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REASSESSING AFRICAN HIGHER EDUCATION AND THE 13TH SUSTAINABLE GOAL (CLIMATE ACTION)

UNPACKING SALIENT CONTRIBUTIONS

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Keywords

Sustainable Development Goals (SDG's); climate action, sustainability; higher education; relevance; solution;, alternatives; contribution; excellence; gaps.

Abstract

Fundamentally, the 2030 Global Agenda for Sustainable Development encapsulated with the 17 Sustainable Development Goals (SDG's), occasions a powerful architecture for a new revolutionary global lifestyle and for earth communities locally and globally. This book chapter has a three-fold purpose. First, it re-makes a critical assessment of the 13th Sustainable Development Goal (Climate Action) towards true realization of sustainable development and particularly the contribution of African higher education both pedagogically and practically. Second, it underscores the multi- and interdisciplinary dimensions and functions of all the SDG's especially in providing fundamental principles

strategies, policies, values and motivation as global "game changers" and breakthrough for sustainable and long-term climate justice, anthropogenic sinks and peaceful sustainable living. Nonetheless, it identifies the inherent "*lacunae*" limitations and challenges as whole! Third, on more transformative, methodological and practical perspectives, today's African model of higher education in particular, needs to truly demonstrate result-based innovative, creative, interdisciplinary contributions, solutions and alternatives towards global realization of SDG 2030. Hence, avoiding only the "North, Atlantic and American based solutions and models". Consequently, going beyond the business as usual approaches and dangerous inaction nationally and continentally.

Briefly, the fundamental task and rationale of this chapter is to concretely calibrate and review substantial and concrete contribution of Africa's academia both qualitatively and quantitatively towards realization of SDG 13 (Climate Action). Admittedly, this quest calls for a new African Avant-garde for sustainable climate action solution for and with our collaborative endeavors towards true domestication of key institutional visions, values and strategies towards climate justice and sustainable development as a whole*.

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To quote this chapter: Msafiri, Aidan G. "Reassessing African Higher Education and the 13th Sustainable Goal (Climate Action): Unpacking Salient Contributions" in: Amélé Adamavi-Aho Ekué, Divya Singh, and Jane Usher (Eds.), *Leading Ethical Leaders: Higher Education, Business Schools and the Sustainable Development Goals*, Geneva: Globethics Publications, 2023, pp.415-448, DOI: 10.58863/20.500.12424/4278457

Sustainable Development Goals (SDG's)

These are 17 highly complex[259] and ambitions global agenda and visions for the sustainability of people, planet and resources. They are profoundly interconnected, inter-disciplinary and interdependent resulting from the former global Millennium Development Goals (2000-2015).

The 13th SDG is specifically focused on climate action as a global "Magna Charta" for climate protection, justice and sustainable livelihood locally and globally. It invigorates also the rest of the SDG's. Briefly, the quest towards global climate protection and environmental stability received substantially greater support and consensus particularly from the Paris Climate Conference and Agreement.

The later was adopted on the 12th December during the 21st Conference of the Parties to the United Nations Framework on Climate Change (UNFCC). Despite its rejection by then US President Donald Trump, the Paris Agreement remains a powerful milestone[260] in climate action and policy.

In recent years, the concept and practice of sustainable development has interchangeably been used also among others as "green growth", "smart growth", "integral development" to mention a few.

Climate Action

This refers to a collective global endeavor to curb multiple and more so long-term drastic effects of climate change and global warming. It has recently been argued that "greenhouse gas emissions are more than

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[259] UN (1992:7-20)

[260] German Advisory Board on Global Change: Special Report "Development and Justice Through Transformation, The Four Big I's", WBGU, Berlin 2016 pp 7-29.

50 percent higher than in 1990. Global warming is causing long-lasting changes to our climate system, which threatens irreversible consequences if we do not act."[261]

Furthermore, from socio-economic, geographic, physical and environmental perspectives, it has been estimated that the "annual average economic losses from climate-related disasters are in hundreds of billions of dollars. This is not to mention the human impact of geo-physical disasters, which are 91 percent climate-related and which between 1998 and 2017 killed 1.3 million people, and left 4.4 billion injured…" Briefly, climate action is a *conditio sine qua non* towards a comprehensive and visionary engagement for the good of the planet, humanity, soil flora, soil fauna for thousands of generations to come. Africa remains the most affected continent ever!

Key Issues at Stake

Admittedly, today the effects of climate change and human inaction are reaching catastrophic proportions. The 17th SDG's and the 13th SDG on climate action provide a vibrant and an outstanding roadmap for sustainability of all forms of life both in short, medium and long-term scenarios. As Archbishop Desmond Tutu once commented, "we do not have planet B. We have only one planet!" Climate action necessarily demands this triad: collective awareness, collective responsibility and collective achievement.

In order to achieve sustainable African societies in particular, Africa higher education need to necessarily re-assess the current climate studies and practices education models, policing action plans as well as strategies. These must necessarily be demonstrated in the learning process, research fitness and relevance as well as community service so

[261] www.africa.undp.org (searched on the 25th March, 2021).

as to achieve "Cradle to Cradle" livelihood and sustainable eco-communities and states in Africa.

Rationale/Justification

First, SDG 13 aptly underscores the universal responsibility for innovative and transformative action for climate justice and sustainability.

Second, SDG 13 and the rest of the 16 SDG's are profoundly interconnected and interdependent. That is they are supportive of one another for better planet and sustainable human and non-human livelihoods.

Third, a critical post-mortem of the current climate change inaction, wanton injustices and indifference both quantitatively and qualitatively locally and globally 13 critical. This demands a re-assessment of the current eco-education models, researches and practices towards more sustainable inclusive and credible eco-solutions and eco-alternatives in Africa in particular and globally in general. Briefly, this must include a plethora of "smarter" eco-curricula, researches, eco-services and strategies.

The African College of Wildlife Management in Mweka on the slopes of Mt. Kilimanjaro in Tanzania is a case in point.

Thought Provoking Questions

What are the intrinsic linkages between all the 17 SDG's? How does SDG 13 contribute to the realization the of other SDG's directly? Indirectly? What are the risks or dangers of dissociating SDG's? To what extent has the African College of Wildlife Management, Mweka domesticated the 13th SDG? What are the effects and socio-human costs of human inaction on addressing adequately, effectively and efficiently

to the climate change and global warming challenges today? To what extent has higher learning in Africa (Tanzania) accommodated the relevance and urgency of domesticating SDG 13 in the teaching, research and community services trajectories on day-to-day basis? What are the strength gaps ("lacunae") opportunities and challenges of the current African higher education specifically on and to SDG 13? Which constructive policy, action plans and strategies' models are be implemented on ground? How are the Alumni being fully prepared for personal and communal climate action? Which current eco-friendly energy sources and practices are being undertaken by African higher learning? Are African institutes of higher learning completely "tabula rasa" of afro-centric eco-solutions and visions? What are the destructive impacts of completely dissociating other disciplines from a climate action education model and practice at the universities in Africa in particular? To what extent has African higher education been a victim of departmentalism and compartmentalization cancers? Is there mutual consensus between the Ministries of national higher education and environment in Africa? Does the government and the policy makers see the nexus between climate action and environmental ethics climate justice? International law and global (national) governance? To what extent are African universities concretely making climate action a number one priority pedagogically, academically and technologically? What are the impacts of climate change skeptics at higher learning in Africa?

The ACTION Methodology

The ACTION[262] methodology stands for:

A=Analysis-qualitative and quantitative.

[262] ACTION developed by the author of this chapter, email: msafiriaidan@yahoo.com, copyright reserved.

C=Convince-Mindsets, views, hearts and lifestyles, etc.
T=Transform-Minds, souls, will power and culture.
I=Initiate-New personal and corporate lifestyles, views and perspectives.
O=Observe-Changes.
N=Network-Collaborative efforts, research consultancy, pastoral outreach, etc.[263]

The structure of the following three parts and subsections is first dealing with climate action and Africa's higher education. Second, it focuses on Africa's higher education and SDG 13, and third, we show the Mweka College's contribution to SDG 13.

Climate Action and Africa's Higher Education: A Critical Theoretical Framework

Global Perspectives

First, according to a recent research by NASA, re-echoes the fact that the "earth's global average surface temperature in 2020 tied with 2016 as the warmest year on record… Continuing the planet's long-term warming trend, the year's global averaged temperature was 1.84 degrees Fahrenheit (1.02 degrees Celsius) warmer than the baseline (1951-1980) mean… the last seven years have been the warmest seven years on record, typifying the ongoing and dramatic warming trend…"[264]

Second, increased quantities of greenhouse gas emissions on our planet have far reaching irreversible consequences to humans, plants (soil flora), animals (soil fauna) as well as to the entire biodiversity matrix for generations.

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264 https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows

Admittedly, the core functions of higher education are anatomically embodied in the perennial quest to generate relevant knowledge research and communities' transformation. These fundamental roles are tantamount to sustainable development cognitively environmentally, socio-economically, technologically etc.

Third, Bangay, C. and Blum, N. (2010) in their paper titled "Education Responses to Climate Change and Quality: Two parts of the same Agenda?" critically analyse the origins and functions of the Concept of Education For Sustainable Development (ESD). They maintain that this concept (ESD), "emerged in the late 1980's alongside international discussions of environmental protection and sustainable development. It was given much of its shape at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, and the resulting Agenda 21: '*Education including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues, while basic education provides the underpinning of any environmental and development education, the latter need to be incorporated as an essential part of learning* (UNCED 1992: Section 36.3)'"[265]

Briefly, since then, education for sustainable development has increasingly been receiving special global attention in higher education, particularly by the UNESCO, who led the United Nations Decade of Education for Sustainable Development (2005-2014). This education model for sustainable and development aptly inculcates and integrates multiple cognitive, psychomotor, attitudinal and values as a whole.

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[265] Bangay, C. and Blum, N. "Education Responses to Climate Change and Quality: Two parts of the same Agenda? International Journal of Educational Development 2010, 3014): 335-450.

Learning Capabilities for the 21st Century	
Knowledge	The basic learning content including core subjects; international language ability and broad-based scientific literacy, as well as self-knowledge.
Competencies and skills	These include foundational skills (literacy, oral expression, numeracy); critical thinking and problem solving skills (reasoning, recognising and questioning patterns; dealing with uncertainties; analysing, synthesising and evaluating information); planning and management skills; life-long learning skills (learn how to learn, to adapt knowledge to new contexts and to engage in self-directed learning); cross-cultural communication skills (ability to communicate in different cultural contexts, negotiate and resolve conflicts); and information, media and technology skills.
Attitudes and behaviours	Flexibility and adaptability; risk taking; the willingness to take initiative; motivation; respect for self and others; sense of commitment; empathy; responsibility for ones actions and work.
Values	Solidarity; gender equality; tolerance; respect for difference; mutual understanding; respect for human rights; non-violence; respect for human life; and dignity.

(Source: Haichour, Metzger and Pigozzi, 2007)

Last, it must well be noted that a true and credible action education model for sustainability necessarily demands a profoundly transformative approach which respects and promotes a better quality

and life dignity especially for long-term goals. Indeed, sustainable development goals embody a set of interconnected and interdependent socio-economic, environmental, cultural, legal, ethical, spiritual, political, and technological trajectories and ramifications.

Tanzania and the Sustainable Development Goals

First, from a positive viewpoint it has been indicated that Tanzania has made substantial "significant changes over the past century: poverty rates have been reduced and economic growth has been documented…"[266] Negatively, it has been observed that "public debt remains high and estimations suggest risks to fiscal stability, which need to be acted on. No districts currently have disaster risk reduction strategies in place…"[267] These elucidate some fundamental systemic national strengths and weaknesses particularly as regards Tanzania in the context of SDG's.

Tanzania and Climate Change Trends: Inconvenient Truths and Facts

First, a recent research study on climate systems analysis group from the University of Cape Town shows that Tanzania's ocean coastline is mainly "warm and generally wet with Dar-es-Salaam experiencing a mean of over 1,000 mm/year of rainfall and daily maximum temperatures slightly cooler, ranging from 27^0 C and 31^0C. Mwanza on the coast of Lake Victoria experiences around 700mm/year which is higher than Tabora, most likely a result of moisture supplied by Lake Victoria… The average annual temperature in Tanzania has increased by 1.0 since 1960. The increase in night-time temperatures has been more pronounced than daytime temperatures… Decreases in observed rainfall

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[266] Ifakara Health Institute: Tanzania and the Sustainable Development Goals: Has Tanzania prepared to roll-out and domesticate the health SDGs? See 3.0 National Context about SDGs, 09/01/2017

[267] Ibid.,

has been significant with observations showing annual rainfall decreasing by 2.8mm per month per decade since 1960…"[268]

Second, a prognosis of Tanzania's future climate scenarios indicates that "average annual temperature is projected to increase by 1.0 to 2.7^0C by 2060s and by 15 to 4.5^0C by the 2090s. Hot days and nights will become increasingly frequent… Most parts of the country particularly the central and Northern Zones which are semi-arid are very vulnerable to climate variability and they will be more vulnerable to the projected increase in frequency and of extreme climate events…"[269]

Third, from Tanzania's multi-sectorial viewpoint, "prolonged dry spells with rainfall unpredictability will be common place in the future. These have far reaching negative nutritional consequences causing severe malnutrition, food shortage, decreases in immunity and prevalence of opportunistic illnesses among the populace."[270]

Economically, a recent story on the economic impacts of climate change "estimates that the cost of building adaptive capacity and enhancing resilience against future climate change in Tanzania is US $ 100 to 150 million per year (but probably more) is required to address current climate risks, in reducing future impacts and building resilience to future climate change. The report further states that aggregate models indicate that net economic costs could be equivalent to a further 1 to 2% decline of GDP per year by 2030."[271]

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[268] Tanzania Climate Action Report For 2016: Resilience and Economic Inclusion Team/Irish Aid/November, 2017 p. 6

[269] Ibid., pp 6-7.

[270] Ibid., p. 8

[271] Ibid., p. 8

Africa's Higher Education and SDG 13: A Broad-spectrum Critical Overview

Contribution and Excellence

Curricula-Based Excellence

First, recently there has been a substantially ever-growing special attention and focus among African higher education towards climate-based resilience knowledge and skills. This paradigm shift with qualitative and quantitative contact methods and strategies is currently manifested particularly in the mission, vision and core value statements of most of higher learning institutes. Conversely, today, higher education does not confine its key "engines" of mere knowledge but equally protectors of the natural environment through climate-action skills, research and concrete eco-solutions and services.

Second, McCowan (2019) unpacks two critical trajectories particularly as regards the fundamental roles of Africa's higher education in achieving the SDG's. He strongly emphasizes the two "notions of projective and expressive roles, and the five modalities of education, knowledge production, public debate, service delivery and embodiment. These fledging ideas are filled out, and applied to climate change…"[272]

Research-Based Excellence

Recent research findings in Africa's higher education have unveiled the catastrophic impacts of Green House Gases (GHG's) as a whole. "It shows the research truths that: emissions are approximately 7.1 gigatonnes Co_2 – eq (representing 14.5% of anthropogenic emissions) from the supply chain of livestock every year. Cattle contribute the

[272] Tristan McCowan Centre for Global Higher Education, Working Paper No.55. November Oxford University, 2020 p. 7.

largest emissions (65%) with pigs, buffalo, chicken… Also 2.1million hectares of deforestation have been linked to cattle production…"[273]

It has recently been observed that climate related symposia, clubs, workshops and campaigns contribute significantly to Africa's higher education knowledge and skills on climate resilience. A chi-square test of independence showed the fact that "students' participation in climate change workshops or programs significantly influenced ($X^2 = 9.507$, $p = 0.002$) their level of knowledge on climate change and their confidence about educating others about the phenomena…"[274]

Ethics and Values-Based Excellence and Fitness

First, our (2013:661) eco-ethics edifice epitomizes significantly ever-increasing emphasis and critical nexus, particularly on "value-based, qualitative approaches in responding to the issues of climate justice and sustainability, i.e to go beyond the hitherto quantitative (mathematical) functionalist and legalist approaches, which are neither exhaustive nor sustainable… The present situation calls for a radical paradigm shift to viable and sustainable ethics for climate rights if humanity and the earth are to survive."[275]

Second, among others, our eco-corpus vision and transformative engine succinctly encapsulates the following trajectories, principles and strategies in particular[276]:

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[273] Cfr.www.mdpi.com/journal/environments Mark M. Akrofi Sarpong H et alii 'Students in Climate Action: A Study of Some Influential Factors and Implications of Knowledge Gaps in Africa, p.8

[274] Ibid., p.11

[275] Aidan G. Msafiri "Ethics for Climate Justice and Sustainability through Value-based Approaches: A New Tanzania Model and Paradigm Shift" in Oliver C. Ruppel Christian Roschmann et alii Climate Change: International Law and Global Governance Vol. II Baden, Nomos, 2013, p.661.

[276] Ibid., pp. 675.

-The principle of Integral (Holistic) Climate Care and Compassion:

Today there is a growing individual and collective positive attitude particularly in promoting a "non-business as usual" culture and virtues towards the planet and climate challenges[277].

-The Principle of Globalization of Climate Action Concern

This unleashes a powerful new climate action ethos reinvigorating both profound pro-activeness on personal and collective awareness and action in protecting the climate, the "DNA" and "health" of climate, and environment, in short-medium and long-term trajectories[278]. It underpins the key triad of efficiency, fairness and sustainability.

-The Principle of Interdisciplinary on Climate Change Science(s)

This underpins the fundamental interdependency and interconnectedness particularly between Climate, climate sciences, natural sciences and social sciences in the collaborative quest in preserving climate and environment locally and globally[279]. Hence, avoiding the "cancers" of departmentalism and "myopism" as a whole.

-The Precautionary Principle on Climate Disasters

This principle underscores and demands personal and collective consciousness and mindful stance for climate justice, action and regimes and goods for thousands and thousands of years to come.

-The Principle of Human Capital and Fitness in Climate Action

It strongly emphasizes particularly on the urgent need for rigorous human capacity building in, for and with higher education in Africa

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[277] Ibid., p. 675-676.

[278] Ibid., p. 676

[279] Aidan G. Msafiri "Good Governance and Sustainable Management of Natural Resources", in KAS-Journal Volume II, March 2013 p. 45.

today[280]. Among others, these include transformative core skills, competences, visions, aptitudes for climate resilience and sustainability.

-The Principle of AGAPE (Golden Rule) in Climate Action

This is embodied in all great religions as the most fundamental solution for climate action and accountability among all people worldwide (as expressed in Mt. 22:37-39). This includes fundamental rights of all humans such as shelter, food, hygiene, education etc. On one hand, but also those of plants (soil flora) and animals (soil fauna) as a whole. Hence, promoting the fundamental ethical norms and values of dignity, preservation of life, trust, partnership, integrity, sustainability, inclusivity and solidarity both vertically and horizontally.

-The Principle of Deep Change and The Middle Path for Climate Action

It addresses climate challenges and issues today in more qualitative and plausible trajectories. Admittedly, a deep change model complements mere arithmetic, geometric and calculus-based models and solutions. These are complementary. In this regard, therefore Jeffrey D. Sachs (2011:162) strongly comments that the "essential teaching of both Buddha and Aristotle is the path of moderation pursued through life-long diligence, training and reflection. It is easy to become addicted to hyper consumerism, the search for sensory pleasures and the indulgence of self-interest, leading to a brief but long-term unhappiness…"[281] This principle, emphasizes motivation for higher and nobler goals as a whole.

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[280] Aidan G. Msafiri, Ibid., p. 48.

[281] Jeffrey D. Sachs, "The Price of Civilization: Economics and Ethics After The Fall." London, The Bodley Head, 2011, p.162.

Justice-Based Excellence and Comprehensive Model

First, justice necessarily calls for a new and vibrant culture of capacity for climate action-based knowledge, skills and aptitudes[282].

Second, comprehensive justice on issues pertaining to climate action demands fair participation of all peoples, stakeholders and players in society starting from the Bottom of the Pyramid (BOP).

Third, justice in and for climate entails collective affirmation and protection of climate justice. Among others, these include due respect and protection of environmental rights, human rights, the right for development, the rights for gender equity and equality, right for transformative power of climate sustainability and the right for effective action for global climate partnerships.

Fourth, true justice in and for climate resources demands transparent and democratic procedures, systems and strategies among all stakeholders e.g local communities, NGO's, government, academia, businesses, etc.

Fifth, integral justice demands not only fair and equal distribution of ecological benefits and resources, but also due punishment to individuals, businesses, institutions, governments, companies involved directly or indirectly on eco-destruction, loss of biodiversity and resources.

Last, but not least, comprehensive justice on issues of respect particularly for the rights of future generations (humans and non-humans) for ecological fitness, wellbeing and happiness for millions of years to come.

Policy-Based Excellence and Key Tenets

First, there is a new synergetic policy-based and interdisciplinary approach especially among higher education in underpinning

[282] Aidan G. Msafiri, "Good Governance and Sustainable Management of Natural Resources in KAS Journal pp. 48-50 passim.

particularly the East African Climate Policy of 2011 section 3.1.3.3 with the rest of the policies.[283] This section underscores the key nexus with the East African Community Framework with other multi-sectoral policies including water resource, coastal and marine environment, forestry, wildlife management, agriculture and food security, human health, tourism, energy, infrastructure, land use, human settlements, fisheries, livestock and industry.

Second, since 2015 in particular, there is a substantially increased focus and emphasis in Tanzania in aligning climate change and climate action with national priorities. It is affirmed that "both mitigation of greenhouse gases and adaption to climate change are addressed in policy documents… The focal point for change is the Division of Environment in Vice President's Office (VPO), which is a prominent ministry reporting directly to the Vice President. The VPO coordinates climate policy and handles Tanzania's international climate engagement, including responsibility for the formulation and implementation of the Nationally Determined Contribution (NDC)."[284]

Briefly, from a higher education perspective this policy focuses more in particular pillars:

1) The more to adopt a narrative of "green growth", "Cradle-to-Cradle growth" as a more effective, resilient and efficient way towards climate action at all educational and sectorial levels.
2) Tanzania's higher education needs more interdisciplinary and inter-sectorial approaches, especially in addressing climate

[283] Konrad Adenauer Stiftung (KAS) The Challenges of Climate Change Adaption and The Potential of Sustainable Energies in The East African Community (EAC) After COP 19 Dar es Salaam, KAS 2014 pp.44-45.

[284] Grantham Research Institute on Climate Change and The Environmental Centre for Climate Change Economies and Policy, Policy Briefs by Michal Nachmany, October 2018 p. 3-4.

change challenges at different workshops, symposia, conferences etc.

3) A growing sense of putting greater and unique importance at the local levels (Bottom of the Pyramid) than ever before.
4) Fourth, recent (2021) observation among high education institutes portrays a powerful propensity especially emphasizing on the accessibility[285] to and the use of transformative climate action research gaps, challenges and opportunities as a whole.
5) Last, there is a remarkable emphasis particularly in the post COP 21 in 2015 in Paris on eco-jurisprudence in higher education than ever before. This new trend is characterized among others especially by the new principles of "Common But Differentiated Responsibility" (CBDR),[286] the principle of "Nationality Determined Contributions" (NDC), Environmental Law Regimes, Customary International Law and Climate Action.

Technical-Based Excellence

First, from a research viewpoint, the Institute of Rural Development Planning (IRDP) in Dodoma Tanzania demonstrates a profound multidisciplinary model and expertise in for climate action and sustainability. These covers particularly research, publications, consultancy services especially in the areas of sustainable agriculture, environment, livestock, food security, governance to mention a few. Currently, IRDP is leading an eco-village adaption modal project in responding to climate change challenges in central Tanzania sponsored by the European Union (EU).[287] The primary objective of this vibrant endeavour is to improve "resilience to climate change among rural

[285] Ibid., pp. 7-8.

[286] Aidan G. Msafiri in Konrad Adenauer Stiftung, Supporting the Rule of Law in Africa "Climate Change and Law", Nairobi, KAS 2017 PP.110-112 passim.

[287] https://www.irdp.ac.tz/research/about_department searched in April 22, 2021

households of Chamwino District and Dodoma City Council, Chamwino District Council, Hombolo Agricultural Research Centre, Dodoma Environmental Network (DONEI), Maji na Maendeleo Dododma (MAMODO), and Tanzania Organic Agriculture Movement (TOAM)"[288]

Second, in recent years diverse agreements, contracts, and partnerships have been made particularly between the government of Tanzania, the academia, NGO's, Civil Societies, and ministries, with Norway for Climate action, environmental protection, and sustainability. Among others, these include the National Carbon Monitoring Centre at the Sokoine University of Agriculture, REDD fund to increase the capacity of the Forest Training Institute in Olmotonyi Arusha, VPO REDD+ Readiness Support, Conservation and restoration of the Easter Arc Mountain project (CREAN), and the Agricultural Council of Tanzania, just to cite a few.[289]

Last, but not the least, from a technical perspective, in the Nelson Mandela, University of Science and Technology in Arusha, Tanzania, substantial efforts have recently been made especially on climate action related projects with very promising and measurable contributions. Among others, these include:

1) The Water Infrastructure and Sustainable Energy Futures (WISE FUTURES).
2) The Evaluation Project of Suitability of Water hyacinth from Lake Victoria as a feedstock for Biofuel Production.
3) BIOINNOVATE Project for agro/biowaste conversion in Eastern Africa.
4) The Solar-assisted Heat Pump Drying Technology for Tanzania's Industrial and Agricultural use.

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[288] Ibid.

[289] www.norway.no/tanzania searched or the April 22, 2021

5) The Social Science of Climate Change Adaptation in advancing Academic writing for young academicians in Tanzania.[290] These are some *best practice* endeavours underpinning the role and contribution of Tanzania's academia to SDG 13 in particular and SDGs in general: the Centre for Climate Change Studies in Dar es Salaam, the College of African Wildlife Management (MWEKA), a very vibrant and fast-growing climate-related training and research centre of excellence in developing models for climate change mitigation, adaptation, strategies, consultancies and climate action and eco-management projects in Tanzania, just to allude to the key best practices in Tanzania's academia as a whole.

An Afro-Based Holistic Model and Its Excellence

First, as we (2016:29) underpinned in another publication, this integral model, particularly through Afro-centric eco- and climate-based life news, shows God ("Ruwa") as creator and "*Homo Africanus*" as responsible co-creators, stewards and protectors of the created world including all climate related resources; land, atmospheres, minerals, air, soil flora (plants), and soil fauna animals.[291]

Second, unlike the Euro-American, North Atlantic quantitative, and mathematically based approaches which are profoundly dualistic, atomistic and individualistic models, the Afro-centric model is necessarily and essentially qualitative all-encompassing and life enhancing. Briefly, it systematically incorporates a "plethora of life promoting values, views and traditions. It underpins the inclusive African spiritual, anthropological and cosmological altruism of '*I am*

[290] www.nm.aist.ac.tz searched on the 22nd April, 2021.

[291] Aidan G. Msafiri, Globalisation of Concern III: Essays on Climate Justice, Education, Sustainability and Technology, Geneva, Globethics.net Focus No. 32 p.29.

because we are' as advocated by John S. Mbiti: According to Mbiti, land or nature in the broadest sense of the word is not an empty impersonal object or phenomenon, it is filled with religious significance. To African people, a religious universe is not an academic proposition, it is an empirical experience, which reaches the height in acts of worship."[292] In the same vein of thought, our recent Book "Globalization of Concern IV: How Relevant and Timely Is 'Laudato Si' For Africa" (2019:1-101) profoundly unleashes the Afro-centric climate change framework and model based on the dynamics of interconnectedness, interdisciplinarity and interdependence both horizontally and vertically.[293]

Some Gaps and Disconnects

Curricula and Pedagogical Gaps

First, it has been observed that there is a critical lack of adequate, relevant, practical and action-oriented curricula systems on climate action in higher education. Unfortunately, climate-action based knowledge is at times simply considered as mere intellectual luxury or an essay pathway to acquire good credits only.[294]

Second, there is an ever-growing negative trend particularly among scholars in Africa's higher education to consider climate action, education and skills as a certain cadre of experts and climate "gurus". Majority at the Bottom of the Pyramid are simply left aside. This attitude and practice discourage interdisciplinary and interdepartmental

[292] John S. Mbiti African Religious and Philosophy, New York: Doubleday, 1970 pp. 73-74.

[293] Aidan G. Msafiri, Globalization of Concern: How Relevant and Timely Is "Laudato Si" For Africa Wienerwald, Be & Be 2019 pp.1-101 passim.

[294] Aidan G. Msafiri, Globalization of Concern II, (Geneva: Globethics.net No. 8) p. 41.

approaches and methodologies in responding adequately to climate challenges. Hence, giving rise to unhealthy departmentalism and compartmentalization of climate knowledge both in terms of content and method.[295]

Commercialisation and Commodification of Climate Related Institutions

First, some universities and higher institutions dealing with climate issues locally as well as globally have been putting more interest and focus on financial profitability than on result-based climate action and sustainability.

Second, in many cases, most of climate change and climate action symposia, for conferences simply take place among high education scholars and academic gurus and in luxurious hotels, beaches, resorts, halls far away from the millions of climate victims at the Bottom of the Pyramid.

Ideological-Philosophical Gaps

First, there are four radical or extremist philosophical and ideological world views as well as life views on climate and environment. This is made of the following four models: -

The extreme anthropocentric life view which considers the human person as the centre of everything, the biocentric life view which considers the life of plants and animals only as essential, the cosmocentric life view which underpins only right of the physical world at the expense of humans and other life forms. Last, the pathocentric life view which exaggerates the rights and roles of animals at the expense of those of humans, plants as well as those of creation.[296]

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[295] Ibid., Aidan G. Msafiri p.41.

[296] Aidan G. Msafiri in Oliver Ruppel and Christian Roschmann Vol. I pp. 669-670.

Jurisprudential and Policy Gaps

First, these are embedded in the metaphorical models which fail in responding to climate justice and action. The 'Greedy Jackal' climate action and Sustainability Policy Model, the 'Ignorant Ostrich' climate action model, the 'Business as Usual' climate action model, the 'Busy Bee' climate action model, the 'Chameleon' climate action model.[297]

Second, there is a remarkably huge gap and lack of coherence and continuity particularly in the institutional, national (Tanzania's) and regional climate change strategies and policies. Furthermore, from a gender perspective, observation indicates that many climate action-based policies do not adequately address gender related issues for gender equality, inclusivity and equity. Hence, making a larger percentage of women to become climate change victims, and refugees.

Third, there is a remarkable widespread lack of core and necessary knowledge, skills, competencies and motivation in and among Africa's high education particularly on the Principle of Common But Differentiated Responsibility (CBDR), Climate justice, REDD+, CDM just to mention a few. Practically, it is not "surprising" to daily observe high educated personnel, professionals, staff, students, academia craving for big cars, buying plastic materials, consuming more meat than vegetables, using several smart phones, iPad, tablets, etc. Indeed, both on the institutional and national levels, there are some existing organizational incapacities, inefficiencies as well as outdated climate change by-laws, laws and policies which directly or indirectly exacerbate greater eco-and climate related stress on the planet for thousands of years to come.

[297] Aidan G. Msafiri in KAS "Supporting the Rule of Law in Africa" p. 111.

Negative Effects of the High-Speed Mania Among High Education

First, we highlight our (2013:673) remarks on the current post-modern trend for high-speed culture with its devastating consequences on climate and environment among high education in particular. Speed "is considered a virtue, slowness a vice. This 'high-speed' culture translates not only into more energy and non-renewable resources consumed, but also into more greenhouse gas emissions from vehicles, industry, aeroplanes, etc…"[298]

Second, Philip Vinod Peacock cites Jeremy Geedom re-affirming that the car for instance "is emblematic of the human enterprise that is killing off so many spicies today. Many scientists are saying that biological diversity is declining at a dangerous rate. Meanwhile the artificial diversity of machines explodes as we humans repopulate with creatures of our own invention."[299]

Briefly, all these gaps ("*lacunae*"), discrepancies, limitations or disconnects elucidate systemic and weaknesses particularly inherent in the current high education edifice on climate change in Tanzania and Africa in particular. Let us now try to specifically portray the college of African Wildlife, Mweka, where I lecture as the best practice trainer in Wildlife and Eco-tourism in Africa. Hence, contributing immensely to climate action (SDG 13) and sustainable communities as a whole.

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[298] Aidan G. Msafiri, In Oliver Ruppel p. 673.

[299] Philip V. Peacock, Challenging the Idols of Speed, in World Common of Reformed Churches (Geneva, 2011)

The Mweka College and its Contribution to SDG 13: Best Practice

Curricular Excellence

First, Mweka, as the leading institution in competence-based professional and technical training in wildlife and Tourism Management, substantially contributes to SDG 13. This is encapsulated through its vision to specifically become a centre of excellence for professional and technical training in addressing the challenges of wildlife sustainability and biodiversity conservation in Africa. Its mission is to provide "the highest standards of technical training by engaging the global community and academia in undertaking research and consultancies in order to meet the needs of wildlife and tourism management in Africa."[300]

Second, the college of African Wildlife Management Mweka offers modules on Management, Habitat Management, and Project Planning. Among others, the fundamental objectives or tasks of these modules is particularly to access National Climate Policies in Conservation, international organizations efforts in climate change mitigation, and renewable energies, to mention but a few key trajectories.

[College of African Wildlife Management, Mweka Since 1963] (Source: www.mwekawildlife.ac.tz)

[300] Cfr - College of African Wildlife Management Brochure under the vision and mission statements April 2021.

Programs Excellence

Competence-based Climate action modules are offered both at Diploma and Bachelor Degree levels in Wildlife Management programs. These are:

1) Postgraduate Diploma in Wildlife Management
2) Postgraduate Diploma in Tourism Planning and Management
3) Bachelor Degree in Wildlife Tourism (NTA 7&8)
4) Ordinary Diploma in Wildlife Management (NTA 6)
5) Ordinary Diploma in Wildlife Tourism (NTA 6)
6) Technician Certificate in Wildlife Management (NTA 5)
7) Technician Certificate in Wildlife Tourism (NTA 5)
8) Basic Technician Certificate in Wildlife Tourism (NTA 4)
9) Basic Technician Certificate in Wildlife Tourism (NTA 4)

Some Short Courses Offered by the College: -

1) Tour Guiding and Interpretation
2) Snake Capturing, Handling and Translocation
3) Professional Walking Safari
4) Applied Fire Arms
5) GIS for Conservation
6) Wildlife Inventory and Monitoring for Wildlife Management Areas
7) Natural Resource Entrepreneurship
8) Ecological Monitoring in Protected Areas
9) Natural Resource Policies and Procedures for Community based Protected Areas
10) Conservation Action Planning and Finance Reporting
11) Destination Management
12) Monitoring and Evaluation for Wildlife Management Areas
13) Cultural Tourism Promotion and Management
14) Principles of Protected Areas Planning

15) Plants Identification and Herbarium Techniques
16) Birds Identification and Interpretation
17) Governance in the Management of Natural Resources

Research and Technical Excellence

First, rigorous and relevant climate action and biodiversity and eco-management related researches is the "heartbeat" of the College Research Agenda. Currently (2021) one of the best practices there is the ongoing collaborative research work on climate change perceptions and adaptations in Tanzania.

Second, the Kwakuchinja Wildlife Corridor (KWC) is a classical research best practice and panacea particularly in re-assessing the well-being and movement of wildlife and sustainable of biodiversity around Tarangire and Lake Manyara National Parks in Tanzania. This is done through the use of the open source "Google Earth Engine and QGIS software. Results show that agriculture increased by 35.6% and woodland decreased by 67.4% in the KWC study area in the period between 2002 and 2017."[301]

Third, among recent research publications linked to climate action, these two are worthy a mention:

1) "Climate Controls of decomposition drive the global biogeography of forest-trees symbioses" – published in Nature by Steidinger, Martin et al.
2) "Climate Land-Use-Interactions shape Tropical Mountain Biodiversity and Eco-system Functions" published in Nature by Dulle et al.

[301] Cfr. College of African Wildlife Management CAWN, Mweka, Research Abstracts 2019/2020 p. 9

(Source: www.mwekawildlife.ac.tz)

Publications' Excellence

Admittedly, the College of African Wildlife Management, Mweka, has immensely demonstrated its unique contribution to climate action through its wide array of well-researched quality and relevant publications. This is rigorously being done collaboratively both with college staff, students and extramural experts and researches nationally and internationally. In the period of 2019 to 2020, for instance, 26 high-quality publications related to biodiversity and climate change challenges have been published. Among others, the following contributions[302] need special mention and attention as a whole: -

1) "The coverage of Biodiversity Conservation Issues in Local Newspapers and The Role of Enhancing Conservation

[302] Ibid., pp. 3-32. For more information on publications see www.mwekawildlife.ac.tz under research and publications

Awareness. An Analysis of Two News Outlets." (Jafari R. Kideghesho et alii).

2) "Spatiotemporal changes In Wildlife Habitat Quality in The Greater Serengeti Ecosystem": (Jafari R. Kideghesho et alii).
3) "Climate Controls of Decomposition Drive the Global Biogeography of Forest-Tree Symbioses" (Emmanuel Martin et alii).
4) "Ecosystem Services and Importance of Common Tree Species in Coffee-Agro Forestry Systems: Local Knowledge of Small-Scale Farmers at Mt. Kilimanjaro, Tanzania." (Rudolf Mremi et alii).
5) "The Importance of Nutrient Hotspots Using Camera Traps, Indirect Observation and Stable Isotopes in A Miombo Ecosystem, Tanzania" (Gabriel Mayengo at alii)
6) "Land Use and Land Cover Change Within and Around the Greater Serengeti Ecosystem, Tanzania." (Jafari R. Kideghesho et alii)
7) "Climate-Land-Use Interactions Shape Tropical Mountain Biodiversity and Eco-system Functions" (Hamadi

Community Outreach and Relevance

First, the college has introduced a climate action-based Bee Pollinator Project among neighbouring schools and communities.[303] Among other schools, these include Cyril Chami, Maria Gorreti, Nsoo and Kibosho Girls secondary schools. This contributes remarkably to conservation of biodiversity, economic remuneration and education for climate awareness and action.

Second, from the national perspective, Mweka College has been very active in tree planting national events as well as the promotor of

[303] Interview with Dr. Emmanuel Martin 16th March, 2021.

education on climate change and its challenges[304], and biodiversity conservation at the grass roots level through various radio stations, including Moshi FM, TBC1, Kili FM, Uhai TV, Safari Channel, to mention a few.

Partnership Excellence and Potentials

First, as the unique and preferred college in biodiversity conservation in Africa, the College of African Wildlife Management, Mweka, has established both national and international partnerships.

Admittedly, these academic and research-based synergies are very beneficial particularly in endowing the college's staff, students and graduates with global climate action, vision and passion particularly on biodiversity professionalism and competence. Among others, this includes partnership with the University of Florence, the University of Freiburg, the University of Manchester, and the University of Milan.

Second, the Mweka College enjoys high reputation, recognition and preference particularly among Tanzania's National Parks and Mountain Forests' Conservation Organizations in Tanzania.

Conclusion

The unique sustainability function of high education on climate action as epitomized in SDG 13 (in particular in and for Africa), cannot be over emphasized. Indeed, this is not a mere academic understatement, but an existential life and death altruism and crucial undertaking. Consequently, at this juncture, few but key remarks need special attention and mention in particular.

First, the triadal classical functions of high education as engines of knowledge, research and community service entail and absolutely timely trajectory of climate-based action, strategies and sustainability activities.

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[304] Ibid., Interview with Dr. Emmanuel Martin on the 16th March, 2021.

This dimension is key particularly in effectively responding to the ever - growing climate related challenges and disasters locally and globally. Higher education, particularly in Africa, needs to prioritize this as key players and agents of a new decarbonization *Avantgarde,* as the African continent remains to be the most affected continent with climate change disasters.

Second, it must be well understood that there is an intrinsic nexus between SDG 13 and the rest of the 16 SDG's and vice versa. Admittedly, all of them are interdependent and interrelated. Consequently, the need for higher education to adopt a multi-disciplinary approach to and among the 17 SDG's.

Third, more than ever before, there is notably growing positive response and contribution in and among higher education in Africa towards climate action education, practical response, conservation of biodiversity, policies and sustainable life styles. Nonetheless, these success stories have been paralleled with certain disconnects and gaps. Truly, the context might be different but the very logic is credible and timeless for thousands of generations to come.

Fourth, from a practical and technical perspective, our collaborative endeavours and synergies towards real climate action in by and through Africa's necessarily demand implementation of climate action, energy, efficiency, strategies and policies, curriculum overview, knowledge, dialogue exchange, and capacity building. In short, cost-effective and cost-efficient energy solutions. These need to be inculcated by and supported by high education while building a vibrant community engagement in collaboration with all key stakeholders as a whole.

Bibliography

Akrofi Sarpong, Mark M. et alii 'Students in Climate Action: A Study of Some Influential Factors and Implications of Knowledge Gaps in Africa, www.mdpi.com/journal/environments

Bangay, C. and Blum, N. (2010). "Education Responses to Climate Change and Quality: Two parts of the same Agenda? International Journal of Educational Development.

College of African Wildlife Management Brochure under the vision and mission statements April, 2021.

Germany Advisory Council (WBGU) on Global Change. (2016). A Special Report: Development and Justice through Transformation: The Four Big "I's" Berlin.

Grantham Research Institute on Climate Change and The Environmental Centre for Climate Change Economies and Policy, Policy Briefs by Michal Nachmany, October, 2018.

Ifakara Health Institute: Tanzania and the Sustainable Development Goals: Has Tanzania prepared to roll-out and domesticate the health SDGs? See 3.0 National Context about SDGs, 09/01/2017

Mbiti John S. (1970). African Religious and Philosophy. New York: Doubleday.

McCowan Tristan Centre for Global Higher Education. (2020).Working Paper No.55. November Oxford University.

Msafiri Aidan G. (2017). "Climate Change and Law" in Konrad Adenauer Stiftung, Supporting the Rule of Law in Africa, Nairobi, KAS.

Msafiri Aidan G. (2013). Ethics for Climate Justice and Sustainability Through Value Based Approaches: A New Tanzania Model and Paradigm Shift in Oliver C. Ruppel, Christian Roschamann *et ali*.

Msafiri Aidan G. (2008). Globalization of Concern Vol. I Dar es Salaam University Press.

Msafiri Aidan G. (2012). Globalization of Concern Vol. II, Essays on Education, Health, Climate Change and Cyberspace. Geneva: Globethics Publications, Focus Series No. 8.

Msafiri Aidan G. (2016). Globalization of Concern Vol. III, Essays on Justice, Education, Sustainability and Technology. Geneva: Globethics Publications, Focus Series No. 32.

NASA, *2020 Tied for Warmest Year on Recors, NASA Analysis shows*, https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows

Peacock, Philip Vinod. (2011). Challenging the Idols of Speech, in: World Communion of Reformed Churches March, Geneva.

Ruppel Oliver C., Roschmann Christian and Ruppel-Schlichting Katharina. (2013). Climate Change: International Law and Global Governance. Volume II: Policy, Diplomacy and Governance in a Changing Environment. Germany: Konrad Adenauer Stiftung.

Ruppel, Oliver C., Climate Change Policy Positions and Related Developments in the AU and SADC, SADC Law Journal 2(1), 14-35, 2012.

Sachs Jeffrey D. (2011). The Price of Civilization: Economics and Ethics after the Fall, London: The Bodley Head.

Konrad Adenauer Stiftung (KAS) (2014). The Challenges of Climate Change Adaption and The Potential of Sustainable Energies in The East African Community (EAC) After COP 19 Dar es Salaam, KAS.

Tanzania Climate Action Report for 2016. (2017). Resilience and Economic Inclusion Team/Irish Aid/November.

UN/United Nations. (1992). The Global Partnership for Environment and Development: A Guide Agenda 21, New York, UN Publications.

UN/United Nations. (1994). The United Nations Earth Summit: Agenda 21: The United Nations Programme of Action from Rio, New York, UN Reproduction.

UNDP/United Nations Developgment Programme Africa, https://www.undp.org/africa