

COMPETENCE DEVELOPMENT IN MARINE PROTECTED AREA PROFESSIONALS

A Case Study of the South African Marine Protected Area Management
Training Course (SAMPATC)

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DECLARATION

I, the undersigned, hereby declare that the full-thesis entitled: *Competence Development in Marine Protected Area Professionals: A Case Study of the South African Marine Protected Area Training Course (SAMPATC)*, submitted for the degree of Masters of Education (Environmental Education), is my original work, except where otherwise acknowledged, and has not in its entirety or in part been submitted to any other university or institution for a higher degree.

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ABSTRACT

This study reviews a training programme on Marine Protected Area (MPA) management. It notes that although MPAs are well promulgated under legislation, reports have found that there are still key challenges facing the management of these areas. The research examines how the course was developed following the Lemm and Attwood (2003) report and designed to develop competences for effective MPA management. The aim is to identify how a MPA management training course produced competences apposite to the workplace settings of the participants.

An interpretive case study method was used, in two phases. The first phase explored salient issues in MPA management in South Africa through analysis of the two key ‘state of MPA management’ reports and interviews with MPA professionals. The second was an analysis of the South African Marine Protected Area Management Training Course. This involved interviews with course designers, a review of the course materials, interviews with past course participants, and an analysis of course evaluations.

Evidence emerged that supported the following findings:

- Challenges and problems facing MPA management still exist.
- Competence in key areas of MPA management was addressed in an effective work-integrated approach.
- Social learning was a key process in the development of these competences.
- The competences articulate well with the workplace of participants.
- Gaps exist between some of the management issues and the competences developed by the course, and some aspects of the course design are ineffective.

From these findings it is concluded that:

- The course took up the majority of issues in MPA management through the development of key competences.
- The course design facilitated the development of these competences.
- The competences developed through the course are relevant to the workplace of MPA professionals.

The research found that the course adequately addresses issues in MPA management through the development of competences. Some recommendations for improvements are made.

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CHAPTER 1

INTRODUCTION

In the end, we will conserve only what we love, we will love only what we understand and we will understand only what we are taught.

— *Baba Dioum, Senegalese conservationist*

1.1.Introduction

This research investigates competence development and work-integrated learning in adult learners, in the context of a Marine Protected Area Management Training Course in South Africa (SAMPATC). The course in question was chosen both because it seeks to develop competence in adult learners, and because it offered an opportunity to conduct research in a field of particular interest to me, marine and coastal conservation. The research will look at how the course addresses issues in Marine Protected Area (MPA) management in South Africa, as well as how it develops the competences of course participants to tackle these issues.

The research first explores salient issues in MPA management in South Africa, and then examines the design of the selected course so as to determine how and to what extent it facilitates the development of the competences that course designers believe can enable managers to tackle these issues. The project makes use of a theoretical framework developed from research done by Knud Illeris that adopts a holistic approach to learning and competence development. It also explores more generally concepts of learning (specifically adult learning), competence development, and competences in MPA management.

This chapter outlines the concept of Marine Protected Areas (MPAs), providing a brief account of their history, of their roles and purposes, and of the international policy surrounding them, before looking specifically at MPAs in South Africa (including the legislation affecting them). The chapter then introduces the SAMPATC by giving a general overview of the course: its development, its basic structure and its design.

Finally, the chapter will give a brief explanation of why the topic has been chosen for research. It will introduce the research question together with the goals and objectives to which it gives rise.

1.2. Marine Protected Areas

1.2.1. What are Marine Protected Areas?

Over the last century the world's marine and coastal resources have been placed under enormous pressure by the growth and development of the human population. The threats facing marine and coastal eco-systems range from pollution to over-fishing and climate change. The situation has over the past two decades resulted in increasing concern within the global community with protecting marine and coastal habitats. Among the administrative tools developed to protect our marine ecosystems and resources is the Marine Protected Areas or MPA.

An MPA can be defined as “[a]ny area of inter-tidal or sub-tidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means to protect all or part of the enclosed environment” (IUCN, cited in Sisitka and Fielding, 2005:7). The term Marine Protected Area is often used interchangeably with the term Marine Reserve (Woods Hole Oceanographic Institution, n.d.: 1), but this study will employ the former.

Although the Earth is more than two-thirds covered by aquatic ecosystems, throughout history more attention has been paid to terrestrial rather than marine environments (Robinson and DeGraaf, 1993: v). This may be due to the fact that terrestrial ecosystems are simply more visible to us, or perhaps because terrestrial habitats are perceived to have higher species biodiversity. However at the level of phylum, 32 of the known 33 Phyla are marine (Agardy, 1994: 267). Marine ecosystems have more than double the biodiversity of terrestrial ecosystems (Ray, 1988, cited in Robinson and DeGraaf, 2003: v).

As the world's population increases dramatically, so does the pressure on its natural resources. The current global population is close to 7 billion people, and it is reported that 60% of this number live on or within 100km of the sea shore (Robinson and DeGraaf, 1993: v). This means that the majority of people rely on the world's coastal and marine ecosystems for their survival. This has led to a marked impact on coastal and marine natural resources. However, the global community is increasingly realising that these resources (once thought to

be inexhaustible) are as vulnerable to degradation as terrestrial ecosystems. This has created more emphasis on the need to protect these resources, not only for the conservation of nature, but also to sustain the livelihoods of future generations reliant on marine and coastal resources (Kelleher, 1999: xv). While the first MPA was created in the early 20th century, by 1985 the number had grown to around 430 (De Silva, Gately and Desilvestre, 1986); however, this number covered a relatively small coastal area. By 1995 there were over 1300 MPAs worldwide (Kelleher, 1999). Today, according to the World Database of Protected Areas (WDPA), that number is over 5000 (WDPA, 2011). This indicates a sharp rise in the awareness of the effects that protected areas can have on marine and coastal ecosystems.

1.2.2. International Policy for MPAs

In 1988 the International Union for the Conservation of Nature (IUCN) made a call to governments, international agencies and non-governmental organisations to: “[p]rovide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world through the creation of a global, representative system of marine protected areas and through management in accordance with principles of the World Conservation Strategy of human activities that use or affect the marine environment” (IUCN, cited in Sisitka and Fielding, 2005:6). This view of the importance of MPAs has led to a number of international treaties and accords which directly or indirectly have the goal of protecting the ocean environment. These include: The United Nations Convention on the Law of the Sea (UNCLOS); Convention of Biological Diversity (CBD); The Nairobi Convention; Ch. 17 of Agenda 21 of the United Nations Conference on Environmental and Development (UNCED); The UNESCO Convention on the World Cultural and Natural Heritage; as well as a number of others (Sisitka and Fielding, 2005: 21).

1.2.3. Roles and Objectives of MPAs

MPAs’ primary objectives can be divided into three broad categories:

- 1) To conserve marine biodiversity.
- 2) To maintain the productivity of marine and coastal ecosystems (Sisitka and Fielding, 2005, Kelleher, 1998).
- 3) Although the protection of biodiversity for many years took precedence over human interests, nowadays protected areas (including MPAs) are being seen more and more

as contributors to the socio-economic welfare of human communities (Sisitka and Fielding, 2005, Kelleher, 1998).

These objectives can be summarised nicely by saying that the overall objective of MPAs is to protect the ecological and socio-economic value of a marine ecosystem. Key to an effective approach to MPA management is to ensure that the rights and interests of the communities surrounding the MPA are protected with as much dedication as the ecosystems within it (Kelleher, 1997: 11).

The International Group of Experts on Marine and Coastal Protected areas gives a similar account of the roles and benefits of MPAs. They say that these areas:

- Should assume a key role in management aimed at the long-term conservation and sustainable use of marine and coastal biodiversity.
- Should function as a central component around which the effective governance of marine and coastal ecosystems can be developed.
- Should provide to surrounding communities education that teaches the importance of conserving marine and coastal ecosystems and also how to use the resources from these ecosystems sustainably (Crosby, Laffoley, Mondor, O'Sullivan, and Geenen, 1997: 247).

While MPAs have other, more specific roles (that depend on the area and purpose of each individual MPA), these three objectives offer a general picture of what purposes are served by MPAs.

1.3. MPAs in South Africa

South Africa has a coastline that stretches for approximately 3 000kms. Of the country's 9 provinces, 4 are bordering coastal marine and coastal environments (Kwa-Zulu Natal, Eastern Cape, Western Cape, and Northern Cape). The country's Economic Exclusive Zone (EEZ) marine environment can be divided into 5 bioregions, namely: Namaqua, South-Western Cape, Agulhas, Natal, and Delagoa (Lombard, Strauss, Harris, Sink, Attwood and Hutchings, 2004). Of the country's coastline, 22% has some degree of protection, but only 9% is protected by 'no-take' MPAs (DEAT, 2007). The total EEZ encompassed in some form of MPA increased from 0.3% in 1997 to 0.4% in 2004, but there is no protected area that extends further than 30-km offshore (DEAT, 2007).

The first MPA in S.A. was declared in 1964 (Tsitsikamma MPA), which makes the concept still relatively new in the South African context. In 1998 the *Marine Living Resources Act No.18 of 1998* (MLRA) was tabled. Originally the Act encompassed 19 MPAs, though this number has since grown to 21. Under this national legislation MPAs have three primary objectives: 1) Protection of marine life; 2) Facilitation of fisheries management (in South Africa, fisheries management and MPAs are controlled by the same legislation and policy); and 3) Reduction of user-conflict (Lemm and Attwood, 2003: 3). Eight MPAs are completely ‘no-take’ areas. There are 6 government agencies (at local, provincial and national levels) involved in MPA management in some way or other. Marine living resources are managed by a branch of the Department of Environmental Affairs (DEA) originally known as Marine and Coastal Management (MCM), which is now called Oceans and Coasts (Lemm and Attwood, 2003: 4). Although the DEA has overall control of South African MPAs, each MPA is entrusted to a managing authority which is responsible for the running and policing of that protected area. Appendix 1 lists the MPAs in South Africa, together with the authority that oversees their management and the province in which they are located.

It is also important to note that there are some key pieces of legislation relevant to MPAs in South Africa, and these are outlined in brief in Appendix 2.

We shall now turn our attention to the primary focus of this research, the SA MPA Management Training Course.

1.4. SA MPA Training Course

1.4.1. Background

In 2002 the WWF-SA along with MCM commissioned a report on the state of MPA management in South Africa. The report, entitled “State of Marine Protected Area Management in South Africa” and compiled by Stephanie Lemm and Colin Attwood, was published in October 2003. (It followed a similar report prepared in 1996 called “Towards a New Policy on Marine Protected Areas for South Africa”, carried out by the Marine Reserves Task Force.) The 2003 report found that the knowledge of most MPA managers concerning MPAs and marine ecology was deficient, and indicated the need for an MPA management training course to be run for South African MPA managers. As such in 2003 it was decided that a course was needed as a response to the findings of the Lemm and Attwood report.

1.4.2. Course development

What followed was a six-month consultation process to identify what was needed from such a course, i.e. content, structure, educational materials, etc. Input was given by experts in the field of marine ecology and education (specifically environmental education), MPA managers, government agencies, communities within and surrounding MPAs, and others. It was found that the programme needed to be workplace based, and thus it was designed around this idea (Sisitka, 2004b).

Some of the activities that were carried out during the development phase included:

- Research into all the areas needed to develop an adequate training programme.
- Deliberation, whereby workshops were held in each MPA province in order to establish an appropriate framework and curriculum for the course.
- Consultation, whereby the draft framework was sent to all key stakeholders, to help develop the final product from advice given by these stakeholders.
- Selection, development and adaptation of educational materials to fit the needs of the course.

Experts were then consulted to give final feedback on the structure, framework and content of the course (Sisitka, 2004b).

1.4.3. Course Revisions and Accreditation

The South African MPA Management Training Course is currently in its 4th edition, in the sense that the original course has undergone three revisions. This has been done for a number of reasons, some due to changes in context and some for accreditation purposes. The course was not originally built around the National Qualification Framework (NQF) unit standards, as course designers believed these to be somewhat limiting and instead opted for a more holistic approach. However, the course did meet some of the NQF level 5 unit standards, and theoretically can be used as credits towards an NQF level 5 qualification (L. Sisitka, personal communication, March 4, 2011). For a full level 5 National Certificate, there is a minimum requirement of 181 credits, which means that the course's 44 credits contribute 24% towards a full qualification. The course was originally run as a short course through Rhodes University (Sisitka, 2004a).

The second edition of the course smoothed out a few inconsistencies in the course, with no real major changes to its design. The course designers subsequently decided that they wanted the course to be accredited through a recognised course provider. They negotiated with the Southern African Wildlife College (SAWC), who were accredited course providers, to have the course run through them as an accredited course. But first the SAWC needed to scrutinise the course to make sure it met the standards set for accreditation. Major adjustments were consequently made to the assessment process in the course, which included abandoning assignments as assessment instruments and the inclusion of a workbook. The finished product became the 3rd edition of the course (L. Sisitka, personal communication, March 4, 2011).

Despite the fact that this edition met programme approval, course coordinators were not satisfied with the new assessment process as it deviated from the original intention of having practical, workplace-based assignments as the main form of assessment (L. Sisitka, personal communication, March 4, 2011).

Recently the course has undergone another revision. The main purpose behind the 4th edition was to include important topics not previously included in the course. As a result the 4th edition has a 9th module that includes the topics of integrated coastal zone management, estuaries and climate change. Another task in the development of the 4th edition was to negotiate with SAWC and the Tourism, Hospitality, Sport Education and Training Authority (THETA), to develop an assessment process that is acceptable to all (L. Sisitka, personal communication, March 4, 2011).

Although the course makes up part of a level 5 NQF qualification, course coordinators feel that the course's design lends itself to coordination with an NQF level 6 or 7 programme. It is for this reason that they are in talks with various tertiary institutions to have the course properly accredited and institutionalised. The hope is to have the course offered as either a post-graduate diploma or as an elective module in an honours programme (L. Sisitka, personal communication, March 4, 2011).

1.4.4. Aims of the course

The course was designed with a number of different aims and objectives in mind, including:

- To strengthen the management of MPAs in South Africa.
- To improve the co-operation between the different agencies responsible for managing the MPAs as well as strengthen long-term relationships between key stakeholders.

- To help create an environment to aid the effective management of MPAs.
- To lend specialist support and help facilitate access to information for MPA management.
- To develop individual and collective management skills.
- To help raise the profile of MPA management within conservation agencies. (Sisitka, 2004b)

1.4.5. Course Design and Structure

The course is targeted at various role-players in the field of MPA management, such as MPA managers from conservation agencies, MPA personnel (field officers, assistant managers, etc.), marine and environmental educators, MCM enforcement officers and other MCM personnel, and municipal environment officials.

The course runs over 6-7 months and requires 6 contact sessions of 2 ½ days each. The course comprises of 8 modules (a proposed 9th module is to be included). Outputs from the course are in the form of assignments. The activities within each module build towards completion of the assignments. Participants are required to develop portfolios to show evidence of learning that include assignments, accounts of on-course activities and workshop notes. Participants are provided with core module texts and supplement these with a CD-ROM and copies of some key materials. At the end of the course, participants who have adequately met key performance criteria will receive a NQF level 5 qualification (Certificate/Diploma Level).

The current course modules are as follows:

- Module 1: Understanding MPAs.
- Module 2: Management Planning for MPAs.
- Module 3: Marine Ecology.
- Module 4: Natural Resource Management (includes fisheries management).
- Module 5: Engaging with Stakeholders.
- Module 6: Human Resources.
- Module 7: Assessing Management Effectiveness.
- Module 8: Financial Planning and Management (Sisitka, 2004b).

A 9th module has recently been developed to cover issues that have emerged since the inception of the course. These include climate change and integrated coastal management (L. Sisitka, personal communication, March 4, 2011).

The course is designed so that each module follows on from the module before. Appendix 3 shows the original design for the course process: it comprises a general set of guidelines for the structure of course that may be adjusted to fit the context and needs of the participants (note that it does not include the 9th module incorporated into the latest edition of the course).

Various educational materials are used in the course, including the modules themselves (a booklet for each module), various hand-outs distributed during teaching, and a CD-ROM (which includes case studies on MPA management) (L. Sisitka, personal communication, March 4, 2011).

1.4.6. Designers Intended Educational Philosophy

The course was designed in such a way as to encourage participants to engage critically with the content of the course. It is for this reason that as much as possible of the course was conducted on site at an MPA. This was not only to give the participants a first-hand view of the real-life context that the course is preparing them for, but also to provide them with a chance to see other MPAs and learn, formally and informally, lessons in management from them. This ensures a collaborative learning process and allows a foundation for communication between different MPAs to emerge (something that has been largely lacking in the past).

In the training programme, assignments were used to help consolidate the learning taking place within each module. The assignments were designed to have practical application and thus inform managers' actual work in MPA management. It was hoped, in fact, that the assignments could be used to help MPA managers come up with strategic management plans for their MPAs. The assignments also served as a baseline for achievement, while the idea was to push each trainee as far as possible. The more competent trainees thus operated at a level far above the minimum, and grew professionally. The approach thus regards assessment as a floor to achievement rather than a ceiling (and often people do not make the minimum). It was noted that often the more competent individuals on the course worked harder and received more out of it (L. Sisitka, personal communication, March 4, 2011).

It is hoped that the course will help build a culture of collaboration within MPA management, by putting different stakeholders with different experiences in and of MPAs together in teams. Ultimately it is hoped that the course will build a national network uniting everyone involved in the management and protection of MPAs. According to Lawrence Sisitka, this network building was quite successful at local levels, but did fail slightly at higher levels such as that of national government. Appendix 3 shows the general outline of each module and the assignments within each module (note it does not include the 9th module that is included in the latest edition of the course) (L. Sisitka, personal communication, March 4, 2011).

Lawrence Sisitka notes that although some participants felt slightly held back by having less competent or experienced people on the course with them, most found it extremely useful to share their experience with others (L. Sisitka, personal communication, March 4, 2011).

1.5. The Research Focus

Based on the findings of a number of reports (to be detailed later) there have been and still are a number of challenges in MPA management in South Africa. The SA MPA Management course was designed to enable participants to meet some of these challenges. This research seeks to identify what the current issues – problems and challenges – in MPA management in the country are, and then attempts to determine whether the course effectively trains MPA professionals to tackle these issues; and if so, to find out what educational processes are integrated into the course design to facilitate the development of competences in participants. As the course targets professionals in a specific field I believe that the concept of competence is critical for developing professionals to better perform in their field. In sum, this investigation seeks to determine how the SA MPA Management Training Course develops the competences needed by MPA professionals to better manage MPAs in South Africa.

1.6. Research Question and Objectives

How are issues, management practices and competences derived, incorporated into and facilitated in an MPA management training course, and how are these evident in learning processes that articulate with the workplace of an MPA professional?

Goal 1: To identify the issues in MPA management in South Africa, and to assess how they are addressed in the training course to develop competences in MPA management practices in the workplace.

Goal 2: To review the training course to identify how learning about MPA issues and management practices is facilitated within the course and to assess if learning is evident within the course and carried over into the workplace.

Goal 3: To assess how emerging competences in MPA management practices developed in the course articulate with the workplace context of the course participants.

1.7. Thesis structure

The thesis consists of six chapters: Chapter 1 is an introductory chapter. It serves to introduce the topic of MPA management and identify the purpose of the research on the MPA course design and implementation. It also outlines the main research questions and objectives that guide the research.

Chapter 2 is the literature review chapter. It provides the theoretical framework on which the research is built. Concepts crucial to the analysis and interpretation of the data are introduced, adding academic rigour to the study's response to the research question.

Chapter 3 is the methodology chapter. This chapter provides an in-depth description of the research methods and tools used to collect and analyse the data, and defends the validity and trustworthiness of the research and its findings. The chapter also addresses the issue of ethics in the research.

Chapter 4 is the data presentation chapter. In this chapter all the data collected that is relevant to the research is presented in a clear and logical manner. The chapter is structured so as to make it easy for conclusions about the research to be drawn and to aid in answering the research question.

Chapter 5 is a discussion of the data collected and presented in chapter 4. In this chapter the findings are discussed using the theory built in chapter 2, and conclusions are drawn that answer the research question posed in chapter 1.

Chapter 6 concludes the research by summarising what has been done and found in the research, and providing some recommendations regarding further research to contribute to the field of MPA management in South Africa.

1.8. Conclusion

In this chapter I have introduced the research by describing briefly how the research came about. I then provide some information about MPAs and the functions they serve, and give an overview of MPAs in the South African context. The chapter subsequently provides a brief overview of the main focus of the research, the SA MPA Management Training Course, before highlighting the purpose of the research via the research question and associated aims and objectives. Finally, the structure of the thesis is described with a brief summary of each chapter.

CHAPTER 2

REVIEW OF LITERATURE AND CONSTRUCTION OF THEORETICAL FRAMEWORK

2.1. Introduction

In this chapter a theoretical framework will be developed to enable a deeper, more meaningful engagement with the objectives of the research. The literature that will inform this is predominantly concerned with three key areas: learning (with a focus on social learning and adult learning); competence and competence development; and competences in MPA management.

2.2. Social and Adult Learning

Learning has traditionally been seen as an individual process in which a learner acquires knowledge and skills (as well as, possibly, opinions and attitudes). However, this view has been broadened by a number of learning theorists (Illeris, 2011: 11). Theorists increasingly view learning as a social process, comprising not only the internal acquisition of knowledge by an individual but also the experience of interaction with his/her environment and other people: in short, an internal and external process of meaning-making interaction (Lave and Wenger, 1991). This wider view is now commonly referred to as Social Learning (Wals, 2007).

2.2.1. A Perspective on Adult Learning

As the MPA course is designed for professionals already in the working world, it is important to give attention to adult learning and life-long learning. This section will highlight some of the key elements of adult learning and then link these to competence development. A key text in this section is *Dimensions of adult learning: Adult education in a global era*, edited by Foley (2004). This text provides a definitive summary of many of the theories of adult education and provides an overview of the topic as a whole.

2.2.1.1. Forms of adult learning

Kolb (1984) states that learning is human beings' primary method of adapting, and that we are constantly learning in many different ways. Foley groups these into four overarching forms of adult learning: formal education; non-formal education; informal learning; and incidental learning (2004: 4).

For the purpose of the SA MPA Management Training Course, it is necessary to look at three of these forms in some detail. Formal learning is the form of adult learning that most of us are familiar with: learning characterised by a formal curriculum put together by professional educators, and generally resulting in some form of qualification (Foley, 2004: 4). The Management Training Course exhibits all three of these characteristics. Also important in terms of the way in which the course is structured is informal learning, that is, learning characterised by people actively trying to learn from their experience. Informal learning occurs not as a result of formal instruction but rather through discussion and reflection (Foley, 2004: 5). Lastly, the course draws on what the participants have learnt in the process of doing their jobs, and this is known as incidental learning (Foley, 2004: 5).

2.2.1.2. Competence

Foley's approach to competence is a relational one, which links individuals' attributes (such as knowledge, skills, values, etc.) to the tasks and activities which they face in their lives (particularly their work lives). He takes the stance that competence does not have to be determined through achieving specific outcomes but rather can be inferred from performance (i.e. competence is not necessarily directly observable) (2004: 20), and argues that the performance of individual tasks is determined by more general capacities (reasoning, judgement, specific knowledge and attitudes). He describes this perspective as a more holistic view of competence (2004: 21). He believes that much of what makes an individual competent is largely tacit and intuitive, and that learning is not only what can be taught in the classroom but rather is developed through doing. It is a process of adapting to the world in which an individual is situated (the communities of practice in which the individual participates), an aspect that is often neglected in the processes of competence development (Foley, 2004: 30). He advocates a shift in professional and vocational education:

...from training the individual mind, to the social settings in which the individual becomes part of the community of practice; from facts and rules stored in the brain until we need to use them, to enacting knowledge through activity; from a conception

of humanity centred exclusively on the brain, to a wider conception in which humans are seen as embodied creatures embedded in the social world. (2004: 31)

2.2.1.3. *Lenses for learning processes*

While there are a number of perceptual lenses through which one can construe the processes behind adult learning, Fenwick and Tennant usefully identify four: learning as an acquisitional process, learning as a reflective process, learning as a practice-based community process, and learning as an embodied co-emergent process (in Foley, 2004: 57).

However, perhaps the most relevant lens for the context of this research is that of learning as a practice-based community process. This perspective advocates a shift away from viewing learning as taking place through reflection towards an approach that focuses more on learning as relational and contextual, that is, learning as rooted in the situation (or community of practice) in which the individual participates (Foley, 2004: 63). This is a view anticipated by Lave and Wenger, who argue that learning in individuals takes place as they interact with the community, the tools at hand and the moment's activity. It follows that knowing is inextricably intertwined with doing (1991). Foley builds on this by saying that the object of learning is not to merely learn about the practice, but rather to become a full (capable) participant in the community of practice (2004: 63).

Engeström *et al.* take a more 'expansive' view of the above. They believe that learning is a cyclical process of questioning an aspect of an activity system, analysing what caused that aspect, developing a new explanation/solution, implementing it, reflecting on it and finally consolidating it. For 'activity theorists', learning is the "collective construction and resolution of successively evolving tensions and contradictions in a complex system" (1999, cited in Foley, 2004: 63). Common to all these perspectives is the assumption that the learning process ultimately involves the system's objects, mediating artefacts and the perspectives of the participants (Foley, 2004: 63). In a workplace setting, constant interaction and exchange help to develop new networks of meaning and collective action, and it is through these networks that the community learns by improvising in response to a problem or issue (Gold, Watson, and Rix, 2000).

Wildermeesch *et al.* formulate this rather differently, arguing that change in individuals is brought about through exposure to the different configurations of a community's relationships. Individuals interact across communities and in doing so transfer meaning across communities (often in the process challenging the new community's ideas of reality).

The key to any learning (whether it be individual or societal) is constant co-operation and dialogue with people located in other configurations (1998).

Overall, in the practice-based community perspective on learning, knowledge is not defined by what is true or false but rather by what is relevant in a particular context or situation. The emphasis rests on one's ability to participate (meaningfully) in a community of practice (Foley, 2004: 64).

Many theorists have drawn attention to concerns regarding the ethical, political and strategic effects of a community's practice. Consideration should be given to inequitable practices within a community. To take an example relevant to the context of MPAs, how do previously excluded people gain an opportunity to participate in the community of practice? (Foley, 2004: 65). (This has been addressed in the context of the SA MPA Training Course and the MPA community at large through an increased focus on stakeholder engagement and the equitable distribution of natural resources.)

2.2.1.4. Self-directed learning

An important aspect of adult learning to consider is the role of the teacher. While the teacher plays a vital role in facilitating learning, equipping the learners with tools to enable them to acquire knowledge, it is even more important that the teacher enables the learner to wish to learn on his/her own. This is known as self-directed learning.

The idea of self-directed learning comes from the belief that adults should (and do) direct their own learning, and that the bulk of learning in adults is informal and self-directed. Adult learning should result from being facilitated rather than from being taught (Foley, 2004: 86). The challenge to the educator is how to create the ideal space to promote self-directed learning in hostile environments (Foley, 2004: 87).

Numerous studies on self-directed learning have identified the following as key to its success:

- Educators' understanding of learning from a learner's perspective.
- Clear procedures and support functions to help learners move towards self-directed learning.
- Open, honest interpersonal relationships between educator and learner.
- Learners being able to direct their learning while simultaneously being challenged by the educator.

- Educators having a thorough understanding of the dynamics, culture and structure of the organisations/environment in which the learner works. (Foley, 2004: 87)

2.2.2. How We Learn

To build on what is proposed above about learning and social learning, I will make use of a model conceptualised by Knud Illeris to provide a theory of learning applicable to this research project. Knud Illeris’s work incorporates the concepts of both social learning and competence development and is therefore useful in understanding the processes at work in courses that take a competence approach to work-integrated learning.

The model presented by Illeris has two processes, three dimensions and a situated position. The first process within the model is the social interaction process which links the individual to his or her environment. This can be depicted as a vertical arrow with the individual (subjective level) at the top and the environment (social level) at the bottom (Illeris, 2007: 23). The second process is the acquisition process, which is between content and incentive, which Illeris describes as the two key elements in any learning situation. Learning can only take place when there is content. Incentive is critically important to the learning process, as all learning requires a certain amount of effort or energy and therefore the individual needs to be motivated through an incentive of sorts to muster that energy (Illeris, 2011: 13). This process can be illustrated by a horizontal arrow above the interaction process’s arrow. The basic model can be seen in Figure 2.1., below.

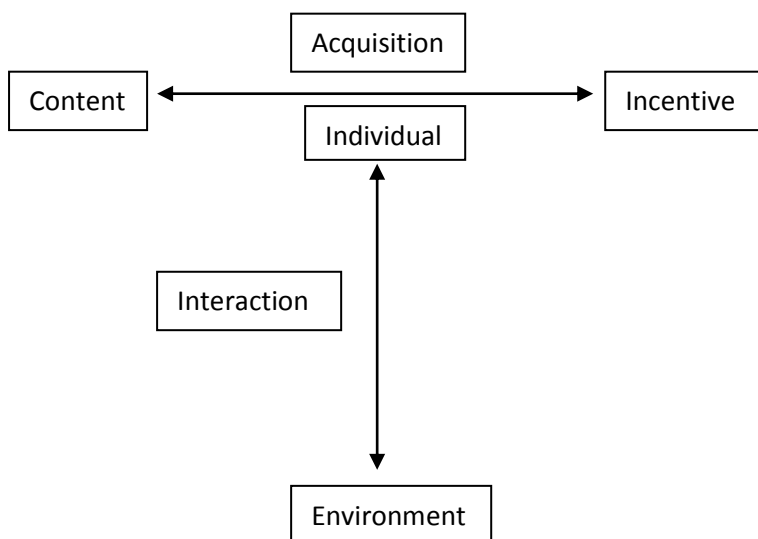


Figure 2.1. Processes of Learning (from Illeris, 2007: 23).

2.2.2.1. Content Dimension

We usually think of content as consisting of the knowledge and skills that we gain from the learning process. However, Illeris believes this to be too narrow a demarcation, and argues that content also includes sensibilities, preparedness, identity, ways of reacting to different situations, and other such ties. Learning also gives us the ability to complete the complex functions needed in the working world, which many refer to as competences (Illeris, 2011: 14). Illeris states that “learning takes place by combining new impressions and information we receive in the interaction with our environment with the results of previously acquired learning” (Illeris, 2011: 14). This means that if we know something or are able to do something in a certain subject or area and we learn something new within that area, the new information affects the previously held knowledge scheme, while the new knowledge is in turn affected (shaped) by what we knew previously. Schemes are the patterns or structures where acquired knowledge is stored in the brain. They are known collectively as memory and usually imagined as some sort of archive or ‘filing cabinet’. It is with this information that Illeris goes on to suggest that there are four different ways in which learning or knowledge is acquired.

Cumulative learning (or mechanical learning) is the acquisition of knowledge that does not fit into part of any existing ‘scheme’ and is totally new to the learner. This type of learning generally takes place at a young age, where most information is completely new to a child. The content involved in this learning is isolated (not connected to other information), and since it is isolated it can only be learned and not understood (Illeris, 2011: 15). Due to its lack of connectedness with other knowledge this sort of content can be tricky to remember and usually requires a situation similar to that in which the learning took place for us to recall it. This learning forms the platform for us to build new knowledge and understandings and develop these into new schemes with vast amounts of knowledge (Illeris, 2011: 16).

The next type of learning described by Illeris is *assimilative learning* (or additive learning). This is the most common form of learning experienced in our day-to-day lives. In this mode of learning, an individual encounters something new in an area and adds the new information to what s/he already knows in that area (Illeris, 2003: 402). This is the type of learning on which education programmes are usually based, in which we constantly develop our knowledge and skills by adding new components to what is already known (Illeris, 2011: 16). A good example of this is the subject of mathematics. We start off learning to count as

children and slowly expand that knowledge into the ability to do complex equations (often not including numbers) by the time we are young adults. As we grow older we establish a vast amount of knowledge that we can easily recall as it is attached to a 'scheme' that contextualises it and allows us to use it when it is needed (Illeris, 2011: 16). The limitation to this type of learning is that often we are called upon to apply our knowledge or skill in a situation that we do not usually associate with that knowledge. Therefore in the current world, which is constantly changing and evolving, this type knowledge may hinder us: as the context keeps changing, we may not be able to adapt our knowledge accordingly and may consequently encounter problems (Illeris, 2011: 17).

Accommodative learning (or transcendent learning) is the form of learning that helps us to deal with the limitations of assimilative learning. This learning takes place in situations where our experience does not match 'modes of comprehension' that we have previously developed, and we are unable to add to previously formed 'schemes' through assimilative learning (Illeris, 2011: 17). When faced with these sorts of situations we are often still willing to try and understand what has happened. To do this we deconstruct a 'scheme' that is in some way relevant to the situation and then reconstruct that 'scheme' so that it incorporates the new information, and thus gives us a contextualisation or frame of reference with which to understand the new situation. This is referred to by Illeris as accommodation (Illeris, 2003: 402). However, learners are often reluctant to deconstruct or change knowledge sets or 'schemes' that they are familiar with. It therefore takes a greater effort on the part of an individual to acquire knowledge through accommodative learning, and thus requires more motivation to occur. Often to avoid the challenge learners will distort the experience or learning to fit a previously built 'scheme' and "see what they want see", which is typically how prejudices are formed (Illeris, 2011: 17). Often accommodative learning takes place suddenly in what many people refer to as an 'aha' moment, in which something previously not understood is grasped as if from nowhere. However more often than not accommodative learning requires reflexivity on the part of the learner, where the information is grappled with for some time (Illeris, 2011: 18). In accommodative learning, information that is acquired is very durable and thus easy to recall as and when it is needed; it also allows for the individual to make flexible and creative use of it (Illeris: 2011: 18).

The last type of learning identified by Illeris is *transformative learning*, perhaps the most important type of learning in ESD. Transformational learning can be defined as "learning that induces more far-reaching change in the learner than other kinds of learning, especially

learning experiences which shape the learner and produce a significant impact, or paradigm shift, which affects the learner's subsequent experiences" (Cooper, n.d.). While the term 'transformative learning' is relatively new, the concept has long been known and discussed by theorists, especially in the field of psychology and psychotherapy. Transformative learning is also known by the term, coined by Yrjö Engeström, 'expansive learning' (Illeris, 2011: 18). This form of learning is far more demanding and extensive than the three previous types of learning. Transformative learning requires the learner to undergo a significant shift in their understandings or even their fundamental identity. In learning terms, transformative learning refers to the deconstruction of existing schemes and their reconstruction into a new coherent scheme that changes the way the learner views a number of previously known knowledge sets. This type of learning usually takes place when the learner experiences a personal crisis, and it can be highly taxing (Illeris, 2011: 18). Transformative learning is becoming more and more prevalent owing to the turbulent nature of the world today. Increasingly, learners are experiencing situations or obstacles that can only be dealt with through a major transformation of the self, a transformation that enables them to understand and/or adapt to change (Illeris, 2003: 402). This type of learning is especially important in Environmental Education or ESD, as the world is currently facing a number of major challenges (climate change, ecosystem degradation, loss of biodiversity, famine, poverty, etc.), and these challenges can only be sustainably dealt with if we as a global community revise how we see our relationship with the world and its inhabitants and completely change the way we live within the world.

2.2.2.2. Incentive Dimension

While content is an important part of the acquisition process, equally important is the notion of incentive. Incentive is the motivation to mobilise the mental energy to engage in learning and is the dimension that drives the process. Both dimensions play their part in the learning process and interact closely with one another. There is an emotional side to learning that causes us to develop feelings or opinions about what knowledge, skills, etc. we are acquiring, and what we learn cognitively is heavily influenced by how we feel about it. The stronger our feelings about a subject (especially if they are feelings of enjoyment), the stronger the imprint that subject or information will have on us (Illeris, 2011: 20). By the same token, if what is being learned does not spark our interest, it is harder for us to retain that information. While our learning is affected by how we feel about the learning of certain content, new content may also change the way we feel about a subject. This is why Illeris's diagram portraying

learning represents the relationship between content and incentive in the acquisition process with a double-headed arrow.

The link between emotion and learning has been researched over the past few years with interesting results. When our senses are stimulated the messages created through that stimulation travel simultaneously through two different neurological pathways. The first path delivers the transmitted stimulus to the area of the brain that is responsible for working memory, which is thus the key area of the brain for learning and decision making. The second channel passes the stimulus through the part of the brain that is responsible for emotion, and that is why the link between what we learn and how we feel about what we learn is so strong (Illeris, 2011: 21).

In schooling systems the mistake of ignoring the emotional aspect of learning in children has often been made (this is also often true for adults in their workplace). However, work addressing the link between the emotions and learning has started showing educators that people learn and work more effectively if they have a strong emotional attachment to what they are involved in (Illeris, 2011: 21). While issues in the dimension of content can easily be fixed by changes in the way we teach or learn, a problem in the incentive dimension may be much harder to fix. At an emotional level there are two ways that our feelings can affect learning: defence against learning and resistance to learning. The former generally comes into play as a way of defending our identity or preconceived notions. This is because in the ever-changing modern world we are constantly bombarded with new information and other forceful influences, against which we have to build emotional 'walls' to protect who we are as individuals, and according to Erikson (1971) and Giddens (1991) it is highly important to an individuals to build a strong and stable identity. Younger people have adapted more successfully to this turbulent world by evolving less stable identities in case they have to adapt to a life-changing event. While this may cause them to be somewhat less reliable than those with stronger identities, it allows them to be more flexible and adaptive to change (Illeris, 2011: 22).

Another less potent obstacle to learning is resistance to learning. This is generally directed against more specific learning situations and may be the result of non-important factors such as a personality clash between the learner and educator (Illeris, 2011: 23). However, unlike defence, resistance may also be a strong motivation to learn. When someone is confronted with a situation that they refuse to accept, they may develop a way of changing that situation

by strengthening their resolve and finding alternatives (Illeris, 2011: 23). This type of resistance is becoming increasingly crucial in EE and ESD as it can lead to transformative learning, in terms of which people will not stand for the negative effects we are having on the environment and go and seek ways to try and change this. This said, often the case is that the more taxing the demands that learning makes of an individual, the bigger the barriers that he or she will put up to resist or defend himself or herself from the learning process (Illeris, 2011: 24).

2.2.2.3. *Interaction Dimension*

This dimension is based not on the individual's acquisition of knowledge but focuses on the interaction between the learner and his/her social and societal environment. This dimension mediates the content and emotional factors of learning (although it does not govern the acquisition process), and affects the learner even if he or she is not in direct contact with other individuals or society at large during the learning process. This is because, as Illeris says, "there is nothing in the world today which does not in one way or the other reflect social and societal influence" (2011: 25).

Illeris has identified several different modes of interaction that influence the learning process (2007: 100). At the most basic level the interaction dimension uses *perception*. There are the impressions that enter our minds unmediated and are based purely on sensory perceptions. Generally these impulses are accepted unconsciously as we are constantly receiving sensory stimulation from our surrounding environment (Illeris, 2011: 25). The next level of interaction takes the form of *transmission*. In this form of interaction, an individual makes a concerted effort to try and send messages or sense impressions to someone else, though these may or may not be received (or attended to) by the receiver. An *experience* characterises a commitment to a type of learning in which there is a special focus and an active relationship, which may be negative or positive but stands out as it is out of the ordinary (Illeris, 2011: 25). *Imitation* involves a relationship in which a learner learns by observing someone else and then repeats what that person does. *Participation*, a concept given particular attention to by Lave and Wenger in their book on situated learning (1991), focuses on the learning that takes place when an individual (or group of people) learns by participating in a community of practice (generally over an extended period) in which other forms of interaction are also present. It is the combination of these that creates a broad kind of learning within the

individual or group (Illeris, 2011: 26). Finally, *Activity* acquires its focus from the learner’s point of view and involves “commitment in goal-orientated activities” (Illeris, 2011: 26).

To summarise and simplify the model, we can say the content dimension emphasises **what we learn**, the incentive dimension emphasises **why we learn**, and the interaction dimension emphasises **how we learn**.

2.2.2.4. Developments in the Model

Although the basic idea has remained the same, Illeris has since slightly modified this model. He renames the content dimension cognition or functionality, and this consists of knowledge, meaning and ability. The incentive dimension becomes the emotional/sensibility dimension, and this consists of feelings and motivations. These two dimensions still interact as internal processes in the acquisition of knowledge. The interaction dimension becomes the environment or sociality dimension and includes such things as participation, communication and co-operation. All of this takes place within the wider context of society or the community of practice (Merriam, Caffarella, and Baumgartner, 2007: 97). Figure 2.2. represents Illeris’ modified model.

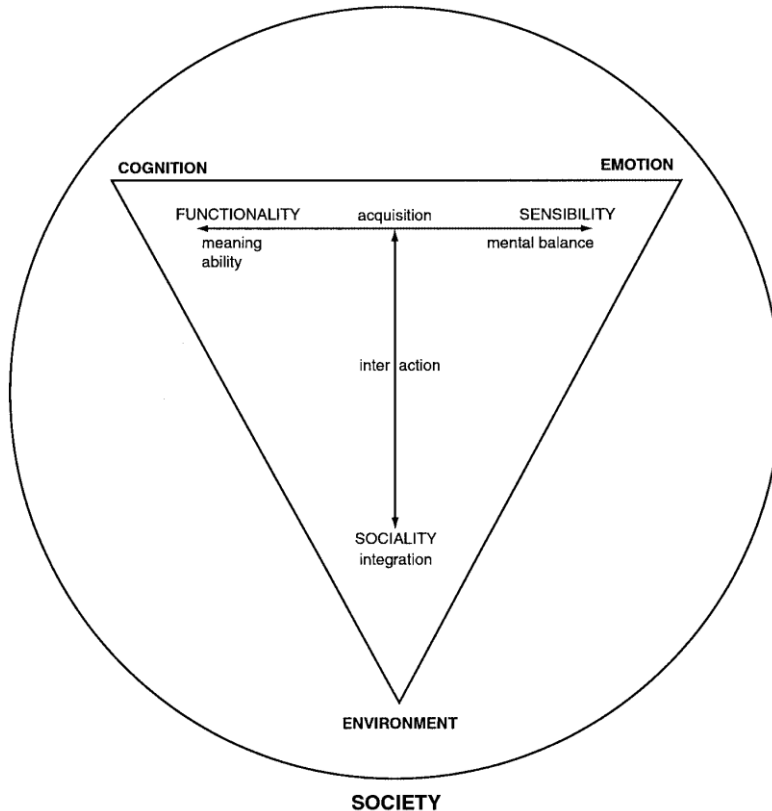


Figure 2.2. Illeris’s Learning Processes and Dimensions (Illeris, 2003: 400).

2.2.2.5. To Begin the Learning Process

Illeris' also shows us how the learning process begins with one of the five stimuli called the "raw material" of the process: perception, transmission, experience, imitation and activity or participation (Illeris, 2002: 120). He goes on, however, to state that these five inputs should not be regarded as separate, but as combining within a single learning event, each being more or less prominent in a unique pattern dependent on the situation (2002: 227).

2.2.2.6. Strengths of the model

While fairly straightforward, the Illeris model is unusually comprehensive, embracing the emotional, social and cognitive dimensions of learning, whereas much of the research on adult learning really only focuses on the cognitive aspect (Merriam, Caffarella, and Baumgartner, 2007: 99). It also gives us a tool to help us understand resistance to learning as well as transformational learning.

While Illeris himself does not claim the model to be specifically related to adult learning, it is somewhat limited when used to describe learning in pre-adults, owing to their limited understanding of societal context as well as their minimal level of cognitive and emotional development (Merriam et al., 2007: 99).

2.2.2.7. What the model means for competence development

Now that, thanks to the model supplied by Knud Illeris, we have a basic understanding of how we learn, we can begin to discuss the concept of competence and competence development. This is because competence can be thought of as an outcome of the learning process.

Illeris usefully summarises the outcome of the learning process in terms of the contextual paradigm: "What then emerges is that in our learning as a whole we attempt to develop meaning, skills, mental and bodily balance and social and societal integration, and in this way we simultaneously develop our functionality, sensitivity and sociality" (Illeris, 2008: 14). Since Illeris believes that functionality, sensitivity and sociality are the primary characteristics of competence (2008: 15), competence development appears to be an inevitable outcome of the learning process (2008: 15).

2.3. Perspectives on Competence and Competence Development

2.3.1. Introduction to Competences

A number of definitions for the term competence have been proposed over the years. Klemp (1981: 55) defines competence as “any attribute of a person that underlies effective performance; a job competency is simply an attribute related to doing a job effectively. People carry with them a wide assortment of knowledge, abilities, interest, traits, and motives, but unless these attributes relate demonstrably to doing a job well, they are not job competencies”. Elkin (1990: 22) gives a similar definition but emphasises the transfer of skills across jobs: according to him, competency is the “ability to perform the activities within an occupation... competence is a wide concept which embodies the ability to transfer skills and knowledge to new situations within the occupational areas. It encompasses organisation, and planning of work, innovations and coping with non-routine activities. It includes those qualities of personal effectiveness that are required in the workplace to deal with co-workers, managers and customers”.

Lastly, since the work of Knud Illeris is playing a large role in this research, it will be instructive to look at the definition that he approves: “The concept of competence refers to a person’s being qualified in a broader sense. It is not merely that a person masters a professional area, but also that the person can apply this professional knowledge, and more than that, applies it in relation to the requirements inherent in a situation which, in addition, may be uncertain and unpredictable. Thus competence includes the person’s assessments and attitudes, and ability to draw on a considerable part of his/her personal qualifications” (Jørgensen, 1999: 4). Illeris uses Jørgensen’s definition to show that competence is the overarching concept that embraces everything that is necessary to perform in a particular context or situation (2008: 15).

What we can gather from these definitions is that, broadly speaking, competences are the skills, knowledge, abilities, etc., that an individual needs to perform in a job. While the definitions quoted above are typically used in the context of big profitable organisations, the concept they address is equally applicable to professionals in all areas of work, including MPA management. Most importantly, however, we must note that possession of a skill or knowledge set in isolation is not enough to be effective in one’s job: rather, it is the combination and integration of a number of these skills or knowledge sets that makes a

competence (i.e. competences are not individual skills and abilities but rather much broader combinations of a number of these) (Illeris, 2009: 11).

The definition provided by Ellstrom combines elements of the three definitions quoted above and simplifies them in the process: “the term competence will be used to refer to the capacity of an individual (or a collective) to successfully (according to a certain formal or informal criteria set by oneself or by somebody else) handle certain situations or complete a certain task or job” (Ellstrom, 1997). What it is important to note here is that competences are not the same as formal qualifications (although many jobs require competences that are developed in formal education situations). According to Ellstrom, a formal competence is based on years of schooling, qualifications, etc., whereas actual competence is what is indicated by the definition quoted above (an individual’s ability to successfully handle a situation or perform a certain task). One may possess formal competence but not actual competence, and vice versa (Warhurst and Thompson, 2006).

Much of the work that has been done on the subject of competence tells us that competence is considered more in terms of outcomes rather than inputs. This is reflected in Swanson’s statement that competence is a “displayed characteristic of expertise, not the expertise itself, but very behaviour-specific, definable and measurable subsets within an individual’s domain of expertise” (2001: 238).

For years debate has raged about the adequacy of competence policy and its framework. Educators argue that the position on competence currently held by those who design the curriculum is too narrow and obsessed with outcomes. They argue that there is a need to take a new holistic approach to competence. This would mean assessing evidence of a select set of performative skills that shows competence, rather than relying purely on the task outcome (Illeris, 2009: 70). This is because of the actual complexity of competence.

2.3.2. Competence Development

Ellstrom and Kock define competence development as “an overall designation for the various measures that can be used to affect the supply of competence on the internal labour market (in individual employees, groups of employees or the whole group)” (cited in Illeris, 2009: 37). They go on to say that this includes recruitment or promotion, change of job tasks or work organisation to try and improve informal learning, and lastly, but most relevant for this research, education and training (both internal and external). These activities are usually

planned, and yet it is often the unintended consequence of an action that results in competence development (Illeris, 2009: 37). One must note here both the distinction between organisation-based competence development and individual competence development, and the importance of combining curriculum-based (formal) learning and practice-based (informal) learning to develop competences (particularly within the workplace) (Illeris, 2009: 38).

2.3.2.1. Why Invest in Competence Development

Ellstrom and Kock distinguish three perspectives that answer the question of why organisations invest in competence development. The first perspective is the *technological function perspective*, in terms of which “competence development is emphasised as a conscious rationally planned strategy for meeting such things as environmental conditions or changes in the organisation” (cited in Illeris, 2009: 38). This perspective sees tools of competence development (including education) as increasing competence in participating individuals and is an instrumental view of education. It is also a goals-means process whereby predetermined objectives can be achieved by the implementation and management of an education process (Ellstrom and Kock, cited in Illeris, 2009: 39).

The second perspective is the *conflict-control perspective*. This perspective takes into account the fact that not all values, norms and objectives at an organisational or societal level are agreed upon, and sees conflict as fundamental to the way society or an organisation works. Thus the activities within an organisation are better understood as a political process, within which the different “actors” struggle for power. In this perspective competence development can be seen as a tool to gain power or to reduce conflict between individuals to achieve a shared outcome (Illeris, 2009: 40).

The final perspective is the *institutional perspective*, a perspective that focuses on the non-rational processes determining investment in competence development. Such investment is controlled by decisions to strive towards increased legitimacy by “adapting to less temporarily predominating ideas” (Illeris, 2009: 41).

2.3.2.2. Successful strategies for competence development

Much work has been done to try and determine what characterises a successful strategy for competence development. It has been found that successful results in competence development do not result from the strategy and methods used alone but from these in

combination with a number of other factors. These factors are identified by Burke and Hutchins (2007: 265) as follows:

- Prior experience of the participants;
- Planning, implementation and management of the programme;
- Internal context and conditions within the organisation;
- Conditions which prevail in the external environment of the organisation.

If all these factors are duly attended to, competence development should result in individuals achieving improvement in skills for handling present tasks, increased motivation to learn something new, a more holistic view/understanding of the job, seeking and taking greater responsibility in their work, and greater job satisfaction (Ellstrom and Kock, cited in Illeris, 2009: 47).

2.3.2.3. A holistic approach to competence development

It is argued that while competence development involves a number of processes, we often view it in a one-dimensional way. For instance, Mulcahy (2000: 521) maintains that competence should be regarded as something a company does rather than something it has. It follows that competences are no more than statements of outcomes. Beckett and Hager (2002) do not agree with this, arguing that we need to focus not only on knowing how we do something but also on knowing why we do something. To do this we must turn something we can only do into something we can say as well (i.e. convert implicit knowledge into explicit knowledge) (cited in Illeris, 2009: 74). By understanding why we do something or why we learn something we are able to adapt this knowledge to new situations.

2.3.2.4. Last words on Competence Development

The notion of competence has grown over the last few years from a formal legal matter into a concept that encompasses many facets of education and management, and is now an expression of what we as individuals (or groups) are able to achieve. Once merely a synonym for the word qualification (Illeris, 2009: 83), competence has evolved into a more holistic concept in terms of which we are trying to understand *why* rather than just *how*.

Competence is more than what we can do in our current areas of work and includes the ability effectively to handle future unforeseen situations (i.e. the adaptability of knowledge). It is for this reason that experience has come to be seen as fundamental to the concept of

competence and competence development. Competences are not something that are produced but rather are developed over time, as we as individuals combine experience, knowledge (from various sources) and skills to become more effective not only at our jobs but also in our ability to adapt and thrive in a world that is incredibly turbulent (Illeris, 2009: 85).

Illeris combines his model of how we learn with other aspects to propose certain learning requirements for competence development. He lists three essential conditions for learning in different situations to assume the nature of competence development.

- 1) Three dimensions of learning (content, incentive and interaction) “should all be activated in significant, conscious and relevant ways in relation to the desired competence development” (2009: 94).
- 2) Learning processes should be organised that facilitate assimilative, accommodative and transformative learning.
- 3) Finally, the learning environment should provide opportunities for reflexivity, this is in order to break down resistance and defence to learning and transform these into development (2009: 94).

Now that we have developed an understanding of the concept of competence and competence development, we will turn to the work done on issues in MPA management in South Africa and on competences in MPA professionals. This will aid us in developing a deeper understanding of the research.

2.4. State of MPA Management in South Africa

While there has been some research on the management of MPAs in South Africa, this has predominantly revolved around issues that have arisen within the management of the MPAs. The management of marine living resources in South Africa is largely the mandate of the Department of Environmental Affairs, and while Oceans and Coasts have ultimate control over the management of MPAs, their field presence has been largely limited to fishing law enforcement (Lemm and Attwood, 2003: 4). The actual management of MPAs is largely undertaken by conservation agencies (these agencies generally do not make laws applicable within themselves), and it is this separation between legislative control and managerial control that is the basis for many of the issues in MPA management in South Africa (Lemm and Attwood, 2003: 4).

2.4.1. History

In 1977 and 1996 surveys were conducted to assess the situation in MPA management in South Africa. Since these surveys were conducted, however, there have been major changes in the structure not only of State Government, but also of the fishing industry in South Africa (Lemm and Atwood, 2003: 5). In 1996 the “Marine Reserves Task Group” was established, and in 1997 the task group released a report entitled *Towards a New Policy on Marine Protected Areas for South Africa* (Lemm and Attwood, 2003: 5). While the report itself has been difficult to get hold of, its findings were reported in the 2003 report by Lemm and Attwood. From the latter document one learns that among the issues in MPA management discussed in the 1997 report were the following:

- The management of MPAs could be drastically improved if there was an implementation of management procedures and systems that have been implemented in other areas.
- There was a lack of participatory processes in the management of MPAs, and users of and communities surrounding the MPAs should be consulted as part of the management process.
- There had been severe degradation of resources within and outside of MPAs and so there needs to be a revision of the MPAs to try and resolve this issue.
- It was found that MPAs were managed by provincial authorities only when there was an adjacent terrestrial protected area.
- There was a lack of capacity in order to effectively manage MPAs, and this was particularly prevalent in the Eastern and Western Cape.
- While MCM did enforce legislation, there was no dedicated team to protect MPAs; moreover, there was not enough staff to adequately prevent poaching.
- Poaching was a large problem in MPAs.
- The report also noted that many MPAs were simply not managed and generally left unattended. (Lemm and Attwood, 2003: 5)

2.4.2. Lemm and Attwood Report on the State of MPA Management (2003)

In 2002 the WWF-SA along with MCM commissioned a report to be done on the state of MPA management in S.A. The report, called *State of Marine Protected Area Management in South Africa*, was compiled by Stephanie Lemm and Colin Attwood, and published in October of 2003 (Sisitka, 2004a).

It is undoubtedly one of the most important works done on MPA management in South Africa. Not only is it important in terms of understanding the strengths and weaknesses in MPA management in South Africa, but it is also the work that gave rise to and informed the SA MPA Management Training Course (and, incidentally, provided data integral to this research project).

The report followed a number of budget cuts affecting conservation and the relegation of MPAs to a secondary role in provincial conservation management agencies. The main motivation for the project was the desire to assess and improve the state of MPA management, as well as to try and secure more funding for MPAs. The report also hoped to bring the legislative and managerial control of MPAs closer together (Lemm and Attwood, 2003: 6).

A questionnaire/survey was given to the agencies in charge of managing MPAs. It was completed by those who were most involved in the day-to-day management of a specific MPA. After the surveys were completed each MPA was visited and the person who filled in the survey was interviewed to clarify his/her answers. A site inspection was also conducted to deepen the researchers' understandings of the workings of MPAs. Finally interviews were conducted with individuals who played some sort of role (directly or indirectly) in the management of MPAs. The research was presented at a conference in Cape Town in 2003, where the problems identified and the practicality of recommendations made were discussed (Lemm and Attwood, 2003: 7).

The details of these findings will not be discussed here as they will be presented in the findings section of the research.

2.4.3. Tunley Report on the state of MPA Management (2009)

Following the Lemm and Attwood report, there was a period of five years in which management interventions were made in an attempt to fix the problems identified in the

report (as well as to implement the more feasible recommendations). In 2009 a repeat assessment was commissioned by WWF-SA, the Department of Environmental Affairs, MCM, and the Tony and Lisette Foundation. This aim of this report was to assess the progress that had been achieved since the 2003 report. The report was compiled by Karen Tunley and entitled *State of Management of South Africa's Marine Protected Areas* (Tunley, 2009: i).

Data was obtained in the following ways: the managers of each of the MPAs were interviewed, and representatives of the 7 managing authorities completed questionnaires. Social scientists and biologists involved in MPAs also provided information through discussions with the researcher. The researcher visited each of the MPAs and held conversations with MPA staff in order to gain a broad understanding of the issues facing MPAs. Once all the information was collected a scoring system was designed to summarise and assess the data (Tunley, 2009: i).

Again results from this work will not be discussed here as they form part of the data to be presented later in the study.

Now that we have an idea of the type of work done on the management of MPAs in South Africa and a better understanding of competences, I will provide an overview of the competences that are required in the management of MPAs. I will refer to competences of a general kind and assume a global perspective rather than confine my attention to South Africa.

2.5. Competences for MPA Managers

To impart a broad understanding of the type of competences required in the management of MPAs, I will be using the information provided in two documents in particular. The first document is entitled *Managing Marine Protected Areas: A Toolkit for the Western Indian Ocean*. The second is the handbook (on policies, procedures and rules) that was created by an initiative called West Indian Ocean Certification of Marine Protected Area Specialists/Professionals (WIO-COMPAS). While the first document mainly describes the competencies needed for effective MPA management, we can use these to create an idea of what broader competences are needed in this area.

WIO-COMPAS assesses and certifies MPA professionals in the West Indian Ocean Region. Its aim is to promote competences, professional growth, leadership and ethical conduct within

this field. It is the first organisation world-wide to certify MPA professionals on the basis of a programme developed by the West Indian Ocean Marine Science Association (WIOMSA) and the Coastal Resources Centre at the University of Rhode Island (CRC/URI) (West Indian Ocean Certification of Marine Protected Area Specialists [WIO-COMPAS], 2010: 1). The programme recognises those individuals who work in the world of MPAs and MPA management, and aims to provide a process whereby qualifications are given to those professionals whose skills and knowledge meet a professional level or standard (WIO-COMPAS, 2010: 1). There are 3 levels of certification attainable through the WIO-COMPAS programme:

- 1) Level 1: Marine Field Operations.
- 2) Level 2: Site Management.
- 3) Level 3: Strategy, Policy and Planning (WIO-COMPAS, 2010: 2).

The certification initiative lists seven competences that an MPA professional should display. The following table displays these competences together with brief descriptions of them. It has been adapted from the WIO-COMPS handbook.

| Competence | Description of what individual should know |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Policy, Legislation and Compliance | The individual should have an in-depth knowledge of compliance strategies within MPAs and should be able to show how they can use this understanding to determine the best institutional and managerial arrangement for the MPA. |
| 2) MPA Concepts and Establishment | The individual should be able to show an understanding of different types of management arrangements in MPAs and their relevance to international coastal conservation programmes. Should be able to demonstrate and carry out institutional |

| | |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | strategies for the management of an MPA. |
| 3) Communication and Stakeholder Engagement | Should be able to show an ability to work with the various stakeholders of an MPA at a regional, national and international level. The individual must be able to work with diverse stakeholder groups (particularly at a local level) with regard to the management of an MPA. |
| 4) Financial Management and Fundraising | Should understand the financial mechanisms at play in MPA management (including budgeting) and have an ability to fundraise. |
| 5) Management Operations | This includes an understanding of planning and reporting, monitoring and evaluation, and human resources. |
| 6) Biophysical and Social Environment Context | Should be able to show an understanding of the ecology surrounding their MPA and the surrounding area, including how to conserve and protect that ecology. This includes demonstrating understanding in areas such as Marine and Coastal Ecology, Fisheries, Tourism, and socio-cultural contexts. |
| 7) Leadership and Ethics | This competence is best explained by the handbook itself: “Ability to identify real issues and opportunities - then to select and apply appropriate approaches, tools and interventions to achieve positive results through exhibiting personal leadership qualities of self-motivation, pro-activeness, innovation and adaptability underpinned by ethical principles” (WIO-COMPAS, 2010: 8) |

Table 2.1. WIO-COMPAS MPA Professional Competences (Adapted from WIO-COMPAS, 2010: 8).

The skills and knowledge outlined for MPA professionals in the WIO-COMPAS handbook are broad and holistic. I have used the framework set out by the WIO-COMPAS programme as it is perhaps the most comprehensive document on prescribed competences needed for effective MPA management and will serve as a sort of exemplar for looking at the competences of the SAMPATC. With the help of the Managing MPAs Toolkit I shall produce a set of competences to complement and perhaps make more specific the competences outlined by the WIO-COMPAS programme.

The toolkit (published by the International Union for the Conservation of Nature [IUCN]) was designed following a comprehensive needs assessment which looked at the requirements for the effective management of MPAs in the WIO region. It was designed to support MPA managers in the WIO region by giving them a hands-on guide that covers a wide range of topics that they might come across in their management of an MPA and addresses issues that are pertinent to all types of MPAs (IUCN, 2004: 6). The Toolkit divides MPA management into two overarching topics, the Management Process, and Conservation and Sustainable Use.

In the first section (the management process) there are a number of sub-headings and themes. Section A looks at the Legislative and Institutional Frameworks of MPAs and covers topics such as types and categories of MPAs, MPA goals and objectives, organisational structures, legislation, integrated coastal management, and environmental impact assessment. This section aligns nicely with competences 1 and 2 of the WIO-COMPAS programme (IUCN, 2004: 16). Section B is entitled “Participatory Processes”. This section covers topics such as participatory techniques, conflict resolution, gender and MPAs, and local and traditional knowledge (IUCN, 2004: 29). This matches up with competence 3 from the WIO-COMPAS handbook, and shows that an ability to engage with stakeholders and key communities is very important in MPA management.

Section C of the toolkit (called planning and reporting) covers topics such as mapping and surveying, MPA design and zoning, management plans, the logical framework approach, and progress and donor reports (IUCN, 2004: 37). These are skills that link up with the management operations competence in the WIO-COMPAS handbook. Section D of the toolkit focuses on human resources and looks at everything from personnel to safety and

emergency procedures (IUCN, 2004: 47). This again falls within the WIO-COMPAS competence of management operations.

Paralleling the competence of financial management and fundraising as outlined in the WIO-COMPAS, section E of the toolkit looks at issues concerning the financial management of MPAs (includes obtaining donor funding) (IUCN, 2004: 55). Section G (Monitoring, Evaluation and Research) can again be aligned with the management operations competence highlighted by the WIO-COMPAS programme. This section covers a number of useful topics such as monitoring and evaluation, and enforcement, which are very relevant for all MPA professionals (IUCN, 2004: 85).

Part 2 of the toolkit focuses on the biophysical and socio-cultural aspects of MPAs, providing an overview of the natural processes that can be found in MPAs (these are quite generalised as the toolkit is for MPA managers from very different geographical locations). It also discusses tourism and education for the public and local communities. This part of the toolkit therefore covers the competence described in the WIO-COMPAS handbook as biophysical and social environment context.

The similarities between the two initiatives show that although there is still much work to be done on competences in MPA professionals, there is substantial consensus among MPA experts as to what competences are necessary for the effective management of MPAs. The literature consulted has helped to develop my understanding of competence development and MPAs (the two central aspects of this research). Through analysing the literature I have been able to build a framework in terms of which to analyse my data, as well as to develop a comprehensive understanding of the issues in MPA management. I have also acquired a notion of competence capable of supporting an understanding of how the SA MPA Management Training Course develops competences in MPA professionals in a South Africa context.

2.6. Conclusion

The chapter has used the existing literature to establish an informed point of view from which the training course and its perspectives on and approaches to competence development and work-integrated learning can be explored. It has covered a number of topics including adult learning, competence development, and competences in MPA management. Most

importantly, the chapter has provided a theoretical foundation for the research project. From the perspective thus created, we are able to examine the decisions behind the research design as well as the direction that the research took.

CHAPTER 3

RESEARCH METHODS

3.1. Introduction

This chapter describes the design of the research and gives an account of the ways in which data was collected and analysed. It explains the choice of methods used to generate data and clarifies perspectives on issues such as ethics and validity. As will become apparent, both design and methodology were largely determined by the research goals and objectives (see Chapter 1.6.).

3.2. Research Orientation

This research generates data to support an interpretive study of an MPA management training course. An interpretative orientation was adopted as the data was gathered not only from documents but also, and perhaps most importantly, from what various individuals perceived to be the major issues in MPA management in South Africa (through the phase one interviews), and from effective individuals' perceptions of the training course (through interviews, evaluations, and assignment assessments). This is in line with the account of the interpretative paradigm given by Cohen, Manion and Morrison (2007):

The central endeavour in the context of the interpretive paradigm is to understand the subjective world of human experience. To retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within. The imposition of external form and structure is resisted, since this reflects the viewpoint of the observer as opposed to that of the actor directly involved. (2007: 21)

This was the obvious choice of paradigm, as it allowed me, an outsider to the world of MPA management, to gain a perspective on the world of MPA management training as seen through the eyes of those who experience that world in their day-to-day working lives.

3.3. Description of Research Method

The research takes two forms. The first entails a descriptive approach to examining issues in MPA management in South Africa. Descriptive research aims to describe a phenomenon accurately using narratives and/or classifications (Terre-Blanche and Durrheim, 2002: 39). In order fully to understand how an MPA manager might learn the competences needed to be

effective in his/her job, it was first necessary to identify and describe the problems that s/he is faced with in the everyday work environment. Understanding these problems would make it possible to determine how effective the SA MPA Management Training Course was in developing the necessary competences in MPA managers. Relevant data was collected and collated in order to tell the story of the state of MPA management in South Africa.

The second form of enquiry involves a case study approach to the research. By closely examining one particular management course I would be in a reasonable position to identify the best way to develop MPA management competences among one particular group of MPA professionals. According to Punch, the central idea in a case study design:

is that one case (or perhaps a small number of cases) will be studied in detail, using whatever methods seem appropriate. While there may be a variety of specific purposes and research questions, the general objective is to develop as full an understanding of that case as possible. (1998: 150, cited in Silverman, 2010: 138)

The case study approach, according to Noor (2008:1603), is useful as it allows the researcher to gain a holistic understanding of a phenomenon, particularly if more than one tool is used for data collection. A case study approach was chosen also because it is a flexible method that gives the researcher room to work with different research instruments (Berg, 1998: 212). Thus I have made use of various tools, including evaluative work done on the course, to interpret how the course develops the competences needed by MPA professionals to effectively manage MPAs.

The reason for choosing to research this specific training course is that it is an innovative course that claims to be focussed on the workplace aspect of learning and the importance of workplace experience in the learning process. It also happens to be the only such course in South Africa.

The second phase of the research may appear to be a program evaluation, i.e. an exercise aimed at determining the effectiveness of a program (Best and Kahn, 2006: 129), whereas it is in fact an interpretive study using evaluation as a source of data.

3.4 Data Generation

3.4.1. Data Collection on MPA Management issues

Three data generation techniques were used to produce data pertaining to the issues and problems currently faced by MPA management in South Africa:

- Document Analysis
- Semi-structured Interviews
- Observations.

3.4.1.1. Document Analysis

Some work has been done on the state of MPA management in South Africa. This has been in the form of two reports. The first report, entitled “The State of Marine Protected Area Management in South Africa”, was published in 2003 by Lemma and Attwood. The second report was published by Tunley in 2009 and is entitled “State of Management of South Africa’s Marine Protected Areas”. These reports were chosen for analysis for the following reasons:

- The Lemm and Attwood 2003 report was one of the primary catalysts for the creation of the SA MPA Management Training Course (Sisitka, 2004b).
- The 2009 report was a follow up to the 2003 report and compared the state of MPA management in South Africa at the time to how it was at the time of the original report.
- Both reports are very comprehensive and have looked at all MPAs (and their managing authorities) in South Africa.
- Lastly, and most importantly, the reports are consonant with the paradigm I am using in this research. The data used to compile both reports was obtained from interviews and a survey conducted among a large number of individuals who work as MPA professionals in the country. It therefore reflects how individual MPA professionals experience MPA management in the country.

The reports were used to inform the interview process and enabled me to develop specific themes to scaffold my understanding of the MPA management environment in South Africa. There are a number of benefits attaching to this data collection method. Cohen et al. believe that documentary sources of data are useful as they enable the researcher to reach inaccessible persons or subjects (2007: 201). This proved true in my case as the reports gave me convenient access to the opinions and perceptions of a large base of MPA professionals. A second benefit of analysing the two documents simultaneously (also highlighted in Cohen

et al., 2007: 201) is that a picture emerges of the evolution of MPA management and its issues in South Africa over a period of several years. Bearing in mind that the first report prompted the creation of the course, the second report provides a perspective on how the MPA management environment has changed in South Africa since the advent of the course, which in turn provides evidence as to the effectiveness of the course in the long term.

3.4.1.2. Interviews

To gain an understanding of salient issues in MPA management in South Africa, I decided to interview people involved in the management of MPAs. Due to the complex nature of MPA management it was decided that semi-structured interviews were the most appropriate. These would allow the researcher to guide the interviews to obtain information on certain topics, while also allowing new themes to emerge. Moreover, the researcher could delve further into certain themes and concepts with follow-up questions. All the interviews were recorded with the aid of a voice recorder. It was important that the majority of these interviews were conducted within the MPAs in which the participants worked. This tends to put the participant at ease as s/he is familiar with the setting (Dearnley, 2005: 26). It also allows the participants, when referring to certain events and places within their work environment, to show evidence of what they are talking about. However, one interview was unable to be conducted on site due to time and financial constraints. I do not feel that this was an issue as the participants were very willing to help and gave great detail within the interview which allowed me to get a good sense of the workings within the MPA. Zorn (2003: 1) describes semi-structured interviews as the most useful form of interviewing for data collection in qualitative research. Semi-structured interviews allow the researcher to ask interviewees the same question within a flexible framework. This method of interviewing also enables the researcher further to explore topics that have emerged in the interview, keeping the participants on the topic but at the same time allowing them to expand on concepts they felt were important. Finally, semi-structured interviews helped to bring new concepts to the surface due to the open-ended nature of the questions asked (Dearnley, 2005: 4).

There are four conservation agencies tasked with the management of MPAs in South Africa: CapeNature, The South African National Parks Board (SANParks), Emzemvelo KZN Wildlife (EKZNW), and The Eastern Cape Parks and Tourism Agency (ECPTA). To get a holistic picture of MPA management issues in South Africa, I decided to interview people from MPAs that fall under each of these conservation management authorities. Due to the

sensitive nature of some of the resultant material, the identities of the MPAs and the interview participants within those MPAs were kept anonymous. Initially I had planned to visit four sites, but the MPA manager at one of the sites put me in touch with the manager of another MPA, and I ended up conducting interviews at 5 sites.

At site 1, only the manager of the MPA was interviewed. At this site I participated in a routine patrol with the manager, which enabled further observation and gave me an opportunity to delve deeper into matters that had emerged in the interview. The MPA manager from site 1 then put me in touch with an MPA manager of a neighbouring MPA (site 2).

At site 2, the MPA manager, the administrative assistant, as well as the person in the conservation agency who oversees the management of sites 1 and 2 were interviewed. The interview took the form of a group interview in order to save time: because the decision to collect data in this site was last-minute, all three participants had limited time at their disposal.

At site 3 four people were interviewed: the MPA manager, the community outreach officer, the administration clerk, and a ranger. At site 4, three interviews were conducted, with the MPA manager, the reserve manager, and a ranger. Unfortunately these interviews were lost due to a malfunction in the voice recorder. I was unable to recover this lost information and because of the timing of the loss, was unable to return to the MPA and conduct the interviews again. This said, from notes made regarding the interviews at site 4 I was able to determine that most of the information in these interviews was similar to information gathered at the other sites.

Site 5 was the only site where it was not possible to conduct face-to-face interviews (due to time and financial constraints). So with this site a telephone interview was conducted, with the senior section ranger as well as two assistant section rangers. Again, for convenience sake, this was done as a group interview.

In total 10 interviews (with 14 participants) were conducted to gather data regarding prominent issues in MPA management in South Africa. However, due to the technical malfunction mentioned previously, the number reflected in the data is 7 interviews (with 11 participants).

3.4.1.3. Observation

Observation was a useful tool because it offered me the chance to draw my own conclusions about events and the state of management within MPAs. Information is often incomplete in the interview process as either it is omitted by the participant (to keep something hidden or not to show themselves in a negative light), or the participant is genuinely not aware of the situation, or, lastly, is telling the researcher what s/he thinks the researcher wants to hear. Observation is a way of counteracting some of the biases that occur in the interview process (Cohen et al., 2007: 396).

The observations made, while useful, served only a limited role in the data collection process. The observations took the form of what I observed in and through my dealings with the MPAs that participated in the research. The observations start right at the beginning of the data collection process with my negotiating access to the MPAs with the conservation agencies. These observations were all noted down in a note book, and will be referred to later.

3.4.2. Data Collection on the SA MPA Management Training Course

For this phase of the research, data was collected to determine how competences are developed in MPA professionals, by looking at the SA MPA Management Training Course (the reasons for selecting this course as a case are covered in section 3.3). I also wanted to assess if these competences helped tackle the issues identified from phase 1.

3.4.2.1. Document Analysis

A number of documents were chosen to generate data for this phase of the research. First the SA MPA Management Course module hand-outs were used. In order to identify how competences were developed in MPA professionals participating in the course, the content as well as the stated outcomes of each module were considered. A number of randomly chosen (due to availability) assignment assessments were examined in order to gauge how participants had performed on average within the course and determine whether or not the course was successful in getting its participants 'on board'.

Course evaluations completed by participants (and one of the course facilitators) were used to determine how effective the course was deemed to be. These evaluations included the

identification of perceived strengths and weaknesses in the course. That these evaluations capture the dynamic situation and perceptions of the course at the time it was running constitutes another of the advantages of document analysis mentioned by Cohen et al.(2007: 201). I was thus able to access many perceptions of the course that might have been forgotten over time, and obtain important information that I could not gather first hand as I was unable to attend any course session.

Lastly, documents provided by course designers, which contain an overview of the course and explain how and why the course was constructed, were used to gather data in this phase. This again was useful as it furnished insight into the intentions and processes of the course, allowing me to compare these with the outcomes and perceptions of the course participants, so as to gauge whether or not the course was successful in doing what it intended. The course designer also provided a document with information on the participants who had previously attended the course, as well as information on whether they were successful or unsuccessful in achieving ‘Certificates of Competence’ in the course. However, this document is slightly incomplete with gaps in the information, so a full picture of how successful participants were could not be drawn.

3.4.2.2. Interviews

Interviews were also used to gather data in the second phase of the research. These again were semi-structured interviews, for the same reasons mentioned above, in section 3.1.4.2. Two interviews were conducted in this phase. The first interview was with course designer Lawrence Sisitka, and was conducted face-to-face with the aid of a voice recorder (this was supported by an earlier informal interview with him prior to the start of the research). The aim of the interview was to gain a sense of what processes within the course aid in developing competences in MPA professionals. The second interview was conducted telephonically with a participant in the course (who will remain anonymous for ethical reasons). Its purpose was to establish how effective the participant believed the course to have been. For a number of reasons, such as course participants not wishing to be contacted or having changed their contact details, only one participant was available for interview. This participant was also a participant in one of the interviews conducted in the first, MPA-issue phase of the research.

3.5. Data Analysis

3.5.1. MPA Management Issues

For the data collected concerning salient issues in MPA management in South Africa, a simple analysis technique was used. The two state of South African MPA management reports were examined, and four key themes or categories common to both were identified. These were National Coordination, Legislation, Institutional Frameworks, and MPA Management Plans and Processes. These four themes effectively covered all the issues that were raised in the two reports. The category of MPA Management Plans and Processes was fairly broad, however, and was divided into 12 sub-categories which included: MPA design, funding and revenue generation, stakeholder engagement, training, compliance and enforcement, staffing, PR/marketing, MPA networks, public education and awareness, capacity, support from authorities, and other (for any issues that emerged that did not fall under any of the above categories). However, when the data was analysed not all 12 sub-categories emerged as being important enough to include in the data presentation chapter (Chapter 4). This follows on what Cohen et al. (2007: 472) say should be done with transcribed data. The analysis that followed transcription can be classified as typological analysis, in terms of which data is put into categories, groups or subsets.

Once the categories had been established, data from the interviews, observations and documents was coded (using a number of colours and symbols) to highlight where each piece of relevant information fitted. An analytical memo was then used to sort the data and make it easy to negotiate. The analytical memo helped me organise the themes and see where information representing each category could be found in the data.

3.5.2. SA MPA Management Training Course

In this phase a similar process of coding occurred, with the addition of Illeris's theory of learning as an overarching framework. Each of the three dimensions of learning (content, incentive and interaction) was used to analyse the data collected regarding the SA MPA Management Course.

For the content aspect of the data analysis, the seven competence areas that WIO-COMPAS has declared necessary for MPA professionals were used. These seven competence areas are: policy, legislation and compliance, MPA concepts and establishment, communication and stakeholder engagement, financial management and fundraising, management operations,

biophysical and social environmental context, and leadership and ethics (WIO-COMPAS, 2010: 8). In each of these competence areas there are a number of key competences identified as requisite for effective MPA management (see Chapter 2.4.). The research used Level 2 of the certification course as it is meant for MPA professionals who have a supervisory role in MPAs, such as MPA managers, senior wardens and section rangers.

For the incentive dimension analysis, I simply went through all the data and tried to identify information that indicated factors motivating participants to attend the course and mobilising the energy to learn. This was actually a difficult task as the relevant data was not as obvious as in the other two dimensions.

For the interaction dimension of the analysis, I looked for emergent themes and patterns in the literature and the data (and found most in the interviews with Lawrence Sisitka). These provided a framework of categories in terms of which to analyse the data. The emergent themes were as follows: interactions between learners, course assignments and activities, learning environment, practical application of what is learnt, weaknesses of the course, and “other”. The data was coded and highlighted according to these themes.

Finally the data was sifted to identify information that might indicate whether or not the course was successful in developing competence. In particular the course’s participant database was used, but other data was useful, such as the course evaluations and the interview with the course designer.

3.6. Ethics

There are a number of ethical issues to consider when one is conducting research, especially when one is actively engaging and interviewing other people.

According to Terre-Blanche and Durrheim, the first ethical principle to observe when one is conducting research is that of autonomy. This principle includes voluntary and informed consent, anonymity, and the right to withdraw from the research process at any time (2002: 66). Using this principle as a guideline I tried to ensure that the research was of a high ethical standard. All the participants were fully aware of the nature and purposes of the interview beforehand and willingly consented to participating. They were given a cover sheet explaining the above and they all signed a letter of consent agreeing to be interviewed. I also went through the cover sheet with each participant and offered to clarify anything they didn’t

understand; I also explained the purpose of the research. All the participants agreed to being recorded, and the results of the research will be made available to all of them.

I told each research participant that they had the freedom to withdraw from the research at any time during the interview process, and the right to withdraw any of their statements after the interview if they so wished.

The question of anonymity was taken very seriously. Especially on account of the nature of some of the responses – which might have caused conflict between the participant and the conservation authority that they work for – all the participants were guaranteed anonymity and only I know their real identities. There are a number of factors that have made the issue of anonymity more complex: first, negotiating access to the MPAs by getting permission from each of the conservation authorities, secondly the fact that there are a limited number of people working in each of the MPAs, and lastly the fact that some of the responses allude to people, places and events in a way that can jeopardise anonymity. All these factors can make it easy for participants' identities to be revealed. For this reason I have not named the reserves or shown which interview comes from which reserve. I have also omitted or changed names, places, and events that could help identify a participant. All of this has been done to ensure the anonymity of the participants. In the case of the two course designers who were interviewed, neither wished to remain anonymous and therefore can be named in the report.

The only complication pertaining to the issue of anonymity arose from the fact that I had to sign contracts with each of the conservation agencies to gain access into the MPAs, and part of all four contracts was a clause to the effect that all findings and raw data had to be disclosed. According to Cohen, Manion and Morrison (2007: 74), this is a problem that arises in the case of sponsored or contractual research. They say it is imperative that the researcher not betray the confidentiality of the participants (2007: 74). Thus the same steps of omitting names, places and events that could incriminate any participant were taken when the findings were reported to the conservation authorities.

Two other important ethical principles that need to be taken into consideration are non-maleficence and beneficence (Terre-Blanche and Durrheim, 2002: 66; Cohen et al., 2007: 58). The principle of non-maleficence basically requires that no harm come to the research participant as a result of his or her participation (Terre-Blanche and Durrheim, 2002: 66). As no direct harm could befall the research participants from the research process this was not a major issue, although – as mentioned before – every effort was made to ensure that no

participant could invite reprisal for their comments. Beneficence requires the researcher to ensure that the research will be beneficial, if not to the participant then to society at large (Terre-Blanche and Durrheim, 2002: 66).

All the information gathered during the interview process was and will only be used for the purposes of the research (including any academic papers that may stem from it). This is also known by all participants. I believe the research will help to improve the state of MPAs in South Africa, by providing valid recommendations to strengthen the SA MPA Management Training Course.

3.7. Validity and Trustworthiness

Validity and trustworthiness are crucial elements in any research project. It is important to take steps to ensure the validity of one's research findings. In the case of this research, there were a number of issues that seemed to raise questions regarding validity. However, specific steps were taken to counter these.

The most important method of ensuring validity in the research was the use of a number of different instruments to collect data, a technique known as triangulation (Cohen et al., 2007: 143). This ensures that the data collected are not just artefacts of the method used to collect the data (Cohen et al., 2007: 141). The use of multiple methods of data collection allowed me to develop thick descriptions and added texture to my findings. Document analysis helped deepen the understanding of certain concepts that emerged from the interviews in the MPA-issues phase of the research. Also in phase 1, the fact that the same issues in MPA management emerged from both reports as well as from a number of interviews, suggests that there is validity within the selected categories.

Interviews were also conducted in different provinces, in MPAs that fall under different conservation authorities. This served to ensure that the data gathered from each site (regarding issues in MPA management) was not entirely site-specific and is to some extent generalisable.

The fact that there was no random sampling in the selection of the participants may be seen as affecting the data's validity, but the paucity of MPA professionals in the country made this impossible. That there are a number of different job positions, professional backgrounds, experience, and organisations represented in the interviews aided in negating any bias that may have arisen from the use of convenience sampling.

My previous lack of understanding of MPAs and the management of MPAs in South Africa could be seen as negatively affecting the study, although my extensive research into the subject would appear to negate this lack of prior knowledge. The fact that I am new to the field of MPAs in fact probably works to obviate any subjective biases that I might have developed had I previously been part of the field.

The use of the voice recorder in the interview process helped ensure that nothing that the interview participants said was missed or forgotten. It also allowed for the compilation of comprehensive transcriptions of the interviews, which in most cases were sent back for the interviewees to check.

I made sure that all findings were reported, and not only the negative findings, or the findings that agreed with each other (Cohen, Manion and Morrison, 2007: 145).

It can be argued that there is an over-reliance on the voice of the course designer in the description and analysis of the course. This was a difficult problem to overcome as he was the only available source for interviews about the course. I overcame this obstacle by immersing myself thoroughly into the course through the analysis of course materials and assessments. This was done to ensure that the information given by the course designer was backed up by evidence in the documents.

3.8. Reflection on the Use of Research Techniques

The close working relationship I had developed with one of the course designers granted me not only a deeper insight into the SA MPA Management Training Course, but also (through his work in the field) a broad understanding of the MPA management environment in South Africa. Close association with this individual helped ease my communication with MPA professionals (he gave me a number of important contacts) and gave me access to a large amount of data that would have otherwise been inaccessible to me.

In the interview process, most important was the fact that the majority of interviews were conducted on site, which not only helped to build rapport with the interview participants (it presumably helped them to feel at ease), but also enabled me to acquire a more realistic understanding of their working lives. The locality permitted interviewees to indicate the physical reality of what they were speaking about, and this helped me to contextualise the information gathered not only from their interviews but also from observation and document analysis. For example, when I was negotiating access to one of the MPAs it seemed that they

were very slow to respond to emails (if they responded at all). Initially I chalked this up to poor communication skills, but upon visiting the MPA I discovered that reception of cell-phone and internet signals was severely limited and that people working in the reserve had been struggling with communication because of this.

Lastly and perhaps most importantly, I believe I was privileged in respect of the data collected for analysis in phase 2. I had unlimited access to two of the primary course designers and their strategic planning documents for the course, all the course materials, course evaluations, participants' assignments, assignment assessments, and course notes. This enabled me to develop a thorough understanding of the course and its processes, and put me in an excellent position to address my research questions. One of the designers was a great source of information as an interview participant, while the other had designer was able to provide a large number of documents which supported what was said in the interviews with the first course designer.

3.9. Conclusion

This chapter has described the methodology used throughout the research, justifying the choices made by appealing both to theory and to the immediate context. It has been shown that serious consideration was given to questions of ethics and validity pertaining to the study. I therefore believe that, despite a small number of potential weaknesses, the research is generally sound and can be trusted to be accurate and comprehensive.

CHAPTER 4

ANALYSIS AND PRESENTATION OF DATA

4.1. Introduction

The following chapter presents the data emerging from the data collection process. There are two parts to the chapter: the first will focus on the data collected concerning the state of MPA management in South Africa, focusing on the issues and processes involved in MPA management. This is the data obtained from the two ‘state of MPA management’ reports and the interviews with MPA professionals. The second section of the chapter presents the data pertaining to the South African MPA Management Course.

The reports that informed the design of the course (Lemm and Attwood, 2003; Tunley, 2009) were coded to identify all of the MPA management issues that needed to be addressed. The significance of the various issues incorporated into the course design was probed in interviews with MPA professionals, so that I gained a clear sense of which issues were most important and how these related to management practices in which staff needed to become proficient. As the same issues ostensibly determined the competences that the course attempts to develop, I examined the ways in which the course aligns the issues with these competences. I therefore present data showing how the course attempts to develop these competences through the way in which it is designed. Lastly I assess the competences developed within the work context of the course participants. A number of data codes are used within this chapter and as such a key is provided as Appendix 5.

4.2. Issues in MPA management in South Africa

4.2.1. National Coordination

4.2.1.1. Delegation of responsibility for (lack of accountability for?) management of reserves

It was found that in terms of national coordination, there is little attempt to assume responsibility for the management of MPAs. The government body of Oceans and Coasts has delegated the responsibility for the management of MPAs to the conservation agencies, but many of these agencies believe it to be the job of Oceans and Coasts.

The issue was first raised in the Lemm and Attwood report (SRM1). The report pointed to a number of aspects and implications, including:

- No mandate for the management of MPAs in the formal management agreements between Oceans and Coasts (which was then MCM) and the conservation agencies.
- Conservation agencies consider day-to-day management of MPAs to be the job of MCM.
- Most conservation agencies did not have dedicated MPA staff (2003: 91).

According to the Tunley report (SRM2), the situation has subsequently improved: the promulgation of new legislation has “improved the co-ordination of MPA management by facilitating delegation of management responsibilities to conservation agencies managing terrestrial protected areas adjacent to MPAs” (2009: 142).

Although the Tunley report points to an improvement in the situation, in the group interview PI5, a statement made by one of the participants indicates that there are still problems regarding the delegation of responsibility for the management of MPAs.

*“...we have to forward through to the MCM staff and to the DAF staff and tell them you guys have to go check it and then they tell us ‘no it’s the *****’s [conservation agency of that MPA] responsibility, we are only doing the shore they are doing the MPA’. It’s this type of stuff, there have to be clear lines of communication, and there has to be clarity on who does what. There needs to be lines of authority.”*

4.2.1.2. Communication between Oceans and Coasts and Conservation agencies

It emerged from the data that there is a lack of effective communication between Oceans and Coasts (MCM) and the conservation agencies tasked with managing the MPAs. This was first noted in SRM1, where it was stated that “the communication between MCM and conservation agencies regarding MPA issues is *ad hoc* and ineffective” (2003: 92). This view was corroborated in SRM2, which had noted that there was no strategy for communication between MCM and these agencies, and that the line of communication between MPA managers and MCM needed improvement, particularly with regard to the issuing of permits (2009: 144).

There were comments in the interviews which support what is contained in the two reports, for example:

“there have to be clear lines of communication” (PI5).

A comment made by a park manager in one of the interviews that was lost due to technical issues indicated that there was a deficiency in communication between the conservation agency and MCM, especially with regard to permits, as MCM would often issue permits for activities in this manager's MPA without notifying him or the conservation agency. He said that this greatly hampered enforcement efforts (N4).

4.2.2. Legislation

4.2.2.1. Consultation with stakeholders

According to the data, there is concern that there was no consultation with all the stakeholders (including MPA managers) when legislation that affects MPAs and MPA management was drawn up. In SRM1 a number of flaws in the legislation are highlighted, all of which indicate that the legislators did not understand how MPAs work at the ground level, which in turn points to a lack of consultation with relevant stakeholders (2003: 95).

This view is backed up by a comment made in one of the interviews conducted:

“There needs to be more participation of MPA professionals in policy making, along with that of scientists” (PI7).

However, more of an issue is the fact the legislation has major deficiencies in respect of enabling stakeholder engagement in the designation and management of MPAs. SRM2 shows how there are no requirements for public involvement in decisions regarding MPAs in the MLRA. The resultant deficiencies pertain to:

- Consultation with stakeholders in declaring an MPA.
- The requirement of building stakeholder capacity as an objective of an MPA.
- Protecting the rights of stakeholders affected by decisions made regarding MPAs.
- Identifying stakeholders.
- The participation of stakeholders in decision making with regard to the management of an MPA (2009: 143).

This issue was also noted in SRM1, where it was pointed out that MPA legislation makes no provision for stakeholder consultation (2003: 100). This shows that the problem has not been addressed, and certainly not redressed.

Although it did not surface in the interviews, there is a great deal in the reports on the subject of user conflict and related issues, which again is traceable to the fact that many stakeholders' interests were not taken into account when the MPAs were being designated or when management plans for them were being designed. For example:

“One of the key issues as we mentioned is user conflict. One of the key issues that were existing was that they said the communities around the [area] should actually be involved in the drafting of the management plan” (PI5).

4.2.3. Institutional Frameworks

Many of the issues and problems pertaining to MPA management in South Africa stem from the institutional structures of the conservation agencies tasked with MPA management. Such issues can range from communication problems to attitudes towards the priority (or lack of it) accorded MPA management.

4.2.3.1. Management of MPAs not a priority

According to the data, one of the major issues affecting MPAs in South Africa is the fact that many of the conservation agencies tasked with the management of MPAs do not consider this to be their primary business.

The issue was first noted in SRM1, as revealed in the following statement: “these agencies do not believe the management of MPAs to be their core business and as a result; MPAs are not adequately managed by these provincial agencies, if at all” (2003: 92). It was also pointed out that staff are not dedicated solely to the management of MPAs (2003: 93).

While an improvement in the situation is noted in SRM2, many of the conservation agencies still lack dedicated marine posts (2009: 145). This suggests that many of the agencies still do not view the management of MPAs as among their primary objectives.

Several pieces of evidence emerged in the interview process to indicate that MPA professionals believe this still to be a problem:

“this is still a sensitive issue; terrestrial still gets a higher priority because overall MPAs make up a minimal area of [the conservation agencies’] territory” (PI7).

“No extra help. There is no one who is helping me” (PI1).

However, in one interview a comment made by the participant shows that perhaps the level of priority given to the MPA by the conservation agency depends on the purpose and perceived value of that MPA.

*“It is a smaller MPA but it is a high priority because actually it was proclaimed due to the fossils within the area which is actually found nowhere else on the ***** except in the ***** area” (PI6).*

So while this may be a widespread issue, it is an issue that appears to vary considerably among the various conservation agencies and the MPAs they are tasked with managing.

4.2.3.2. Working relationship between conservation agency and MPA staff

A major issue that has emerged from the data concerns working relationships between the conservation agency (head office) and the staff tasked with managing the MPA. One factor that could be seen as either a cause or a symptom of this is poor communication between head office and the MPA. The following is an excerpt from an interview (PI1) between myself and an MPA manager:

Sebastian: So you find that sometimes it is head office causing you more issues by not effectively doing their job effectively?

Manager: Yes.

Sebastian: So would you say that sometimes there is a breakdown in communication between you and head office? Is there a problem with you and head office talking and working together?

Manager: Ya, it's a problem for example we are having one line here, and it's a telefax, and if someone is using the phone I have to wait. If there is a fax coming I have to wait. So if the head office is trying to communicate with me it's difficult. So I end up not getting information about some things, and when it becomes a problem tomorrow they tell me “know we tried to find you, but we didn't”, things like these make it difficult for me to work.

While there is no doubt that there is a problem with communication between the conservation agency and the MPA manager, we can also see that this is worsened by the literal problem of poor equipment, an issue which will be looked at in more detail later.

The fact that another interviewee (PI4) raised the issue of lack of communication suggests that it is by no means a problem of lack of equipment only:

Sebastian: So particularly [the communication] between the reserve and head office [is problematic]?

Interviewee: Yes the communication between us is problematic.

The issue of communication was also brought up in SRM2, where it was reported that “the levels of communication and information exchange indicated by the managers varied within the conservation agencies” (2009: 145). However, it was noted that this could be due to a lack of communicative competence on the part of the manager and was not necessarily an issue pertaining to authority (2009: 145).

Sometimes this working relationship is impeded by other factors such as bureaucracy on the part of the conservation authority, which makes the job of MPA staff more difficult. This is exemplified by a statement made in an interview regarding the complexity of the process of procuring items needed by the MPA:

*“there are processes in places in place in terms of red tape that you have to go through certain structures to get certain items, you know procurement issues, which consumes time, if **** has to process an order, there are a whole lot of steps before the order can be issued and these are the restricting factors”* (PI5).

Another example of inefficiency on the part of the conservation authority that has an impact on the effectiveness of the manager is apparent in the statement of an interviewee about complaints made by visitors to the MPA:

“when the bookings are done in head office they don’t tell the tourists they have to bring a big car, 4 x 4, the road is terrible. So the tourists here they fight with me as if I am the one who is responsible. I am not doing bookings so the people in head office that are doing the bookings have to tell the [the tourists] everything that is happening here” (PI1).

All the above evidence suggests that difficulties in the working relationship between the conservation authority and the staff managing the MPA (particularly with regard to communication) can impede the effectiveness with which the MPA is managed.

4.2.3.3. Consultation of MPA staff in the design of management plans

An issue repeatedly emerging from the data is the fact that often there is little or no consultation, regarding the design of management plans for the MPA, with the very people tasked with the management of the MPA by the conservation authority. This appears to be inherently problematic as the people on the ground know the most about the challenges and tasks of the day-to-day management of the MPA, and should therefore have a say in any plans drawn up for this purpose.

In SRM2 it is pointed out that many of the plans had not been specifically designed for the MPAs and the management capabilities within these. It also found that many of the MPA managers believed that the plans offered little guidance in matters such as implementing operational plans and allocating management resources (2009: 146).

This situation appears to be confirmed by my own findings. One interviewee, when asked who makes strategic decisions for the MPA, responded:

“In terms of who makes decisions in the MPA), it is top management. Then I am on the ground to implement the decisions taken by top management, in terms of a new board that should be put in or should we patrol 10 times a week, depending on whatever decisions they take” (PI6).

In another interview (PI5), a respondent voiced his frustration over the design of the MPA as well as the limits imposed on activities allowed in the MPA. He proceeded to show me how a restructuring of the design would aid in improving how the MPA is managed. This again seems to show that it is the serving MPA manager who knows how best to design and manage the MPA.

Another interviewee (PI7) voiced frustration over the constant battle with the conservation authority to keep the MPA a no-take zone, which again illustrates that often the advice of the MPA manager is not taken sufficiently seriously.

4.2.4. MPA Management Plans and Processes

The last theme in respect of MPA management pertains to actual managerial issues faced by MPA managers. This is perhaps the most important to look at, as these issues are often able to be treated through skills development and training, which is the focus of this research.

4.2.4.1. MPA Design

A number of issues regarding the design of MPAs have emerged from the data. The most important issue is that often the design of the MPA hampers effective management or the protection of biodiversity. In SRM2 it is noted that in a number of cases, areas critical for the protection of the integrity of an ecosystem had not been given sufficient protection in the MPA (2009: 145).

These sentiments are echoed in interview PI5 (see 4.3.3.3.), where the respondent notes that the design of the MPA complicates its management. He also remarks:

“When it comes to biodiversity that is nonsense. It’s not doing anything to the biodiversity or protecting fish stocks”.

Another interview also brought to light the issue of MPA design. A participant (assistant section ranger) in one group interview (PI7) noted that complexities in the usage of the zone under his supervision made it difficult to manage.

“The west section is however more difficult to manage as the control zone adds to its complexity”.

This problem is also raised in PI5, where a certain area is a complete no-take zone while just metres away fishing is allowed. This makes enforcement more complicated and increases user conflict. It is evident that often design makes policing the MPA difficult at times. Another example of this is noted in an informal conversation with the respondent PI6, where he notes that the boat launch sites are a few kilometres north and south of the reserve. He notes that if they do see a boat fishing within the restricted area it takes them an extensive period of time to get the patrol boat launched and to the area where the illegal fishing vessel was spotted in which time the boat is usually gone.

4.2.4.2. Funding and revenue generation

An issue that has often been cited as affecting the management of MPAs in South Africa is the issue of funding and revenue generation. There has been a distinct lack of funding for MPAs in South Africa, which has of course severely compromised the ability of conservation agencies and MPA managers to effectively manage the MPAs.

SRM1 states that this issue is a universal problem with MPA management and not just specific to South Africa. However, it did note that lack of funds has contributed to the poor quality of management in MPAs in South Africa (2003: 98). The report points to the existence of a marine living resources fund, which holds money made from fishing permits, fines, etc.; and while this is a positive step the money from the fund is not used for the management of MPAs. The MCM also has a large budget for MPAs, but this is dedicated entirely to research into new MPAs and is not used for the operational management of existing MPAs (2003: 99). While this issue did not receive much attention in SRM2, it was noted that fees paid for activities in MPAs (such as fishing permits) generally still did not go towards the management of the MPA (2009: 142).

In two interviews, financial constraints were identified as an issue in the management of an MPA. In PI5, an interviewee remarked on how often they requested funding in order to allocate adequate resources to different aspects of MPA management, only to be turned down:

“You have to be able to allocate equitable resources to the area, and to do that you have to motivate, which is a major train smash, because at times you motivate the things but don’t actually get it”.

He also said the following:

“financial constraints are something that needs to be looked at”.

In another interview a respondent noted that while they did not have an issue with funding within his MPA, he was aware that a shortage of funds was a big issue generally in MPA management in South Africa.

“Funding for MPAs is often an issue; however [MPA] is lucky and has good funding. But again in general MPAs lack the funding necessary to effectively manage themselves” (PI7).

4.2.4.3. Stakeholder engagement

Identified as a problematic issue in MPA legislation, stakeholder engagement again stands out as an issue in MPA management plans and processes. This is particularly true in respect of communities surrounding or adjacent to the MPAs. A failure properly to engage and consult can result in a major conflict between the MPA management and the community affected by the MPA.

SRM2 points out that while many MPAs have created stakeholder committees and forums, very often these do not adequately represent all stakeholder groups (2009: 148). It also notes that although many MPA authorities view positive relationships with surrounding communities as valuable, very few had made moves towards establishing these positive relationships (2009: 149). Engaging with stakeholders is an absolutely vital aspect of MPA management, for many MPA management decisions directly affect the surrounding communities, many of which rely upon natural resources within the MPA as a source of livelihood.

Among the major issues pertaining to stakeholder engagement are conflict with surrounding communities, the question of consultation with stakeholders when decisions are made regarding the MPA, and the need for stakeholders to understand and support the role and function of the MPA. These factors are highlighted in a number of statements that emerged in the interview process:

“There are a few conflicts like some of the communities do not accept the strategies that are being used by the reserve like not being allowed to enter and poach or set fire to the area” (PI3).

“East section however is more dangerous because the communities (i.e. poachers in that area) are more violent” (PI7).

“so people don’t understand why we have MPAs” (PI6).

The first comment also suggests that many communities do not support or understand the strategies, goals and functions of the MPA. Whether because of a lack of awareness, a breakdown in communication, or some other factor, this issue appears again and again in the data. In another interview, the respondent emphasised the importance of involving the communities in the management plans of the MPA:

“One of the key issues as we mentioned is user conflict. One of the key issues that were existing was that they said the communities around the shoal should actually be involved in the drafting of the management plan” (PI5).

From this we can see that stakeholder engagement, especially community engagement, is a fundamental aspect of MPA management and its absence can cause a number of problems for MPA managers. In nearly all the interviews the respondents insisted that their MPA actively

engaged with the surrounding communities regarding matters pertaining to the management of the MPA (PI1, PI2, PI3; PI5; PI6; PI7).

4.2.4.4. Compliance and enforcement

Closely linked and inextricably tied to the issue of stakeholder engagement is the question of compliance and enforcement. During the data collection and analysis process I came to view this as probably the biggest and most persistent concern in MPA management in South Africa.

SRM1 states that there is a large problem with enforcement in MPAs in South Africa, due to a number of factors: lack of enforcement staff, poor training, issuing of permits, sea-going capacity, etc. (2003: 101). It would seem to make sense to group the several factors or dimensions into convenient categories.

First, I would like to look at the issue of poaching in general. In every single interview poaching emerged as quite possibly the primary challenge facing the MPA (PI1; PI2; PI3; PI4; PI5; PI6; PI7; it was also recorded in notes from the lost interviews). The following comments illustrate this prominence:

“Biggest problem is illegal fishing” (PI7).

“Abalone poaching is a problem” (PI7).

“The problems that are coming up are poaching” (PI2).

“The bigger problems that we are concerned about, is poaching, there is a lot of poaching inside this reserve” (PI1).

From the data it emerged that the biggest problem in tackling the issue of poaching was the shortage of staff available to patrol and enforce the laws (PI1; PI 6; SRM1 and SRM2). But there is also a lack of training in terms of understanding arrest procedures, knowing the relevant legislation, and even something as practical as self-defence. Although these considerations did not feature prominently in the interviews, they were highlighted in both SRM1 and SRM2. It also appears that law enforcement officers, including prosecutors and magistrates, do not take green crimes seriously, either because they do not deem them important or because of a failure of education and/or understanding. This issue was raised in interviews PI5 and PI7, as well as in SRM1 and SRM2.

Other factors compound the issue of compliance and enforcement, such as the lack of sea-going capacity, and boundary demarcation. However, these are largely practical issues and for the purposes of the research require no further investigation.

4.2.4.5. Training

Training, or the lack of training, is a large problem in MPA management in South Africa. This is due to a number of factors, most important of which is that there has been no training dedicated specifically to MPA management in the country; another is the fact that MPA management is a complex job requiring a number of different skills; there is also a paucity of qualified individuals entering the workforce. Meanwhile experience (and not once-off training) remains the key to being effective in MPA management.

SRM1 states that the lack of trained personnel is a major issue affecting MPA management in South Africa, and that often MPA managers have received no formal training specific to MPA management concepts. The deficiencies lie specifically in the area of management itself, with most managers considering MPA management to be solely fisheries management (2003: 101). SRM2 indicates that while an MPA management-specific training course (SA MPA Management Training Course) has been introduced, there is still a shortage of staff with sufficient marine-related skills (2009: 146). The report specifically identifies deficiencies in skipper skills, boat maintenance and seamanship skills. Some interview respondents indicated that they had indeed had no training in such things (PI3).

A number of interviews indicated the need for greater proficiency in various skills, including managerial skills. For instance, interview PI5 revealed the need for a manager to be trained in everything from surf launching [a boat], to budgeting and financial reporting skills. In interview PI1, the respondent indicated that his job would be made easier if he were provided with more training; particularly in the following areas:

“I have done skippers training, but I feel as if it’s important to know the safety at sea. I do have the skippers, but maybe if there is a problem there at sea, what am I going to do. I also think it’s important for me, since I am dealing with people, human resources, if I could maybe get training for HR it would be good. Also for swimming” (PI1).

Other required training identified in the data included swimming (PI1; SRM2), public relations (SRM2; PI1), surf launching (PI5; PI7), understanding of legislation (SRM1; SRM2; PI6), and environmental education training to educate people about the importance of

MPAs and sustainable resource use (PI2; notes on lost interviews). However, what was cited as most important in terms of training, was experience. Many of the interview respondents believe experience to be the most valuable form of MPA management training (PI5; PI6; PI7; as well as comments made in the lost interviews).

One can see that a wide range of skills is required in MPA management, ranging from the strictly managerial (such as budgeting and HR skills) to more practical skills (such as boat control and skipper skills). It is important that MPA management training covers this broad range of skills, supplemented both before and after by experience. This view is summed up in a comment made in PI5:

“it’s difficult to find those people with all those skills in one little pack, it’s not easy, because it’s something you build up over a period of years, so you can’t just go put a guy in that position and say ‘you are the manager of this place’, the poor guy is going to be lost, so unfortunately these things take a lot of time to build up”.

4.2.4.6 Public education and awareness

The final issue in MPA management that I believe it important to note is that of public awareness and education. It is simply essential because if the public does not understand the importance of marine and coastal ecosystems, and the importance of MPAs in protecting those ecosystems, there can be no resolution of many of the other issues (such as poaching) mentioned above.

Many people do not understand what an MPA is and what the roles and functions of MPAs are. It emerged in many of the interviews that there is a need to educate people (especially the surrounding communities) on what an MPA is and how it attempts to protect marine natural resources (PI2; PI3; PI5; PI6; PI7). One respondent remarked:

“Some of them [members of adjoining communities] don’t understand what is going on in the reserve” (PI3).

An exchange in interview PI6 underlined this problem:

Interviewee: Generally people don’t understand why we are putting MPAs in the 1st place. We try to explain to people MPAs are the places where we find most of the fish are spawning and when they are a lot in one place they can move out to other areas, and so people don’t understand why we have MPAs.

Sebastian: Ok, so it's a lack of understanding of the role of MPAs (by the general public)?

Interviewee: Yes.

A second important aspect of public education and awareness is the fact that much of the poaching in MPAs is done by people harvesting natural resources in order to survive. Often such communities do not understand concepts of sustainable resource use, and need to be taught ways of exploiting natural resources sustainably. This need was raised in a number of interviews (PI2; PI3; PI7). It was remarked in PI7,

“Education is also another issue. There is a general lack of education on how to better preserve natural resources”.

A related matter is the need to keep the public (especially the surrounding community) informed of what is happening within the reserve, and thus muster support for the management strategies employed by the MPA. SRM2 insists on the importance of facilitating effective engagement and building positive relationships with the public and nearby communities (2009: 148). This was raised as an important issue in interviews PI3 and PI6:

“We have policies in place but it's a matter of continuously publishing them in the paper until people get used to it” (PI6).

A problem raised in both SRM 1 and SRM2 is that educational and information materials that are meant to give information to the public about the MPA (such as brochures, sign boards, etc.) are often out-dated, inadequate or all together not available (2003: 102, and 2009: 148). While this did not emerge in the interviews, I observed that there is very little information about any of the MPAs on the internet, and that in only one instance was there a physical brochure about one of the MPAs available. Another MPA had sign boards displaying information and, interestingly, both this MPA and the one with the brochure fell under the same conservation authority.

The last point to note with regard to public engagement and awareness is the fact that often ignorance (or claims of ignorance) about laws and legislation is responsible for illegal fishing or the harvesting of other natural resources within an MPA. In SRM2 it is noted that often fishermen who exceed bag limits or keep undersized fish claim as an excuse that the regulations were not adequately explained to them (e.g., that the information was not provided to them when they purchased their permits). This issue was raised in interviews PI5,

PI6 and PI7. I had first-hand experience of this problem while accompanying one manager on a routine patrol of the MPA. We encountered a man fishing; when asked for his permit he could not produce it, claiming that he had a permit but was unaware that he was meant to carry it around with him at all times when fishing. In this instance, however, the MPA manager (who is known in the area for being a no-nonsense character) told him that this was no excuse as it was clearly stated on the permit that the fisherman should be in possession of the permit while fishing, and exercised his right to issue the fisherman with the maximum fine for the offence.

These, then, are the issues that have influenced the development of the course and its revisions from its inception in 2003 to now. They are the issues to which the course designers have responded by identifying the several competences needed to deal with them.

4.3. Competences in the SA MPA Training Course

The following section presents data concerning the competences that the course claims to develop in participants. These competences reflect the manner in which the course has sought to respond to issues and problems identified as prevalent in MPA management.

In an overview of the course I found a list of outcomes that the course designers wished to achieve. I was able to link these to competences in distinct competence areas corresponding to course modules. The following section details the data that was found regarding the outcomes and related competences that the course aims to inculcate in course participants.

The full details of the data are presented in Appendix 4; the table in the appendix represents the competences that the course claims to develop, as outlined in the overview of the course and its modules. The table also shows which broad course outcome (as per the course overview) each competence aims to serve as well as where in the course (i.e. which module) the competences are described. What is presented below is a summary of the findings shown in the table.

The competences that the course claims to develop in participants all fall within one of seven competence areas. Each competence area relates to a broad outcome(s), that is, whatever it is that the designers hope the learner will achieve through participation in the course. Each of these broad outcomes has a number of corresponding competences that the course aims to develop in its participants.

The three broad outcomes of the course are expressed in terms of goals for participants: develop an understanding of the roles and benefits of MPAs, develop an understanding of the national and international legislation relating to MPAs, and develop an understanding of the options for enforcement of and compliance with the legislation. These goals are associated with eight competences that course designers have identified as relating to an understanding of MPAs.

A second desired outcome is an understanding of management planning processes, and an ability to apply them in context, and this has eleven associated competences. There are eight competences that the course claims to develop relating to the area of marine ecology, a third desired outcome, and twelve competences that focus on natural resource management, including fisheries management. Another broad outcome intended by the course is for participants to develop an understanding of working with stakeholders and partners in collaborative management. This intended outcome relates to 12 key competences that the course aims to develop in course participants.

Yet another intended outcome is that participants develop an understanding of the effective use of available human resources, and this is served by eight competences. There are a further eight competences that relate directly to the intentions of the course; to develop an understanding of the assessment of management effectiveness (monitoring and evaluation). A final outcome is that the course aims to develop an understanding of financial and budgeting processes. The course designers have attempted to do this by seeking to develop six associated competences.

The above (and the table in appendix 4) indicate the competences that course designers have devised in response to the issues that have influenced the advent of the course. These are the competences that course designers believe are required for an individual effectively to manage or help to manage an MPA. The next part of the chapter will present data that illustrates how the course has been designed in attempt to facilitate learning so as to develop these competences.

4.4. Learning and Competence

The course was designed around the identified competences. As such it tries to facilitate the development of these competences through its content, structure and processes. Each module is representative of a competence area, so I will present data regarding the structure and content of each module. I will then use course evaluations (conducted at the end of each

course) as well as interviews to comment on the effectiveness of each module in developing competence. Finally I will present data on the overall structure and processes of the course, as well as on how effective these have been in the development of competences. For this purpose I will again use course evaluations and interviews as well as a database of information on the success or otherwise of participants in passing the course. It is perhaps worth noting that because not all the activities in the modules contribute towards an individual's marks, in the data I have described the activities that do count for marks as assignments.

4.4.1. Module 1: Understanding Marine Protected Areas

Module 1 focuses on developing the competences in the first competence area identified in Appendix 4. The following table indicates the content topics within Module 1 as well as the activities and discussion topics that participants are meant to engage with in the module. The table attempts to link the activities and discussion topics to the relevant content.

| Content | Related Activities and Assignments |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> - Roles, purposes and benefits of MPAs <ul style="list-style-type: none"> o Background to the ideas of MPAs. o Purposes and roles o Benefits | <p>There are three activities for this topic in module 1. The first is a look at the general roles and purposes of MPAs. The second activity is an assignment (for marks) where the participant examines the roles and purposes behind the existence behind their own MPAs. The final activity is a short exercise to examine the benefits of MPAs in general, as well as the benefits of the individual's own MPA.</p> |
| <ul style="list-style-type: none"> - Criteria for the selection, proclamation and establishment of MPAs. <ul style="list-style-type: none"> o Types of MPAs o Some general criteria o Criteria for South Africa | <p>The first activity that falls under this topic is a pair activity in which participants identify what criteria their MPAs fit. The 2nd activity is an assignment (again in pairs): participants have to do a COMPARE analysis of their MPAs.</p> |
| <ul style="list-style-type: none"> - International agreements, conventions and treaties. <ul style="list-style-type: none"> o Background to the development of international agreements and national legislation. o Key international treaties concerning | <p>The only activity for this topic is a group activity that gets participants to examine the importance of international agreements and conventions to their MPA.</p> |

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| <p>marine protection</p> <ul style="list-style-type: none"> ○ Review of topic. | |
| <p>- South African national policies, strategies and legislation</p> <ul style="list-style-type: none"> ○ Why we need laws ○ Historical background and current perspectives ○ Key legislation relating to MPAs ○ Some other important legislation ○ Some other important legislation ○ Some ideas for discussion ○ Review of topic | <p>There are two activities within this topic. The first is a question and answer session followed by a discussion of different legislative terms, such as green paper, white paper, an act, etc. The second is an activity for participants to identify which piece of legislation is most relevant to the MPA within which they work. This takes the form of group study followed by presentations of their answers.</p> |
| <p>- Institutional arrangements for management of MPAs in South Africa.</p> <ul style="list-style-type: none"> ○ Some initial thoughts. ○ Institutional structures and managing agencies. ○ Review of topic | <p>The only activity within this section is one that gets the participants to think about how effective the institutional structure of their MPAs are, and how these could be improved. This activity is again group work that is then presented to the rest of the class.</p> |
| <p>- Enforcement obligations and compliance options.</p> <ul style="list-style-type: none"> ○ Enforcement and compliance challenges for management. ○ Review of topic. ○ Some concluding discussions | <p>The activity linked to this topic is a chance for participants to identify the approaches and challenges to enforcement and compliance within their MPAs.</p> |
| <p>- Review and summary of the module.</p> | <p>The large post assignment for the module (these make up a large portion of the marks in the course) is to make recommendations for a compliance and enforcement strategy for their MPAs. This includes identifying issues pertaining to compliance and enforcement in their MPAs, identifying affected stakeholders, making recommendations for compliance and enforcement, as well as proposing who would be responsible for what. All of this is to be summarised in a table.</p> |

Table 4.1. SAMPATC Module 1

Other findings apposite to module 1

When asked in a course evaluation (CE3) how the course could be strengthened, one of the participants made a comment relevant to Module 1:

“more emphasis on legal issues, i.e. training on arrest procedures”.

Another participant remarked that they had hoped to learn more about steps to be taken in developing a new MPA, but this was not taught. While not much was said directly in CE3 about module 1, in course evaluation CE4 many participants remarked about the usefulness of module 1, in particular the information on legislation (though one or two participants did not find the module useful as much of its content was already known to them).

An interview with a past course participant (CI2) revealed that he believed Module 1 to have been very effective in broadening his understanding of MPAs.

4.4.2 Module 2: Management planning for MPAs

Module 2 addresses the competencies under competence area 2 (see appendix 4). It focuses on the planning that is required in the management of MPAs. As with Module 1, the following table represents the content and activities contained within Module 2.

| Content | Related Activities and Assignments |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - Importance and purposes of planning <ul style="list-style-type: none">○ Types of plan.○ Importance of planning.○ Purposes of planning. | The activity within this topic gets the participants to try and identify what type of management plan is used in their MPA. |
| - Frameworks, approaches and processes. <ul style="list-style-type: none">○ Planning frameworks.○ Planning methods and approaches.○ Planning processes○ Integrated coastal zone management. | The first activity within this topic is a course assignment, which tasks participants with developing a framework for a workable operational plan for their MPAs. The second activity is an exercise in participatory planning, where participants must identify who should be involved in the planning and at what level of participation (in relation to their answer in the previous activity). |
| - Setting goals and objectives. <ul style="list-style-type: none">○ A hierarchy of ideas○ Goals | The activity related to this topic involves participants' identifying the goals and objectives in the management of their MPAs, and then conducting a SMART analysis on these. |

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| <ul style="list-style-type: none"> ○ Objectives ○ Developing goals and objectives | |
| <ul style="list-style-type: none"> - Contingency planning <ul style="list-style-type: none"> ○ Identifying risks ○ Estimating the risk level of particular emergency situations ○ Planning for emergencies | In the first activity in this topic, participants identify what the most likely emergency situations within their MPAs, working within MPA groups. The second activity is to find out whether there is a workable contingency plan for their MPA, and if so, to decide which aspects need strengthening. |
| <ul style="list-style-type: none"> - Management strategies and tools <ul style="list-style-type: none"> ○ Categories of strategies and tools ○ Selection of strategies and tools | The only activity within this section is for participants to identify the current strategies and tools being used in the management of their MPAs, and which other strategies and tools might be useful in achieving the goals and objectives identified earlier. |
| <ul style="list-style-type: none"> - Roles of the MPA manager <ul style="list-style-type: none"> ○ Managers' roles and responsibilities. ○ Managers' knowledge and skills. ○ Delegation (sharing responsibility). ○ Staying one step ahead of the game. | While there are no activities for this topic, the post course assignment requires participants to update the existing contingency plan, or develop a new one, for their MPAs. |

Table 4.2. SAMPATC Module 2

Other findings for Module 2

In CE3 many comments were made by participants about the usefulness of skills and knowledge developed around MPA management planning, though no participants made direct mention of Module 2 itself. In CE4 however, Module 2 is cited a number of times as being particularly useful, and while a number of participants commented that they had learned a lot about planning, one participant said the following when asked about what he felt was the most important thing he had learned in the course,

“Planning, planning, planning”.

In the interview CI2, the past course participant had also commented on the usefulness of Module 2. These comments all reveal that Module 2 is perceived as particularly useful to course participants.

4.4.3. Module 3: Marine Ecology

Module 3 focuses on the competences relating to participants' understandings of marine ecology. Again I will represent the content and activities within the module in the following table.

| Content | Related Activities and Assignments |
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| <ul style="list-style-type: none"> - What is the coast? <ul style="list-style-type: none"> o Agreeing on a definition | <p>A group discussion on what is meant by coastal management in relation to the participants' MPAs.</p> |
| <ul style="list-style-type: none"> - Physical Oceanography <ul style="list-style-type: none"> o The big two (Benguela and Agulhas). o Other physical processes o Review of topic | <p>In this topic participants have to give a presentation on the general background of physical coastal processes in southern Africa. Related to this topic is an assignment where participants work in groups to answer the question of what are the main physical coastal processes influencing their MPA.</p> |
| <ul style="list-style-type: none"> - Biozones and bioregions of the South African marine environment. <ul style="list-style-type: none"> o Conserving marine biodiversity o A complex picture o Categories of South African MPAs o Coastal habitats | <p>In this topic participants are required to give a presentation on the biogeography of the marine environment in South Africa, and to examine the conservation status of habitats and biodiversity. This topic is supported by a field trip to the coastal environment of the MPA in which the module is conducted, led by a marine ecologist. There is also a discussion on the different habitats in the marine environment. Finally, participants are asked to identify the key species and ecosystems within their MPAs, as well as the conservation status of these and the key threats faced by them.</p> |
| <ul style="list-style-type: none"> - Ecological linkages <ul style="list-style-type: none"> o Interconnectedness (Integrated ecosystem management). o Some vital linkages o Review of topic | <p>This section has an activity that gets participants to try and understand the localised linkages between their MPAs and the neighbouring terrestrial environment, as well as the implications of these linkages for management.</p> |
| <ul style="list-style-type: none"> - Uses of and threats to the marine environment and its resources. <ul style="list-style-type: none"> o An overview o Some key benefits o Some key threats | <p>The activity relating to this topic is a group discussion and presentation on the main threats to South Africa's marine ecosystems, as well as the main threats to biodiversity within the participant's MPA. There is also a discussion on the threats to ecosystems caused by pollution.</p> |

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| <ul style="list-style-type: none"> ○ Responding appropriately ○ Review of topic | |
| <ul style="list-style-type: none"> - Ecosystem management and large marine ecosystems. <ul style="list-style-type: none"> ○ Background to the idea of LMEs | <p>There is a facilitator-led discussion on the concept of LMEs. For the post-course assignment, participants have to identify the key species and habitats, and linkages between them and terrestrial systems within their MPAs, as well as describing the effects of excessive predation on three of the key species identified.</p> |

Table 4.3. SAMPATC Module 3

Other findings regarding Module 3

In CE3 Module 3 was regarded by participants as especially useful, with several of them saying that the ecological component was the most important feature of the course. (One participant expressed his disappointment that more information was not given regarding tides.) A similar pattern is recorded in CE4, where again Module 3 is cited most frequently as the most useful module. Comments in CE4 indicate that field trips were felt to be especially beneficial, with one participant suggesting that the course could be improved by the inclusion of more practical outdoor activities.

4.4.4. Module 4: Marine Natural Resource Management

This module tries to develop competences relating to the principles of marine natural resource management.

| Content | Related Activities and Assignments |
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| <ul style="list-style-type: none"> - Sustainable use of natural resources <ul style="list-style-type: none"> ○ Sustainability ○ Sustainable populations ○ Different categories of resource users ○ Sustainable harvesting | |
| <ul style="list-style-type: none"> - Fisheries management <ul style="list-style-type: none"> ○ The need for fisheries management ○ Fisheries management techniques ○ The need for new management. | <p>The first activity within the module falls under the topic of fisheries management. The aim is to work in MPA groups to define the aspects of fisheries management relevant to their MPAs (e.g. what fisheries are there, how they affect the MPA, etc.).</p> |

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| | They then present to the rest of the group. |
| <ul style="list-style-type: none"> - MPAs and sustainable fisheries management. <ul style="list-style-type: none"> o Benefits of MPAs for both fisheries and conservation. o Conservation benefits o Benefits to fisheries management. | |
| <ul style="list-style-type: none"> - Zoning and resource use in MPAs <ul style="list-style-type: none"> o Different uses of MPAs for management. o Consumptive and non-consumptive use of resources o Zoning o Zoning methodology | The next activity in the module requires participants to focus on zoning in relation to their MPAs, as well as recommendations for zoning within their MPAs, and then to present these findings to the group. |
| <ul style="list-style-type: none"> - Coastal zone management <ul style="list-style-type: none"> o Coastal zone management. o Zones of influence. o Protection of species and habitats. | |
| <ul style="list-style-type: none"> - Tourism and other no-consumptive uses of MPAs. <ul style="list-style-type: none"> o Tourism. o Eco-tourism o Other tourism activities o Tourism carrying capacity. o Community-based tourism. o Funding MPAs through tourism. o Education, research and existing value. | The activity in this section is for participants to look at the tourism and other non-consumptive use of resources that occur in their MPAs, as well as potential tourism and non-consumptive resource use activities that have not been adopted. |
| <ul style="list-style-type: none"> - Threats to MPAs <ul style="list-style-type: none"> o Sources of degradation o Control of external influences | The last activity in the module, is the post-module assignment, where participants must identify stakeholders in the local fishing industry (around their MPA) and the potential impacts of fisheries on their fish stocks, and then indicate the role that their MPA can play in contributing to sustainable fish stocks. |

Table 4.4. SAMPATC Module 4

Other findings of Module 4

In CE3, Module 4 was another module regarded by participants as having been extremely useful. A number of comments singled out the fisheries management part of the course for particular praise. This trend is also evident in CE4, though here it was suggested that greater coverage could be given to fisheries management.

In interview CI2, the interviewee made particular mention of what he had learnt about natural resource management, and in particular about fisheries management.

4.4.5. Module 5: Engaging with stakeholders

Module 5 is focussed on developing competences within individuals in the general area of stakeholder engagement in MPAs.

| Contents | Related Activities and Assignments |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> - Management approaches and institutional structures. <ul style="list-style-type: none"> o Management Agencies in South Africa. o Choosing an approach. o Some approaches in South Africa. o Institutional structures | <p>The first activity is for participants to describe the management approach in their MPA, and if another approach might be more appropriate. The second activity is for participants to identify the management structures in place in their MPAs, describe their composition, and consider whether they are representative [of all stakeholder groups].</p> |
| <ul style="list-style-type: none"> - Participation, partnerships and co-management <ul style="list-style-type: none"> o Participation o Partnerships and co-management | <p>The third activity is to try to get participants to understand the concept of participation as well as the challenges and benefits of participation. A further activity focuses on participants looking at ways of knowing in relation to their MPAs. Another activity tries to get participants to engage with the partnership/co-management agreements within their MPAs.</p> |
| <ul style="list-style-type: none"> - Who are stakeholders? How are they and/or could they be involved? <ul style="list-style-type: none"> o Who are the stakeholders o Stakeholder roles | <p>The first activity within this section tries to get participants to identify the different stakeholders within their MPA, together with their respective interests. Then they are asked to construct a diagram illustrating the relational dynamics between stakeholders in their MPA. They then have to identify</p> |

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| | the different stakeholders who have been involved in their MPA in the past (and those currently involved), describing the different roles these stakeholders play as well as the roles they might potentially play. |
| <ul style="list-style-type: none"> - Different perceptions and ‘knowledges’; challenges and opportunities <ul style="list-style-type: none"> o Playground, goldmine, lifeline or sanctuary. o Playground, goldmine, lifeline and sanctuary. o Different ‘ways of knowing’ or ‘knowledge’s’. o Challenges and opportunities | Another activity asks participants to describe the views that the different stakeholders have of the MPA and of each other, and what potential conflicts may exist between them. The participants must try to identify ways of overcoming these differences so as to reach agreement and share benefits with all MPA stakeholders. They must also identify the different knowledges of the resources within the MPA. |
| <ul style="list-style-type: none"> - Conflict management <ul style="list-style-type: none"> o What do we mean by conflict? o The dynamics and causes of conflict o Characteristics of protected area conflicts o Destructive and constructive conflicts o Managing or resolving conflicts o Approaches to conflict management o The human factor | The first activity in this section is for participants to try and grapple with the different approaches to managing conflict adopted by different groups, and the best ways to behave in conflict situations. |
| <ul style="list-style-type: none"> - The importance of communication/ communication skills <ul style="list-style-type: none"> o What is communication o Barriers to communication o Communication skills o A communication strategy | In the first activity, participants must try and develop an understanding of the positive and negative ways of communicating. The participants must identify the different ways of communicating in different contexts, and the skills required to do so. They must then come up with a few key ideas for their own communication strategies. |
| <ul style="list-style-type: none"> - Information, interpretation, and education <ul style="list-style-type: none"> o Information o Interpretation o Education | Here participants must identify the different types of information they provide, why they do so, and who the info is directed to. They then have to identify additional information that may be useful. The next activity gets participants to engage with the concepts |

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| <ul style="list-style-type: none"> ○ Education and visitor centres | <p>of interpretation. Finally they have to engage in an activity to do with the educational programmes provided within their MPAs. There is no course assignment for this module.</p> |
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Table 4.5. SAMPATC Module 5

Other findings on Module 5

According to CE4, Module 5 was regarded by participants as a particularly important module.

4.4.6. Module 6: Human Resources

A number of the competences identified by course designers relate to the area of human resources, so it makes sense that Module 6 is devoted to human resources.

| Content | Related Activities and Assignments |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> - The importance of human resources <ul style="list-style-type: none"> ○ The human contribution ○ Sharing responsibilities | <p>The first activity tries to get participants to identify the contributions that different people can make to the management of the MPA. They are then asked to ask to identify which core management functions should be retained within the management agency.</p> |
| <ul style="list-style-type: none"> - Key labour legislation <ul style="list-style-type: none"> ○ Basic conditions of employment act. ○ Employment equity act. ○ Occupational health and safety act. ○ Skills development act. ○ Labour relations act. | |
| <ul style="list-style-type: none"> - Staff requirements, roles, recruitment and performance <ul style="list-style-type: none"> ○ Identifying needs ○ Recruitment ○ Performance Assessment | <p>The first activity within this section is for participants to identify the current staff structure in the MPA, as well as the main functions each member of staff performs. The next activity aims to get participants understand the concept of KPAs, KPIs and evidence, by engaging with a case study.</p> |
| <ul style="list-style-type: none"> - Volunteers, partnerships, local communities and visitors. <ul style="list-style-type: none"> ○ Volunteers and partners | <p>An activity within this section gets participants to engage with a case study to develop their understanding of volunteers and partners.</p> |

| | |
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| <ul style="list-style-type: none"> ○ Local communities and visitors ○ Motivation, recognition and reward | |
| <ul style="list-style-type: none"> - Consultation and contractors <ul style="list-style-type: none"> ○ Benefits and challenges ○ Terms of reference and contracts. ○ Selection and issuing contracts | An activity within this section helps participants to engage with good and bad experiences of consultants and contractors. |
| <ul style="list-style-type: none"> - Training <ul style="list-style-type: none"> ○ The national qualifications framework and qualifications. ○ Assessing training needs ○ A training strategy programme ○ Training approaches | An important activity within this section requires course participants to look at the components of a training strategy relevant to their MPA. |
| <ul style="list-style-type: none"> - Administration and logistics <ul style="list-style-type: none"> ○ Administration ○ Logistics | There is no post-course individual assignment in this module. |

Table 4.6. SAMPATC Module 6

Other findings on Module 6

In CE3 and CE4 a number of participants underlined the importance of Module 6 and its effectiveness in teaching participants selected aspects of stakeholder engagement.

4.4.7. Module 7: Assessing management effectiveness

| Content | Related activities and assignments |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> - Management effectiveness <ul style="list-style-type: none"> ○ So what is management effectiveness ○ Assessing management effectiveness ○ Methods of assessment ○ The assessment process | The first activity in this module is to get participants to think of management effectiveness in the context of their MPAs. The next activity is to get participants to think about how to assess their management effectiveness by examining some of the tools available to them to do so. |
| <ul style="list-style-type: none"> - Understanding monitoring an evaluation. <ul style="list-style-type: none"> ○ What are monitoring and evaluation? | The third activity is to get participants to look at their past monitoring and evaluation experiences. The next activity is to do a HIYMPAD of your MPA. |

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ○ When to monitor and evaluate ○ Who should be involved in M&E | |
| <ul style="list-style-type: none"> - Monitoring and evaluation for MPAs <ul style="list-style-type: none"> ○ More on indicators ○ Monitoring methods ○ What skills are needed and who should be involved? ○ Analysis and interpretation-evaluation ○ A valuable summary | An activity within this section requires participants to consider the skills needed to measure indicators in the monitoring process and who should be involved in the process. |
| <ul style="list-style-type: none"> - The contribution of research <ul style="list-style-type: none"> ○ Research and the MPA ○ Specific research contributions | The first activity within this topic is to identify the information gaps and the main research needs pertaining to their MPA. |
| <ul style="list-style-type: none"> - Developing a strategy, making a plan <ul style="list-style-type: none"> ○ A strategy ○ A plan | The activity here asks participants to identify the main components needed in their M&E strategy. |
| <ul style="list-style-type: none"> - Information management <ul style="list-style-type: none"> ○ Ownership of information ○ Selection and grading of information ○ Verification and quality control ○ Collection and storage of information. | The post-module assignment is for participants to develop recommendations for monitoring, evaluation and research strategies for their MPA. |

Table 4.7. SAMPATC Module 7

4.4.8. Module 8: Financial planning

| Content | Related Activities and Assignments |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <ul style="list-style-type: none"> - Importance and principles of financial planning <ul style="list-style-type: none"> ○ The purposes of financial planning ○ Main aspects of a financial (or business) plan. | |
| <ul style="list-style-type: none"> - Sustainable financing options | The first activity is for participants to identify the |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ○ User fees and direct revenues ○ Environmental trust funds ○ Donor funding | opportunities for income from user fees in their MPAs. |
| <ul style="list-style-type: none"> - Project planning and management <ul style="list-style-type: none"> ○ Identification and prioritisation of projects ○ Planning, management and evaluation ○ Evaluation and reporting | An activity within this topic involves participants' identifying upcoming MPA projects and how to prioritise them. |
| <ul style="list-style-type: none"> - Budgeting <ul style="list-style-type: none"> ○ Components of a budget ○ Preparing a budget | In an activity in this section participants must take a project they had identified in the previous activity and prepare a budget for it. |
| <ul style="list-style-type: none"> - Reporting <ul style="list-style-type: none"> ○ Reporting procedures ○ Reporting frameworks and formats ○ Reporting for reflection and evaluation. | |
| <ul style="list-style-type: none"> - Some key networks <ul style="list-style-type: none"> ○ SANCOR ○ MCEN ○ WIOMSA | |

Table 4.8. SAMPATC Module 8

4.4.9. Other findings on course and content

In many of the course evaluations (CE3 and CE4), participants claimed that it was the content in its entirety that was the most useful aspect of the course (presumably in recognition of the comprehensive way in which aspects of MPA management are treated). For example:

“I have gained a lot of information” (CE3).

“[Most important thing learnt] Understanding MPA management” (CE3).

“Understanding of different facets in the management of the MPA and how to get stakeholder involvement” (CE4).

“The overall approach that needs to be taken in managing an MPA” (CE4).

“How to manage the MPA” (CE4).

The following exchange was recorded in interview CI2, underlining what has been said about the overall usefulness of the course, in terms of both structure and content:

Sebastian: What aspects/processes were most important in helping you develop the knowledge and skills and competences needed to be an effective MPA manager?

Interviewee: I initially had a minimal understanding of MPAs and their management. It is very difficult to pinpoint exactly but interaction with facilitators and how they delivered the information is vitally important.

The participant also noted the following:

- *It is a combination of all aspects of the course that are important.*
- *The evaluations, workbooks and the assignments all interact well and support each other well.*

In the course of an informal conversation with a course designer, the participant realised how the course was structured in a way that meant each module followed on the previous module, building on knowledge developed in previous modules. He also came to recognise how the course promotes an integrated approach to management (L. Sisitka, personal communication, March 4, 2011).

4.4.10. Other findings on the SA MPA Management Training Course

Interaction between learners

One of the key factors promoting learning within the course is social interaction among the participants. The course designers specifically designed the course to promote social learning by encouraging MPA professionals from different MPAs, with varying experience and from different backgrounds, to work together in confronting issues of common interest. All the modules contain activities that have to be done in groups, and there are certain topics that require group discussion (L. Sisitka, personal communication, March 4, 2011). In the

evaluation summaries it emerged that for many of the participants the interaction with other MPA professionals was extremely useful and vitally important to the learning process (CE3 and CE4). In CE 5 (an evaluation of the course by a facilitator) the following comment was made:

“The group work sessions have always proved very useful because they require contact between members of different organisations. This results in an exchange of ideas, the building of relationships and networks between different management agencies, and an understanding of the problems experienced by the different agencies. Participants indicated verbally to trainers that this aspect of the training was of major benefit”.

In fact, apart from the post-course assignments, every activity in the course lends itself to group work and learning through social interaction.

In CE4 an added benefit of the interaction on the course was noted: the formation of strong relationships between participants from different organisations and MPAs. It is hoped that these relationships will lead to a more collaborative approach to the management of MPAs in South Africa and the establishment of a virtual ‘community of practice’. This point emerged in the data CE3, CE4, and CI2. One comment made by a participant in the evaluation of the course was particularly powerful. When asked about positive memories of the course, he answered:

“To do my work and think ‘brother’.” (CE4).

Course assignments and activities

Course assignments and activities are designed to get the participants to use theory learnt in the course to deal with issues that they face in their work environments (L. Sisitka, personal communication, March 4, 2011). Examination of the activities and assignments within each module revealed that every assignment was directly related to a topic within the module, and that almost every activity and assignment could be located within the work place context of each individual participant.

In the evaluation made by a course facilitator (CE5), it appears that the majority of assignments were completed to a satisfactory level, and that participants who struggled with the assignments were given extra support. The facilitator noted that in the new format (which responds to the NQF framework for assessment), often the questions/activities within the

workbooks could be answered by the simple insertion of information gleaned elsewhere in the workbook, which does not promote learning. However, the facilitator conceded that although this was often a problem, the mere fact that learners were going back to material covered, finding the relevant information and writing it down, did reinforce what had been learnt.

The facilitator commented that the out-of-class assignments provided the best means of assessing a student's competence in a particular area, while for the participants (as both CE3 and CE4 attest), the on-course discussions and activities were also valuable in the learning process.

Learning environment

It has emerged that an important factor in the learning process is the fact that each session of the course is conducted in an MPA in order to give a real-life context to the theory being taught, a feature that goes hand-in-hand with the field excursions that form part of a number of modules. Course designer Lawrence Sisitka commented on this in an interview:

“Also locating it as we did within different MPAs, we were on site, so they could actually learn from the site, and look at the issues around the particular site, so that was also a very powerful learning experience. It's a contextualisation and recognition that other people have similar problems and seeing how they try deal with them and that sort of thing” (CI1).

It was also noted by a number of participants that being on site and going on field trips was very conducive to learning (CE3 and CE4). It was also noted in CE5 that the field trips were well led by the partner organisations tasked with the role.

Facilitators

It was found that the facilitator is a critical component of the course. The quality of the course was dependent to a large extent on the facilitator leading the sessions. Participants commented in evaluation summaries CE3 and CE4 that the facilitator was highly instrumental in the learning process.

Reviewing the evaluations, the course designers recognised that the facilitation or mediation of the course was a critical factor, and concluded that it was the interaction between facilitators and participants (as well as among participants themselves) that was the primary determining factor of the success of each course.

Support Material

The CD-ROM and other support materials were found to be very useful. Both evaluation summaries picked up on comments made by participants indicating that they found the CD-ROM to be a vitally useful resource, providing a good information base for all aspects of MPA management (CE3 and CE4). This point was also made in the interview CI2 and by the course designer in interview CI1.

Potential barriers to learning

Although the course has generally received very positive reviews, certain weaknesses have been identified that could affect the effectiveness of the learning process.

The first issue that emerged from the data was the fact that language was often a barrier to learning on the course. The fact that the participants are very diverse in terms of level of education, geographical distribution, first language, cultural upbringing, etc., means that a number of participants have found it difficult to cope with the primary language of instruction of the course (English). This problem was raised in the course evaluations of the participants as well as that of the facilitator (CE3, CE4, and CE5). The issue was also mentioned by a course designer in interview CI1, who pointed out that often the problem stemmed from the fact that learners are reluctant to admit they do not understand something or are battling with the language. He said that it was emphasised throughout the course that a learner must tell them if they are battling with the language and that they will assist them in any way possible. For instance, they have given participants the option to do assignments in a language they are more comfortable with.

Another issue that arises is the implications that the NQF framework has for the course. The course has attempted to align itself to NQF unit standards in order to be able to confer recognised qualifications on participants, but this has to an extent impeded the assessment process and in fact made it more difficult to assess whether a participant has developed the appropriate competences. It is the following of NQF standards more closely that has led to the problem mentioned earlier of learners being able merely to regurgitate what they have read in order to answer workbook questions (CE5). This was not an issue pre-NQF alignment, as off-course assignments were the only form of assessment and, as mentioned before, these are perceived to be better indicators of competence. But according to NQF standards, these assignments could be seen as discriminating against those who do not have

English as a first language, and thus cannot be used as the primary tool of assessment (CE5). In interview CI1, the challenge of aligning with the NQF framework was also mentioned. As noted in the incentive section, adjustments to the course to make it fit more closely with unit standards have reduced its content and may also have eroded its quality (CI1).

Another issue that emerged was the fact that assignments were either too long or too “tricky”. A number of learners commented, in the evaluation of the course, that assignments were too time consuming. The fact that all participants had full-time jobs often meant that they were unable to spend the full recommended time completing the assignments (CI1; CE3; CE4).

Besides what has been mentioned above very few weaknesses were identified in the data. In the course evaluations very few negative comments were made about the course and very few recommendations were made.

Knowledge shared after the course

Finally, it was interesting to discover that the interviewee in CI2 believed the course provided skills and knowledge that one could impart to others working within one’s MPA. He maintained that it also equipped one to educate and raise awareness within the surrounding communities:

“Teaching your rangers and improving them as well is an important job for MPA managers, and course has given me the tools to do that. The course also helps you raise awareness among the surrounding communities. I got most of his ideas for educating the community from things he learnt from the course” (CI2).

Future of the course

In an informal interview with course designer Lawrence Sisitka, it was discovered that a new module has just been designed for future courses. This ninth module includes climate change, estuary conservation and integrated coastal zone management. The latter is a concept that is already practised in many MPAs and coastal conservation projects around the world and is widely held to be the future of marine and coastal conservation (L. Sisitka, personal communication, March 4, 2011). He also spoke about how the course has undergone large changes to its design and structure so as to meet the requirements for accreditation set by its new facilitators, the South African Wildlife College. This has meant that the course has been shortened and the modules have changed to fit with National Qualification Framework (NQF) standards (L. Sisitka, personal communication, March 4, 2011). It is a cause of worry among

facilitators that these changes may impact on the quality of the course. Lawrence Sisitka is also concerned that running the MPA Management Course as an accredited course that is part of a larger qualification (e.g. a diploma or postgraduate certificate) might attract participants not particularly interested in improving MPAs in South Africa or even wishing to be part of the MPA community, but who rather merely wish to obtain the credits towards a larger qualification (L. Sisitka, personal communication, March 4, 2011).

4.5. Evidence of Learning and Articulation of Course in the Workplace

From the analysis of the course activities and assignments, I was able to note that almost all the assignments required participants to link the theory they had learned to their everyday experience. Indeed, most activities required the participant to complete a task that directly relates to the management of their MPA, and to place the information gained from the course in the context of their MPA. In CE4 it was noted how a participant did not have an operational plan in her work and was actually using assignment number 9 to develop one, while other participants stated how the course had given them the incentive to do things that they had thought of doing but had not done.

In the analysis of the data, evidence was found to indicate that the SA MPA Training Course was effective in developing competences within its participants.

In CE5 it was mentioned by a course facilitator that the off-course assignments were a good indicator of competence in a particular topic, and as the lead instructor in the course run for the South Cape Cluster, he felt that all participants benefited greatly from the course.

Seventeen assessments of off-course assignments for 11 individuals (a number of the assessments were for the same individuals but for different assignments) were reviewed. Ten of the 17 were up to the required level, and on six of these the marker had commented on the high standard achieved.

In CE3 it is mentioned that there were initially 17 participants attending the course. Unfortunately three dropped out because of work-related commitments and time constraints. Of the 14 who completed the course, 8 achieved 'Certificates of Competence', while the remaining 6 achieved 'Certificates of Attendance'.

In the data PD (although incomplete), 79 participants are recorded. Of these, data regarding the completion of the course is missing for 44 participants. This is somewhat troublesome. Of

the 35 participants for whom data was available, it was found that 15 had been successful and received 'Certificates of Competence'. Of the remaining 20, 11 had not completed the course (for a number of reasons) and 9 were unsuccessful.

In the interview CII, the course designer commented that while it was difficult to gauge the long-term impact of the course on participants, many of them had gone on to become candidates for certification (WIO-COMPAS); from his position as someone closely involved in the certification process he was able to see that many of the participants had benefited from the course and developed some of the competences necessary for certification. He was convinced, in short, that there had been professional development in individual participants as a result of the course.

4.6. Conclusion

This chapter has presented the data that emerged from the collection process. It has been structured so as to allow for the answering of the research question. The chapter forms the basis for the discussion around the findings in the next chapter. The chapter has looked at two different areas. Firstly, data was presented on the issues in MPA management in South Africa. Secondly, data was presented regarding the SAMPATC and to determine how the course facilitates competence development in participants.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1. Introduction

Chapter Four used data gathered to provide a thick description of salient issues and problems being faced by MPA management in South Africa. It also presented data on the design of the SAMPATC, focusing on if and how it develops work-appropriate competences in participants. Drawing on the data presented in Chapter Four and the theory reviewed in Chapter Two, in this chapter I attempt to draw a set of conclusions that will answer my research question.

5.2. Discussion of findings

Analytical statements will be used to describe the key conclusions reached from the findings presented in Chapter 4. Each analytical statement summarises a conclusion derived from the data, and supporting each statement is some discussion that attempts to answer part of the research question.

In Chapter 4 there is evidence that indicates the following:

Analytical Statement 1:

The SA MPA Management Training Course was taken up in ways that have addressed many of the MPA issues and management practices through the specification of competences that MPA professionals should develop through the course.

In Chapter 1 it was noted that the SAMPATC was designed in response to the report on the state of MPA management in South Africa by Lemm and Attwood in 2003. In notes on the course (obtained from the course designers) as well as in interviews with the course designer, it emerged that the course had been specifically designed to tackle issues raised in the report. Appendix 4 gives us an overview of the broad outcomes and related competences of the course. On this basis it is safe to assume that the course did incorporate attention to MPA issues and management practices at the time it was designed. But the world is not static and change is constantly happening, including in the field of MPA management. Therefore the

2009 report on South African MPA management was also analysed, along with interviews conducted in four MPAs to see if the issues were still the same and if not, whether the course was responding to these different issues.

In Chapter Four it can be seen that while some of the issues noted in the Lemm and Attwood report had been resolved (such as contractual issues between the DEA and MPA managing authorities), many of these issues were still current several years later. Perhaps the main issue pertaining to MPA management to emerge from the data (as it linked to almost every other issue) was that of stakeholder engagement and communication with stakeholders. Stakeholder engagement (or an absence thereof) can be blamed, at least in part, for illegal fishing, user conflict, and the lack of support for MPAs from surrounding communities. It also plays an obvious role in public awareness, fund raising, etc. It therefore stands to reason that, in order effectively to address problems and contentious issues in MPA management, it is essential for MPA managers to engage appropriately with all stakeholders and include them (in particular surrounding communities) in the management and strategic planning of the MPA. Perhaps the biggest cause of this problem is the lack of guidance from legislation regarding stakeholder management and engagement.

However, it appears that the SAMPATC has taken full cognisance of this in terms of its competence objectives. One of the course's broad intended outcomes states that it aims to help participants to have a "*Developed understanding of working with stakeholders and partners in collaborative management*" (see appendix 4), and it accordingly seeks to develop competences to address the matter of stakeholder engagement. By encouraging government officials from the Oceans and Coast division of the DEA it is also trying to make them more aware of these issues and persuade them to fill in the gaps in the legislation (and not only the gaps in the legislation relating to stakeholder engagement but in all areas of MPAs and their management).

One intended outcome of the course that is unstated in course materials but is very much a core component of what the designers hope to achieve, is the creation of a more collaborative approach to MPA management in South Africa, which includes building relationships and networks between different MPAs and their management authorities as well as strengthening relationships between government and MPA management authorities. This is highlighted in both interviews with the course designer, and mentioned in Chapter 4. This aim is supported by encouraging different groups to attend the course and making participants in the course

work in groups. In this way several problematic issues are addressed, including aspects of the national coordination of MPAs and the institutional frameworks of those involved in MPA management. The course also tries to improve communication skills (pertaining particularly to a number of intended competences listed in the module regarding stakeholder engagement), and thus again can be seen as taking up issues in MPA management in the course.

Other issues such as compliance and enforcement (particularly in relation to understanding key legislation), MPA design, funding and revenue are also explicitly covered by competences that the course aims to inculcate. The course as a whole addresses one of the biggest issues identified in the 2003 report, the lack of training for MPA professionals.

But while the SAMPATC undoubtedly covers a wide range of MPA management issues and processes, some areas and issues were identified as not being given specific attention by the course. These pertain especially to more practical skill sets. For instance it emerged from a number of interviews (as was mentioned in Chapter 4) that a number of MPA professionals could not swim. Other skill sets not covered by the course include skipper's training, arrest procedures, first aid and boat maintenance. Computer skills could also be seen as being necessary, as in all the MPAs I visited in the course of the interview process computers were extensively used in the management of the MPA (from communication to budgeting to planning, etc.). But these are skills that are built up over time and are very costly to include in a training programme; for this reason, it is understandable that they have been left out of the course.

From the above we can conclude that while some elements of MPA management (processes and issues) are not covered in the course, the majority of these are addressed by the competences and outcomes (stated or unstated) associated with the course. For a full list of these competences and outcomes see appendix 4. I will now look at the design of the course in order to show how the course facilitates learning, using the lens provided by the work of Illeris as described in Chapter 2.

Analytical Statement 2:

The SA MPA Management Training Course facilitates learning on the part of course participants, through an interplay between three interacting dimensions of learning (content, interaction and incentive) identified in a competence framework approach to workplace training.

In Chapter 4 the Illeris framework (dimensions of learning) developed in Chapter 2 was used to describe how the design and structure of the course facilitate learning. The first dimension (content) comprises what the learner knows, can do, and understands (Illeris, 2011: 14). In Chapter 4 we saw that the course has content directly relating to the management of MPAs in South Africa, broken into sections. Each section focuses on an aspect of MPA management or addresses MPA issues (see section 5.2.). The purpose of the content dimension in the learning process is to develop meaning, the “coherent understanding of matter in existence” (Illeris, 2007:25), and to develop abilities within the learner. Illeris believes that if both of these are adequately developed the learner develops **functionality**, which Illeris describes as the “capacity to function appropriately in the various contexts in which we are involved” (26: 2007).

From this description, we can see that the course has (directly or indirectly) appropriately addressed the content dimension of learning. First, the content of the modules is relevant to MPA professionals and the management of MPAs: all the information pertains to different aspects of MPA management and is solely focused on imparting knowledge and skills to participants that will aid them in their workplace. Secondly, and most importantly, all the assignments and activities within the course and its modules get the participants to apply what has been taught to their own individual MPAs. This gives them the chance to develop the ability to use what they have learnt in a context appropriate to them, and if they are successful (i.e. by successfully completing the assignments) they will have demonstrated **functionality**. From this I deduce that the content dimension of the learning process is present in the learning within the SAMPATC.

Illeris further develops this aspect of his model by describing the four ways in which knowledge is acquired (cumulative, assimilative, accommodative and transformative) (2011: 15). Cumulative learning does not have much relevance here, as most of what is being taught in the course fits into already existing schemas within the learners. However, the other four ways of acquiring knowledge are very much evident in the way the course attempts to teach

the participants. Assimilative learning is as we know the most common way of acquiring knowledge, in terms of which we take new pieces of information and add them to what we already know about a subject (Illeris, 2003: 402). This structure is certainly in evidence in the course, as it repeatedly seeks to use what the participants already know about MPAs to help them understand new concepts that it is trying to impart to them. For instance in module 2, participants are taught the theory behind strategic management planning. Almost all the participants will have been involved in the day-to-day management planning processes of their MPAs and have some understanding of the process, so teaching them generally accepted planning theory within the same context is building on and developing what they already know.

Accommodative learning is harder and often takes more time than assimilative learning. In this paradigm, what we are learning does not fit previously existing schemas and we have to deconstruct a schema or schemas to accommodate the new information, thus constructing a frame of reference or contextualisation within which to understand the new situation (Illeris, 2003: 402). The course forces participants to learn in this way, but assists them in doing so by creating a situation where the participant can look at the new information in a context relevant to them, thus helping them to understand what they are learning. For example in module 1 participants are taught the theory of the general roles and objectives of MPAs, and are then asked in an activity to identify what they believe the role and purpose of their own MPA is in relation to what they have just been taught. This is a very basic example, but it is part of a wider trend within the course design. By teaching in this manner, the course teaches the participant to take general information and apply it in and to different situations, thus again building the functionality of the individual.

Illeris's last category is transformative learning (also known as expansive learning), which as stated in Chapter 2 is the most important type of learning for ESD. This type of learning creates a paradigm shift in the learner that affects all his or her subsequent experiences and is thus much more difficult than the other three forms of learning (Cooper, n.d.). In an MPA environment that is rapidly changing, MPA professionals will face a number of new challenges that they have never before encountered. In my dealings with MPA professionals, it has often emerged that a widely held belief is that MPAs should be completely 'no-take' zones (i.e. no natural resources should be taken from those areas). This view is consistent with certain global views which hold that conservation means to completely stop human interference with nature. However, this view negates the rights of many of the people and

communities who rely on those resources for their survival. Therefore the course attempts to promote an ethic among participants that MPAs and their staff should work with communities not only to conserve the natural environment but also to protect the rights of those who rely on coastal and marine natural resources. Another example of this is the adaptation of the course to include a module on climate change and integrated coastal zone management, two concepts that (though still relatively unconsidered in SA MPA management) are redefining the way in which MPAs are managed around the world. The hope is that this will change the management styles of participants and persuade them to address these concepts in the manner in which they manage their MPAs.

We will now turn to the question of how the course facilitates the interaction dimension of learning. This is the dimension that focuses on how or where an individual learns, on the interaction between the learner and his/her societal environment (Illeris, 2011: 25). The aim of this dimension in the learning process is to develop the **sociality** of the learner. Sociality is the “ability to become engaged and function appropriately in various forms of social interaction between people” (Illeris, 2007: 27). Illeris identifies a number of forms of interaction (see Chapter 2.2.2.3.). One of the most important things to note from Chapter 4 is that the course relies heavily on interaction among participants in the learning process. There is abundant evidence for this, ranging from evaluations of the course by participants to comments by course designers (see section 4.4.10). The interaction among participants comes in the form of discussion (whether facilitated by a course instructor or not), activities done in groups, and assignments presented to the rest of the class. This type of interaction is called **participation** by Illeris (2011: 26). Important in the interaction dimension is the influence of society on the learning process, as is shown in Illeris’s statement “there is nothing in the world today which does not in one way or the other reflect social and societal influence” (2011: 25). This means that participants are each influenced differently by their role within and interaction with society, and each will therefore take away something different from the course. By creating a space for participants to learn from each other the course is drawing on the fact that each participant has learnt something differently from the others and can therefore teach other participants things from different perspectives and in different contexts, enhancing their ability to use knowledge in different contexts and thus developing their sociality.

This concept is also given considerable attention by Lave and Wenger, who call it social learning (1991). Illeris believes that this is learning which takes place through participation in

a community of practice. In the course participants present their assignments to each other, in this way witnessing the application of the theory to other contexts and thus broadening their own knowledge. Also by working in groups, participants share their knowledge with each other in order to complete course assignments. Another form of interaction discussed by Illeris is **activity**, in terms of which learners learn by engaging in goal-orientated activities (2011: 26). This is evident in the course, as every module and assignment is aimed at achieving predetermined outcomes (or goals). Thus in an attempt to achieve those outcomes (and complete the course successfully), the participants engage in a number of activities and use knowledge given to them within the course (as well as their prior knowledge) to perform certain activities. Another form of interaction evident in the course is that of **transmission**. This is described by Illeris as the conscious sending and receiving of sense impressions (2011: 25). In the course this is merely a case of imparting knowledge or information to participants through lectures, course hand-outs, etc.

An important aspect of the interaction dimension of learning is the learning environment (Illeris, 2007). The situation in which the learning takes place contributes heavily to its effectiveness. This is evident in the design of the course, where course sessions are conducted within MPAs and what is taught in each course session is illustrated through examples in or drawn from the MPA in which the participants are learning. By thus immediately contextualising the information given to learners the course is reinforcing what is being learnt (Illeris, 2007: 25). This rehearses the fact that every aspect of the design of the course aims to relate the theory being taught to what learners have experienced in their working lives (as is evident in the findings in Chapter 4), especially in the assignments. This is important as in the interaction dimension of learning it is vital that space be provided to for learners to apply practically what they have learnt (Illeris, 2007). The learning environment is highlighted as an important aspect of the course in section 4.4.10.

However, as noted above, some course participants struggle with the language of instruction (English). This affects their ability to communicate and restricts their experience of social learning.

Finally, there is the dimension of learning that Illeris refers to as **incentive**. According to Illeris, this dimension focuses on the “mobilisation of the mental energy required by learning” (2007: 26). It includes aspects such as the motivation to learn, learners’ emotions,

learners' volition, etc. (2007: 26). Illeris goes on to point out how a learner's emotions may build up barriers to learning, such as resistance (2011: 23).

The first affective problem to be mentioned (cf. the last point made regarding interaction) is that of language. Many course participants struggled with the course being taught in English, even though course facilitators constantly urged them to voice their problems so that solutions could be found. Illeris goes on to point out how a learner's emotion may build up barriers to learning, such as resistance (2011: 23). But this said, it emerged in an interview with a course designer that often participants with language problems did not alert facilitators because they did not wish to seem "stupid", and rather allowed their work to suffer. Course designers offered participants the opportunity to do assignments in their language of preference and tried to make sure that during course sessions participants understood what was being taught. This is an example of how the flexible nature of the course facilitates learning.

In a number of interviews with MPA managers, it emerged that many of them believed that their MPAs should be designated 'no-take' areas in which local communities should not be allowed to harvest resources. This is a feeling that could lead to a strong resistance to learning on the course, as the course is heavily structured around the concept of working with communities and ensuring their interests are considered as well. The course tries to overcome this resistance by including case studies in the course material that show that this concept is an effective and rewarding approach to MPA management. Here we begin to see an interplay between the dimensions of content and incentive (referred to as acquisition by Illeris).

In terms of motivation to learn not much data was found. However, in an interview with a past course participant it emerged that he participated in the course as he believed that much of his job involved MPA management (he is the manager of a terrestrial reserve that is adjacent to an MPA which he is also in charge of), and that he believed the course would enable him to better perform his duties as manager of the reserve. From this I tentatively assume that many of the participants are on the course in order to improve their performance in their jobs as MPA managers, and this serves as sufficient motivation for them to learn. This is in line with what Illeris says about learners needing to be motivated in order for learning to take place (2011: 23). One infers that the course motivates learning by offering participants the opportunity to develop themselves professionally.

From the above we can see that the course includes elements of the three dimensions of learning outlined by Illeris. For learning to occur, there should be a combination of the three and interplay between them (Illeris, 2008: 12). In Chapter Four as well as the discussion above it became evident that the SAMPATC's design clearly facilitates all three learning dimensions in the teaching processes of the course. The reason why participants attend the course (incentive), combined with what is taught (content) and the way in which the course develops the skills and knowledge of participants (interaction), indicate that learning is effectively facilitated by the course. One can conclude therefore that full participation in the course and its processes is enough for participants to come away having undergone some degree of learning.

Analytical Statement 3:

Learning, and therefore competence development, is evident within the assignment tasks and other activities on the course.

Most important for this research is to decide whether course participants do in fact appear to be learning from the course? If so, how are they doing so? And is this learning translating into competence development? To answer these questions I would first like to refer to analytical statement 2. In the discussion of analytical statement 2 it was concluded that the design and processes of the course facilitate learning through the interplay between the three dimensions of learning as identified by Illeris. According to Illeris, all three dimensions in the learning process have to be present for learning to occur (2007: 23). It is therefore possible to deduce that because the course facilitates all three such dimensions, learning is taking place. While this makes sense, more evidence of an empirical kind is needed to prove that learning and competence development is taking place.

But first it is necessary to show that through learning the participants are developing competences. Illeris links learning and competence development very closely. As was noted in Chapter 2, he in fact believes that competence development is an outcome of his notion of the learning process (2008: 15). This is because in his framework of how people learn, each dimension of learning builds the sociality, sensitivity or functionality of an individual, and these three traits are in fact characteristics of competence (2008: 15). Other aspects of theory discussed in Chapter 2 also indicate that learning leads to competence development (competence being seen as the set of skills, knowledge, attitudes, etc. an individual requires effectively to perform within his/her job; Klemp, 1981; Elkin, 1990; and Illeris, 2008). From

this we can conclude that if the course participants are learning within the course they are in fact developing competences.

In Chapter 2 there was discussion of three forms of adult learning that are relevant to the course: formal, informal, and incidental learning. From the evidence presented in Chapter 4 it is clear that the SAMPATC course teaches participants using these three forms of learning. First, formal education is clearly evident in the course. A pre-set curriculum is designed and taught by professional educators or experts to course participants in an attempt to give the participants what they need to know in order to pass and achieve an official qualification. This is characteristic of formal learning (Foley, 2004: 4). The course also makes use of informal learning processes to try and achieve the desired outcomes and develop the intended competences. This is evident in the fact that the course allows space for and facilitates discussion around the information and theory given to participants. Course designers and facilitators thus try to share their knowledge with each other and to learn through social interaction, which is characteristic of informal learning (Foley, 2004: 5). Lastly the course uses the prior knowledge and experience of the participants in order to strengthen what is being taught to them and is thus using a form of incidental learning to try and build competences in participants (Foley, 2004: 5).

To understand the learning processes in the course it is necessary to use the lens for understanding learning developed in Chapter 2. This is learning as a practice-based community process. In this perspective the focus is on the relational, contextual and social aspects of learning (Foley, 2004: 63). One of the key findings to emerge from Chapter 4 concerns the social and contextual approach that the course takes. The data repeatedly reveals that the primary strategies used by the course were interaction between the participants and reiterated attempts to get participants to reflect on the relevance of what they were learning to their own workplace contexts. Almost every assignment on the course was done in groups and all work done by participants was presented to the rest of the class. In this way the participants were constantly learning and teaching each other. Each assignment in the course required participants to apply what they had learnt to a relevant aspect of the management of their own MPAs. For example an assignment in module 2 required participants to develop an operational planning framework for their MPAs. So by discussing problems in groups and presenting their work to each other the participants were showing each other various practical applications of what was being taught in relevant contexts. This resonates with what Lave and Wenger say about the importance of situational learning and how learning and doing are

inextricably linked (1991, cited in Foley, 2004: 63). It is also in line with what Foley says about the practice-based community approach to learning, in which learning is not about what is true or false but rather about what is relevant in a particular context, and the focus of learning should be to develop an individual's ability meaningfully to participate in a community of practice (Foley, 2004: 64). Or as Wildermesch et al. (1998) put it, the key to any learning is constant co-operation and dialogue with people located in other configurations (situations), and the evidence presented in Chapter 4 shows that this is exactly the thinking behind the design of the course.

All this is germane to what Foley says about competence development. He believes that much of what makes an individual competent is tacit and intuitive, and that learning is not only what can be taught in the classroom but rather comes about through doing. It is a process of adapting to the world in which the individual is situated (or to the communities of practice in which the individual participates) (Foley, 2004: 30). The evidence in Chapter 4 shows that the approach taken by the course is in line with this thinking. As mentioned above, the course is primarily focused on learning by doing as a community of practice. This not only teaches the participant to use his/her knowledge across different MPA management situations but also teaches him/her to be a part of the community of practice. It can therefore be concluded that if the participant is able to pass the course, he/she has developed the competences intended by the course.

So now it is only left to determine how successful participants were in completing the course. From the evidence available and presented in Chapter 4, based on the criteria set by course designers, a large proportion of participants successfully completed the course. From the available information for 35 participants, 15 were successful in completing the course, 11 were not able to complete the full course (for various reasons), and only 9 were unable to meet the standards set for the successful completion of the course. There is a large gap in the information available (information is missing on 44 participants), but on the evidence of what records there are, the course is generally successful in guiding the participants to success. Since participants are marked on the quality of their assignments, which reflects their ability to practically apply what they have learnt and is related to course competences, we are able to deduce that by successfully completing the course, participants have developed the competences intended by the course. I can also state that, based on the evidence and the discussion above, because of the nature of the course and its approach to learning, mere participation in the course is enough for learning and thus competence development to occur.

This is because, as Foley believes, competence does not have to be determined by the performance of specific outcomes. However, this all told the course does seem to have a rather high rate of participants that do not complete it (for various reasons), this could be seen as an area of concern.

Now that it has been shown that learning is evident on the part of the course participants, all that is left is to explore whether or not what has been learnt is relevant to the workplace of MPA professionals, or better put, whether or not the developed competences articulate with the workplace of an MPA professional.

Analytical Statement 4:

The competences developed on the course are relevant to the workplace context of MPA professionals.

In the discussion in this chapter it has been established that the course has taken on board MPA management issues through the development of competences. We have also established that the course design facilitates learning through an interplay between the three dimensions of learning identified by Illeris. Finally, we have seen the processes informing learning within the course as well as other evidence that learning, and thus competence development, has taken place within course participants. Now we must look at the evidence and identify whether or not these competences articulate with the workplace context of MPA professionals.

In Chapter 4 a number of pieces of evidence emerged indicating that the competences developed on the course do in fact articulate with the workplace context of MPA professionals. It has been established that the course engages with issues in MPA management through the development of competences (see analytical statement 1). From this we can infer that the competences are in fact relevant to MPA professionals, as the competences had been derived in order to address the issues faced by MPA managers.

As mentioned before, the course assignments also relate directly to the work each participant does in his/her MPA, which reinforces the course's relevance to the workplace context of the participant. A good example of this is the participant who did not have an operational plan in her workplace and used a course assignment in order to develop one. It was also noted in Chapter 4 that a number of the assignments in the course had prompted participants to follow up on management activities that they had not been able to previously. In the interview with a

past course participant, it emerged that not only had the course been extremely beneficial to his professional development, but that he was able to go back to his MPA and teach his staff what he had learned. This indicates that he felt what he had learned on the course would be useful in improving the performance of all the staff in the MPA. In this interview, the MPA manager also mentioned that he constantly referred back to the course hand-outs and support materials when he needed some guidance in the management of his MPA. This is clear evidence that the skills and competences developed on the course are useful in the workplace context of MPA professionals.

However, perhaps the most important piece of evidence confirming that the course articulates well with the workplace is its alignment with the WIO-COMPAS programme. As mentioned in Chapter 2, WIO-COMPAS is a certification programme that assesses the ability of MPA managers based on a set of competences it deems necessary for the effective management of MPAs. Identified by people in the field of MPA management, the competences outlined in the programme hold particular relevance in the MPA workplace (refer to Chapter 2.5. for a list of these competences). Analysing the competences of the SAMPATC and comparing them to the WIO-COMPAS programme shows that there is alignment between the two. The broad competence areas outlined in the programme include: Financial Management and Fundraising, Management Operations, Biophysical and Social Environment Context, Policy, Legislation and Compliance, MPA Concepts and Establishment, and Communication and Stakeholder Engagement (WIO-COMPAS, 2010: 8). As one can see from the course content and the course competences in Appendix 4, these aligned closely with those mentioned by WIO-COMPAS. In an interview with a course designer it emerged that the designers of the SAMPATC were very involved in the development of the WIO-COMPAS programme, and that when the course was revised they ensured that it aligned neatly with the WIO-COMPAS programme. The course designer noticed that those individuals who had attended the course before attempting the WIO-COMPAS certification process were much better equipped to do so.

I therefore believe that the SAMPATC course is more than adequately relevant to the workplace context of MPA professionals in South Africa.

5.3. Conclusion

This chapter has used the theory developed in Chapter 2 to discuss the data presented in Chapter 4. A number of conclusions are drawn before theory and evidence are combined to

answer the primary research question. All that remains is to use what has been discussed here to draw final conclusions in chapter 6.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

In this chapter the discussion that featured in Chapter 5 will be used in an attempt to formulate a full answer to the primary research question that has guided the research. The chapter will also make a number of recommendations that, although tentative, may nevertheless be useful for designers of future MPA management training courses. First I shall summarise the research process and pull the material from the previous five chapters together.

6.2. Research Summary

The research process has been a long one, and a number of concepts, ideas and conclusions have emerged. In Chapter 1 the research was introduced. The chapter started by discussing the focus of the research and how it came about. This was followed by an introduction to the concept of MPAs, focusing on MPAs in a South African context. Next came a brief description of the SAMPATC, by way of introduction to the primary case that the research was to look at. Lastly in Chapter 1, the research question and associated research objectives were introduced. This was followed by a brief summary and explanation of the structure of the thesis.

In Chapter 2, literature was consulted in order to develop a theoretical framework for the research. The literature was used to build an understanding of the key concepts that would form the backbone of the research. These included adult and social learning (in particular a model of how people learn developed by Knud Illeris), competences and competence development, and competence in MPA management. The literature dealt with here subsequently functions as lens to keep the research in sharp focus.

Chapter 3 is the methodology section of the study. In this chapter the decisions behind the research design were discussed. The chapter looked at the research orientation as well as the methods of data collection and analysis. It also addressed issues such as validity and certain ethical considerations.

Chapter 4 is the data presentation chapter. In this chapter the data that emerged during the data collection process is presented in a clear and logical manner. The structure of this chapter aims to make it simple for the reader to come to conclusions regarding the research. The chapter consists of two sections: in the first is the data regarding issues in MPA management, and in the second, data regarding the SAMPATC. The chapter merely presents the data and does not seek to draw any conclusions.

Chapter 5 discusses the data presented in Chapter 4. In chapter 5 analytical statements are formulated to summarise key findings, and around each statement there is some discussion. The chapter uses the data from Chapter 4 as well as the literature in Chapter 2 to draw conclusions from the research that answers the primary research question.

6.3. Addressing the Research Question

The entire research process has been guided by the research question and has sought to answer this question as comprehensively as possible. As introduced in Chapter 1, the primary question of the research is:

How are issues, management practices and competences derived, incorporated into and facilitated in an MPA management training course, and how are these evident in learning processes that articulate with the workplace of an MPA professional?

It is clear through the data presented in Chapter 4 and the discussion of that data using theory in Chapter 5 that the research question has been adequately addressed. Analytical statement 1 answers the question of how issues, management practices and competences have been derived and taken up by an MPA management training course. We saw that the MPA management training course that is examined in this research was born out of a study done on MPA management in South Africa and since then has adapted appropriately to changes in the MPA management environment. The structure and design of the course also ensures that it is relevant to the work being done by course participants within their MPAs.

The course designers have looked at management practices and problems within MPAs in South Africa and have derived a number of core competences (across a number of competence areas) that every MPA professional should possess in order to be effective in his or her job. The course aims to develop these competences, making use of a number of different tools and processes.

Although the course was known to take its bearings from issues raised in the two ‘state of MPA management’ reports, interviews with MPA professionals conducted as part of the research further corroborated the view that the course was effective in addressing difficult issues facing MPA management in South Africa. This said, a number of issues pertaining to the day-to-day management of MPAs in South Africa are not addressed by the course. These tend to be of a practical sort, and include such things as the inability of an MPA professional to swim, the need for skipper’s training, basic boat maintenance skills, etc. However, these are skills that are developed over time and would be quite difficult to include in a formal learning setting such as that of the SAMPATC.

Once it was established how issues, management practices and competences were identified for inclusion in an MPA training course, the researcher needed to examine how learning and thus the development of these competences was facilitated by the course. This was addressed by analytical statements 2 and 3.

In the discussion around analytical statement 2, the SAMPATC was scrutinised using the model of learning proposed by Knud Illeris. The model suggests that there are three dimensions of learning necessary for learning to take place: **incentive**, **interaction**, and **content**. Through examination of the data using this model and the work done by Illeris it was concluded that all three dimensions of learning (as well as interplay among them) were evident in the course, and thus one could conclude that the course facilitated learning. Also from Illeris comes the notion that one of the outcomes of learning is competence development, so we could conclude that since the course facilitated learning it also facilitated the development of the competences that it had derived.

In the discussion around analytical statement 3, two key aspects of the course that facilitated learning were identified. First was the fact that the course requires participants to do activities and assignments relating directly to his or her own personal workplace. This not only strengthens the learning process but also enables the participant to develop the ability to use what they have learnt in the classroom setting and apply it to situations in their workplace. This is in line with new research being conducted into the concept of what is called work-integrated learning.

Secondly, the course created a space for participants to work together and share their knowledge. The social and contextual approach to learning was found to resemble the

practice-based community approach to learning that was introduced as a concept in Chapter 2. The primary method of teaching used was interaction among participants on the course.

These two key aspects of the course are very close to the concepts of situational and social learning. It was therefore concluded that the course as a whole was designed to facilitate learning using these concepts as its foundation.

In the discussion around this analytical statement evidence was broached that pointed to the success of the course in developing competences. A large number of participants have passed the course. Moreover, evaluations of the course done by participants show that even those who did not pass benefitted greatly from participating in the course. But it was also found that there is a high number of participants that do not successfully complete the course, which could be an area that course designers wish to address.

Lastly, the research looked at how the learning processes on the course articulated with the workplace setting of participants. It had already been established that the course addressed many of the contentious issues in management practice in MPAs in South Africa, and thus it could be concluded that it was relevant to the workplace setting of participants. Furthermore it emerged from course evaluations that the participants themselves found the course to be highly relevant to their day-to-day workplace experience. It was even found that coursework activities could be used by participants after the course to help put into practice in their respective MPAs what they had learnt on the course. It was also found that the course and the competences it tries to develop align very neatly with an international certification programme for MPA professionals (the WIO-COMPAS programme). All this permitted me to conclude that the course articulates very well with the workplace setting of the participants.

From the above it is clear that the primary research question has been answered in an adequate fashion through the presentation and discussion of the data. Based on the findings of the research, I believe there are some modest recommendations to be made in order further to improve future MPA management training courses.

6.4. Recommendations

From the conclusions reached in the research, there are some tentative recommendations that I would like to make with regard to the SAMPATC.

First I would like to recommend that a practical element be added to the course to bring on board some hitherto neglected skills relevant to MPA management. By this I mean that the SAMPATC could have modules on boat maintenance, skippering, swimming, or diving. This is because in the course of the research it was found that many MPA professionals need training in these areas. Understandably such skills have very specific training requirements and may not feasibly be included in the course, but the SAMPATC designers could build relationships with institutions/organisations that offer this sort of training and are accredited. In this way anyone on the SAMPATC could arrange through course facilitators to do this sort of practical training if they wished (perhaps at a discounted rate). One type of training that it would be feasible to add as an additional component in the course is a basic computer literacy course.

The second recommendation I would like to make relates to the design of the course. The course currently relies heavily on *work-integrated learning* to facilitate the development of competences in its participants. I believe no matter what changes are made to the course structure (as will happen once it is facilitated by the SAWC), it must try to maintain this approach to education. The research found that one of the fundamental aspects in the course facilitating competence development was this work-integrated approach to learning. The course must ensure that it retains this approach to learning. Specifically it should ensure that course activities and assignments remain firmly rooted in the work-place contexts of each individual participant and require participants to reflect on their experiences in the management of their MPAs.

Thirdly, there seems to be a high number of participants that drop out of the course, it would be useful to course designers to identify the reasons for this and try make adjustment to the course and its structure to try and limit the number of participants that drop out from the course.

Another recommendation is that when assessing course participants, course facilitators could also look at actual changes that participants have implemented within their MPAs. However, this may be difficult due to the time scale that changes in MPAs usually occur within is too long to make assessment effective.

My final recommendation is not to do with the course but instead with MPAs in South Africa in general. The last comprehensive survey on the state of MPA management in South Africa was done in 2009. It has become apparent that the MPA environment (natural, economic,

political and managerial) is constantly changing, and at a very fast rate. I believe for this reason another comprehensive study on the state of MPA management should be undertaken in the next year or two. Since MPAs are protecting many of the country's natural resources, the responsibility for such a report should fall on the South African government. This responsibility should take the form of funding to enable professionals already heavily involved in the field of MPAs in South Africa to conduct the research.

6.5. Conclusion

The research has focused predominantly on adult learning, work-integrated learning, and competence development. These areas of focus have not been treated as theoretical concepts but in terms of MPA management training. Using the SAMPATC as a case study, the research has been able to examine the practical use of the concepts in real-life learning situations. The research has examined how an MPA management training course has taken up the issues and management practices that affect MPA professionals, how it has developed and defined competences from these issues, and how it has facilitated the development of these competences in course participants. In essence the research has looked at how an MPA training course has prepared course participants to effectively tackle issues that arise in the real-life work situations they are faced with in the management of MPAs. The research is structured in such a way that although a specific MPA management training course has been the exclusive focus, the results of the research and the lessons to be learned from it can be applied not only to other MPA training programmes but also more broadly in other conservation management training programmes.

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APPENDICES

APPENDIX 1: MPAs of South Africa

| MPA | Location | Managing Authority |
|--------------------|------------------------|---------------------------------------------------|
| Aliwal Shoal MPA | Umkomaas, KZN | Emzemvelo KZN Wildlife |
| Betty's Bay MPA | Betty's Bay, WC | CapeNature |
| Bird Island MPA | Nelson Mandela Bay, EC | SANParks* |
| De Hoop MPA | South Coast, WC | CapeNature |
| Dwesa-Cweba MPA | Wild Coast, EC | Eastern Cape Parks Board |
| Goukamma MPA | Knysna, WC | CapeNature |
| Helderberg MPA | False Bay, WC | Oceans and Coasts |
| Hluleka MPA | Wild Coast, EC | Eastern Cape Parks Board |
| Langebaan Lagoon | West Coast, WC | SANParks |
| Sixteen Mile Beach | West Coast, WC | SANParks |
| Malgas Island | West Coast, WC | SANParks |
| Marcus Islands | West Coast, WC | SANParks |
| Jutten Island | West Coast, WC | SANParks |
| Pondoland MPA | Wild Coast, EC | Oceans and Coasts and Eastern Cape Parks Board |
| Robberg MPA | Plettenberg Bay, WC | CapeNature |
| Sardinia Bay MPA | Sardinia Bay, EC | Nelson Mandela Metropolitan Municipality |
| Stilbaai MPA | Mosselbay, WC | CapeNature |

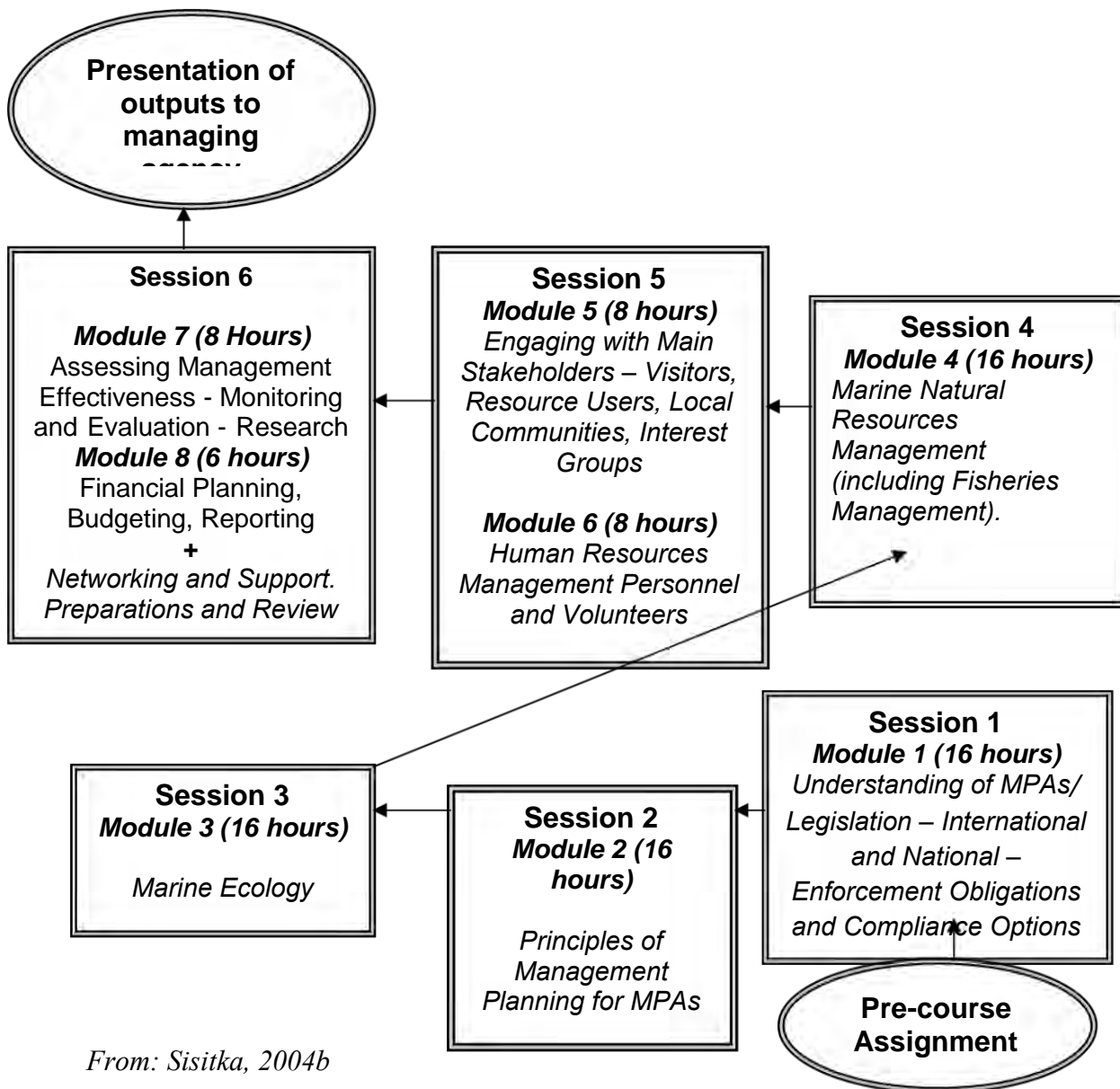
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| Table Mountain MPA | Cape Peninsula, WC | SANParks |
| Trafalgar MPA | Margate, KZN | Emzemvelo KZN Wildlife |
| Tsitsikamma MPA | Garden Route, WC | SANParks |
| ISimangaliso MPA | KZN | Isimangaliso Wetland Park Authority and Emzemvelo KZN Wildlife |

APPENDIX 2: Legislation Relevant to MPAs in South Africa

| Legislation | Description |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>The South African Constitution</i> | There are a number of provisions within the South African Constitution that affects coastal and marine ecosystems in South Africa. The South African Constitution is rare as it is one of the only Constitutions that recognise a healthy environment as a basic human right (Sisitka and Fielding, 2005: 32). |
| <i>The Marine Living Resources Act of 1998 (MLRA)</i> | Piece of legislation that is most directly relevant to the MPAs of South Africa. Designed to ensure that the marine resources of the country were used in a sustainable way that protects these resources in the long-term as well as conserving South Africa's marine and coastal ecosystems. |
| <i>The Sea Shore Act (21 of 1935)</i> | The piece of legislation that gives ownership of the sea and shore to the President of the State to govern for benefit of the South African public. The act governs uses of the sea and shore (while protecting public interest) but does not provide for any access rights to the shore from above the high water mark. The act is considered to be somewhat out of date with the constitution and so therefore needs to be updated (Sisitka and Fielding, 2005: 37). |
| <i>The White Paper on Sustainable Coastal Development 2000</i> | Aims to bring in a new thinking about coastal management and development by promoting integrated coastal management. It looks at fostering a participatory approach to the management of coastal resources and highlights how valuable the country's coastline is, and stresses the importance of protecting the diversity, prosperity and productivity of South Africa's coastal ecosystems (South Africa. DEA, 2000). |
| <i>The National Environmental Management Act 107 of 1998 (NEMA)</i> | This piece of legislature provides guidance on environmental governance in South Africa. It helps provide a framework for decision-making activities that relate to environmental matters (South Africa. DEA. 1998). Particularly relevant to MPAs are the provisions relating to co-operative governance, civil society's role in environmental management, and public engagement in the environmental assessment process, as well as equitable access to resources (Sisitka and Fielding, 2005: 38). |
| <i>National Environmental Management:</i> | This forms part of NEMA and serves to govern the |

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| <p><i>Biodiversity Act, 2004</i></p> | <p>conservation and management of South Africa's biodiversity and ecosystems. It looks at the management, co-operative governance, equitable distribution, sustainable use, and ratification of international agreements for the country's biological natural resources. It also outlines the monitoring systems to monitor the status of biodiversity within the country (South Africa. DEA, 2004).</p> |
| <p><i>National Environmental Management: Protected Areas Act of 2003</i></p> | <p>This act provides for the declaration and management of protected areas within the country (including MPAs). It also aims to promote and foster co-operative governance of these areas, as well as creating a network of protected areas within the country (private and public), however this provision at this point only provides for terrestrial protected areas (Sisitka and Fielding, 2005: 40).</p> |

APPENDIX 3: Original Course Layout and Content



APPENDIX 4: SAMPATC Outcomes and Competences

| Competence Area | Broad Intended Outcome(s) of Course | Competences Course Claims to develop | Where in the course Competences are addressed (module) |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Understanding MPAs | <ul style="list-style-type: none"> - Developed understanding of the roles and benefits of MPAs; - Developed understanding of the national and international legislation relating to MPAs; - Developed understanding of the options for enforcement of and compliance with the legislation. | <ol style="list-style-type: none"> 1) An understanding of the purposes behind the establishment of MPAs. 2) An understanding of the criteria used to establish MPAs. 3) An understanding of the international, national and local legislative contexts in which South Africa’s MPAs are located. 4) An understanding of the key issues concerning enforcement of and compliance with the requirements of these legislative contexts. 5) Understanding of the history and context of conservation legislation in South Africa. 6) The ability to relate these understandings with the particular circumstances of your [the participant’s] MPA. 7) The ability to draw on these understandings to strengthen the management of your [the participant’s] MPA. 8) The ability to share these understandings and skills | 1 |

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| | | with others concerned with the management of your [the participant's] MPA. | |
| Management Planning for MPAs | - <i>Developed understanding of management planning processes, and application of these in context.</i> | <ol style="list-style-type: none"> 1) An understanding of the importance of planning. 2) An understanding of the purposes of planning. 3) An appreciation of the values of different planning frameworks. 4) The ability to develop and appropriate planning framework for your context. 5) An understanding of different approaches to planning. 6) An understanding of the benefits and challenges of participatory planning. 7) An appreciation of the information required to support the planning process. 8) The ability to identify appropriate goals and objectives for your MPA. 9) An understanding of the concept and practice of contingency planning. 10) An understanding of the various management strategies available to MPA manager. 11) An understanding of the different roles of the MPA manager. | 2 |
| Marine Ecology | - <i>Developed understanding of the principles of marine ecology, and key</i> | <ol style="list-style-type: none"> 1) An understanding of what constitutes the coastal zone. 2) An understanding of major | 3 |

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| | <i>components within the local contexts</i> | <p>oceanographic influences on the southern African marine and coastal environment.</p> <p>3) An understanding of the way these processes influence the biodiversity patterns of the coastal environment.</p> <p>4) An understanding of how the bioregions, biozones and habitats that are a result of the physical oceanography are classified and how this is an important aid to conservation of biodiversity.</p> <p>5) A detailed understanding of the different habitats within bioregions and biozones and some of the important linkages between biozones and habitats and between the organisms within habitats.</p> <p>6) An understanding of some of the major threats to biodiversity.</p> <p>7) An understanding of the necessity for integrated management of the coastal zone.</p> | |
| Marine natural resource management | - <i>Developed understanding of marine resources management, including fisheries management.</i> | <p>1) An understanding of the natural resources within MPAs.</p> <p>2) An understanding of idea of sustainability in relation to the use and management of these resources.</p> <p>3) An understanding of the</p> | 4 |

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| | | <p>different resource users.</p> <ol style="list-style-type: none"> 4) An understanding of the importance of fisheries management. 5) An understanding of the different systems and techniques used in fisheries management. 6) An understanding of the benefits of MPAs for fisheries management. 7) An understanding of the many other benefits of MPAs. 8) An understanding of the concept of Zoning. 9) Recognition of the many non-consumptive uses for MPAs. 10) A recognition of the threats posed to MPAs. 11) The ability to identify the natural resources within your MPA, and develop strategies for their sustainable use. The ability to identify appropriate strategies for sustainable fisheries management. 12) The ability to develop an appropriate Zoning plan for the MPA. | |
| Engaging with stakeholders | - <i>Developed understanding of working with stakeholders and partners in collaborative management</i> | <ol style="list-style-type: none"> 1) An understanding of the idea of stakeholders and who they are likely to be. 2) An understanding of some of the different institutional structures and approaches, and collaborative approaches to management. | 5 |

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| | | <ul style="list-style-type: none"> 3) An understanding of the importance and nature of different types of partnerships. 4) An understanding of conflict management. 5) An understanding of the challenges and opportunities represented by different cultural perceptions. 6) An understanding of the importance of communication. 7) An understanding of the educational value and potential of MPAs. 8) The ability to conduct a stakeholder analysis. 9) The ability to communicate effectively with a range of different groups. 10) The ability to develop a communication and education strategy. | |
| Human resources | - <i>Developed understanding of the effective use of the available human resources.</i> | <ul style="list-style-type: none"> 1) An understanding of the importance of the human resources, and effective human resource management. 2) An understanding of the key aspects of the relevant labour legislation. 3) An understanding of training needs assessment. 4) An understanding of technical resources assessment. 5) An appreciation of administrative and logistic | 6 |

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| | | <p>contributions to management.</p> <p>6) The ability to conduct training needs assessment and develop a training plan.</p> <p>7) The ability to identify key performance indicators (KPIs).</p> <p>8) The ability to conduct a technical resources assessment for the MPA.</p> | |
| Assessing management effectiveness | - <i>Developed understanding of the assessment of management effectiveness (monitoring and evaluation)</i> | <p>1) An understanding of the concept of management effectiveness.</p> <p>2) An understanding of the importance of monitoring and evaluation as a management strategy.</p> <p>3) An understanding of the importance of responding positively and constructively to evaluation outcomes.</p> <p>4) An understanding of the management of monitoring and evaluation programmes, and of the data arising from them.</p> <p>5) An understanding of the contribution research can make to the MPA.</p> <p>6) The ability to design and develop appropriate monitoring and evaluation strategies.</p> <p>7) The ability to identify appropriate research programmes.</p> <p>8) The ability to manage the data in an efficient and</p> | 7 |

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| | | effective manner. | |
| Financial planning and management | - <i>Developed understanding of financial planning and budgeting processes</i> | <ol style="list-style-type: none"> 1) An understanding of the importance of financial planning and management. 2) An understanding of the different options available for MPA financing. 3) An understanding of project management, including reporting and evaluation. 4) The ability to budget for activities and projects within a planning framework. 5) The ability to clearly identify a range of potential funding options for the MPA. 6) The ability to report clearly and accurately on projects and activities. | 8 |

APPENDIX 5: Key to Codes Used in Data Presentation Chapter

| Data Type/Source | Code | Number of sources within data type |
|---------------------------------|-------------|-------------------------------------------|
| Course Assignments | CA | 8 |
| Course Assignments Assessments | AA | 11 |
| Course Evaluations | CE | 5 |
| Course Interviews | CI | 2 |
| Course Manual | CM | 8 |
| Course Designer's Notes | NC | 2 |
| MPA Issues Interviews | PI | 7 |
| State of MPA Management Reports | SRM | 2 |