable development. Sub-themes on waste management, climate change, and air pollution are being integrated into the curriculum. Furthermore, the FED 101 course goes beyond environmental issues as it concerns holistic education. It includes gender issues, population issues, human rights issues, and civic education issues. This change project officially had one participant and one co-participant; substantial contributions were made, however, by Mrs Kabanda who took over when Ms Tukahabwa received a scholarship to study her PhD full time in England.</p> <p>Action plan and way forward: FED 101 is an existing module and therefore the changes that were introduced did not require university Senate approval. What will be sought is Faculty approval that ought to be forthcoming given that members of faculty have actively been involved in the module changes. The Science Faculty has shown keen interest in developing a similar module; preliminary ideas were shared at the Phase 5 workshop which will be formalised in forthcoming meetings between faculty members consulting the change project participants.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education; - Contribution to capacity development and change processes in participants' institutions and home countries.
114		<p>Rwanda</p> 	<p>INSTITUTION: Kigali Institute of Science and Technology (KIST)</p> <p>2012</p> <p>Participants: Leopold Mbereyaho & Antoine Nsabimana</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Review of KIST's Curriculum and Inclusion of Aspects of ESD</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>The Kigali Institute of Science and Technology (KIST) is the first public technological institute of higher learning in Rwanda. It came into existence in 1997 with a clear mandate to produce technical, scientific degree programmes of a high standard. KIST has two campuses: the main campus is located in the heart of the capital city Kigali, while the Remera campus is on the outskirts of the city and houses the Centre for innovations and Technology Transfer (CITT). KIST consists of three faculties (Applied Sciences, Engineering, Architecture & Environmental Design). KIST is a young Higher Learning institution which needs to introduce some ESD aspects in its programmes although some programmes already have aspects of ESD in their modules.</p> <p>The aim of the project was to ensure that the Institute's curriculum is able to meet the needs of Rwandans and to ensure that the teaching and learning in KIST is of the highest quality. This is meant to be done by including some topics related to ESD in the module description. The change project is located within the Engineering Faculty consisting of five departments offering nine undergraduate programmes and five postgraduate programmes. It is significant that the participant is the Dean of the Faculty and his co-participant, the Dean of the Applied Science Faculty. The situation prior to the project is that, it was evident that less than 50% of ESD principles in the curriculum, teaching, research and community services were incorporated across the five departments.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>Starting out: The institution was preparing for a curriculum review process and this provided an opportunity for in-depth interrogation of the current offering and for finding ways to address the emergent gaps. This project focused on the addition of three modules infusing Education for Sustainable Development. These modules are going to be examinable so that students pay more attention. One of these modules cuts across KIST and the other two have been developed for the Engineering and Applied Science Faculty. The modules are designed so that the content, teaching and learning strategies will follow the module system already implemented in KIST.</p>


			<p>Main outcomes: The main outcomes/ benefits of the project are the developed modules considering ESD principles. These modules will be part of the good practice employed at KIST of regular module review to ensure their sustainability. This project analysed the KIST curriculum as a whole therefore providing other faculties currently not involved in the change project with important information about the current status of SD principles and concepts in the curriculum. The added value of having the participant and co-participant with Dean status is that the Faculty of Applied Science also engaged in the same exercise simultaneously. Thus the two Deans worked together on the module that cuts across all programmes offered in KIST as well as developed faculty-based modules..</p> <p>Action plan and way forward: By April 2013, the three new modules had not been approved but were at the curriculum review stage. There are plans to initiate students ESD clubs on campus. Leopold Mbereyaho has been invited to participate in workshops organised by the Rwanda Environment Management Authority (REMA). The proposed modules were presented at the Phase 5 workshop where students, academics and KIST administrators were invited to provide feedback on the feasibility of the proposed modules. With minor adjustments, the modules were accepted and will now go through the normal processes of approval at faculty level, and through to Senate level and will be offered in 2014.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector: - Contribution to the enhancement and sustainability of networks in the field of higher education - ITP change project facilitated a closer relationship with local representation from REMA, KIST and UNESCO. - Contribution to capacity development and change processes in participants' institutions and home countries.
115	26	<p>Senegal</p> 	<p>INSTITUTION: University of Cheikh Anta Diop of Dakar</p> <p>2008 Participants: Alioune Kane and Awa Fall Niang</p> <p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Strengthening ESD Issues in the Doctoral School on Water, Water Quality and Water Uses in Senegal</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr. (Mrs.) Awa Fall Niang is the General Secretary of Edeque at the Department of Geography, Faculty of Arts and Human Sciences, University of Cheikh Anta Diop of Dakar (UCAD). During the regional workshop held in Nigeria, Alioune Kane made a presentation on "The State of ESD in Senegal." As Senegal is faced with water crisis it is necessary to adapt new curricula to the context of water scarcity with the challenge of makin different stakeholders conscious of how precious water is for life. The participants' change project was to develop a big component on ESD in their doctoral school programmes on water and related disciplines.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project is designed within the context of strengthening ESD through the curriculum of the Doctoral School on Water, Water Quality and Water Uses in Senegal. The project seeks to set up a specific training programme on ESD in Senegal, particularly in the field of water. A framework for collaboration with UNESCO/BREDA and National Commission for Sustainable Development (NCSD) was incorporated into the project. The product developed during the workshop includes the mechanisms and strategies to acquire financial resources intended for financing the training scheme of the doctoral school and establishment of a national ESD network in Senegal.</p> <p>The proposal for the change project was adopted by the university, the ministry and water societies. At the sub-regional and continental scale, interactions were developed with AMCOW and the NEPAD. The university has become a Centre of Excellency for Water Science and Technology and they coordinated the West African network. The proposed doctorate school is well recognised and students are being received from different faculties and from around the sub-region, Central Africa and Europe (Romania).</p>


				<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education – local networks on environment were integrated as well as network of AUF (Francophony agency). Further support of the existing network will develop the cooperation of other French speaking countries. - Contribution to poverty reduction and sustainable development – food security and water availability are indivisible, hence the change project aimed at influencing water and water use will in the long run help alleviate poverty; - Contribution to capacity development and change processes in participants’ institutions and home countries.
116	27	<p>Seychelles</p> 	<p>INSTITUTION: Ministry of Education</p> <p>2008 Participants: Selby Dora and Audrey Nanon</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of a Core Module on SD to shape Curriculum Development of the New University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The Seychelles as at the time of this project did not have a university, but plans were in place to establish one and course participants were in charge of designing the framework for the university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A broad framework and concept document was developed to support the establishment of a new university in Seychelles. During the programme the participant developed a deeper understanding of the meaning of sustainable development and of ESD. The project developed greater focus and clarity in Phase 2, 3 and 4, and the final product was a module outline for a core course for SD that could be integrated into all faculties in the new university, establishing an SD ethos and orientation for the university. The participant has since changed jobs, but has fed the work into the planning committees and the board responsible for establishing the university. This project can also be integrated into the SADC REEP network in future if plans go ahead. Regional information obtained since the change project was finalised have contributed to the university being established and adopting a strong ESD focus.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector - Development of ESD in Higher Education and improved sustainable development through training.
117	28	<p>South Africa</p> 	<p>INSTITUTION: University of Cape Town</p> <p>2008 Participants: Alexander Ross Paterson</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development and Expansion of Environmental Law offerings in the Law Faculty</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Alexander Ross Paterson is from the Faculty of Law, University of Cape Town. The change project started with using the USAT tool and through this, various environmental activities on campus were identified. The initial plan was to develop a multi-disciplinary programme across faculties centring on environmental law integration. Following the USAT process and with reflection, a decision was made to focus on improving the breadth and opportunities for the study of environmental law in the UCT Faculty of Law.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>



			<p>The further development of the change project included developing an environmental awareness programme for students to stimulate interest and debate, various meeting with senior management and production of proposals which were approved by university committees. This included approval of two new staff members, both of which are tenured positions and which will ensure the longer term sustainability of the change project initiative. The Environmental Law offerings at UCT were increased, through reform of the LLB curriculum (at both undergraduate and postgraduate levels), and various new environmental law modules were prepared, with teaching materials. The course was produced in an e-learning format to allow for flexible delivery and wider student participation in the learning process. A new environmental law research forum has been established, and this project can be integrated into the SADC REEP MESA network activities. A Phase 2 involving the multi-disciplinary focus originally planned for and Phase 3, wider Africa networking was planned and feedback afterwards indicated that this change project had led to expansion of law offerings in the Faculty, including the appointment of new staff members in the faculty.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to sustainable development via improved law course offerings - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.
118	<p>South Africa</p> 	<p>INSTITUTION: Rhodes University</p> <p>2008 Participant: Heila Lotz-Sisitka</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Developing a Curriculum Framework for Socially Transformative Teaching and Learning</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Prof Heila Lotz-Sisitka is the Director of Environmental Learning Research Centre, Faculty of Education, Rhodes University. She holds the Robert and Murray Chair in Environmental Education and is a key ITP planner and facilitator. In October 2014, she took up the post of the Director of the Postgraduate Studies Centre at Rhodes University. The project started with a review of the existing MEd course at Rhodes University. The intention was to re-design the course based on a critical review, and also to deepen the pedagogical approach of the course.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: This project was based on an in-depth review of the MEd course in environmental education at Rhodes University, where key teaching practices were identified. The aim was to probe the orientation of the curriculum, and to identify which teaching practices, in what mix, are best oriented towards social transformation. The review highlighted 10 teaching practices, and some of the dimensions and dynamics of these teaching practices. A revised course framework was developed, and a new course orientation was produced to capture the elements of socially transformative teaching and learning. The curriculum articulates an integrated approach to teaching, research and community engagement, or a community-engaged approach to teaching and research. This addresses current epistemological problems associated with the doxa of scholastic reasoning in higher education, and seeks to articulate a more complex epistemology associated with ESD in Higher Education. This is being captured in an academic paper on the subject, to be submitted for peer review. This project is already part of the SADC REEP MESA network. In sum, the project resulted in an in-depth review of the Masters in Environmental Education course during the period of the ITP. The course modules were re-developed, and some of the content on offer in the ITP was integrated into the course, especially the social-ecological systems and resilience perspectives from the SRI in Sweden, and some of the work on practical ethical reflections from Uppsala University. A course review document was produced in the form of a teaching portfolio, and a new course framework and materials was prepared for implementation. The course has since been implemented three times in this format, serving up to 90 MEd scholars in southern Africa. The course framework has also influenced research and research orientations in the Rhodes ELRC.</p>


			<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Improved Higher Education theory and practice - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
119	<p>South Africa</p> 	<p>INSTITUTION: Rhodes University/WESS A</p> <p>2008 Participant: Mike Ward</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of the ESD in HE Programme into an International Programme that creates links between Africa, Asia and Sweden</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This change project was focused on the ITP ESD HE itself, and involved the co-ordinator further developing the course to include an Asian perspective. It involved setting up links with Asian institutions, as well as adaptation of the course materials for Asia.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A revised ITP programme in HESD that included both African and Asian participants.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - An expanded programme, with wider relevance, South-South-North exchange opportunities. - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
120	<p>South Africa</p> 	<p>INSTITUTION: University of Venda</p> <p>2009 Participants: Ndanganeni Florence Litshani and Humbulani Nancy Mutshaeni</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating Education for Sustainable Development in the Curriculum</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Ndanganeni Florence Litshani and Humbulani Nancy Mutshaeni are from the School of Education, University of Venda. The main focus of the change project was to reorient the Education final year students' curriculum by integrating education for sustainable development. The objectives include: (1) integrate principles, values and practices for sustainable development into Teacher Education methodology modules in final year students' curriculum; (2) To discourage universities to fragment and sectorise knowledge in teaching and learning practices; (3) To support students to become contextually knowledgeable, critical, creative, competent and compassionate for sustainable development; (4) To produce young adults with the confidence to adapt to change and drive education for sustainable development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: This project has proved an important learning opportunity for the participants and their colleagues as they clarify what is required by a very turbulent higher education sector in South Africa. By keeping the changes to the syllabus to below 30%, the participants have been able to implement their project immediately and are working with colleagues to infuse ESD into final year courses for the beginning of next year (2010).</p>



				<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
121		<p>South Africa</p> 	<p>INSTITUTION: Nelson Mandela Metropolitan University (NMMU)</p> <p>2011 Participants: Bianca Currie, Anerie Vlok and Christo Fabricius</p>	<p>CATEGORY OF CHANGE PROJECT: Category E: New Structures and Networks (Student Engagement)</p> <p>TITLE OF CHANGE PROJECT: NMMU Student Mobilisation Project</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Before the commencement of this change project, NMMU already had a Green Campus initiative which was predominantly driven by the management and academic staff. However, NMMU was experiencing high levels of student apathy in terms of sustainability practice on campus and this was the impetus for the change project. The purpose of the change project was therefore to establish a student driven society for sustainability practice on the NMMU campus, to formalise the management of the society, to embed the society in the institution in order to access funds and to gain management support. The USAT results (adapting the student involvement tool) were used as a foundation for the project (initially set at 14.3% participation). This led to various initiatives and actions including: formal registration and revival of the Green Campus forum through formal registration as a student organisation. This allowed for access to funding. Communication channels using social networking tools were established, and included development of a newsletter. A committee succession plan was developed to address continuity issues. Two key activities helped to institutionalise the initiative further: a Student Mobilisation indaba, and an Agent of Change leadership capacity development workshop, attended by the Head of the Campus and international visitors (Phase 3 and 5 workshops). The USAT tool is being used for ongoing evaluation (shows substantive improvement from Phase 1-5).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: By April 2013, the Green Campus forum had been successfully established and has grown from strength to strength. Through the work of the Green Campus forum which is a new structure at NMMU, management practices and policies have been influenced. For example, the Green Campus forum was instrumental in the roll-out of solar lights across the campus and promoted a solar geyser policy in all student residences. Within the institution, the level of student apathy has reduced significantly and a broader network has been established. The change project leader was able to achieve a terminal relationship with the forum which is sustainable in its own right without being driven by staff or management. There is greater student engagement in sustainability issues on campus and in the greater community. Sustainability efforts have been linked with other institutions nationally and abroad. For example, the NMMU Green Campus forum (student driven initiative) is now linked with a greater community. They engage with the Blue Buck Network and have had networking opportunities with Uppsala University. The Green Campus forum raises funds to assist needy individuals on the campus and has adopted various community projects to alleviate poverty in the local area. Through the local and international networks established with the Green Campus forum there is greater potential for the forum to accomplish ESD at a national and even international level.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education; - Contribution to improved institutional infrastructure for ESD.
122	29	<p>Sudan</p> 	<p>INSTITUTION: University of Juba</p> <p>2008</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Development of a Policy Document for the University on ESD in a Post-Conflict Context (Department of Geography and whole university)</p>



			<p>Participants: Elnazir A.M.A. Ramadan and Abdelmoneim A. A. Abusin</p>	<p>CONTEXTUAL INFORMATION AND STARTING POINTS: Participants are from the Department of Geography, Urban and Regional Planning unit, University of Juba. The main purpose of their change project was to mainstream sustainability in curriculum, research and community service. The University of Juba had to split into two as a result of the separation of South Sudan. This change project was conceptualised in the context of university wide re-structuring after a period of conflict in which university momentum was lost. A new initiative to restructure all the university curricula is underway. Following an audit using the USAT tool, very low results related to sustainability were identified, which added impetus to the focus of change project on policy. Through institutional consultations following the use of the USAT tool and its findings, it was decided that it would be most appropriate to develop a policy on mainstreaming sustainability into the university and that this would be a key intervention.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: An institutional workshop was held in Phase 1 which informed the direction of the policy. During Phase 4 a draft policy was developed, based on earlier consultations. In Phase 5 the policy and its development formed a focus of the institutional workshop. The main participant, Elnazir Ramadan left the University in September, but the change project and the Phase 5 workshop were carried forward by the co-participant. The aftermath of the aforementioned institutional split has negatively affected the implementation of the change project because new priorities arose and many negative factors have influenced the change process, although there has been more awareness of ESD. However, the participants are still trying to make something happen, stating that “there is always room for improvement with time.”</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
123	30	<p>Swaziland</p> 	<p>INSTITUTION: University of Swaziland (UNISWA)</p> <p>2011</p> <p>Participants: Nathie E. Maseko and David Manyatsi</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Systemic Integration of Environment and Sustainability Issues into different sub-disciplines in the Faculty of Commerce</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Nathie Maseko and David Manyatsi are both from the University of Swaziland. Nathie Maseko is a lecturer in the Faculty of commerce, department of business administration. He teaches marketing courses and also assists in management courses. Maseko is currently the Head of Department of Business Administration. David Manyatsi is a senior lecturer in the department of curriculum and teaching, specialising in geographical education with over 20 years working experience at UNISWA. A whole-institution USAT analysis was done by the MESA Implementation Committee, including the Commerce Faculty which showed low levels of engagement with ESD. In Phase 3, the change project was linked to the work of the university MESA implementation committee, which conducted workshops for not only the Commerce Faculty, but also for other faculties, the library and institutes in the university. These workshops focussed on understanding sustainable development issues, to build a common knowledge of SD across the university in other to build a foundation for mainstreaming across the university.</p> <p>Staff members in the Faculty of Commerce were then worked with separately, and the same process was repeated at Faculty level, building an understanding of SD and what it means for Commerce Faculty teaching and learning in Swaziland. Staff members were also capacitated on methods of incorporating environment and sustainable development concepts and principles into their courses, curricula and research. Plans are to use the Commerce Faculty mainstreaming process (this ITP project) as an example of how to work with other faculties in the MESA programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>



			<p>The management of the University of Swaziland is supportive of the change project and members of staff have shown interest in environment and sustainability issues. Currently the currency of ESD at UNISWA has greatly increased and in many departments there are new topics, course outlines, teaching approaches, methods and courses for students, for example, courses and modules in Geography and BA 423-The physical environment and Sustainable Development (in international marketing), ACF 431-Carbon Accounting, BUS 440-Environmental issues in Business. There are various community projects and improved engagement with the Swazi community members and industry. Lecturers are more aware of ESD and are in the process of reorienting their curricula to reflect ESD. They are aware of the sustainable use of water and electricity. Students and teachers in the Faculty of Education conduct research on ESD.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.
124	31	<p>Tanzania</p> 	<p>INSTITUTION: Zanzibar University</p> <p>2008</p> <p>Participants: Mohammed Abdulrahman Jiddawy and Fatma Rashid Khalfan</p> <p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: New module in Development Course, and Student Participation Project (Faculty of Law and Faculty of Social Science)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p> <p>The main ITP participant, Fatma Khalfan, left for Italy in September to start a new MEd degree and no longer works with Zanzibar University even though she still does some volunteer jobs there. Her co-participant Mohammed Abdulrahman Jiddawy is still at the university. University of Zanzibar is among the first private higher learning institution to be established in Zanzibar. It is also the first institution to establish a Faculty of Law and Shariah in Tanzania. However, in order for the institution to develop and produce students with good quality education, the university curriculum had to incorporate and accommodate changes. For example many students do not believe in self-employment and therefore after graduating, they become job seekers. There are subjects which need to be integrated in all Faculties, such as Law of Equity, Children's Rights Protection which appear to be important to all people. There is a need for a counselling unit; however, the unit has not yet been established in many universities in Tanzania including Zanzibar University.</p> <p>The change project started with big plans for mainstreaming across the university and introducing a generic course for all faculties. After the July workshop plans were revised to be implemented within current processes and resources. A decision was made to integrate a focus on SD in the development courses in the university offered by the Faculty of Humanities, and also to integrate community-based law issues into the law curriculum. A student participation project (camping initiative) was also launched to strengthen student involvement. The University was visited in Phase 5, but a workshop was not possible. Instead a meeting was held between Prof Sistika, the Deans of the different faculties and the Vice Rector for Academic Planning. Further staff development workshops through MESA were requested for future follow-up. The aims and objectives of the change project were to develop curriculum and integrate subjects that would ensure students have skills to employ themselves and not become job seekers and to build their internal capacity. The aim is also to introduce new subjects that are important for community development.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>The implementation of the change project has continued irrespective of the move of one participant; this is because of 'passion and commitment' for ESD. The ITP provided the pedagogical skills to teach students efficiently. A Diploma course on Children Rights Protection has already been introduced in coordination with Save the Children UK in Zanzibar to assist in enacting a new Act. This new course has an</p>


			<p>ESD component incorporated under development subjects which are taught in all faculties. A draft Bill for Zanzibar Children's Act was enacted in 2010 which is crucial for the future generation. In addition, the university environmental, HIV/AIDS and marketing club has been engaging more students and other people outside the university in the nearby community. Furthermore, to effect more change and ensure sustainable development, Fatma Rashid Khalfan is now in the process of establishing a Students Bureau in Dar es Salaam where she now lives. Further plans: More courses are expected to be introduced in the future such as in the Faculty of Agriculture and of Education (organisational level). Several projects as well as PhD programme are expected to be introduced in the Institute (institutional level); much support is expected from the government (national level).</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development both in short and long run, due to the introduction of the Diploma course on Children Rights Protection at the University of Zanzibar and the fact that other institutions are expected to introduce the same course; - Contribution to capacity development and change processes in participants' institutions and home countries; the integration of the ESD component in Development Studies will enable students to comprehend equitable rights. The students have also begun to changing their mindsets about employment and now consider self-employment E.g. agricultural is a subject which is now emphasized for future development. The university has been conducting workshops to teach students how they can employ themselves through agriculture and particularly sustainable agriculture; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
125	<p>Tanzania</p> 	<p>INSTITUTION: Dar Es Salaam University College of Education (DUCE)</p> <p>2013 Participants: Mashaza Leatitia Gabriel and Innocent Buberwa Rugambuka</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD aspects into BEd Arts Programme at Dar es Salaam University College of Education</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Mashaza Leatitia Gabriel and innocent Buberwa Rugambuka are both assistant lecturers in the Curriculum and Teaching Unit of Dar Es Salaam University College of Education (DUCE). They are both involved in teaching, research, consultancy activities and student supervision.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The Phase 3 institutional workshop took place on 16 September when students were off campus and academics were due to start work placement evaluations. All Heads of Departments and course co-ordinators were present at the workshop. Within the two-week stay in South Africa, participants refined their project. They narrowed their change project from 'Development Education Course' to 'Integrating ESD aspects into BEd Arts Programme'. In addition, they identified the programme and courses to focus on, forwarded their refined idea to their Dean who has accepted it and given them a time frame (January 2014). There have been continuous discussions between participants.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
126	<p>Tanzania</p> 	<p>INSTITUTION: Nelson Mandela African Institute of Science & Technology (NM-AIST)</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Development of a new Masters and PhD programmes on Innovation Management and Entrepreneurship (IM-E)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS:</p>


			<p>2013 Participants: Pasape Liliane and Neema Atupakiseye Heri Mwakabonga</p> <p>Liliane Pasape, Dean and lecturer in the department of Business Studies and Humanities and Neema Heri, her co-participant, is a Teaching Assistant at the Business School and Humanities unit of the Nelson Mandela African Institute of Science & Technology (NM-AIST). NM-AIST is a newly established postgraduate university. This department is in a unique position of offering the following three courses that are compulsory to all students registered at the university: (1) Enterprise Development and Management, (2) Philosophy Law and Ethnics and (3) Communication Skills and Research Methodology. Therefore any innovation in this department will have the potential to have an impact across the campus.</p> <p>This change project is focused on developing modules to strengthen the new Masters and PhD curriculum on Innovation Management and Entrepreneurship with three specialisations: Technological Products, Commercialization of Knowledge and Industries and Business Solutions. The key competence expected from these degree programmes includes: knowledge, ability and skills on planning and managing innovation, ventures as well as commercialisation processes in both existing and newly established companies with a strong emphasis on ESD principles.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Liliane Pasape was unable to come to South Africa. In her absence, Neema was able to consider how to better mainstream sustainability in two already existing curricula: (1) Sustainable entrepreneurship (2) Ethics and Social Imperative courses. Liliane achieved the following during phase 4:</p> <ul style="list-style-type: none"> • Explored sustainability practices in other business schools • Benchmarked good examples of courses in other institutions • Developed preliminary course outline, learning objectives and course contents <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
127	<p>Tanzania</p> 	<p>INSTITUTION: Mbeya University of Science and Technology</p> <p>2013 Participants: Kayuki Gwido Eliam and Raphael Iddphonc Mkini</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integration of SD into Science and Technology Curricula at Mbeya University of Science and Technology.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Kayuki Gwido Eliam is the Registrar at the Science and Business Management Department and a lecturer. He is involved in curriculum and teaching activities. Raphael Iddphonc Mkini is an Assistant Lecturer in the Department of Mechanical Engineering. Mbeya University of Science of Technology (MUST) became a registered public institution in 2012 and is situated in the southern region of Tanzania. Despite the relevantly new public registration, a range of diploma and degree programmes housed under seven departments (Architecture, Computer Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering and Science and Business Management) have been on offer from as far back as 1990.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Participants have:</p> <p>(1) Developed strategies for implementation of their project which includes: organising project coordinators seminars; development of training materials for students; training students; establishing students clubs; and establishing an ESD committee within the university.</p> <p>(2) Identified research areas such as: i) community development; ii) community empowerment (socially, economically, and politically); iii) climate changes; iv) natural resource conservation; v) integrating traditional and modern technologies; vi) rural transformation; vii) urbanisation; viii) water (supply and sanitation); ix) human rights, citizenship, gender equality; x) technological innovation; xi) HIV/AIDS,</p>


			<p>malaria; xii) environmental awareness; xiii) waste management; xiv. renewable energy. (3) Identified sources of funding for the project from their university budget for projects.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
128		<p>Tanzania</p>  <p>INSTITUTION: State University of Zanzibar</p> <p>2013 Participants: Mwevura Haji and Said Khamis Juma</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Project to Boost Employability of SUZA graduates: Course Modification of IT programme and other courses; Tool to Evaluate the project.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Mwevura Haji is the DVC (Academics) and thus oversees all academic research and community engagement programmes to ensure quality and relevance, as well as teach environmental related courses inter alia. Said Khamis Juma is an Assistant Lecturer at the School of Education involved in teaching and research.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: In phase 4, participants decided on an ESD framework and key ESD issues to integrate into their proposed course which is aimed at creating new business opportunities that will be economically viable but which will not compromise the environment. Their proposed framework is centred on Three Ps:</p> <ol style="list-style-type: none"> 1. PEOPLE - the protection of human rights, guarding against child labour, unethical labour practices as well as responsible leadership; 2. PLANET - protecting ecosystems, the impact of a company on natural resources and the environment; 3. PROFIT - financial gain and its distribution. <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
129	32	<p>Thailand</p>  <p>INSTITUTION: Chulalongkorn University</p> <p>2009 Participant: Athapol Anunthavorasakul</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Curriculum Development in Teacher Education on ESD</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: This project seeks to expand on ESD initiatives established within the Faculty of Education of Chulalongkorn University. It contains several components, one of which focuses primarily on the revision of course curriculum and the development of syllabus for a new undergraduate course (Education for Sustainable Social Development). The other component entails the development of a workshop manual for ESD capacity development, to be published and introduced through Thailand-TEI (Teacher Education Institutes).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.



130	33	Uganda 	INSTITUTION: Mbarara University of Science and Technology 2008 Participants: Kenneth K. Kwikiriza and Basil Tibanyendera	CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods TITLE OF CHANGE PROJECT: Development of Materials and Approaches to Improve the Relevance of Science and Technology Teaching in the Education Faculty CONTEXTUAL INFORMATION AND STARTING POINTS: An institutional audit was conducted using the USAT tool which revealed relatively low levels of integration of sustainability issues into the university curriculum, teaching and research. CHANGE PROJECT PROCESS AND OUTCOME: An initial institutional workshop was held to deliberate the change project and the wider issue of mainstreaming environment and sustainability into universities (drawing on USAT findings). A framework for a course was developed with a focus on the re-orientation of the methods to address community needs and make stronger links between concepts and context. Following this a lecturer training programme was held in early October, with a second institutional workshop in late October involving university management, staff, students and the wider community. An ESD sensitisation week was held, and a number of other student and orientation related activities have also been undertaken to highlight ESD. The USAT tool was used to evaluate the intervention at the end of the process, showing a shift in awareness, willingness and knowledge of ESD. RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector
131		Uganda 	INSTITUTION: Uganda Martyrs University 2009 Participants: Bro Aloysius Byaruhanga and Jimmy S. Ssentongo	CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods TITLE OF CHANGE PROJECT: Mainstreaming ESD in Uganda Martyrs University's Programmes and Policies through Management, Staff and Student Leaders' Capacity Development (Faculty of Education) CONTEXTUAL INFORMATION AND STARTING POINTS: Both participants are from the Faculty of Education, Uganda Martyrs University. Bro Aloysius Byaruhanga is a Senior Lecturer, Dean and focal person for ESD and Greater Masaka RCE. Jimmy Spire Ssentongo holds a masters degree in Sustainability from London. As a way of ensuring that education in Uganda Martyrs University (UMU) responds to the local and global concerns of sustainability, this initiative is geared towards building capacity for integrating ESD in the university's policy, practice and pedagogy. UMU has already taken some significant steps towards building capacity for integrating ESD in the university's policy, practice and pedagogy through incorporating the achievement of elements of sustainable development in its mission, through its Community Outreach programme and some course units. However, an integrated approach to ESD is yet to be achieved. Such an approach would have to see the university taking an interdisciplinary approach and ensuring that ESD is enshrined in university policy. CHANGE PROJECT PROCESS AND OUTCOME: This project has consolidated these initiatives and has used innovative ways of supporting staff (e.g. the use of the course materials on the intranet). The project has also received substantial support from the Vice Chancellor of the University. RELEVANCE TO OBJECTIVES OF THE ITP:



			<ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector
132	<p>Uganda</p> 	<p>INSTITUTION: Ministry of Education and Sports</p> <p>2009 Participant: Sande Awava Kabirizi</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Assessment of ESD Implementation in Institutions of Higher Learning in Uganda (National Government)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: The objectives of this project are to find out if the institutions of higher education in Uganda, have mainstreamed ESD in their programmes and how they have implemented it. The choice of this change project was made on the realisation that it is the duty of the Higher Education Department to monitor all institutions of higher learning in Uganda (a total of 160).</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The study will be limited to eight institutions because of the limited time and funding. The institutions will be randomly selected. However they will be representative of the education institutions in Uganda.</p> <p>To assess sustainability efforts in higher education, an assessment questionnaire will be developed. The questionnaire will be administered to the heads of institutions or academic registrars. The questionnaire will be designed to assess the extent to which university/institution are sustainable in teaching, research, operations and outreach. The questionnaire will require the respondent to give impressions on the institution's accomplishments on these critical dimensions of higher education. In an attempt to elicit more detailed data informal discussions will be carried out with different groups of people like students, lecturers, university/institution administrators and community. In addition the institutional reports and documents were reviewed. Consolidation of the data and the related reports have not yet been finalised.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
133	<p>Uganda</p> 	<p>INSTITUTION: Makerere University</p> <p>2011 Participant: Dr Victoria Tamale and Dr Mathias Mulumba</p> <p>Kaggwa Rosette</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integration of SD into the 'Theory and Practice of Educational Administration' and Management Course Outlines.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Makerere University is a well-known, established university on the African continent. It has, however, been affected by the privatisation of Higher Education (World Bank Structural Adjustment measures) in recent years, and has experienced pressure of increased numbers of students, without associated resources. The university mission and vision incorporates a commitment to sustainable development. Uganda has a strong National Strategy for implementing ESD, and there is strong support for ESD from the National Environmental Management Authority (the Director contributed to the establishment of MESA). The university has recently completed a cycle of curriculum reform; and is currently undergoing restructuring; and internal re-orientation towards learner centred education and increased research outputs. Broader national education challenges affect the university.</p> <p>The USAT audit of different sub-disciplines in the School of Education showed poor integration of ESD concepts and approaches in all courses. Due to internal structural difficulties (re-structuring, strikes, loss of financial resources) the initial change project plan (to work</p>

			<p>across the School of Education) was ‘focussed down’ to one course.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A draft of the course outline, i.e. Educational Administration and Management with ESD inclusions, has been produced. The original course outline has been enriched, and pilot tested with students, who responded positively to the changes. Significantly, the changes in the curriculum increased students’ interest in the course and also showed them that an administrator does not only administer people, but also other resources like the economy and the environment. During Phase 5 ITP, internal discussion of the audit results showed that there is a desire from staff for deeper understanding and skills in SD in the School of Education as a whole. It was proposed that an effective way to deal with this would be to design a postgraduate diploma and masters degree course on ESD in the School of Education; short courses on ESD; and enhance community engagement.</p> <p>They drew on understandings of SD gained through the Swedish component to develop their change project. The USAT tool was particularly useful, and assisted the participants to review practices in the Faculty of Education, and to use this for internal dialogue and curriculum development purposes. While a broad audit had been done of sub-disciplines in the Faculty of Education involving Economics of Education; Science and Technology Education, Curriculum Studies, Geography Education, Professional Ethics, Philosophy of Education and Sociology of Education (using the USAT tool); at Phase 4 the participants were supported to focus more specifically on actual content changes in one of the sub-disciplines, as tackling all of them in an environment that was suffering from unsettled re-structuring was seen to be too ambitious a goal in the first instance. The Change project was therefore re-shaped from a faculty wide intervention, to a course-based curriculum intervention focussing on improved content, teaching methods and assessment practices that reflected some of the principles of ESD.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
134	<p>Uganda</p> 	<p>INSTITUTION: Nkumba University (NU)</p> <p>2011 Participants: Ms Agnes Nambatya Kivumbi and Mr Alithum Bruce</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming SD in disciplines within the School of Humanities and Sciences: Focus on Religious Education Programmes, Teacher Education Programmes and Social Sciences.</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Uganda has a National ESD Strategy that is providing orientation to universities for ESD mainstreaming. University policy broadly supportive of ESD. ESD is not well understood in the institution; and fragmented approaches to ESD exist in the university, including at whole institutional policy level, curriculum level, and community engagement and research levels.</p> <p>The USAT tool was used to audit three different types of courses were audited for sustainability using USAT: individual Religious Education courses (within the Teacher Education Department) as well as other Teacher Education Courses; and Social Sciences Courses (the latter was done later in the programme by the co-participant).</p> <p>Participants drew on concepts of sustainable development, examples of community engagement, and curriculum development approaches (e.g. approaches to practical learning and formative assessment) encountered during the Phase 2 and 4 interactions. They made extensive use of USAT, and are expanding the use of this tool as a mechanism for starting up engagement with departments in the School of Humanities</p>



			<p>and Sciences (as has been piloted in the Teacher Education and Social Sciences programmes in the ITP). Of interest is the integration of the curriculum work with community engagement activities, which was discussed in some detail in the Phase 4 workshop in South Africa.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Recommendations from the Religious Education audit were used to change the curricula for Religious Education studies; and a new course was developed. It was presented for feedback, and critical review helped to inform the ongoing development of the course (Phase 3-5). A green foods project was started to establish a student-based community engagement programme linked to the ESD mainstreaming efforts. Students' involvement under the Green Foods project was positive. The students Green Foods Project is fully supported by the university which provided all the garden tools. The planned curriculum change activities were budgeted for within the faculty budget and therefore well resourced. The developed course will have to be presented to the School board for approval, assurance committee and finally tabled at Senate for approval. The project activities are to be included in the strategic plan of the school, later to be incorporated into the University strategic plan. An audit survey for 11 disciplines in the Social Sciences has been undertaken (following the work in the Education Faculty) and the findings have been disseminated. An SD committee will be formed to regularly monitor progress. Further community engagement projects are being planned, and there are plans to develop an ESD policy to guide ongoing ESD mainstreaming.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
135	<p>Uganda</p> 	<p>INSTITUTION: Busitema University (BU)</p> <p>2011 Participants: Dr Edward andama and Dr Margaret Stella Ujeyo</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming ESD Principles and Practices in Teacher Education Programme (Bachelor of Science in Education and in-Service Teacher Training Diploma)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Busitema University (BU) is a new multi-campus university in Uganda. The university hosts the Eastern Uganda Regional Centre of Expertise in Education for Sustainable Development. Uganda has a proactive National ESD Strategy which provides a framework for all educational stakeholders to participate in ESD activities.</p> <p>The VC of the university is very supportive of ESD. The change project has had full support of the University administration particularly the Vice Chancellor and the academic registrar who is in charge of the administration of all academic programmes and curricula in the University. The faculty was set for a curriculum review and this was quite timely for a crosscutting course on SD to be incorporated. Another influencing factor was recent introduction of Universal Primary Education in Uganda, which includes Universal Science Education. Participant is Dean of Faculty of Science Education. The University strategic plan provides a holistic approach to building a sustainable long term future within a continuously changing environment. Findings of USAT revealed low levels of integration of sustainability in many areas and little involvement in community outreach; a lack of awareness of ESD and key issues relevant to sustainability. All departments needed strengthening to internalise and realise policy in practice despite a strong university and national policy environment oriented towards SD.</p> <p>The aims and objectives of this change project were to (1) equip teachers with the knowledge and skills needed to initiate sustainability practices and train them to become educators of sustainable development (2) Develop a cross cutting ESD course. This change project was instigated by the fact that firstly, Uganda as a country had already developed an ESD policy which provided a basis for this project. Secondly, Busitema University set itself to educate for sustainability from the start. This commitment is reflected in the University niche of practical</p>


			<p>sciences, relevant technology, productive education and innovation for sustainable development. All the written statements of the University emphasise this commitment. The University strategic plan provides a holistic approach to building a sustainable long term future within a continuously changing environment. The cross-cutting issues in the plan such as gender, HIV/AIDs, quality assurance, environment, entrepreneurship and disaster management are all ESD components. A key concern of Busitema University has always been to adopt a learner centred approach to teaching in order to produce graduates with problem solving skills and reflective ability.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The project implementation started by engaging University management in dialogue, and seeking their support. The dialogue then moved on to other stakeholders like the student leaders and staff who needed to take part in the audit.</p> <p>USAT analysis showed low levels of integration of sustainability into university programmes, and a lack of community engagement. A cross-cutting course for the Bachelor of Science Education was developed, and piloted, and was fully supported by the University administration, the Dean (Dr Andama) and staff. The final product has already been included in the teacher education programmes for bachelor degrees and diplomas The reviewed curricula are set to be discussed by the University Senate and sent to the National Council of Higher Education for approval. Approval is still anticipated; in the meantime participants have pursued the areas of student involvement and community engagement embedded in the courses. Hence the student community has been highly motivated by ESD activities and community outreach and there is currently a proposal to introduce a campus environmental week and environmental awards as well. The ESD course unit has been developed as cross-cutting pilot course to benefit all students of the faculty but later will be rolled to other University programmes. A student association already exists to spearhead ESD activities in the Faculty and links with the community; in addition there budgetary considerations for ESD activities in the faculty.</p> <p>The programme was affected by a strike, and by a re-structuring process involving change from faculties to colleges. Participants also reported on institutional bureaucracy and lack of interest amongst other lecturers in sustainability issues as constraints.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to the enhancement and sustainability of networks in the field of higher education – The project has identified different categories of people and organisations to work with in order to achieve the objectives. These include networks with: (1) Schools around the University; (2) National Environment Management Authority; (3) the Regional Centre of Expertise (RCE) whereby the institutions and organisations that are members of the RCE are their partners. - Contribution to poverty reduction and sustainable development – The change project has an influence on poverty reduction in the long run because some topics embedded in the courses explore causes and effects of poverty and practices of poverty reduction. The practical aspects of the courses require students to engage with communities in poverty reduction activities.</p>
136	34	<p>Vietnam</p> 	<p>INSTITUTION: Hatinh University</p> <p>2009</p> <p>Participants: Tran Minh Duc and Tran Thi Ninh</p> <p>CATEGORY OF CHANGE PROJECT: Category B: New Management Practices</p> <p>TITLE OF CHANGE PROJECT: Green and Clean Campus at Hatinh University</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Building on the university management board priorities to support a “green” university campus, this project seeks to create awareness and change behaviour concerning waste management at the university campus. Starting “small”, the project will focus on delivering ESD workshops, combined with campus wide action days to raise the profile of sustainability issues among students.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME:</p>


				<p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <p>- Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.</p>
137		<p>Vietnam</p> 	<p>INSTITUTION: University of Natural Science</p> <p>2011 Participants: Do Thi Thuy Quyen and To Thi Hien</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Integrating ESD in University of Science</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: In recent years, Vietnam has invested significant budget to improve the quality of the education system. Besides infrastructure, policies, strategies and plans are being developed at the ministry, and university levels. In addition, Vietnam actively implements UN's DESD concept and programmes. The Faculty of Environmental Science is the only one in the University that has started to pay attention to sustainable development. The change project is therefore to strengthen the SD concept in existing curricula and to extend to other faculties. This programme was designed to enhance all students' understanding of the sustainable development issues as well to help them develop skills to apply these to their study, research, and practice.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The USAT tool was slightly modified and applied to the university. It was found the Schools of Environmental Science and Material Science are paying more attention to SD than other faculties. As a result of the extensive understanding in ESD and some practical experience shared by other participants during the ITP, participants have been applying ESD in their own country and department. They have modified their teaching methods and also integrated sustainability into their lectures and research field. In addition, there has been a spread of the awareness of sustainability to the community through the students' activities and an integration of ESD concept in several course syllabuses.</p> <p>An initiative known as 'swapping day', characterised by the exchange of old items was hosted by students and the community actively participated. This event is now an annual activity in October. Networks have been established with other universities in Asia to share information, experience and material in ESD. Outcomes of this change project can be best described as 'new and revised programmes'. They include: curriculum innovation (1-2 courses as pilots at Department of Environmental Technology, to be extended to the whole university in near future); enhancement of students' skills: communication skills, team-working, problem solving; increasing community awareness in sustainable development (through the students' activities).</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education.
138		<p>Vietnam</p> 	<p>INSTITUTION: Tra Vinh University</p> <p>2011 Participants: Pham Trung Yen and Tieu Thanh Thuy</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Developing a Strategic Plan for Tra Vinh University to serve the Sustainable Social – Economic Development of Local Region</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Tra Vinh is an agricultural county. Due to rapid development in the county, the University is formulating development plans to support the social and economic development. Therefore, it is an ideal time to integrate the concept and experience of environment protection and sustainable development into university plans which will ultimately serve the county. The change project will actively work with the aims of</p>

			<p>increasing knowledge and awareness of SD in local people, staff and students at Tra Vinh University; cooperating with the youth and student union, department of Facility management to build and maintain a green campus at Tra Vinh University; contributing directly with implementing the strategic plan of 2015 of the school and the social-economic development plan 2010 – 2020 of Tra Vinh province. The project has strong links with the strategic plan of Tra Vinh University. The project goal is to contribute to sustainable improvement of knowledge and awareness of SD in local people and students in Tra Vinh University. The project purpose is to facilitate the local people and students' access to and participation in environmental protection activities in Tra Vinh province, with relevance elsewhere in Vietnam.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Further plan of Tra Vinh University includes: 1) strengthening the role of the university in helping the community by means of cooperating with local government departments and organising workshops for local officers; training workshops for farmers towards a friendly environment; and promoting research projects; 2) promoting and help student union for involvement in green campus and green community; 3) preparing documents for joining the Association of University Leaders for a Sustainable Future; 4) keeping tight links with ESD alumni such as University of Natural Science and An Giang University; 5) establishing an institute for climate change adaptation etc.; 6) building a green campus</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to the enhancement and sustainability of networks in the field of higher education.</p>
139		<p>Vietnam</p>  <p>INSTITUTION: An Giang University</p> <p>2011 Participants: Doan Huu Luc and Vo Thi Nhiem</p>	<p>CATEGORY OF CHANGE PROJECT: Category A: New Policies and Management Strategies</p> <p>TITLE OF CHANGE PROJECT: Developing a Process to Implement Sustainable Development in An Giang</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: An Giang University (AGU) is based in Long Xuyen city, the capital of An Giang province in Vietnam's Mekong Delta region. An Giang Province (PCAG) and offers free or low-cost education to high school graduates resident in An Giang and nearby provinces. AGU's mission is to provide academic programmes at all levels to assist in enhancing An Giang's and the broader region's human resources and economic development. The aim of the change project is to initiate and develop the process of implementing the principles, concept and values of sustainable development in the participants' university.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The process of implementing the project includes the plan to (1) Improve training programmes in the Faculty of Technology and Environment; (2) Add knowledge of environmental protection to curricula for pedagogic college students who will teach the youth from primary to middle schools; (3) Develop courses on sustainable development to teach undergraduate students and members of other sectors in An Giang Province; (4) Implement "Green University" project at AGU.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries.</p>
140	35	<p>Zambia</p>  <p>INSTITUTION: National institute of Public Administration</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Training of Trainers on Development of Modules on Sustainable Development to integrate into Current Public Administration Programmes</p>

		<p>2008 Participants: Bridget S. Mwiya Muyambango and Fredson K. Yamba</p>	<p>CONTEXTUAL INFORMATION AND STARTING POINTS: Bridget S. Mwiya Muyambango is one of the Directors at the National Institute of Public Administration, NIPA, responsible for the coordination of all Management and Legal Study Programmes. Being part of the top management of NIPA, she facilitates up to 22 staff members. Honourable Fredson K. Yamba who was formally the Director for Research and Consultancy at NIPA is now the Secretary to the Treasury of the Zambian Government.</p> <p>NIPA is one of the leading providers of high quality professional management and business training, research and consultancy services, in Zambia and the SADC region. NIPA was originally established as a staff training college in 1963. Later under the Public Service Reform Programme through the Act of Parliament No.15 of 1998 NIPA was transformed into a semi-autonomous commercial institution. With over 43 years track record in capacity building, NIPA has continued to play a leading role in consultancy, research and development of human resource for the public and private sectors locally and regionally and has established sound collaboration with international institutions. Some of the full time/part time courses offered at NIPA include Law and management courses, Management courses, Business courses; there are also distance learning programmes.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: Bridget S. Mwiya Muyambango has realised that irrespective of the education sector and the profession, Education for Sustainable Development can be integrated. But the challenge will be how the integration can be done. The ‘how’ was the aim of the change project; wanting to know how ESD can be integrated into already existing programmes, at least some aspects. Because she is responsible for only management and legal studies programme among the many programmes at NIPA, this was a challenge, especially because only Bridget and Fredson were very familiar with ESD due to their participation in the ITP in 2008. They engaged their colleagues in informal talks. A workshop was organised and held for NIPA staff members.</p> <p>An institutional audit was conducted, followed by an institutional workshop where audit results were shared (in April 2008). Findings of the audit indicated very little attention is being given to sustainability issues in the National Institute of Public Administration (in courses, administration, management and teaching practice). A change project was discussed for the institution focussing on capacity building of staff to integrate sustainability into courses. It was agreed that a pilot projects should be initiated before wider upscaling, and that it should be incorporated into the Strategic Planning of the institution in 2009-2011 to ensure that budgets could be allocated to the activities. A framework for a module on Principles of Sustainable Development was developed in Phase 4 of the programme, and in Phase 5 an institutional workshop involving 15 staff members was held to plan for the running of the programme in two of the NIPA programmes in the first instance, before rolling it out into other NIPA programmes. A scope and sequence chart was completed to plan for the further implementation of the programme.</p> <p>An outstanding outcome of this change project is the successful integration of ESD issues and concepts in a Diploma in Gender Studies (DSG 203) course titled “Gender and Natural Resource Management.” Some of the key ESD related course content include: Millennium Development Goals; Climate change and women; Environmental degradation and women; Environmental sustainability; Food security and the role of women; Environmental policies and programmes etc.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to poverty reduction and sustainable development; - Contribution to capacity development and change processes in participants’ institutions and home countries; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
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141		<p>Zambia</p> 	<p>INSTITUTION: Copperbelt University</p> <p>2009</p> <p>Participants: Roy Alexander Chileshe and Gilson Chisomo Ngoma</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Education for Sustainable Development and Global Citizenship (ESDGC)</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Roy Alexander Chileshe is the Dean, School of the Built Environment, Copperbelt University, Kitwe and Gilson Chisomo Ngoma is a Senior Lecturer and a member of the council of the same University. The School of the Built Environment is expected to indulge in activities that have direct bearing on the future of the planet. The objective of this change project was to provide support to the School of the Built Environment at the Copperbelt University in planning and implementing programmes that will bring environment and sustainability into the mainstream of learning and research. The change project aimed at increasing the awareness and knowledge of issues such as: interdependence, citizenship and stewardship, values and perceptions, sustainable change, diversity, uncertainty and precaution, conflict resolution, quality of life, needs and rights.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A substantial discussion document on Education for Sustainable Development and Global Citizenship (ESDGC) was developed during the regional component of the programme. Two workshops have subsequently been conducted (in October and September) and substantial support has been gathered for this initiative. The next stage is to present a proposed ESDGC policy document to the Board of Studies after which the document can be presented to Senate. Once this has been done and assuming that Senate accepts the School's proposals, a policy document on ESDGC will be adopted by the school. By 2013, the general perception of staff and student had changed regarding ESD. By 2014, the School of Built Environment through its Practice office in collaboration with the Dr Chileshe, the Dean, has integrated principles of sustainability in all their activities.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP: - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector; - Contribution to capacity development and change processes in participants' institutions and home countries.</p>
142		<p>Zambia</p> 	<p>INSTITUTION: University of Zambia</p> <p>2011</p> <p>Participants: Enock N. Sakala and Douty Chibamba</p>	<p>CATEGORY OF CHANGE PROJECT: Category D: New Programmes and Courses</p> <p>TITLE OF CHANGE PROJECT: Mainstreaming Sustainability Concepts in the Proposed New MSc Environmental and Natural Resource Management (ENRM) Programme</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Dr Sakala and Dr Chibamba are both lecturers at the School of Natural Science, Geography Department, University of Zambia. Environmental degradation and very poor solid waste management in urban areas is notable in Zambia. Extensive review of existing knowledge, local issues, and consultation with stakeholders was used as a basis for the design of the MSc Programme; and a number of modules were developed. Alongside this consultation, a departmental USAT audit was undertaken; revealing that efforts to integrate environment and sustainability concepts and principles were patchy and poorly connected. A lack of differentiation between environment and sustainable development also existed; and a lack of clarity on how to introduce the concept of sustainability was identified. The change project's focus was therefore to integrate sustainability concepts into five modules of the MSc programme.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The project developed a directory of relevant student projects, to inform practical fieldwork; strengthening inter-university collaboration for</p>

			<p>the programme, and increasing awareness of sustainability literacy across the department; and creating an ESD resource that helped to clarify use of the sustainability concept. The programme has received Senate approval and therefore sustainability concepts have been explicitly integrated into five of the core courses on the M.Sc ENRM and were launched in July 2012, substantively enriching the programme's original modules.</p> <p>By April 2013, there had been collaboration between the department and the Ministry of Local Government and Housing, to develop another MSc programme in spatial planning. The emphasis on this programme, whose development the ITP participant coordinate, is sustainable development. There is also a generally increased awareness about ESD in the department to the extent that staff members are beginning to apply ESD concepts even in undergraduate courses. This project addresses the environmental, socio-cultural and economic dimensions of Sustainable Development by ensuring that students are guided by staff to undertake case studies with practical interventions to local communities in Zambia. As at 2014, two new Masters programmes had been approved and commenced. The ITP participants are directly involved in the development and running of the programmes. These programmes are called 'Masters of Science in Environment and Capacity Development' and 'Masters of Science in Spatial Planning.'</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
143	<p>Zambia</p> 	<p>INSTITUTION: University of Zambia (UNZA)</p> <p>2011 Participants: Milupi inonge Kasimona and Esther Hara Zulu (co)</p>	<p>CATEGORY OF CHANGE PROJECT: Category C: New Tools and Methods</p> <p>TITLE OF CHANGE PROJECT: Participatory Materials Development Booklet developed both as a Teaching and Learning Resource</p> <p>CONTEXTUAL INFORMATION AND STARTING POINTS: Milupi inonge Kasimona and Esther Hara Zulu are both Lecturers at the School of Education, University of Zambia (UNZA). Their change project was centred on the development of an Environmental Management and Ecology booklet. The institutional mobilisation processes used in implementing the change project were workshops, peer consultations and strategic meetings. During the Phase 3 workshop, discussions were established around how teaching modules and expertise from the Geography, Environmental Science and Education Departments could be shared for environmental management teaching and learning.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: A draft booklet has been developed which draws in practical fieldwork that students have undertaken on key environmental issues in Zambia. Their work is represented by both photographs of the field-based issues that they observed, as well as critical commentary and inputs from students. Additionally, critical questions are framed to encourage further engagement with the contents of the module. The resource book was developed for teaching environmental management (EM) in undergraduate Bachelors in Environmental Education; with stronger focus on local environmental issues and risks that require management. More participatory modality of curriculum development established. The next step is to make the booklet available to colleagues and students for critical review, trailing and testing. The booklet has not yet been published. It is hoped that the institution will encourage the production of the resource material.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.
144	Zambia	INSTITUTION:	CATEGORY OF CHANGE PROJECT: Category B: New Management Practices

			<p>Kasama College of Education</p>	<p>TITLE OF CHANGE PROJECT: Kasama College of Education (KACE) Green Campus Project</p>
		<p>2011</p> <p>Participants: Ntenga Oscar Emmanuel and Musonda Moses (co)</p>		<p>CONTEXTUAL INFORMATION AND STARTING POINTS: Ntenga Oscar Emmanuel and Musonda Moses are both Lecturers at the Kasama College of Education (KACE), Kitwe, Zambia. The choice of the participants' change project was motivated by the pathetic appearance of Kasama College Campus as well as the negative attitudes of college community members towards ESD and EE issues. The aims of the project was therefore to (1) Cultivate positive attitudes in the college community members towards preservation of the environment and other ESD issues; (2) Preserve and sustain the college environment through litter management, landscaping and tree planting; and (3) Integrate ESD in the college curriculum.</p> <p>CHANGE PROJECT PROCESS AND OUTCOME: The change project implementation process was initiated at four distinct levels: (1) Curriculum revision (to include EE/ESD content and teaching principles); (2) Greening of campus by students and staff; (3) Improved environmental management on campus via greening (planting of trees); and (4) Student participation in ESD issues via clubs. A meeting with the non-academic staff to educate them on the changes that would be put in place to improve the College Environment was held. Another meeting with the Preventive Maintenance System (PMS) committee was held as they were instrumental to the success of the change project. Meetings with the students and occupants of the houses in both the junior and senior compounds were held to sensitise them on ESD and EE issues because they are equally important stakeholders. Necessary materials and tools / equipment were procured by the administration to start making KACE a Green Campus. In the dry season, watering of lands commenced and the PMS was strengthened to ensure active participation of students and workers.</p> <p>Four other results were achieved: 1) Curriculum revision to include EE/ESD issues; 2) A student-established botanical garden was started with regular contributions from students; 3) Over 4000 pine trees were planted on the College Farm; 4) Over 20 rubbish bins have been procured; 5) A special issues club programme has been started to encourage students to get more involved in local sustainable development issues; 5) The formally dilapidated pathways on campus have been rebuilt with new concrete and this has improved infrastructure in the institution. The College is planning to build on these initiatives in future by (1) Comprehensively incorporating ESD more into the college curricula to cut across all the disciplines; (2) Strengthening litter management on campus; and (3) Improving afforestation and community engagement.</p> <p>RELEVANCE TO OBJECTIVES OF THE ITP:</p> <ul style="list-style-type: none"> - Contribution to capacity development and change processes in participants' institutions and home countries; - Contribution to strengthening of methods, processes and monitoring to enable relevant quality education; - Contribution to increasing the awareness of the importance of effective ESD in the higher education sector.

Appendix 4: Sample of computer-assisted self-administered questionnaires and data

Index: #28

COMPLETE

- Collector: Adesuwa Vanessa Agbedahin (Web Link)
- Started: Wednesday, April 10, 2013 3:24:20 PM
- Last Modified: Wednesday, April 10, 2013 4:49:06 PM
- Time Spent: 01:24:46
- IP Address: 197.218.68.166

PAGE 1

Q1: Provide the following basic information

- **Name:** Antonio dos Anjos Luis
- **Name of co-participant** (as the case may be): Ali Ahamed Puna Atumane
- **Country:** Mozambique
- **State/Province:** Niassa
- **City/Town:** Cuamba
- **Institution:** Catholic University of Mozambique
- **Department:** Faculty of Agriculture
- **Unit:** Agriculture Science
- **Phone Number:** +258825961720
- **Alternative email:** aatumane@gmail.com

Q2: What is your current position in your department?

Lecturer

Q3: What is your job description?

Lecturer in Land Use Planning

Q4: Which ITP Programme did you participate in?

- 2012

Q5: Are you still in the Institution/Faculty/Department where you were when you participated in the ITP? If not where have you moved to and (if possible) why did you move?

Yes I still at Catholic University of Mozambique (UCM) Faculty of Agriculture/BSc Program in Agriculture Science

Q6: If your response to question (5) was no, were you able to continue your Change Project despite your move?

- Yes

Q7: What new knowledge, capabilities, competences related to environmental and sustainable development issues did you acquire because of your participation in the ITP?

Types of Sustainable Knowledge, values and transformative learning approach; competences to assess and reorient the curriculum

Q8: How have the ITP programme and processes (interaction in Sweden, South Africa, and visit to your institution/country) influenced ESD practices in your profession?

The interaction and visits was helpful as i saw activities that I recommended my institution to implement

Q9: What was/is your ESD Change Project about?

Curriculum Development: Integrating ESD in a BSc Agriculture Science; and Green Campus at Catholic University of Mozambique - Faculty of Agriculture - Cuamba - Mozambique

Q10: What were the aims and objectives of your ESD Change Project?

Reorient the BSc curriculum toward Sustainable issues and Involve students in sustainable activities

Q11: What is it about your institution or country that influenced the choice of your Change Project?

The location and purpose of the Faculty, it is located in the rural area and the main program is agriculture science

Q12: Which of the following aspects did/does your ESD Change Project focus on?

- Curriculum Innovation
- Student Engagement

Q13: Elaborate on your answer(s) to (12)

The ESD change project focus on curriculum development by reorienting the BSc in Agriculture Science toward environmental sustainable issues and involvement of student in environmental sustainable activities

Q14: Have you been able to implement your Change Project after the ITP programme ended? If not why and if yes, what exactly have you achieved?

The Program still being implemented

Q15: What has changed or been modified or developed in your Department, Faculty, Institution or Country as a result of your ESD Change Project?

More awareness on environmental sustainable issues among lecturers and students at the Faculty
More involvement of student in activities within the faculty and in the community

Q16: Which of the following categories describe the outcome of your Change Project?

- New management practices
- New and revised programmes

Q17: Elaborate on your answer(s) to question (16)

New management practices: the students association contribute to management practices through the green campus project by identify and advise the management to solve problems or use new practices to address the problems

Q18: Mention the positive and negative factors that influenced the implementation of your ESD Change Project.

The Positive factors that influenced the implementation of ESD Change project was: 1) the Involvement of all Staff (Managers, lecturers and all other staffs) and students; 2) the use of existent structure for the implementation, student association for the green campus and head of departments for the curriculum development.

The Negative factors that influenced the implementation of ESD change project was: 1) difficult of having a full participation of everyone involved in the project. Not all students participated in the green campus project, not all staff had a full participation in the activities

Q19: How did/does your Change Project address the environmental, socio-cultural and economic dimensions of Sustainable Development?

Environmental: conservation practices, risk management, environmental health (air quality, waste management, pollution) Socio-cultural: adaptive capacity, attitude toward sustainability Economics: save practices (energy save, water save, paper save) - reduce bill of the expenses by save practice

Q20: What networks in the field of ESD has the ITP helped you to build and strengthen, and how?

Local level network: the local government and other stakeholders (City municipality and farming company in Cuamba to implement greening project) National level: between universities (Eduardo Mondlane University and Catholic University of Mozambique in curriculum development project) International level: ITP participant - collaboration between students of Faculty of Agriculture and students from others Universities participated in the ITP for the implementation of green campus projects and other environmental sustainable activities

Q21: Does your Change Project have any influence on poverty reduction in your country in a short or long run? If yes how?

Not directly, however by delivering students with capabilities to address environmental sustainable issue influence the poverty reduction in a long run.

Q22: What has improved with regard to your institutional infrastructure for ESD as a result of the ITP and your Change Project?

The new infrastructure is being created as demand of ESD implementation such improvement of rooms recommended by students.

Q23: What futuristic potential do you envisage your ESD Change Project to accomplish at an organizational level, institutional level and national level?

To extent the ESD to all faculty at the University and influence in policy formulation

Appendix 5: Sample of the 2013 self-administered survey questionnaires and data

Index: 2013p1

Name: Bouabdelli Fatima

Institution: Cadi Ayyad Uni, Marrekesh, Morocco

Department/unit: English

Post/designation: HOD of English

- 1. What was your position in your institution before your participation in the ITP?** (*By position we mean your tasks, duties, rights, influences, powers, places, functions, roles, rules*)?

I was senior lecturer and head of the department of English. I teach, conduct research, do office work and coordinate between the department and the university administration.
- 2. What were your ESD related practices before your participation in the ITP** (*By practices we mean activities*)?

In March 2011, my department organised in partnership with REED (British “shore to shore” project), a seminar on “literatures, cultures and nature.” The “gardening club” (student activity) began alongside with that seminar. However, there was no practice in ESD proper (in classroom).
- 3. What was your position in your institution during your participation in the ITP?** (*By position we mean your tasks, duties, rights, influences, powers, places, functions, roles, rules*)?

I was senior lecturer and head of the department and also member of the faculty council (dealing with budget issues/pedagogical and research issues)
- 4. What were your ESD related practices during your participation in the ITP** (*By practices we mean activities*)?

I began to refer to SD contents in my lectures (when appropriate). A master student is linking ‘theories of change’ and ‘transformative learning’ under my supervision. I am developing and thinking of the implementation of the change project (with my co-participant). I am thinking of developing ‘green campus’ activities. Now we have a network in the faculty interested in ESD.

Appendix 6: Sample of signed consent form by participants (next page please)

Appendix 7: Phase Three ITP alumni's questioning route



ITP PARTICIPANTS' ORIENTATION TO INTERVIEW PROCESS

RESEARCHER: Adesuwa *Vanessa* Agbedahin (Mrs), PhD Student, Rhodes University, South Africa.

SUPERVISOR: Prof Heila Lotz-Sisitka.

You are greatly appreciated for agreeing to be part of this research and I bring you greetings from Heila and the entire Environmental Learning Research Centre, Rhodes University, South Africa.

RESEARCH TITLE: An investigation of how the 'position-practice system' of university professionals shapes effective ESD mainstreaming in Africa [...*especially before, during and after their participation in ESD related change-oriented professional development training programme or take up of a key ESD related 'office'/appointment*].

MAIN AIM OF INTERVIEWING ITP PARTICIPANTS:

- To know your positions and practices (Before, during, after ITP/MESA Chair contract)
- To get a deeper understanding of how their various positions and practices enable/constrain Change Project implementation and outcomes to emerge in the different university contexts.
- To understand the role of the MESA Chairs and the synergistic relationship between the MESA Chairs, the ITP programme, ITP participants, Change Projects, HEIs, countries and SADC and Africa.

CLARIFICATION OF KEY CONCEPTS:

By your '**positions**' I mean your duties, rights, places, functions, rules, tasks, influences, powers, authorities etc. and by your '**practices**' I mean your activities.

MODE OF INTERVIEW: 6 components – before, during and after your participation in the ITP.

INTERVIEW GUIDE:

1. Pre-ITP positions and practices of participants

- 1) Kindly tell me about yourself. Who you are and what you do and your involvement with the ITP.
- 2) Before your participation in the ITP, what were your positions (duties, rights, places, functions, rules, tasks, influences, powers) in your university?
- 3) What were your general practices (activities) before your participation in the ITP?
- 4) What were your ESD related practices before your participation in the ITP?
- 5) Before your participation in the ITP, what was your personal strength/technical know-how with regard to ESD mainstreaming?
- 6) Before your participation in the ITP, what were your personal challenges or limitations about ESD mainstreaming in your department/institution/country?

2. Institutional/national/regional/global ESD related problems the participants proposed to address through their participation in the ITP

- 1) What was your concern about your institution/environment/society/community that prompted the choice of your Change Project?
- 2) What was your Change Project on?
- 3) Before your participation in the ITP, how do you think your institution/department/country conditioned (influenced, shaped) ESD mainstreaming generally?
- 4) Before your participation in the ITP, how do you think your institution/department/country conditioned (influence, shape) your ESD practices?

3. The kind of support the ITP participants (and their respective institutions) received through their participation in the ITP/availability of a MESA Chair in their HEIs and country

- 1) What did the ITP add to you as an individual?
- 2) Can you describe your learning experience during the ITP?
- 3) What kind of support (assistance, help, contribution) did you/your institution receive from the ITP to enhance the implementation of your change project?
- 4) Did your positions (duties, rights, places, functions, rules, tasks, influences, powers) change during the one year of the ITP? Explain
- 5) Did your practices (activities) change during the one year of the ITP? Expatiate
- 6) What does the existence of a MESA Chair in your country mean to you?
- 7) What difference has the existence of a MESA Chair made in your country/institution?
- 8) What kinds of support (assistance, help, contribution) have you/your institution received from the existence of a MESA Chair in your country?
- 9) Did the existence/presence of a MESA Chair affect the actualisation of your change project and general ESD mainstreaming in your institution/country?

4. Post-ITP positions and practices and how these shape the ESD learning and change processes in their HEIs/country/region/Africa

- 1) What are your current positions and practices?
- 2) How do you think your current positions (duties, rights, places, functions, rules, tasks, influences, powers) are influencing your ESD practices?
- 3) How do you think other's current positions (duties, rights, places, functions, rules, tasks, influences, powers) is influencing their ESD practices?
- 4) Can you describe your change project implementation process? How did you go about it?
- 5) What enabling factors influenced the implementation of your change project?
- 6) What constraining factors influenced the implementation of your change project?
- 7) Which/whose position and practice has been most influential in terms of enabling ESD mainstreaming in your institution/community/country?
- 8) Which/whose position and practice has been most influential in terms of constraining ESD mainstreaming in your institution/community/country?
- 9) What can you say about others' position (duties, rights, places, functions, rules, tasks) and their influence on your/their ESD practices?

5. Agential elaboration (or reproduction) related to ESD mainstreaming

- 1) What has changed about you and your position (duties, rights, places, functions, rules, tasks, powers, and influences) after the one year ITP?
- 2) What has changed about you and your practices (activities) after the one year ITP?
- 3) Has your participation in the ITP contributed to your current positions (duties, rights, places, functions, rules, tasks, influences, powers) and ESD related practices? How? Please explain.

6. Structural elaboration (or reproduction) related to ESD mainstreaming

- 1) What has been modified or changed in and about your department or faculty or institution or country as a result of your participation in the ITP? In other words, what has your change project brought to your institution/country? What is being done now/practiced now that was not done/practices before?
- 2) What do you have left to do/envisage with regard to your change project and your commitment to ESD mainstreaming?
- 3) From the way things are now, what can you say about the prospect of ESD mainstreaming in your institution/country/Southern Africa/Africa?

Others:

- 1) Apart from the ITP and MESA programmes, which other ESD/SD related professional development training programme have you attended?
- 2) If any, are there synergies between the programme(s) and the ITP?
- 3) How do you think the ITP programme and activities can be improved?
- 4) How do you think the MESA and the MESA Chair's activities can be improved?

Conclusion:

- Questions or comments or observations or advice.
- Request for university, departmental publications
- Documents, publications related or relevant to this research
- Much appreciation – Thanks and God bless you.

Appendix 8: Phase three MESA Chair's questioning route



ESD MESA CHAIR'S ORIENTATION TO INTERVIEW PROCESS

RESEARCHER: Adesuwa *Vanessa* Agbedahin (Mrs), PhD Student, Rhodes University, South Africa.

SUPERVISOR: Prof Heila Lotz-Sisitka.

You are greatly appreciated for agreeing to be part of this research and I bring you greetings from Heila and the entire Environmental Learning Research Centre, Rhodes University, South Africa.

RESEARCH TITLE: An investigation of how the 'position-practice system' of university professionals shapes effective ESD mainstreaming in Africa [...*especially before, during and after their participation in ESD related change-oriented professional development training programme or taking up a key ESD related 'office'/appointment*].

MAIN AIM OF INTERVIEWING EE/ESD MESA CHAIRS:

- To know their positions and practices (Before, during, after ITP/MESA Chair contract)
- To get a deeper understanding of how their various positions and practices enable/constrain Change Project implementation and outcomes to emerge in the different university contexts.
- To understand the role of the MESA Chairs and the synergistic relationship between the MESA Chairs, the ITP programme, ITP participants, Change Projects, HEIs, countries and SADC and Africa.

CLARIFICATION OF CONCEPTS:

'Positions' are referred to as duties, rights, places, functions, rules, tasks, influences, powers
'Practices' are referred to as activities.

MODE OF INTERVIEW: 6 components – before, during and after MESA Chair appointment.

INTERVIEW GUIDE:

1. Pre-MESA Chair positions and practices of participants

- 1) Kindly tell me about yourself. Who you are and what you do?
- 2) Before your appointment as MESA Chair what were your positions (duties, rights, places, functions, rules, tasks, influences, powers) in your university?
- 3) What were your general practices (activities) before your appointment as MESA Chair?
- 4) What were your ESD related practices before your appointment as MESA Chair?
- 5) Before your appointment as MESA Chair, what were your personal strengths/technical know-how with regard to ESD mainstreaming?

- 6) Before your appointment as MESA Chair, what were your personal challenges or limitations about ESD mainstreaming in your department/institution/country?

2. Institutional/national/regional/global ESD related problems the participants proposed to address through the commencement of the MESA Chair contract

- 1) What was your concern about your institution/environment/society/community that prompted the expression of interest in being a MESA Chair?
- 2) Before your appointment as a MESA Chair, how do you think your institution or country conditioned (influence, shape) ESD mainstreaming?
- 3) What was the purpose of the MESA Chair?
- 4) How did your department/institution/country influence your ESD practices?

3. The kind of support the ITP participants (and their respective institutions) received from the availability of a MESA Chair in their HEIs and country

- 1) What has the being an ESD MESA Chair added to you as an individual?
- 2) Can you describe your learning experience so far with regard to your office?
- 3) What difference has the existence of a MESA Chair made in your country/institution?
- 4) What kinds of support (assistance, help, contribution) have you colleagues and institution received from your office as a MESA Chair?
- 5) How has the existence/presence of a MESA Chair affected the actualisation of your ESD change project and general ESD mainstreaming in your institution/country/Southern African region?

4. MESA Chair's positions and practices and how these shape the ESD learning and change processes in their HEIs/country/region/Africa

- 1) How do you think your current positions (duties, rights, places, functions, rules, tasks, influences, powers) are influencing your ESD practices?
- 2) How do you think other's current positions (duties, rights, places, functions, rules, tasks, influences, powers) are influencing their ESD practices?
- 3) What enabling factors influenced the implementation of your ESD mainstreaming activities?
- 4) What constraining factors influenced the implementation of your ESD mainstreaming activities?
- 5) Which/whose position and practice has been most influential in terms of enabling ESD mainstreaming in your institution/community/country?
- 6) Which/whose position and practice has been most influential in terms of constraining ESD mainstreaming in your institution/community/country?
- 7) What can you say about others' position (duties, rights, places, functions, rules, tasks, influences, powers) and their influence on your/their ESD practices?

5. Agential elaboration (or reproduction) related to ESD mainstreaming

- 1) What has changed about you and your position (duties, rights, places, functions, rules, tasks, influences, powers) after your appointment as a MESA chair?
- 2) What has changed about you and your practices (activities) after your appointment as a MESA chair?
- 3) How has your appointment as a MESA chair contributed to your current positions and ESD related practices?

- 4) Has your current position as a MESA chair contributed to the current positions and ESD related practices of others?

6. Structural elaboration (or reproduction) related to ESD mainstreaming

- 1) What has been modified or changed in and about your department or faculty or institution or country as a result of your appointment as a MESA Chair? In other words, what has your change project brought to your institution/country? What is being done now/practiced now that was not done/practices before?
- 2) What do you have left to do/envisage with regard to your office as a MESA Chair?
- 3) From the way things are now, what can you say about the prospect of ESD mainstreaming in your institution/country/Southern Africa/Africa?

Others:

- 1) Apart from the ITP and MESA programmes, which other ESD/SD related professional development training programme have you attended or know about?
- 2) If any, are there synergies between the programme(s) and the ITP/MESA programmes?
- 3) What were your past and current challenges as a MESA Chair?
- 4) How do you think the ITP programme and activities can be improved?
- 5) How do you think the MESA and the MESA Chair's activities can be improved?

Conclusion:

- Questions or comments or observations or advice.
- Request for university or department publications.
- Documents, publications related or relevant to this research.
- Much appreciation – Thanks and God bless you.

Appendix 9: Photographs of interviewees and interviewer, dates, lengths and locations of interviews

Research participant 1:



Country: Swaziland
Name, institution and faculty: Nathie Maseko, University of Swaziland, Commerce Faculty
Date of interview: May 19, 2014
Place of interview: Science Conference Room S2.112, University of Swaziland, Swaziland
Length of interview: 01:12:35
Signatory to consent form: Yes

Research participant 2:



Country: Swaziland
Name, institution and faculty: David Manyatsi, University of Swaziland, Faculty of Education
Date of interview: May 19, 2014
Place of interview: Science Conference Room S2.112, University of Swaziland, Swaziland
Length of interview: 01:17:48
Signatory to consent form: Yes

Research participant 3:



Country: Swaziland
Name, institution and faculty: Mandla Mlipha, University of Swaziland, Faculty of Science and Engineering
Date of interview: May 19, 2014
Place of interview: Esibayeni Lodge, Conference Room, Swaziland
Length of interview: 01:44:35
Signatory to consent form: Yes

Research participant 4:



Country: Zambia
Name, institution and faculty: Inonge Milupi Kasimona, School of Education
Date of interview: June 1, 2014
Place of interview: Protea Hotel Conference Room, Lusaka, Zambia
Length of interview: 01:07:52
Signatory to consent form: Yes

Research participant 5:



Country: Zambia
Name, institution and faculty: Esther Hara Zulu, School of Education
Date of interview: June 3, 2014
Place of interview: Participant's Office, University of Zambia, Lusaka, Zambia
Length of interview: 01:14:36
Signatory to consent form: Yes

Research participant 6:



Country: Zambia
Name, institution and faculty: Enoch Sakala (Accompanied by Gilbert Siame), School of Natural Sciences
Date of interview: May 30, 2014
Place of interview: Protea Hotel Conference Room, Lusaka, Zambia
Length of interview: 01:30:20
Signatory to consent form: Yes

Research participant 7:



Country: Zambia
Name, institution and faculty: Douty Chibamba, School of Natural Sciences
Date of interview: May 30, 2014
Place of interview: Participant's Office, UNZA
Length of interview: 01:19:09
Signatory to consent form: Yes

Research participant 8:



Country: Zambia
Name, institution and faculty: Charles Namafe, University of Zambia, School of Education
Date of interview: May 30, 2014
Place of interview: Participant's Office, University of Zambia, Lusaka, Zambia
Length of interview: 02:06:34
Signatory to consent form: Yes

Research participant 9:



Country: Zambia
Name, institution: Bridget Myiwa Muyambango, National Institute of Public Administration
Date of interview: June 3, 2014
Place of interview: Participant's Office, Lusaka, Zambia
Length of interview: 00:45:42
Signatory to consent form: Yes

Research participant 10:



Country: Zambia
Name, institution and faculty: Roy Alexander Chileshe, School of Built Environment, Cobberbelt University
Date of interview:
Place of interview: Participant's Office, Cobberbelt University, Kitwe, Zambia
Length of interview: 02:14:46
Signatory to consent form: Yes

Research participant 11:



Country: Zambia
Name, institution and faculty: Gilson Chisomo Ngoma, School of Engineering, Cobberbelt University
Date of interview: June 2, 2014
Place of interview: Participant's Office, Cobberbelt University, Kitwe, Zambia
Length of interview: 01:19:06
Signatory to consent form: Yes

Research participant 12:



Country: Botswana
Name, institution and faculty: Mphemelang Joseph Kethoiwe, University of Botswana, Faculty of Education
Date of interview: July 15, 2014
Place of interview: Participant's Office
Length of interview: 02:33:18
Signatory to consent form: Yes

Research participant 13:



Country: Botswana
Name, institution and faculty: Jeremish Koketso, University of Botswana, Faculty of Education
Date of interview: July 15, 2014
Place of interview: Participant's Office
Length of interview: 02:18:56
Signatory to consent form: Yes

Research participant 15:



Country: Botswana
Name, institution and faculty: Gabatshwane Tsayang, University of Botswana, Faculty of Education
Date of interview: July 15, 2014
Place of interview: Participant's Office
Length of interview: 01:27:11
Signatory to consent form: Yes

Research participant 15:



Country: Botswana
Name, institution and faculty: Kabita Bose, University of Botswana, Faculty of Education
Date of interview: July 14, 2014
Place of interview: Participant's Office
Length of interview: 00:37:46
Signatory to consent form: Yes

Research participant 16:



Country: Botswana
Name, institution and faculty: Tshiamiso Moutakwa, University of Botswana, Faculty of Education
Date of interview: July 16, 2014
Place of interview: Participant's office
Length of interview: 01:19:27
Signatory to consent form: Yes

Research participant 17:



Country: Botswana
Name, institution and faculty: Gregory Kamwendo, formerly in the University of Botswana, Faculty of Education, now in the University of KwaZulu-Natal, Edgewood Campus.
Date of interview: August 13, 2014
Place of interview: Participant's current office
Length of interview: 01:49:59
Signatory to consent form: Yes

Appendix 10: Coding themes for analysis of data

Agential conditioning

Pre-ITP Positions:

Pre-ITP Practices:

Personal challenges or limitations:

How pre-ITP position-practice system shaped ESD learning and change processes:

Change project:

What they planned to do:

Why they planned to do it:

Aims and objectives of change project:

Focus of the change project:

How they planning to go about it:

Institutional conditioning

Pre-ITP institutional ESD related problems:

Socio-ecological conditions agents worked in:

What prompted agential mediation:

Institutional unsustainable practices that demanded attention:

Source/history of the change project:

Who they worked with:

ITP mediation

Support educators and institution received through ITP:

What happened through the ITP mediation?

PEPs emerging:

Learning:

Collaboration with their colleagues:

Learning and change process

What has happened after the ITP mediation?

Learning and change recorded:

How the change project has been implemented:

How post position/practice shape ESD learning and change processes and vice versa:

PEP, CEP and SEP are emerging:

What has/is enabling the change process?

What has/is constraining the change process?

Agential elaboration/ post-ITP positions and practices

Post- ITP positions:

Post-ITP practices:

ESD related agential elaboration:

What ESD related agential elaboration imply:

PEP, CEP and SEP are emerging:

Structural elaboration

ESD related structural elaboration:

What ESD related structural elaboration imply:

What has been modified or changed in the institutions:

Futuristic potential outcomes: