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Decolonising the Curriculum: Fostering Sustainability in Higher Education in Zambia

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Abstract

Zambia continues to experience escalating environmental challenges that threaten not only the country's biodiversity but also the well-being of the population. The higher education environmental education curriculum has been recognised as crucial to solving these sustainability challenges. However, the curriculum is more than a neutral assemblage of knowledge, it is, a selective tradition that values and validates knowledge rooted in how human subjects are conceptualised and are produced in curriculum making processes.

In contemporary Zambian society, efforts towards environmental sustainability are connected to colonial legacies and embedded in various historical contingencies. In an education system charged with addressing issues of environmental sustainability, the history of colonial presence influences how Zambian environmental policies affect local interests. I argue that contemporary Zambian environmental policies and curricula are entangled in the ongoing and incremental dismantling of local people's environmental knowledges and ways of acting. In addition, international declarations concerning the environment and environmental education also marginalise local ways of knowing and being. These complex forces are rooted in Zambia's colonial past implicating Zambia's present environmental management practices, policies, and curricula.

This study seeks to better understand the environmental education curriculum and entanglements with the colonial past to facilitate the inclusion of knowledges appropriate and responsive to Zambia's local and national environmental challenges. It investigates the curriculum at one public university in Zambia by highlighting the use of Western knowledges and subjectivities. The study poses the following research questions: (a) what does the higher education environmental education curriculum in Zambia include and exclude? (b) what informs and influences the development of the higher education environmental education curriculum? and (c) what is the effect of inclusions and exclusions on the higher education environmental education curriculum?

Using Foucauldian and decolonial conceptions of power, knowledge, and subjectivity, this study investigates struggles over the Zambian environment and the

production of Zambian students' knowledge and subjectivity. A decolonial genealogy connects De Sousa Santos' (2014) epistemologies of the South to Foucault's (1984) history of the present. Both Foucauldian genealogy and decolonial perspectives are concerned with the possibilities of 'emergence', and each is interested in the way that Western rationality seeks to represent what counts as knowledge and subjectivity and how these representations legitimise power relations. The theoretical orientation of this study thus takes the present as radically prescribed by colonial logics. The study draws on the memories, accounts, and practices of local traditional leaders, lecturers, policy makers and Non-Government Organisation (NGO) representatives as well as environmental policies and documents, to explore how certain knowledges and modalities of being and relating to the environment are excluded from national environmental policies in general and university environmental education curricula in particular.

The genealogical analysis of the study begins with an investigation of the "problem' as represented by local leaders, lecturers, policy makers, NGO representatives, environmental policies, and curricula. Here, present tensions of 'problem' representations between local traditional leaders and environmental policies are brought to light. These tensions are then examined to locate their emergence through Zambia's colonial past and their entanglements with the and present. Finally, the study examines how the historical emergence of the 'problem' affects what is deemed as worthwhile environmental knowledge, the process by which curricula are produced, and the subjectivities that are desired. The analysis of the historical present shows that the environmental education curriculum is informed by Western epistemologies which mobilise, normalise, and preserve an environmental cosmopolitan, that is, a Western(ised) rational, individualised and accumulation-oriented subject who overshadows indigenous ways of knowing and being in the environment.

The thesis concludes by proposing and developing the concept of Southern environmentality to advance the decolonisation of environmental knowledge and subjectivity. It argues that the environmental education curriculum and the production of its knowledge should be an activity that reconciles different stakeholders creating the possibility of an ecological subject and a sustainable future.

Dedication

This is dedicated to all the Zambian Elders past, present and future and my daughters Taizya and Nikiwe.

I am because we are!

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Lastly, to my best friend and husband, Brian, thanks for your love, patience, encouragement and for believing in me. Above all, thank you for parenting without me.

Finally, many thanks to Jehovah.

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List of Abbreviations

CBU	Copperbelt University
CoZ	The Constitution of Zambia
EE	Environmental Education
ESD	Education for sustainable development
GRZ	Government of the Republic of Zambia
HEd	Higher Education
HEd EE	Higher Education Environmental Education
ICUN	International Union for Conservation of Nature and Natural Resources
IOs	International Organisations
MENR	Ministry of Environment and Natural Resources
MESTVEE	Ministry of Education, Science, Vocational Training and Early Education
MoE	Ministry of Education
MoHE	Ministry of Higher Education
MMD	Movement for Multiparty Democracy
MNDP	Ministry of National Development and Planning
NCS	National Conservation Strategy
NEAP	National Environmental Action Plan
NEP	National Environmental Policy
NPCC	National Policy on Climate Change
NRDC	Natural Resources Development College
PF	Patriotic Front
SD	Sustainable Development
SDD	Sustainable Development Discourse

UN	United Nations
UNDP	United Nations Development Programme
UNEP	United National Environmental Programme
UNESCO	United Educational Scientific and Cultural Organization
UNIP	United Party for National Independence
UNZA	University of Zambia
WCED	World Commission on Environment and Development
WPR	What's the problem represented to be?
WECSZ	Wildlife Conservation Society of Zambia
ZECF	Zambia Education Curriculum Framework

Chapter 1: Introducing the Study

1.1 INTRODUCTION

As the world wrestles with global socio-ecological challenges like environmental degradation, rapid biodiversity loss and climate change (UNESCO, 2016), societies are being urged to transition towards sustainable social systems (Blackmore et al., 2011). Sustainability is a multifaceted, socially constructed notion with complex and contested interpretations. It involves interconnections and interactions across domains and scales, including the global and the local (Mazzocchi, 2020), and it is deployed in different ways by individuals, organisations and governments through worldviews that support a variety of ambitions and goals. However, it is generally agreed that sustainability implies balancing the economic, socio-cultural, and ecological dimensions of society (Wals et al., 2017). Sustainability concerns the conditions under which it is possible to uphold the enduring well-being of human communities and societies by meeting "the needs of the present generation without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development (WCED, 1987, p. 8).

It has been argued that current economic, socio-cultural, and ecological systems are flawed and maladaptive (Lotz-Sistka et al., 2015) and this has contributed to the degradation of the planet. Sustaining the planet entails a fundamental rethinking of underlying structures and processes (Fien, 2004). However, sustainability challenges have been regarded as 'wicked problems' characterised by ambiguity, complexity, controversy, and uncertainty, concerning causes and effects as well as relevant actions required to solve them. These challenges are rapidly changing and and not amenable to simple solutions (Wals & Corcoran, 2012).

1.1.1 The Role of Higher Education in Promoting Sustainability

The progression and depth of environmental and sustainability concerns has prompted an urgent need for action and change (UNESCO, 2015) and higher education (HEd) has been called to respond to sustainability concerns (Corcoran & Wals, 2004; Ketlhoilwe et al., 2020). HEd is often categorised as a 'soft' and persuasive policy instrument, credited with the potential to foster the formation of sustainable, democratic, and deliberative societies (Barth & Fisher, 2012; Orr, 2004; Sachs et al., 2019; Weiss et al., 2021). International and national policy papers emphasise the need for an educational response, describing education as "one of the most

powerful tools for providing individuals with appropriate knowledge, skills, and competencies to become sustainable consumers" (Organization for Economic Co-operation and Development [OECD], 2008, p. 25). Higher education (HEd) can create a sustainable future by providing students with the opportunity not only to develop sustainability competencies (Wiek et al., 2011), but also to critically reflect on their values and to apply them to their lives (Sipos et al., 2008). Higher education is thus an important tool with which to increase sustainability awareness and knowledge among students. Moreover, HEd has a responsibility to generate sustainability values and knowledge:

> Higher education institutions bear a profound, moral responsibility to increase awareness, knowledge, skills, and values needed to create a just and sustainable future. Higher education plays a critical but often overlooked role in making this vision a reality. It prepares most of the professionals who develop, lead, manage, teach, work in and influence society's institutions (Cortese, 2003, p. 17)

In African countries HEd is seen as a key to answering worsening socio-environmental problems as well as paving the way towards the socio-economic and environmental transformation of citizens (Anamuah-Mensah, 2012). To become change-agents empowered with the agency to participate in sustainability transitions and societal change, the HEd curriculum, research, and engagement with community must be geared towards addressing sustainability challenges (Sonnetti et al., 2019).

1.2   CONTEXT: SETTING THE BACKGROUND OF THE STUDY

Zambia, the site of this research, is a post-colonial, resource rich, liberal democratic and developing country with a population of 19 million, and a surface area of 753,614 square kilometres. It is a culturally and linguistically diverse country and is one of the countries with the highest biodiversity in the world. However, Zambia is in grave danger due to natural resource exploitation and other human activities. These activities have left a trail of devastating environmental problems including unrestrained exploitation of forest and wildlife resources; serious water and air pollution from decades of mining; a growing middle-class population set on material accumulation; and a growing population affected by poverty and dependent on natural resources. Currently, Zambia has the largest per capita deforestation rate in Africa and fifth highest in the world; many Zambians are vulnerable to climate variability and climate change, and Zambia's wildlife continues to be threatened (Government of the Republic of Zambia [GRZ], 2017; GRZ-UN Zambia, 2017). In addition, Zambians have a low-level of

environmental consciousness (GRZ, 2007). While the government is making efforts to address these issues, more effort is needed.

Although Zambia's environmental issues are unique, their foundation is ecological and epistemological. The source of this double crisis of eco-justice is the Western dualistic 'habit of knowing' (Jun, 2014) and 'habit-it-being' (Shotwell, 2016; Stein, 2019) which has shaped knowledge, beliefs, values and attitudes towards the earth's biotic community. The dominant 'habit-of-being' is not only unethical and harmful, but also ecologically unsustainable because it is founded on the denial of human entanglement with the biotic community (Stein, 2019). Further, the dualisms are based on racialised exploitation and expropriation of land, labour and natural resources.

Many higher education institutions (HEIs) have integrated their response to environmental degradation and climate change into community outreach, research priorities, physical infrastructures, and curricula (Henderson et al., 2017; Stein, 2019; Vaughter et al., 2015). Others have initiated policies, plans and offices, and endorsed national and international declarations that promise to work towards implementing sustainability within the institution (Vaughter et al., 2015, p. 83). As well as increased hope for HEd and educators to instil the 'right' values and attitudes towards the biotic community, the urgent need for solutions has intensified interest in scientific and technical solutions: the very "high-tech economy of cognitive capitalism that caused the problems in the first place" (Braidotti, 2020, p. 1).

Zambian youths are considered to be crucial to solving environmental problems. Historically, they have taken the role of 'change agents', both socially and politically. Their activism and spirit have been indispensable in paving a way in each change of regime. For instance, Zambian youths played a crucial role in the establishment of the independent nation-state in 1964, the ousting of Kenneth Kaunda's One-Party regime and reintroduction of a multiparty democracy; and, more recently in 2021, the removal of the most corrupt regime in the history of Zambia through a protest vote. Zambia's youth, therefore, constitute a huge resource for socio-cultural change towards pro-environmental subjectivity and practice, and represent the nation's best hope for halting the destruction of Zambia's natural environment (Parker & Prabawa-Sear, 2020).

Although Zambia has lowered its illiteracy levels, its education system was inherited from former colonisers. Like other formerly colonised countries, Zambia needs an education system whose knowledge is relevant and best adapted to its realities. These include addressing taking into account: "unique socio-cultural, socio-economic, ethno-religious and the geo-

political differences" (Oviawe, 2013, p. 5) and different "values, metaphors, communication patterns, sense of time, place and self" (Frandy, 2018, p. 2). Problematically, the curriculum, a tool which intends to assist education, is laden with deep-rooted power dynamics charged with defining what counts as valid knowledge (Bernstein, 1971). The capacity to select what counts as valid knowledge revolves around a power matrix concerning: "what [or] whose knowledge is of most worth [and] for whom, as well as the way such knowledge has been produced, packaged, legitimized, taught, and evaluated" (Paraskeva, 2014, p. ix). Given this, knowledges that fall outside the power matrix are excluded, resulting in 'epistemicide' (De Sousa Santos, 2007; Paraskeva, 2011, 2014, 2016, 2018). 'Epistemicide' is the term De Sousa Santos (2007) uses to refer to the way a colonial power matrix marginalises forms of knowledge through a dichotomous process of inclusion and exclusion. This selection criteria excludes Zambia's local knowledges and discourses from both the school and university curricula because they fall in the category of knowledges perceived to be non-existent by those holding power. Importantly, they "are usually dismissed as not necessary for … education" (Oviawe, 2013, p. 5).

It is important to note that Zambians depend on local knowledges to solve day-to-day socio-economic challenges, to address various environmental challenges, as well as to adapt to change (Fataar & Subreenduth, 2015). Even though local knowledges give meaning to Zambian people's lives and livelihoods, their absence in the curricula poses a challenge and problem. The absence of local knowledges from the curricula can be deemed a "contrived manifestation of abyssal epistemology" (Fataar & Subreenduth, 2015, p. 5). 'Abyssal epistemology' is another term coined by De Sousa Santos (2007) to theorise dominant forms of thought based on a dichotomous system of "visible and invisible distinctions" (p. 45). Abyssal epistemology, therefore, not only marginalises other knowledges in epistemicide, but also sustains the coloniality of knowledge making the curriculum a: "beacon of epistemological cleansing" (Paraskeva. 2016b, p. ix).

1.3   THE PROBLEM STATEMENT

As Zambia's environmental challenges worsen, the population's conduct towards the environment has generated growing concern and triggered curricula questions of: how an environmental consciousness can be achieved; what levels of environmental literacy and awareness are necessary for responsible and democratic decision-making about environmental and sustainability matters; and how the Zambian population can acquire environmental knowledge relevant and responsive to Zambia's economic and socio-cultural contexts. The

education of youth to become 'agents of change' is widely regarded as crucial to mobilising environmental consciousness.

Agenda 21 recognises that education is a key to dealing with environment and development issues:

> Both formal and non-formal education are dispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. They are also critical for achieving environmental and ethical wellness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision making (UNSD, 1992).

Education, thus, is an intervention that socialises youth "in new lifestyles that demand ecological, economic and social sustainability" and "the world can be saved with the aid of education, engagement, and the will to do the right thing" (Ideland, 2019, p. 4). In HEd, environmental education (EE) and education for sustainable development (ESD) are the most suitable tools to bringing this much needed transformation. The United Nations Environmental Programme (UNEP, 2002) indicates that ESD encourages the development of significant, effective and efficient environmental management strategies to address environmental challenges. As a result of UNEP's argument, the Zambia Education Curriculum Framework (ZECF) had the objective of developing an environmental culture among young Zambians to allow them to appreciate and participate in taking care of the environment and natural resources. The ZECF emphasses that:

> learning institutions, at *all* levels, should provide aspects of education for sustainable development, and environmental education (Ministry of Education, Science, Vocational Training and Early Education, (MESVTEE, 2013, p. 22 emphasis mine).

The ZECF further indicates that,

> Climate change is an ecological as well as a social problem because all societies are affected in one way or another […] it is important that the […] curriculum provides for this education (MESVTEE, 2013, p. 22).

The adoption of EE is due to Zambia's recent unprecedented deforestation, the effects of climate change and general environmental degradation which have led to political and economic strife (Ministry of National Development and Planning [MNDP] , 2017). It is thus envisaged that including EE in the HEd curriculum will make: "learners become aware of the aspects of the climate crisis and learn how to contribute towards preventing and combating the issue" (MESVTEE, 2013, p. 22). It is because HEd has been at the forefront of creating and

breaking paradigms, educating future decision makers and leaders (Cortese, 2003; Elton, 2003; Lozano, 2006; Lozano et al., 2013) that it is also seen as important for the achivement of a sustainable future (Aleixo et al., 2018; Sibbel, 2009; Stephens et al., 2008; Wals, et al., 2010).

However, much of modern education relies on Newtonian and Cartesian models which are reductionist and mechanistic (Lovelock, 2007; Nonaka & Takeuchi, 2001). In addition, HEIs perpetuate epistemic and eco inequalities and injustices (Bodkin-Andrews & Carlson, 2013, 2016). Although higher education environmental education (HEd EE) is required for sustainable development (SD), it also poses a challenge. It assumes that more knowledge needs to be imparted to students for them to develop their understanding, awareness and concerns about the environment, and that they fail to act because they have no knowledge about the environment and its problems (Barr, 2007; Grotzer & Lincoln, 2007; Moxnes & Saysel, 2009; Nigbur et al., 2010).

Environmental education, like other HEd programs, practices, and perspectives, is deeply embedded in specific social, historical, and economic contexts. Ideas about what and whose knowledge is valuable and appropriate are closely related to the political and social positions of individuals and organisations. What kinds of knowledge does, or should, EE curricula include? Why are some kinds of knowledge prioritised while others marginalised? It can thus be argued that: "we don't have a knowledge problem- we have a habit-of-being problem" (Shotwell, 2016, p. 38). Because HEIs developed alongside and through colonialism, they remain structurally dependent upon colonialism for their continued existence (Boggs & Mitchell, 2018; Stein, 2017, 2019; Wilder, 2013).

Higher Education EE in Zambia is a source of concern for policy makers, and the wider community who wonder why it has not transformed communities through responses to economic and socio-ecological challenges (Anamuah-Mensah, 2012). The National Policy on Higher Education (NPHE) states that "the quality of education and its relevance […] remains elusive" and this is due to: the "inappropriate curriculum" (Ministry of Higher Education, 2019, pp. 12-13). Such concerns, however, are not confined to Zambia. Calls for HEd in Africa to be responsive to local needs have been ongoing for decades (Mamdani, 1993; Mazrui, 1992; Mbembe, 2016). Indeed, post-colonial countries are still trying to overcome the entangled legacies of colonialism when educational relevance was not placed at the centre of national debates (Anamuah-Mensah, 2012). (Post) colonial education was, and continues to be, geared towards the interests of external markets, not local needs (Anamuah-Mensah, 2012). The

imposition of Western science marginalised Indigenous cognitive traditions by failing to integrate them into mainstream science.

Zambia's National Development Plan of 2017 recognises culture as essential to Zambia's development agenda, and culture has been prioritised and accommodated in the development of strategies and programmes. The plan further proposes a paradigm shift that focuses on enhancing positive cultural attributes that can enable development (Ministry of National Development Planning, 2017). It states that achieving SD "will require putting in place measures and activities that reflect the complex and multidimensional nature of Zambian culture and knowledge systems (Ministry of National Development Planning (MNDP), 2017, p. 29). It further indicates the need "to identify areas of Zambian cultural strength and enlist the active participation of various stakeholders" to promote Indigenous knowledge systems (MNDP, 2017, p. 29).

Zambia's philosophical rationale for education rests on the need to provide an education that takes into consideration uniqueness so that people can fully participate in the economic, cultural, and social affairs of the country (MOE, 1996; MOESVTEE, 2013). Accordingly, the ZECF promises to provide learners with an education that takes into "account knowledge and skills appropriate to their age, their social and economic roles" (MOESVTEE, 2013, p. i). It further promises to "deal with Zambia's cultural and intellectual heritage as well as with the knowledge, skills and values that are to be transmitted to future generations" (MOESVTEE, 2013, p. i).

Problematically, however, SD, ESD and EE are vaguely and ambiguously included in the curriculum, and although Indigenous knowledge and culture to development are indicated as important, they do not figure prominently. Neither does the ZECF indicate what areas of Zambian cultural and knowledge strengths are to be included. EE is: "embedded within a specific cultural and historical framework involving the foregrounding of Western colonial knowledges" (Zembylas, 2017a, p. 488). There is need, therefore, for a decolonising approach that problematises the nature and establishment of SD and EE. This is necessary because SD and EE discourses are tied to a modern framework, and: "premises of bounded individualism and human exceptionalism" (Carrasco-Miro, 2017, p. 89). Most importantly, EE

> cannot be detached from its natural community and environment…should be learned in terms of different contexts, cultures, people and experiences…it is [to be] rooted in people's everyday experiences, aspirations, concerns and needs rather than abstract and intagible concepts (Coysh, 2014, pp. 110-111).

Despite EE's potential for positive attitudes for economic, social, and environmental transformation, it has in fact "served to further justify and reinforce the very paradigm that it sought to deconstruct" (Hove, 2004, p. 48). It fails to capture the different conceptions of sustainability, development, conservation and human-nature relationships as they exist in communities and local knowledge structures. In its current form, EE is highly ethnocentric (Le Grange, 2012).

1.4   PURPOSE OF THE STUDY

Few would dispute the fact that HEd is key to sustainable national development (Anamuah-Mensah, 2012) because it prepares learners to engage and respond effectively and actively to sustainability challenges. The central concern of this study is the kind of HEd EE curricula being promoted in post-colonial contexts like Zambia. It has become increasingly clear that responding to environmental degradation in post-colonial contexts requires different ways of understanding, knowing and being in and through the environment. HEd, especially in post-colonial contexts, has the responsibility to adapt and design curricula to reflect changes and problems, as well as resolve them using local contexts (Brown & Erickson, 2014; Gruenewald, 2003; Junyet et al., 2008; Kurland et al., 2010). Thus, to foster societies toward sustainability, relevant and responsive HEd needs to be provided (Anamuah-Mensah, 2012). This study, therefore, examines aspects of Zambian environmental governance history and its interconnections to current structural oppression, and questions their cultural nuances, their origins, why and how they persist, and how they might actively be combated.

1.4.1 Aim

Based on the problem statement of this thesis, the overarching aim of this research is to advance EE in HEd in Zambia, and to facilitate the inclusion of knowledges appropriate and responsive to local and national environmental challenges.

1.4.2 Research Objectives

1. To investigate the use of Western knowledges in the higher education environmental education curriculum.

2. To examine the subjectivities that are aspired in the higher education environmental education curriculum.

1.4.3 Research Questions

In response to the research problem and aim, the research answers the core question of:

1. What does the higher education environmental education curriculum in Zambia *do* and *might do?*

and the following sub-question:

    i. What informed/influenced the development of higher education environmental education in Zambia?

    ii. What does the higher education environmental education curriculum in Zambia include and exclude?

    iii. What is the effect of inclusions and exclusions in the higher education environmental education EE curriculum in Zambia?

Answering these research questions will provide new insights into the implicit and explicit understandings that shape how the Zambian population's conduct is characterised as a 'problem', and the effects of policies on both curriculum knowledge selection and desired subjectivities. These insights will open possibilities for rethinking what constitutes EE knowledge and subjectivity and help foster a decolonised curriculum that reflects the lived experiences of the excluded, responsive to local environmental problems. The rationale for pursuing this research is to help foster sustainability efforts in Zambian HEd by contributing knowledge to inform the development of a culturally appropriate decolonised curriculum.

1.5 THESIS CONTRIBUTION

This study contributes to theory, methodology and praxis in fields of EE and curriculum in post-colonial contexts. The Zambian HEd EE curricula lack a substantive Southern 'environmentality' able to guide transformation (Leibowitz, 2017). The pervasive hegemonic tendency of Western knowledge in the curricula is due to the difficulty of thinking and practicing outside the frames of Western hegemony (Mbembe, 2016). This is why Zambia's HEd curricula paradigm not only exalts Western knowledge systems but is a form of coloniality of knowledge and mimics global development rhetoric. This renders Zambia's HEd curricula culturally irrelevant and unresponsive to local needs. This study seeks to provide a substantive decolonial genealogy as a methodological approach and praxis that guides the transformation of the HEd EE curricula towards local contexts.

This research represents a decolonial turn in the HEd EE curricula. It is an attempt to rethink and re-imagine Zambian education and its perpetuation through coloniality. Rethinking and reimagining education will be made possible by analytical, theoretical, scholarly,

epistemic, and programmatic (practical and political) forms of decoloniality (Mignolo, 2007). This places decoloniality in the position where it can help inform the selection of curriculum knowledge. Moreover, the research will add knowledge by generating a theoretical understanding for the inclusion of relevant local knowledges in the curriculum. More specifically it:

i. contributes new ideas to discourses on decolonising the EE curriculum in particular, and curriculum theory and praxis in general.

ii. develops a Southern epistemological framework based on alternative knowledges. The framework is informed by decolonial approaches that are foundational to the selection and organisation of curriculum knowledge appropriate and responsive to local sustainability needs.

iii. provides a framework for "critical dialogue" between previously incommensurate knowledges, and

iv. promotes a re-imagined curriculum that promotes social, ecological, and cognitive justice and a sense of identity and responsibility in Zambian students.

1.6   THESIS STRUCTURE

This chapter introduced the research study and shared the context and research problem of the study. The chapter outlined research aims and questions and the significance of the study to the broader research field of EE.

Chapter 2 presents a comprehensive review of existing literature on EE and curricula. The review explores three major areas of EE: (a) terminological debates and (b) the HEd EE curriculum

Chapter 3 discusses the concepts and theories used in this study. It brings together curriculum, decolonial and post structural theories, as well as the concepts of power, knowledge, subjectivity, *currere,* and *Ubuntu/Ukama* and their relevance to the study, curriculum studies and EE more broadly.

Chapter 4 introduces and justifies a decolonial genealogical methodology, before detailing participant selection. The chapter outlines specific methods employed to answer the research questions. It introduces the methods selected to collect data comprising policy and curriculum documents, conversations with local traditional leaders, lecturers, policy maker and NGO representatives, The chapter then details the framework used to analyse the data.

Chapters 5, 6 and 7: These chapters analyse the research data and detail research findings concerning tensions in problem representations. They detail how problems representations came about, and the effects of problem representations on knowledge and subjectivity mobilised in the curriculum.

Chapter 8: This chapter summarises the finding of the study and makes recommendations for decolonising the curriculum.

1.7   SUMMARY

This introduction demonstrated the need for this study in light of ongoing sustainability challenges. It noted that HEd is acknowledged as being crucial to responding to sustainability challenges, but in post-colonial contexts, it is informed by Western epistemologies that hinder it from being relevant and responsive to local needs. The chapter drew attention to the need for research that investigates what EE curriculum in post-colonial contexts does, notably by examining what HEd EE curriculum in Zambia includes and/or excludes, and the effects of such exclusions on local ecological knowledges and subjectivities. To conclude the chapter, I shared the research aim, and objectives, thus delineating the focus of the study. I also detailed the study's contribution to methodology, theory, and praxis EE, and a brief summary of the structure and content of the thesis to orient the study.

In the following chapter, I undertake a review of the literature, and highlight the major concepts and existing research that informs and inspires the study.

Chapter 2: Literature Review

2.1 INTRODUCTION

The first section of this literature review discusses the contested nature of EE and examines studies that seek to clarify what it should be or look like. The chapter proceeds by identifying international studies of environmental policies and their impact on EE and discusses studies relevant to understanding the importance of recognising Indigenous knowledge, histories, and cultures. The second section of this chapter reviews literature which addresses the relationship of EE to the curriculum. The third and final section of this chapter discusses the studies addressing EE, EE policy and the importance of a paradigmatic shift. The chapter argues that most studies of EE are located in the Global North and generated out of international policy, and these have shaped the field of EE in a particular direction. Few studies of EE have been located in the Global South.

2.2 ENVIRONMENTAL EDUCATION AND TERMINOLOGICAL DEBATES

On the surface, EE may appear to be a rather straight forward notion charged with increasing public awareness on environmental issues; however, the field is complex. This complexity has been attributed to the wide variety of ideas and practices included in EE, its interdisciplinary nature, and its gradual emergency. The central philosophy of EE is thus informed by a variety of source disciplines, a situation that has brought about confusion with regards to its identity and application (Carter & Simmons, 2010). This has contributed to the trend of approaching EE as a disparate discipline and not as a permanent necessity of everyday life and thus it is not always integrated in the educational curriculum (Brennan, 1994; Filho et al., 2015; Hautecoeur, 2002; Öllerer, 2015; Orr, 1994; Potter, 2010).

The field of EE is marred with definitions of what it is and is not. For instance, while Hungerford et al. (1983) called for an end to the debates regarding the definition of EE by arguing that a strong and widely agreed upon structure of EE is already in existence, Disinger (1983) insists that the ongoing challenge within the field of EE lies "in the matter of definition" (p. 2). Later Disinger (1997) argued that EE's "definitional problem" has at best only shifted slightly towards a point of resolution (p. 2). These recurring definitional challenges have had a huge impact on EE practices, discourses and outcomes (Fraser et al., 2015). One major weakness is the absence of an adequate framework and ways of training educators in the

development of appropriate practices and purposes (Tilbury et al., 2005; Sund & Wickman 2008). Robertson and Krugly-Smolska (1997) have argued that a lack of agreement between theorists and academicians about what EE should actually look like has caused a significant confusion for educators.

An early definition of EE was developed by Stapp et al. (1969) who defined environmental EE as:

> aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to solve these problems, and motivated to work towards their solution (p. 31).

From inception, EE was considered a process for the education of citizenship. The premise underpining it was that more knowledge about the environment equates to pro-environmental behaviour and attitudes (Kollmuss & Agyeman, 2002). The definition provided by Stapp et al. (1969) emphasises creating a citizenry that is knowledgeable about the biophysical environment and related problems. However, it says little about how the creation of how a conscious or aware and motivated population might be achieved. For Stapp et al. (1969), educating the general population about the interconnections between them and the biophysical environment was a key matter for society. However, this definition fails to understand the importance of the socio-cultural aspects of EE (Roth, 1970). Recognising the limitation of this definition, Stapp (1970) drew attention to the point that teaching knowledge and skills does not necessarily translate to positive and long-lasting changes to behaviour. Coincidentally, belief in this direct relationship between knowledge and behaviour is still widespread in the field.

In the same period, the *International Working Meeting on EE in the School Curriculum* organised by the International Union for Conservation of Nature and Natural Resources (IUCN) developed the following definition:

> Environmental Education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among *man,* his culture and his biophysical surroundings. EE also entails practice in decision making and self formulation of a code of behaviour about issues concerning Environmental quality (ICUN, 1970, p. 26 emphasis mine).

This definition has been used in many EE programs. Like Stapp et al. (1969), the ICUN describes EE as a learning process and pays attention to the internal aspects of the individual

by developing behavioural change, attitudes, and decision-making skills. This definition was also foundational to the association of EE with human-environmental relations, that is, the interrelatedness among man and his biophysical surroundings.

UNESCO-UNEP (1976) stated that EE should:

- consider the environment in its totality natural, man-made ecological, political, economic, technological, social, legislative, cultural, and aesthetic.
- be a continuous lifelong process, both in-school and out-of-school.
- be interdisciplinary in approach.
- emphasize active participation in preventing and solving environmental problems.
- examination of major environmental issues from a world point of view, while paying due regard to regional differences.
- focus on current and future environmental situations.
- examine all development and growth from an environmental perspective.
- promote the value and necessity of local, national, and international cooperation in the solution of environmental problems (p. 2).

Environmental education according to UNESCO (2005), should not be borrowed from another place, or implemented from non-specific, placeless instruction.

2.2.1 Terminological Debates

The field of EE can be compared to a thriving, robust tree with the tree's many branches representing the diversity and variety of the field (McCrea, 2006). Many EE approaches or currents (Sauvé, 2005) are driven by specific definitions, emphases, methodologies, diverse theories, and practices (Cutter & Smith, 2001; Disinger, 1985; Scott, 1999). Each approach involves an ideology regarding the ways to define and practice EE. As such, ideologies selected by stakeholders determine what approach or current EE may take. Stakeholders, defined as different groups and/ or disciplines that inform EE, play a crucial role in regulating concepts, aims, methodologies and terms of EE. These transitions, however, are rarely clear. In most cases, prominent events, policy documents and scholarly works set milestones and definitions for the field. For instance, international policies and scholarly works have driven shifts in contemporary education (Scott, 1999). Lucas (1979) coined the phrases, *in, for,* and *about* the environment. In the 1970s EE was concerned with educating *about* the environment. Educating *about* the environment was concerned with knowledge. By the 1980s, the focus had shifted to experiencing environments and education *in* the environment. Education *in* the environment is

a pedagogical approach that refers to education outside the classroom (Tilbury et al., 2005). The mid 1980s saw another shift which established the emergence of action-oriented objectives in EE plans and programs. The term 'education *for* the environment' was associated with this shift. By the late 1990s and into the 2000s the focus again shifted and this time it was towards the sustainability agenda. This saw a move away from single actions of recycling and tree planting towards student participation in decision making. Such an approach to sustainability is crucial to incorporating change although James (2006) has indicated that statements related to EE, education for sustainability (EfS) and ESD still generally originate from environmental agencies like United Educational Scientific and Cultural Organization (UNESCO) and UNEP rather than education departments, thus reinforcing the political priority over the educational priority. Figure 1 describes the evolution of approaches to EE:
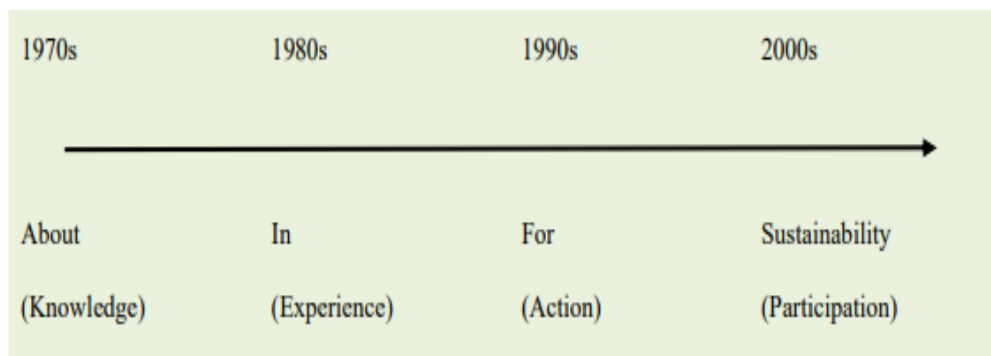
Figure 1: Evolution of approaches to environmental education (Lucas, 1979; Tilbury et al., 2005, p. 26).

These terms are still commonly used to describe the different approaches to EE programs; however, Lucas (1979) argues that EE could be any one of, or a merger of, all three. Linke (1980) argues that pedagogical approaches and basic educational activities are in fact components of EE but are not in themselves EE. His argument is that since the Belgrade Charter of 1975, three fundamental components of EE have emerged: (a) advancing a deeper understanding of the complex and dynamic interrelationships between people and the physical, social, and biological environment, (b) improving and maintaining quality of human life through conservation of the environment, and (c) stressing positive, individual, and collective action as a means of demonstrating this concern (Linke, 1980). He argues that EE is "all three of these things; it is, in its own right, any one of them" (Linke, 1980, p. 20).

Apart from the different orientations to EE, the existence of different terminologies used in and by international policy reflect a lack of unity around the naming of the field. The term EE is not universally agreed upon. As such, apart from EE, other terms like 'ecological

education', 'conservation education' and more recently 'sustainability education' or 'education for sustainable development' 'education for sustainability' have been proposed and/or adopted. Although there are many technical differences between these domains (Harris & Mische, 2004), their philosophical and ideological bases are similar. EE, increasingly referred to as ESD (Öllerer, 2015), is often used interchangeably with ESD and EfS. According to UNESCO (2006), sustainability education, ESD, and EfS may be used "synonymously and interchangeably" (p. 9). The use of the three terms illustrates that although there may be a general understanding that these terms refer to education that is about, through and for the environment, they all can and do mean so much more depending on how they are being used and by whom. There are, however, significant analyses and debates that have permeated the literature regarding which terminology should be used (Chapman, 2007; Fien, 2000; Fien & Tilbury, 1996; Hesselink, et al., 2000; Huckle, 1991; Jickling, 1992, 2001, 2006; Jickling & Spork, 1998; Jickling & Wals, 2008; Kopnina, 2014; McKeown & Hopkins, 2003; Sterling, 1996). Key stakeholders in the field continue to struggle with this issue for which there is no concensus or clarity (McKeown & Hopkins, 2003). SD as a concept is, in particular, "imprecisely defined, and socially and culturally contested (Kopnina, 2014, p. 79).

The various views of EE/ ESD relationship have been summarised by Eilam and Trop (2011) in the following diagram and explanation (see Figure 2).
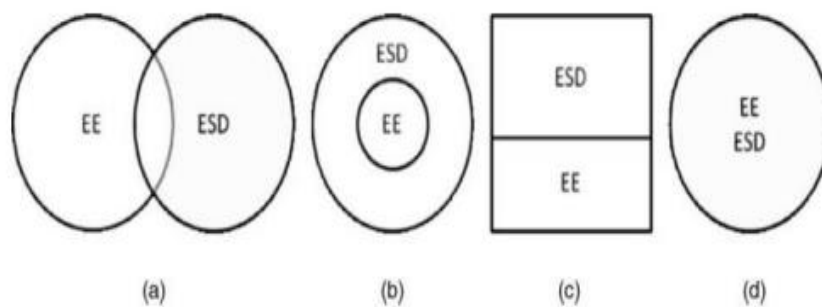
*Figure 2:*Representation of the relationships between environmental education and education for sustainable development (Eilam & Trop, 2011, p. 44)

They identify four major connections between EE and ESD considering them as: (i) distinct fields of education with some similarities; (ii) ESD […] as a field that subsumed EE and increased its scope; (iii) "as two separate fields, where environment education comprises the foundation of education for sustainable development, yet, the latter has evolved as an

educational practise on its own"; and (iv) as a complete overlap between the EE and ESD (p. 44). Sauve (2005) identifies ESD as one of the fifteen currents within the broader fields of EE.

Table 1: The fifteen currents in environmental education (Sauve, 2005, p. 13)

Among those currents with a longer tradition in EE	Among those currents more recently emerged in EE
Naturalist current	Holistic current
Conservation/ resourcist current	Bioreginist current
Problem-solving current	Praxic current
Systemic current	Socially critical current
Scientific current	Feminist current
Humanist/ mesological current	Ethnographic current
Value centred current	Eco-education current
	Sustainable Development/ sustainability current

Each of these currents conceives of the environment and education differently (Sauve, 2005). Another currrent can be regarded as that of climate change (Bowers, & Chaves, 2019; Jorgenson et al., 2019; Monroe, et al., 2013; Monroe et al., 2019; Shepardson et al., 2011). Hart (2008) wryly notes that the

> uneasy tension that was evident in the intial juxtaposition of EE and education for SD has abated somewhat as exhaustion in trying to fix their meanings sets in (p. 31)

In spite of the variation in terminologies, UNESCO (2006) advises that in efforts concerning sustainable development, the title and content "must be locally relevant and culturally approariate" (p.9). These multiple "tensions and contradictions in perspectives" (Hart, 2009, p. 29) stress the need for educators, learners, and the broader community to analyse and explore their own thoughts about the debate. Locally framed approaches to EE reinforce the relevance and authenticity of EE and assure adequate consideration of local "environmental, social, and economic conditions and goals for their communities, regions and nations" (UNESCO, 2005, p. 15).

2.2.2 International Policies and the Development of Formal Environmental Education

In an effort to advance the implementation of EE, strong impetus, support, and policy frameworks have been put forth by the UN (UN) and its subsidiaries like the UNESCO and UNEP. These international policies, concerned with environmental protection and governance and efforts with different practices, are materializing around the world (Gruenewald, 2004; Ideland, 2016, 2019). Environmental education has emerged from these international events, declarations and policies. Environmental education is "a vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future" (UNESCO, 2004, p. 1). Its core purpose is to foster a critical reflection on human/ non-human relations as well as encouraging a healthy relationship bewteen them while working towards environmental and social justice (Breiting et al., 2009; Breunig, 2014). It has been argued that EE has two fundamental goals: to transmit scientific knowledge to the public (Castillo et al., 2002; Carter & Simmons, 2010; Disinger, 1985; Stapp, et al., 1969; Öllerer, 2015) and to change their behaviour and attitudes (Carter & Simmons, 2010; Corraliza & Berenguer, 2000; Disinger, 1985; Ferreira, 2007; Pooley & O'Connor, 2000; Stapp, et al., 1969; Vaske & Kobrin, 2001) in order to create environmentally friendly citizens. The assumption is that when scientific knowledge is imparted, individuals will be empowered (Ferreira, 2007) to transform their behaviour and attitudes towards the environment. This change in behaviour will create environmental citizens with the competence (Ideland, 2016) to transform society towards sustainability (Commission on Sustainable Development, 2001). Historically, EE was perceived as a study of the environment or nature. However, growing global awareness of escalating environmental changes and the threats these changes posed to continued human existence, saw a new view evolve (UNESCO-UNEP, 1995) which "instigated a paradigm shift away from predominantly natural science framework for the interpretation of problems and solutions" (Tilbury, 1994, p. 2). To this extent, EE emerged with a distinctive name (Gough, 1997).

It is, therefore, important to review the process by which EE has come to be part of the formal education lexicon. Formal education is "usually institutionalised in schools and colleges" and is "highly structured, based on different stages, has extremely determined outcomes, and leads to certification (Bates & Lewis, 2009, p. 112). Formal EE learning takes place in schools and higher learning institutions with specific curricula. Contemporary EE in many countries is "not a discrete subject in its own right" but rather integrated into other subject areas (Taylor et al., 2009, p. 319) and it is this integrated approach that is adopted in many

countries (Taylor et al., 2009). In some countries, however, EE is offered as an optional or voluntary activity (Manolas, 2009, p. 94). In delivering formal EE in schools, most countries adopt a system that integrates, embeds, or infuses EE in all subjects (Bolstad et al., 2006; Calik, 2009; Platje & Slodczyk, 2009; Taylor et al., 2009). In HEd, most universities offer specific environment-related courses and programmes.

International foundations of environmental education

Contemporary EE consists of a multitude of policy frameworks, strands and approaches, practices of education, and intellectual models all representing the field debates (Lahnstein & Peñaloza, 2022). Scholars have recognised the important role played by international organisations (IOs) in making and influencing global EE policy, as well as reshaping the networks and structures of EE at all levels of education (Henry et al., 2001; Rizvi & Lingard, 2010; Shahjahan,2012, 2016; Vaira, 2004). Since the 1970s, IOs such as the UN, through UNESCO and UNEP, have not only increased their activities and scope (Shahjahan, 2016), but have also shaped the public image of EE (Hart, 2008). International organisations have played a crucial role in the global flow of new ideas and institutional imperatives about EE, and are complex centres of policy communities (Shahjahan, 2012, 2016). Consequently, EE has been formally addressed and outlined in international policy forums, conferences, and other legislations across the globe (Dillon, 2014; Gough A, 2013). Table 2 below is a list of international events, declarations and policies that have played a role in shaping EE.

Table 2: Major international events, strategies, declarations, reports, goals, agendas, and frameworks that supported the growth environmental education, education for sustainability and education for sustainable development (adapted from Calder & Clugstone, 2003; Cutter-Mackenzie & Smith, 2003; Wright, 2004).

Year	Place	Event	Document	Key contributions/ themes
1972	Stockholm, Sweden	The UN Conference on Human Environment, Stockholm, Sweden	The International EE Program (1975)	First intergovernmental meeting to address environmental issues and recommend EE programmes. International integration of the word "biosphere" to the terminology of the field.
1975	Belgrade, Yugoslavia	The Belgrade Conference on EE	The Belgrade Charter: A Global Framework for EE	Global agreements on goals and application of EE whilst intertwined with social development. First time EE definitions are free of sexist language (Gough, 2013, p. 16)
1977	Tbilisi, Georgia, USSR	Intergovernmental Conference on EE	Tbilisi Declaration	Reoriented EE to knowledge, aptitude, attitude, skills, and determination to act. Focus on environmental problems and

Year	Place	Event	Document	Key contributions/ themes
				working on solutions. Advocated for EE to be integrated into whole system of formal education, at all levels.
1980		The International Union of Conservation of Nature, Natural Resources, The UN Environment Programme and World Conservation Foundation		World Conservation Strategy
1982	New York, USA	General Assembly, 48th plenary meeting	World Charter for Nature	It offered general principles, functions, and implementation strategies for the conservation of nature.
1987	Moscow, USSR	International Congress on EE and Training	International Strategy for Action in the Field of EE and Training for the 1990s	Promoted EE as a life-long learning process and suggested education in EE for teachers.
1987	Oxford, UK	900-day International exercise in search for a SDpath	Our Common Future (Brundtland Report)	The UN's World Commission on Environmental and Development set a conceptual landmark for SD(SD) and interdisciplinary EE.
1992	Toronto, Canada	The Toronto World Congress for Education and Communication on Environment and Development		
1992	Rio de Janeiro, Brazil	The UN International Conference on Environment and Development, (Earth Summit)	Agenda 21, the Rio Declaration on Environment and Development,	Chapter 36 of Agenda 21 accentuated the importance of education, public awareness, and training, for EE and ESD.
1996	Paris, France	International Commission on Education for the 21st Century	Final Report	Re-affirmed the fundamental role education has in personal and social development.
1997	Thessaloniki, Greece	The UN International Conference on Environment and Society	Final Report, Thessaloniki Declaration	Called for reorienting education to include sustainability. All subjects must include issues of sustainability; a greater emphasis on interdisciplinary education.
2000		Millennium Summit of the UN	Millennium Development Goals	
2002	Johannesburg, South Africa	UN World Summit on Sustainable Development	Plan of Implementation of the World Summit on Sustainable Development	Addressed eradication of poverty, changing consumption/production patterns, natural resources basis, sustainable development, and the need for public awareness achieved through education.

Year	Place	Event	Document	Key contributions/ themes
2004	Paris, France	UN's Decade of Education for SD(DESD)	DESD (2005-2014) International Implementation Scheme	Implemented a decade of international engagement for learning values, behaviour, and lifestyles towards SD. EE loses emphasis in DESD.
2007	Ahmedabad, India	4th International Conference on EE	The Ahmedabad Declaration 2007: A Call to Action	Focused on encouraging sustainable lifestyles embedded in ecological integrity, economic and social justice, and respect for life on earth. EE ought to advocate for education for SD(ESD).
2009	Bonn, Germany	UNESCO World Conference for Education for Sustainable Development	The Bonn Declaration	Lifelong learning and formal education are reaffirmed as ways to achieve more sustainable lifestyles.
2009	Montreal, Canada	5th World EE Congress	Congress report "Earth Our Common Home"	International discussions in the "Earth our common home" reconsidered the role of EE.
2014	New York, USA	The 2010 UN Summit	The Millennium Goals Report	Targeted to reducing poverty and unsustainable lifestyles. Environmental sustainability is still recognised as a pressing issue.
2014	Aichi-Nagoya, Japan	UNESCO World Conference on Education for Sustainable Development	Aichi-Nagoya Declaration on Education for Sustainable Development	
2015	New York, USA	UN Sustainable Development Summit	Transforming Our World: The 2030 Agenda for Sustainable Development (17 Sustainable Development Goals)	
2015	Incheon, Republic of Korea	World Education Forum- Equitable and Inclusive Quality Education and Lifelong Learning for all by 2030	Education 2030: Incheon Declaration and Framework for Action for the Implementation of SDG 4 (2016)	
2016	Paris, France	Education Transforms Lives		

Year	Place	Event	Document	Key contributions/ themes
2021	Virtual, Berlin, Germany		Berlin Declaration on Education for Sustainable Development (EE must be a core curriculum component by 2025)	

These various international declarations, agendas, and meetings stress the importance of EE and ESD (UNESCO, 1972, 1978, 1997, 2002, 2005a, 2005b; 2005c, 2008, 2009, 2010, 2014; UN, 1992, 2015; UNESCO-UNEP,1976, 1978, 1987, 1990, 2007, 2012). The UN Conference on the Human Environment (UNCHE) recognised EE as "one of the most critical elements of an all-out attack on the world's environment crisis (UNESCO-UNEP, 1976, p. 2). The Belgrade Charter stressed the need for a "new global ethic, an ethic which espouses attitudes for individuals and societies which are consonant with humanity's place within the biosphere" (p. 1). After the Belgrade Charter, various other conferences, reports, summits, strategies, programs, declarations and initiatives have continued to emphasise the important role of education in fostering a transition towards environmental awareness and sustainability (see Table 1) (Gough, 2006; Steven et al., 2014).

Higher education has also been recognised as crucial to fostering sustainability, and numerous meetings, and declarations have sought to steer HEd towards fostering sustainability (see Table 3 below).

Table 3: International declarations on sustainability in higher education (Tilbury, 2011, p. 20)

Year	Declaration/Charter	Partners	Key words
1990	Talloires Declaration	University Leaders for a Sustainable Future	Education, research, policy, information exchange, and reverse the trends
1991	Halifax Declaration	Consortium of Canadian Institutions, IAU; UNU	Responsibility to shape their present and future development, ethical obligation; overcome root causes.
1993	Kyoto University	IAU	Better communication of what and why of ESD; teaching and research capacity; operations to reflect best SD practice
1993	Swansea Declaration	Association of Australian Government Universities	Education, research, and public service roles, major attitudinal and policy changes
2001	Luneburg Declaration	Global Higher Education for Sustainability Partnership	Indispensable role; catalyst for SD building a learning society; generate new knowledge to train leaders and teachers of tomorrow; disseminate SD knowledge; state of the art knowledge; continually

Year	Declaration/Charter	Partners	Key words
			review and update curricula; serve teachers; lifelong learners
2002	Ubuntu Declaration	UNU, UNESCO, IAU, Third World Academy of Sciences and the Science Council of Asia, Copernicus Campus, Global Higher Education for Sustainability Partnership and University Leaders for Sustainable Future	Called for the creation of a global learning environment in SD; to produce an action oriented toolkit for universities designed to move from commitment to action; to indicate strategies for taking SD; to suggest strategies for reform, especially in areas such as teaching, research, operation, and outreach; and to make an inventory of best practice and case studies.
2004	Graz Declarations on commiting universities to sustainable development, Austria	Copernicus Campus, Karl Franzen University Graz, Technical University Graz, Oikos International, UNESCO	called on universities to give status to SD in their strategies and activities; called for universities to use SD as a framework for the enhancement of a social dimension of higher education
2008	Sapporo Sustainability Declaration	G8 University Network	universities to work closely with policy makers; universities leadership role in becoming critical; disseminating information; training leaders; interdisciplinary perspective
2009	World Conference on Higher Education	UNESCO	Advance understanding of multifaceted issues and our ability to respond; increase interdiscplinary focus; promote critical thinking, active citizenship, peace, well being, human rights; contribute to education of committed ethical citizens
2009	Turin Declaration on Education and Research for Sustainable Development, Italy	G8 University Network	Called for new models of social and economic development consistent with sustainability principles; ethical approaches to SD; new approaches to energy policy; focus on sustainable ecosystems.

Tables 2 and 3 show that international policy documents play a crucial role in the development of EE around the world (Cutter-Mackenzie-Knowles, et al., 2019) and provide guidance and support for countries, governments and teachers to address environmental concerns. Not all researchers regard UNESCO declarations as able to inspire a global EE movement. Some, like Stevenson (2007), observe that they fail to inspire adequate "support resources" to achieve meaningful and enduring changes within education. Nevertheless, after considerable critique of the usefulness of declarations, Lotz-Sisitka (2009) concludes that they are important because they constitute "political 'mobilisation tool[s]' that encourage governments to embrace sustainability focused" objectives (p. 208).

As a result of these declarations, an increasing number of HEIs have incorporated and institutionalised SD into their systems (Boks & Diehl, 2006; Lozano, 2006, 2010; Wemmenhove & de Groot, 2001). Documents like the Talloires Declaration (University

Leaders For a Sustainable Future [ULSF], 1994) indicate how early the HEd sector responded to challenges arising from environmental problems. This early phase was characterised by relatively independent efforts to integrate sustainability into the organization's operations (Delakowitz & Hoffmann, 2000; Ferrer-Balas, 2004) while the latter was about including sustainability in the curriculum (Barth, 2013; Lidgran et al., 2006; Lozano, 2010).

The documents outlined in Tables 2 and 3 have greatly contributed to a global acknowledgement of the importance of education, and particularly HEd, to solving environmental and social challenges (Cutter & Smith, 2001; Landorf et al., 2008; Sauvé et al. 2008). However, many studies have shown that signing declarations does not necessarily lead to the implementation of the declarations' principles of sustainability and that universities have either found themselves unable to implement the principles or have not made efforts towards their implementation (Alshuwaikhat & Abubakar, 2008; Bekessy et al., 2007; Clugston & Calder, 1999; Grindsted, 2011; Grindsted & Holm, 2012; Lidgren, et al., 2006; Wright, 2002):

> it is widely known that the adoption of sustainability declarations […] does not necessarily translate into the implementation of their basic commitments" (Bekessy et al., 2007, p. 30).

However, despite implementation difficulties, the declarations have influenced HEIs' decision-making in many ways (Clarke & Kouri, 2009; Grindsted, 2011; Wright, 2004) for example, by linking learning, innovation and competitiveness to SD (Tilbury, 2004).

Where there has been implementation, there have been criticisms and concerns pertaining to their 'dominating presence'. For instance, scholars have engaged in the well-founded critique of UNESCO's dominating presence in the 'politicizing' of the field (Cutter-Mackenzie-Knowles et al., 2019, p. 952). Other scholars have charged IOs' EE initiatives within client countries with neo-colonial domination, suggesting that IOs reproduce client dependencies, limit local decision-making by favouring one size fit all solutions, methodologies, and approaches based on neoliberal and Western knowledges (Aboites, 2010; Anwaruddin, 2014; Collins, 2011; Collins & Rhoads, 2010; Shahjahan, 2016). Particularly, there have been widespread concerns that centre around the increasing influence of neoliberal Western knowledges and knowing subjectivity (Cutter-Mackenzie-Knowles et al., 2019; Derby et al., 2015; Hursh et al., 2015; Kopnina, 2015; Tulloch, 2016) which tend to prioritise economic goals and human needs above environmental concerns (Kopnina, 2014) and a culturally specific environmental subjectivity (Ideland, 2019; Ideland & Malmberg, 2014).

Tulloch (2016) accuses the UN of promoting a "homogenization of environmental thought based on […] neoliberal logic" (p. 192).

The neoliberal influence is manifested in the transition from EE towards ESD. Worthy of note is that Western influence affects not only international and national policy, discourse, and environmental curriculum, but also permeates humans' understanding and engagement with the world (Derby et al., 2015; Newell, 2008; Robertson M., 2007). Awareness of this strengthens the need to actively critique and challenge hegemonic Western influences in the field of EE and in people's lives. Kopnina (2014) accuses UNESCO documents of enabling the capturing of EE by an economic worldview, particularly through the 'anthropocentric bias' that is endemic throughout Agenda 21. In the same vein, Hursh et al. (2015) identify neoliberalism's harmful, and in most cases invisible, effects on the conceptualisation and implementation of EE especially "what is and is not (dreamed or deemed) possible in and as EE" (p. 313). Such neoliberal influences result in an approach to environmental concerns that are "soft-green managerialist/ technological" (Tulloch, 2016, p. 170) or, in short, anthropocentric and harmful to environmental goals.

Other criticisms of IOs and their environmental policies have been centred on their ability to perpetuate colonial control through cultural norms that limit countries and their local communities in setting their own EE policies and programs (Harvey, 2005; McCarthy & Prudham, 2004). It has been argued that underpinning the "good governance" in EE policies lies an insidious teleology that places the West at the top of the hierarchy (Gruffydd Jones, 2013) obscuring or ignoring colonial histories and power dynamics (Gadgil & Guha, 1992). In their assessment of IOs in EE policy, Collins and Rhoads (2010) found that IOs contributed to modern imperialism. Likewise Anwaruddin's (2014) analysis of IOs' educational initiatives suggested that IOs such as the World Bank create and disseminate Western ways of knowing that justify their interventions on the educational policies and priorities in the Global South. Stapleton (2020) adds that all experiences in nature and conceptions of the environment in various ways are always culturally mediated. For instance, international policies advocate for environmental habits, and being 'green', and that these terms are associated with 'white people culture' (Stapleton, 2020). This being the case, it is through IOs and their policy declarations that culturally specific trends, social issues and societal divisions and tensions permeate EE (Stapleton, 2020).

The focus on Northern environmental issues raises ethical concerns about exclusions, responsibilities, who contributes to and who is negatively impacted by global policies on

education. To address this, UNESCO (2014) has explored the need to revisit assumptions, worldviews and power relations in mainstream discourses and consider people/ groups that are systematically represented/ marginalised" (p. 16). Another problematic orientation concerns the way EE tends to reproduce systems of power where 'we' in the Global North can learn about and solve the problems of 'them' in the Global South (Ideland, 2016; Pashby & Sund, 2020). Researchers like Wals (2009) and Sund and Öhman (2014) have critiqued mainstream approaches to EE for their overreliance on universalising approaches. They suggest that contemporary EE is Western(ised) and promotes change largely through behaviour modification; as such, it disregards systemic issues (Jickling & Wals, 2008; Van Poeck & Vandenabeele, 2012) such as race and/or epistemic (in)justice. Matthews (2011) and Blekinsop et al. (2017) note a lack of attention to the interdependence of globalization, post-colonialism, and environmental matters, and the perpetuation of western epistemologies at the expense of non-western and Indigenous worldviews in EE. Scholars writing critically about EE argue that superficial approaches to teaching about global environmental issues step over ethical issues and reinforce colonial systems of power in materials and approaches offered to learners (de Oliviera Andreotti, 2011; Martin, 2011; Pashby, 2012; Schultz, & Pillay, 2018).

2.2.3 Recognising Indigenous Knowledges, Histories, and Cultures

Prior to colonisation, many African indigenous communities consisted of several hundred diverse African ethnic groups, each with its own linguistic, legal, political, and cultural tradition. These groups had highly effective knowledges and practices in place that sustained human and non-human relations (Bishop et al., 2021). These relations were different from modern Western relationships to non-humans. Dodson (1996) explains the difference:

> there is another dimension that invests the land with meaning and significance- that transforms the land and environment into landscape, and into 'country'. That other dimension is culture (cited in Stocker et al., 2016, p. 845).

It is thus important to recognise the presence of indigenous environmental knowledges and their potential contribution to EE (Abram, 1996; Cruikshank, 2012, Martin, 2007) as colonisation has had deep and far-reaching impacts on indigenous people and their systems of relationships. In Africa, EE was, until colonisation, a social affair that was determined by the socio-environmental needs of communities. However, in modern times, there is a widespread tendency to ignore the fact that indigenous communities practiced environmentalism long before they were colonised (Masemula, 2015). The lack of recognition of this fact is evidence to the long-established discrimination, marginalisation and colonisation of Indigenous peoples

and their localities (Berkes, 2009; Bishop et al., 2021; Eames & Cutter-Mackenzie, 2017). Indigenous cultures have long possessed complex understandings of human relationships to nature (Ritchie, 2012), especially their place "as cohabitants of a shared realm" (p. 86). These understandings were embedded in their knowledges. Indigenous knowledge can be understood as the:

> cummulative body of knowledge, know-how, practices and representations maintained and developed by peoples with extended histories of interaction with the natural environment (Nakata et al., 2014, p. 1; Perasecoli, 2017, p. 181).

Mohamedbhai (2013) observes that

> there is a rich body of Indigenous knowledge embodied in Africa's culture and ecological diversity and African people have drawn on this knowledge for hundreds of years to solve specific developmental and environmental problems.

Indigenous knowledge is described in many different ways. Table 4 below provides an overview of the different terminologies used in various studies.

Table 4: Alternative terms to describing indigenous knowledge

Alternative terms	Literature
Aboriginal science	Aikenhead, 2006; Zidney et al., 2020
Native science	Cajete, 2000; Zidney et al., 2020
Ethnoscience	Abonyi 2002; Jessen et al., 2022; Hardesty 1977; Sturtevant 1964; Zidney et al., 2020'
Traditional (native) knowledge	Stephens, 2000; Zidney et al., 2020
Māori science	McKinley, 1996; Zidney et al., 2020
Traditional Ecological Knowledge	Snively & Corsiglia 2000; Kimmerer 2012; van Lopik 2012; Hamlin 2013; Sumida Huaman 2016; Bermudez et al. 2017; Kim et al. 2017; Zidney et al., 2020
Yupiaq science	Kawagley, 1995; Zidney et al., 2020
Traditional wisdom	George, 1999; Zidney et al., 2020
Indigenous science	Aikenhead & Ogawa, 2007; Ogawa, 1995; Snively & Corsiglia, 2000; Zidney et al., 2020

Rather than focusing on the content of indigenous knowledge and the science/ indigenous knowledge debates, Berkes (2009) insists that efforts should be towards examining indigenous knowledge as a process as well as reframing "science and traditional knowledge dialogue and partnership" (p. 151). Table 5 details the holistic nature of indigenous knowledges and how indigenous people come to know and interact with their environment.

Table 5: The holistic nature of indigenous environmental knowledge (adapted from Zidney et al., 2020).

Theme	Indigenous knowledge	Common ground
Organizing principles	o Holistic. o Includes physical and metaphysical worldviews linked to moral codes. o Emphasises practical application of skills and knowledge.	o Universe is unified o Body of knowledge is stable but subject to modification
Habits of mind	o Trust for inherited wisdom o Respect for all things	o Honesty, inquisitiveness o Perseverance o Open-mindedness
Skills and procedures	o Practical experimentation o Qualitative oral record o Local verification o Communication of metaphors and stories connected to life, values, and proper behaviour	o Empirical observation in natural settings o Pattern recognition o Verification through repetition o Inference and prediction
Knowledge	o Integrated and applied to daily living and traditional subsistence practices	o Plant and animal behaviour, cycles, habitat needs, interdependence o Properties of objects and materials o Position and motion of objects o Cycles and changes in earth and sky

Recognising EE's complex, layered and rich origins is an active attempt to unsettle the curriculum knowledge-making-process by acknowledging the effects of different cultural and social factors on which individuals' thoughts and actions depend (Reid, 2009) on. It is important that policy makers and lecturers unsettle the marginalisation and obliteration of "traditional knowledges and the histories and stories that contain them" (Ritchie, 2012, p. 88) and actively seek to integrate indigenous knowledges within the curriculum. When EE

integrates multiple forms of knowledge, learning becomes contextually relevant and enhanced (O'Donoghue & Russo, 2004).

Studies focusing on sustainability science and indigenous knowledge (Chandra 2014; Hamlin 2013; Kimmerer 2012; Sumida Huaman, 2016; van Lopik, 2012) found that indigenous knowledges offered rich contexts that had the potential to contribute to understanding the relationship between environmental, sociocultural, and spiritual elements of life and nature (Aikenhead, 2001). Unfortunately, however, possible conflicts may arise when students take information from one knowledge system and place it into another (Aikenhead, 2001). The barriers preventing Indigenous knowledges from co-existing in sustainability science curricula include limitations of time and corresponding learning materials, prescribed curricula, the selection of appropriate pedagogies, and teachers' doubts in conveying topics containing spiritual aspects into science (Snively & Williams, 2016).

The following section discusses the relationship between EE and the university curriculum, paying particular attention to the integration of EE and sustainability.

2.3 ENVIRONMENTAL EDUCATION AND THE CURRICULUM

The curriculum is considered essential to decision making processes in and for achieving sustainability in HEd (Barnett et al., 2001; Drake, 1998; Karmasin & Voci, 2021; Lattuca & Starks, 2009) and there is a complex relationship between curriculum and EE (Gough & Scott, 2001). This is because:

o in many countries government policy on both is to some extent intertwined and some organisations and individual practioners are explicitly concerned with both.

o both are subject to fundamental intellectual challenge at a conceptual level.

o practioners in each field have been influenced by a number of similar ideas relating to uncertainty and change.

o practitioners continue to grapple, from their different perspectives, with the problem of whether thought and appropriate action should properly be based on technical or practical considerations (Gough & Scott, 2001, p. 137).

This complexity makes the curriculum the weakest area of systematic improvement in HEd (Bartlett et al., 2020). Despite the impetus to address EE in higher education through curricula, both curriculum and EE are "insecure as *concepts* in theoretical terms" (Gough & Scott, 2001, p. 137). Curriculum is described by Hlebowitsh (1999) as "a field now largely in

schism" (p. 350). Westbury (1999) adds that "the contemporary field of curriculum studies has little, if any coherence" (p. 355) and Fraser and Bosanquet's (2006) study of how staff approached curriculum reform and development found that staff were influenced by varied and disparate meanings.

Definitions of curriculum that stand out are provided by UNESCO (2010) where the curriculum is understood as "the sum of all the formal and informal teaching and learning experiences in educational courses and discourses". EE curriculum according to Palmer (1998) is the total of all experiences that learners undertake to help them develop environmental literacy, problem solving skills, decision making, and active participation in taking action towards the environment while taking into consideration the political, ecological and economic aspects. This definition engenders aspects of planning for instruction which shows what learners need to know in EE, how the learners are to achieve the prescribed goals, what educators need to do to help learners gain the required knowledge, and the context in which teaching and learning takes place. For Makrakis and Kostoulos- Makrakis (2012), however, the curriculum is:

> not simply a set of plans to be implemented, but rather is constituted through an active process in which planning, acting, and evaluating are all reciprocally related and integrated into the process (p. 12).

In this definition, curriculum transcends planning to include implementation and evaluation. More commonly, the curriculum is perceived as an educational project that is developed in a particular historical, social and political context and has the ability to form identities (Karmasin & Voci, 2021). Curriculum planning and design are crucial areas in sustainability efforts. Efforts towards a green curriculum should be the result of solid decisions and attempts by academics to transform the way in which undergraduate students think and work (De Ciurana & Leal Filho, 2006). The environmental and sustainability infused curriculum embodies the totality of the learning experience of students in the teaching process. This includes content, principles and pedagogic approaches, implicit and explicit norms, and values inherent in sustainability learning and teaching processes. It is argued that sustainability curriculum design process should be rooted on ecological principles (Burns, 2011).

The following section is concerned with the components of EE and the inclusion of environmental and sustainability in the university curriculum.

2.3.1 Components of Environmental Education in the Curriculum

There are different ways of understanding and designing the curriculum for HEd EE. As the curriculum can denote a plan for learning, the main components of the curriculum are the rationale, aims and objectives, the content, learning activities, the teacher's role, teaching and learning resources, time, and assessment (Akker, 2003). There are other ways of looking at what constitutes a curriculum, and EE scholars have suggested different approaches. A commonly acknowledged effective approach is one which is holistic and engages with the whole university curriculum (Palmer & Neal, 1994; Smyth, 2006; Tilbury, 1995; UNESCO, 1977). However, all HEIs need to consider three interlinked dimensions of EE. These interconnected components are crucial components of EE planning at all levels (Palmer, 1998). Figure 3 below depicts a model of curriculum design showing how interconnected components of EE can be used in designing the curriculum for EE.
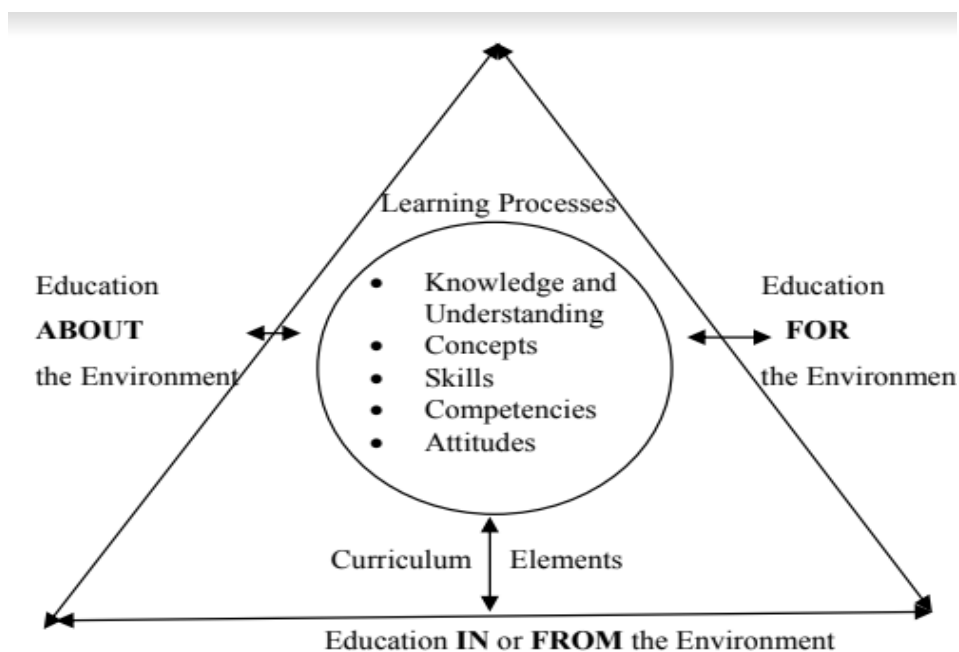
Figure 3: Interconnected components of planning of environmental education (adapted from Palmer, 1998, p. 144).

Figure 3 shows that central elements to be addressed in EE are knowledge and understanding, concepts, skills, competencies, and attitudes. Environmental education curriculum can address this process through a variety of learning processes which include

teaching and learning activities and the role of the lecturers. The three components of EE can be connected to the technical, practical, and critical curriculum models discussed by Carr and Kemis (1986) and Stevenson (1993). In the technical model, the emphasis is on knowledge, skills, and attitudes and, as such, is oriented towards the aspect of education about the environment. The main curriculum concern in this model is subject content (Robottom & Hart, 1993; Tilbury, 1994) and it is this model that is widely used in EE around the world (Lee & William, 2001).

The practical or interpretive curriculum model assumes that the student is an active participant in constructing knowledge and meanings (Stevenson, 1993). Students develop meanings from experiences in the environment. As such, the lecturer's role is to organise experiences in the environment where students can be involved. Thus, when linking this to the different components of the environment, the emphasis in this curriculum model is education in or through the environment (Lee & William, 2001).

The critical curriculum model focuses on the component of education for the environment (Lee & William, 2001). In this model, the students are encouraged to construct knowledge, critically on their experiences and actions, while taking into consideration the political, economic, and cultural aspects of society. The aim for this model is to empower the individual and community. Although discussed separately, all these components need to be taken into consideration simultaneously if EE is to be meaningful, and it can address education about, in, and for the environment (Fien, 1993; Palmer, 1998).

2.3.2 Approaches to Including Environmental Education into the Curriculum

There is an urgency to the need to integrate EE and sustainability within HEd curricula, including, but not limited to, the importance of responding in a timely manner to the global challenges of poverty, loss of biodiversity, climate change and deforestation. The integration of sustainability is a crucial part of achieving the integration of EE in HEd (Anand et al., 2016). The integration processes of EE and sustainability in the curricula are defined as:

> the development and implementation of new approaches to teaching and learning (courses, programs and certificates) in the paradigm of education for sustainable development, and at the same time, acknowledgment of sustainability as a cross-cutting theme within existing curricula (Barth, 2015, p. 47).

The integration of EE and sustainability into the curriculum helps to foster sustainability in education (Anand et al., 2016). An important part of integrating EE and

sustainability into the curriculum is the provision of sustainability tools to students as well as exposing them to the methods, knowledges, values and attitudes that can be used to implement sustainability in real-life scenarios. In HEd, environmental and sustainability education can be integrated at the micro level through teaching and learning in courses (Roy, et al., 2020) and at the macro level through programs and curricula (Acevedo-Osorio et al., 2020; Weiss et al., 2021; Yarime, et al., 2012). Although case studies have provided insights into how integration can be successful, exactly how EE and sustainability curricula are developed and how institutionalisation occurs remain unclear (Weiss et al., 2021). As such, curriculum integration is a challenging goal to attain as it calls for changes in a curriculum (Anand et al., 2016; Venkataraman, 2009).

Higher education institutions are being challenged to incorporate EE and sustainability issues into their curricula and ensure that graduates have the right knowledge and competencies to overcome environmental sustainability challenges (Barth & Rieckmann, 2012; Fonseca et al., 2018; Shriberg, 2002; Watson et al., 2013). However, change has been little and slow (Boks & Diehl, 2006; Capdevilla et al., 2002; Thomas, 2004; Velasquez et al., 2005) with a few integrating and institutionalising EE and sustainability into university curricula (Cortese, 2003; Hill & Wang, 2018; Lozano, 2006; Lozano & Peattie, 2009; Thurer et al., 2018). Further, the current proficiency level of lecturers in terms of delivering effective curricula for addressing sustainability is still not at desired levels (Tejedor et al., 2018). For example, in their study, Graham et al. (2018) indicated that very few educational programs across North America had dedicated environmental and sustainability courses. Three levels of progress have been identified: (a) major progress in embedding environmental and sustainability concerns into undergraduate and postgraduate degrees; (b) some limited progress; and (c) relative difficulties in making credible and rigorous connections in courses and degrees, in spite of an interest in adopting the environmental and sustainability agenda (Thomas, 2004).

Studies propose that curricula assessment can offer university leaders a starting point and catalyse integration (Barth & Rieckmann, 2012; Lozano & Peattie, 2009; Watson et al., 2013) Assessments can highlight the courses and degrees that contribute to sustainability, as well as those where environmental and sustainability education could be better incorporated (Lozano, 2010; Lozano & Peattie, 2009).

Although the emphasis of environmental and sustainability education in HEd curricula has gained momentum (Wang et al., 2013), most HEIs' curricula have been based on disciplinary specialization and reductionist thinking (Cortese, 2003; Lovelock, 2007; Lozano,

2010) which have resulted in education that is unbalanced, overspecialised, and mono-disciplinary, as well as graduates who use their skill sets to solve problems by analysing systems' components in isolation (Lozano, 2010). Nevertheless, a number of approaches for overcoming this and incorporating sustainability into the curricula have been proposed, ranging from addressing a specific sustainability dimension to offering a specialised environmental sustainability degree (Lozano, 2010). There are various strategies which universities can use to incorporate environmental and sustainability education into the curriculum. Such strategies, Albareda-Tiana et al. (2018) argue, require a paradigm shift in education through the curriculum. As such, scholars distinguish between vertical and horizontal integration (Ceulemans & De Prins, 2010; Lambrechts et al., 2013) or disciplinary, interdisciplinary and transdisciplinary approaches (Barth, 2013). Environmental and sustainability education can be included into the university curriculum as an independent subject or as a cross curricula issue that permeates the whole university curriculum, thus integrated into existing courses or programmes; or it can be taught as a theme-significant socio-environmental issue and challenge. The following subsections discuss three approaches to integrating EE in the university curriculum.

Environmental education as a stand-alone subject

One approach to integrating EE in the university curriculum is to include it as a separate course or programme. This disciplinary approach (Barth, 2013) to organising the curriculum treats EE and sustainability as discrete components. Many countries around the world implement EE in this manner, Zambia included. When EE is granted the status of a subject, it has its own syllabus, teaching and learning materials, time allocated on the timetable and assessment procedures. It is taught like any other course or programme of the university.

There have been criticisms against establishing EE as a separate subject, course, or programme. It has been argued that EE is not a discipline with a body of knowledge and skills like other disciplines. Instead, it is a situation in which students may be involved to develop knowledge, skills, and attitudes towards the environment and an orientation that needs to permeate the whole curriculum (UNESCO, 1976, 1978). In practice, however, this is rarely the case. Environmental education has been taught as a new subject in the school syllabus and referred to as environmental studies or environmental science (Gough, 1997). So, while it is possible to include EE as an independent program or course in the university curriculum, critics argue that this may not achieve the intended results, and if the purpose of EE is to rethink the human-non-human relationship, this cannot be achieved through EE as a program (Gough

1997; Powers, 2004). In this view, considering EE as a discipline perpetuates and reinforces the nature-culture binary. The Tbilisi declaration agrees that:

> Environmental education should not be just one more subject to add to existing programs, but should be incorporated into programs intended for all learners, whatever their age (UNESCO, 1977, p. 20)

While EE is easier to teach and has its own identity when regarded as a separate discipline (Sterling, 2004), its focus is narrow and unrelated to other disciplines (Rusinko, 2010).

Integration of environmental education into other disciplines

Another approach to integrating environmental and sustainability content into university programmes is as a cross-curricula or interdisciplinary subject. This approach is referred to as correlated-subject design (Jackson, 1992) or multidisciplinarity (Klein, 1985) and/or a whole curriculum approach. When integrated into the curriculum in this way, it becomes the 'thread' that runs through the whole university curriculum. This a popular way of integrating EE so that a theme or topic is addressed through the lenses of different disciplines (Drake, 2004) and can draw content from the discipline specific content of each discipline. When implemented in this way, EE does not replace a specific discipline, rather, it is treated holistically through all areas of understanding and experiences (Tilbury, 1995).

The successful integration of EE into the university curriculum depends on certain conditions, the aims of education, and the socio-economic conditions of a specific country. Scholars argue that embedding EE into existing subjects helps learners to develop understandings, skills and attitudes that will enable them take an active and responsible role in protection and conservation of the environment. Arguing for the integration approach, Bolstad (2005) found the institutions of learning are likely to find space for EE if it can be associated with existing courses and programs in the curricula, rather than creating independent courses or programs. In the same vein, Capra (1997) argues that in addressing environmental sustainability issue, there is need to shift from parts to wholes. The argument is that for environmental and sustainability challenges to be fully understood, they must be addressed in an interdisciplinary context (Keiny, 1991).

The holistic approach is supported by scholars like Bolstad et al. (2004) and McClaren and Hammond (2005). One of their arguments is that this approach facilitates an exchange and

collaboration among different disciplines (McClaren & Hammond, 2005) and thus makes learning meaningful. It is also argued that the integration approach bridges the rhetoric-reality gap (Palmer, 1998). The rhetoric-reality gap is the difference between EE, which is theoretically advocated for, and EE that actually takes place in HEIs (Grace & Sharp, 2000). Further, integrating EE into existing courses or programs ensures that a large number of students, if not all, are exposed to EE. However, it is argued that despite this approach being good, it has a wide scope which demands a lot of time and resources (Rusinko, 2010) as well as skills on the part of educators.

Studies have shown that integrating EE into different programmes creates a number of challenges (Mappin & Johnson, 2005; Palmer, 1998). Students may fail to develop a clear understanding of what different disciplines or forms of knowledge contribute to the understanding of an environmental topic (Kadji, 2002; McClaren & Hammond, 2005). In addition, educators find it difficult to connect EE content with specific discipline content as there seems to be no clear formula for implementation. As such, many educators are not comfortable with teaching through integration (Drake, 2004).

Unfortunately, the integration of EE into courses and programmes may lower its status for both educators and students and also dilute it, especially in an assessment-oriented curriculum (Adedayo & Olawepo, 1997). Finally, the integration of EE into existing subjects may not be accorded adequate weight in various courses and programmes.

Transdisciplinary approach

Another approach to integration is that of transdisciplinarity. This is considered a powerful way of integration (Flaws & Meredith, 2007) allowing educators and students to identify significant sustainability and environmental issues without taking into consideration boundaries between disciplines or subject areas (Beane, 1997). In this approach, the core of the unit or course is based on issues of concern, rather than on topics (Fraser, 2000). Educators and students have distinct roles, however, there is room for negotiation in terms of what environmental and sustainability issues are to be addressed (Joyce & Taylor, 2001). The educator plays the role of a guide and learning resource provider, while students provide a problem-solving process and reach an agreement on the issues to be investigated and the steps to be followed. This approach involves interconnection between the 'metacurriculum' and the curriculum or subject content. "Metacurriculum" is a term used to denote skills and competencies such as critical thinking and problem solving (Flaws & Meredith, 2007).

It is argued that when the curriculum is organised around significant socio-environmental and sustainability issues, it makes possible relevant and holistic learning. This is because learning can become relevant if it includes learners in real life situations which may be of concern. Because learners are be involved in identifying, analyzing and solving different socio-environmental and sustainability issues, they develop critical thinking skills salient to EE.

Considering the three approaches used in including EE and sustainability in the university curriculum, the preferred approach is the independent subject approach because most educators are used to it. However, it can be argued that when integrated into the curriculum as an independent study, EE has a narrow focus (Rusinko, 2010). However, for students to be autonomous, the preferred model of curriculum integration is that in which content and curricular areas are shared or connected in some way, and form a broader focus (Flaws & Meredith, 2007; Rusinko, 2010).

These approaches to incorporating EE and sustainability in the curricula can sometimes be used independently or in a combined manner (Lozano, 2010). Any attempts to integrate EE and sustainability in the curriculum must certainly address how the implementation will be delivered (Rusinko, 2010), and universities must pose questions of what to follow: whether to use existing structures or create new structures. Rusinko (2010) provides examples of how EE and sustainability can be integrated in already existing structures, such as a course in the form of a new topic. She further illustrates how sustainability and EE can be integrated by creating a new structure, such as a a new course, major or programme. Rusinko (2010) illustrates how environmental and sustainability issues can be integrated into curricula using a narrower focus, using an individual programe or school, or using a broader focus involving cross-disciplinary or university-wide reform. The matrix in Figure 4 below captures these alternatives.

SHE delivery

	Existing structures	New structures
Narrow (discipline-specific)	**I.** Integrate into existing course(s) minor(s), major(s), or programs(s)	**II.** Create new, discipline-specific sustainability course(s), minor(s), major(s) or programs(s)
Broad (cross-disciplinary)	**III.** Integrate into common core requirements	**IV.** Create new, cross-disciplinary sustainability course(s), minor(s), major(s), or programs(s)

SHE focus

Figure 4: Matrix for integrating sustainability into the higher education curriculum (Rusinko, 2010, p. 253)

The incorporation of EE and sustainability into the curriculum is, of course, value laden. This is because EE curricula are not a neutral endeavour (Chapman, 2011). They are driven by worldviews about the nature of the natural world as well as the role and implications of human interactions (Belshaw, 2014). EE and sustainability tend to be limited to Western educational and developmental approaches without meaningfully taking advantage of Indigenous knowledge and alternative worldviews (Demssie et al., 2020). Pluralistic, adaptable and flexible EE curricula are crucial for creating EE that reflects on multiple standpoints. These require a "critical examination of the history of the narrative and voices present and missing from EE, agendas and curricula" (Aguilar et al., p. 196).

2.3.3 A Paradigmatic Shift in Environmental Education Curricula

Although the crisis of the environment requires a solution, and education is part of that solution, scholars like Huckle (1991) and Orr (1993) argue that EE fails to provide a solution but is instead a part of the problem. They claim that the current practice of EE fails to reveal the true causes of environmental challenges and thus fails to educate students in a manner which will allow them to realise SD (Huckle, 1991). Environmental education has also been criticised for failing to consider issues of power and knowledge and their impact on EE curricula (Stapleton, 2020), for remaining largely a Western endeavour (Reed & George, 2011) and for defining the environment and education through Western ways of thinking (Agyeman et al. 2010). It is argued that these failures perpetuate Western or modernist technocratic ideals

which marginalise or silence alternative approaches to environmental governance and education. Consequently, this has led to the risk of EE in post-colonial contexts to be ineffective and/or to (re) produce environmental knowledges and subjectivities based on Western norms (DePuy, et al., 2021; Ideland, 2019).

Scholars like Taylor (1996) argue for studies of EE that consider the perspectives and experiences of the people of colour and the Global South. Other scholars emphasise the importance of an EE curriculum that "is physically, emotionally, and socially acceptable" (Aguilar et al., 2017, p. 195) and addresses cultural trends, social issues, and societal divisions and tensions that permeate EE such as class, ethnicity, race and all other aspects of difference and identity (Stapleton, 2020). A paradigmatic shift in EE towards a "re-conceptualization of the relationship between the issues of culture, environment, and education" (Agyeman, 2002, p. 6) has been advocated for. It is argued that such a move would shift EE curricula towards being reflective of non-dominant positionalities (Stapleton, 2020). Gough A (2013) emphasises that:

> we have culturally, racially, socioeconomically, and sexually (and so on) different people with fragmented identities whose experiences and understandings can only be constituted through the lenses of subjectivity. Given there is growing recognition that there is no one way of looking at the world, no 'one true story,' rather a multiplicity of stories, then we should look at a multiplicity of strategies for policies, pedagogies, and research in environmental education. (p. 376).

A number of scholars have encouraged the field of EE to include and consider areas that challenge mainstream, non-critical conceptions, most notably in the work on gender in EE (Gough A, 1999, 2013; Gough et al., 2017), querying EE (Russell, 2013; Russell et al., 2002); attention to race and/or multicultural approaches (Aguilar et al., 2017; Agyeman, 2002; Miller, 2018; Taylor, 1996) Indigenous perspectives (Le Grange, 2007, 2012a, 2015, 2018; Lowan-Trudeau, 2013; Scully, 2012; Sutherland & Swayze, 2012) and intersectional analyses (Fawcett, 2013; Maina-Okori et al., 2018).

Marouli (2002), for instance, stresses the importance of addressing cultural diversity within EE curricula through multicultural EE. However, multicultural education is insufficient to capture the wide variety of social identities and contexts that need to be reflected in EE (Stapleton, 2020). Multicultural EE curricula fail to unsettle Eurocentrism as it centres the Western idea of Man and constructs the 'Other' (Desai & Sanya, 2016). Multicultural curricula are what Ahmed (2012) refers to as 'non-performative commitment to diversity', that is, they

give an impression of commitment to diversity without action. Perfomativity, according to Butler (1993), must be understood not as a singular or deliberate act, but rather as the reiterative and citational practice by which discourse produces the effects that it names (p. 2). As such, those who work towards curricula diversity are practitioners working "*with* as well as *in* the gap between words and deeds" (Ahmed, 2012, p. 116). Multicultural EE curricula then becomes a site that naturalises Western ways of knowing and being in the environment (Desai & Sanya, 2016). Based on the shortcomings of multicultural EE, Huckle (1991), Robottom (2005), Stevenson et al. (2017) and Stapleton (2020) advocate for an EE curriculum that is sensitive to power inequalities. They argue that power inequalities surround different social positions, identities, and contexts, including race, ethnicity, class, gender, and nationality.

There still remains need for EE to consider non-mainstream perspectives. As Haluza-DeLay (2013) notes, "race, power, culture remain largely unproblematized in EE" (p. 397). Haluza-DeLay (2013) calls for a focus in EE on "knowledge about society, its history, its structures, and the interplay of social and economic processes with ecological matters" (p. 400). In the same vein, Matthews (2011) notes that environmental challenges and injustices provide for a rethinking of pedagogy and how post-colonial theory and interdisciplinarity, for instance, can inform the practice of education for a sustainable future. She argues that if post-colonialism and environmental matters are not connected, then "inequality and injustice are not linked to historical and locally specific environmental contexts" (p. 267). As a result, subjugation and marginalisation of Indigenous worldviews and knowledges are preserved through "the assumption that educational solutions to contemporary environmental problems can be found in the addition of more science-based EE, education for sustainability, or climate change management courses and programs" (Matthews, 2011, p. 274).

Speaking from settler-colonial contexts, Tuck and Yang (2012), Tuck et al. (2014) and Tuck and McKenzie (2015) emphasise the need to centre historical and current contexts of colonisation in education on, and in connection to, land, as well as stressing that colonialism is not an event contained in the past but is ongoing. Tuck and Yang (2012) advise not to use the term "decolonisation" without bringing attention to Indigenous agency and Indigenous rights to land and resources. They point to unsettling calls to "decolonize schools" and "decolonize student thinking", as these turn decolonization into "a metaphor for other things we want to do to improve our societies and schools" (p. 1). Following Tuck and Yang (2012), Patel (2014) draws on Calderon (2014) to highlight the unmet promises of the term decolonisation,

proposing that an anticolonial stance "seems to meet more fully the task of locating the hydra-like shape-shifting yet implacable logics of settler colonialism" (p. 360).

Writing from an African post-colonial context, Le Grange (2007) and Kayira (2015) suggest the worldview of *Ubuntu/uMunthu* as a platform to challenge the dominant truths championed by Western thought. Mokuku (2012) develops and explores Lahae- la -rona, an African lived epistemology for its value and potential in EE in Lesotho. His study criticised the hegemonic Eurocentric framework used in EE in Africa, and used African-centred concepts instead. The study also gave insights into how an African epistemology could be used to curb environmental and sustainability problems. To break the monopoly of colonial legacy and mindset in the current, dominant models of HEd EE requires intercultural "crossings" between Indigenous and Western approaches to education, as well as a paradigmatic shift towards Indigenist perspectives (Ma Rhea, 2015, 2018). Taking an indigenist perspective means a commitment to a pro-indigenous worldview as well as a questioning of the colonial mindset. Such a perspective implies leadership and management curriculum that directly recognize and support indigenous rights, lifeways, and perspectives, without implying that the supporter is indigenous (Ma Rhea, 2018).

2.4   CONCLUSION

The chapter began by clarifying the nature of how EE is a contested notion influenced by international declarations and policies. It proceeded to show the notion of curriculum, like EE, is contested. A review of the various studies of EE detailed the different approaches used to include EE into the curriculum through disciplinary, multidisciplinary, and transdisciplinary approaches. The studies also discussed studies critiquing the value laden nature of the EE curriculum and the need for a paradigm shift to include Indigenous knowledges and local community involvement to transitioning society towards sustainability.

The following are the gaps identified in the literature review:

- o The importance of a paradigm shift in environmental governance and EE curricula has been discussed extensively in literature (De la Cadena & Blaser, 2018; Descola, 2013; Holbraad & Perdersen, 2017; Snyman, 2013; Viveiros de Castro, 1998) through calls for decolonisation (Lotz-Sistka, 2017) and a move towards a more ethically and effective way of navigating socio-environmental challenges facing the planet and human-nonhuman relations (Blaser, 2013; Burman, 2017; Sullivan, 2017; Yates et al., 2017); however, empirical evidence

showing a paradigm shift in environmental governance and EE curricula is lacking. In Africa, the decolonisation of EE is underexplored (Lotz-Sistka, 2017).

o The importance of spirituality and culturally appropriate EE curricula has been recognised. However, what makes environmentality culturally and spiritually appropriate has not been established in the literature.

o Most literature is drawn from the global North and there is greater need for EE research undertaken in post-colonial contexts, particularly the Zambian context.

o Much of the literature informing EE research, practice, curricula, and policy is based on international policies that may not be appropriate or applicable to the Zambian context.

This thesis will, therefore, contribute to theory and methodology by interrogating questions of power and ways dominant discourses, practices and institutions shape EE curricula in post-colonial contexts. The thesis is an attempt towards a paradigmatic shift that deepens sensitivity to epistemological and ontological diversity within an EE curriculum.

The following chapter, outlines and justifies the theoretical and conceptual assemblage that informs this study and its foundations.

Chapter 3: A *Southern Environmentality Dispositif*

3.1 INTRODUCTION

This chapter brings together the concepts and theories used in this thesis to interrogate and rethink EE curriculum. Post-structural, decolonial and indigenous theories are used to examine how Zambian HEd curriculum entangles 'complicated' conversations (Pinar, 2011) from beyond and within national boundaries to constitute the situated space and time of the Zambian post-colonial present. What emerges from this discussion is a *Southern environmentality dispositif* comprising the following theoretical orientations and analytical concepts: *currere* working out of Foucauldian notions of power/ knowledge, discourse, subjectivity, and governmentality; decoloniality and the concepts of 'colonial power matrix', epistemicides, and coloniality of knowing subjects and indigenous concepts of *Ubuntu* and *Ukama.* These theoretical orientations and concepts cohere and complement each other as a framework to help explain how the work of lecturers, students, and texts meet within interstices of post-colonial power to environmental governance, EE curricula and environmental subjectivities.

To bring these concepts together in a coherent frame, I deploy Foucault's concept of *dispositif.* The *dispositif* is a "grid of intelligibility" (Dreyfus & Rabinow cited in Bruck & Vargas, 2020) or a social apparatus (Deleuze, 1992) that is made up of both material and immaterial elements within a social millieu. O'Farrell (2005) indicates the discursive and non-discursive elements of the *dispositif* discussed below are the "various institutional, physical and administrative mechanism and knowledge structures which enhance and maintain the exercise of power on the social body" (p. 128). Multiple elements are brought together without formally sharing any identity (Kauppinen & Clavier, 2017) and converge and emerge as a strategic relationship (O'Farrell, 2005). A *dispositif* demonstrates the interaction of "discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral, and philanthropic propositions" (Foucault, 1980, p. 194). As such, the *dispositif* is characterised by heterogeneous forces and practices and functions as a "system of relations" (Foucault, 1980, p. 194) that respond to an urgent need in a specific

historical moment (Foucault, 1980). Environmental (un)sustainability and/or lack of local ecological knowledges is one such need.

In this sense, the *dispositif* is characterised by heterogeneous forces and practices that respond to an *urgent need.* In the following sections, I show how my conceptualisation of curriculum, discourse, power, knowledge, governmentality, environmentality, subjectivity, decoloniality, *Ubuntu/ Ukama* are brought together to form a *dispositif* of Southern environmentality to function as an analytic for this thesis.

3.2   CONCEPTUALISING AND THEORISING CURRICULUM

3.2.1 Conceptualising Curriculum

As a concept, curriculum is complex, elusive, and confusing (Ornstein & Hunkins, 2018) as it has diverse meanings depending on context (Jung & Pinar, 2015; Pinar, 2015). Following Deleuzi and Guattari (1994), what a concept does is more significant than what it is. Thus, rather than dwelling on what curriculum is, this thesis focuses on what it does. Central to the study of curriculum are the concepts of power, knowledge and subjectivity (Pinar, 2004, 2011; Wallin, 2010a, 2010b 2011). A curriculum needs both power and knowledge to speak, to become concrete and become actual (Pinar, 2019). Conceptualising curriculum in these terms addresses the questions of what a curriculum does, or might do, to environmental knowledge and the environmental subject.

Conceptualising curriculum through its etymological root of *currere*, a Latin concept that means "to run the course", Pinar (1975, 2011) highlights the importance of students' experiences over course content or alignment with society or economy. Later, Wallin (2010a, 2010b) revisited the concept of *currere* by thinking with Deleuze and Guattari (1994) and their claim that a concept is not just a name attached to something, but is rather a way of approaching the world. Taking this characterisation of what a concept *does* or *might do*, Wallin's (2010a, 2010b) conceptualisation of curriculum draws attention to the paradoxical character of *currere*'s etymology given its active and reactive forces.

In its active form, *currere* intimates "to run" (Wallin, 2010a). To run indicates that

the conceptual power of *currere* is intimate to its productive capacity to create new flows, offshoots, multiplicitous movements […] *currere* creates a line of becoming that expands difference, implying experimentation, movement, and creation. Along this line of flight, *currere* abolishes the image of a world given dictatorially (p. 2)

Regarding the curriculum as an active conceptual force enables it to be understood as a creative force with no fixity or closeness. As an active force, the curriculum opens up multiple ways of becoming for environmental subjects. It expands difference through its movement, able to create new connections, assemblages and unlikely fidelities. It thus serves as a useful basis for decolonisation (Le Grange, 2019).

The reactive force of *currere* on the other hand reduces "complexity and difference through the transposition of an a priori image of life's potential for becoming" (Wallin, 2010a, p. 2). It limits the course to be run, capturing movements, and reducing it to a rigid "representational structure" (Deleuze & Guattari, 1983; Wallin, 2010a, 2010b). In this way, curriculum can become a normalising and homogenising territory. Doll (1993) likens the reactive conceptual force of *currere* to:

> 'canned' lessons, divorced from local experiences of students, come ready made, and we know already what will be learned, free from ambiguity and disruption inquiry might invite. The potential for students to affect or speak work anew is suffocated by a curriculum that already purports to know all the answers and ultimate goals of a priori of experience. Conceptualising the curriculum as a ready-made plan helps students discover the already known but does not help them develop their own powers of dealing with the indeterminate. (p. 32)

The reactive force of *currere*, therefore, is not only ahistorical (Burns, 2018), but also lacks a connection to lived experience and transformative power. It moves away from the ambiguities spawned by deep ecological interconnectedness towards a headed scientific pristeness, knowing, assured and untroubled (Wallin & Graham, 2002).

Below, I consider what *currere* 'wills to power' and discuss questions of curriculum and curriculum knowledge as an exercise of power from both Foucauldian and decolonial perspectives. While Foucault's thoughts on power, knowledge, and subjectivity are indispensable to this thesis, a decolonial perspective addresses my concerns with experiential knowing subjectivities in colonial and post-colonial contexts, issues that are not addressed by Foucault. Bringing Foucauldian and decolonial thought together raises the questions about a) the discourse(s) of curriculum, b) how power is exercised in and through the curriculum, c) how the curriculum becomes the 'truth' of environmental educational experience, and d) who and whose knowledge is marginalised in and through the curriculum hierarchy.

3.2.2 Theorising Curriculum as a *Pharmakon*

Curriculum, Paraskeva (2014a) argues, is: "theoretically shattered and profoundly disputed" (p. ix). Pinar (2011) adds that "the impoverishment of theory … [has] plagued

curriculum…for decades" (p. xi). The notion of curriculum has remained vague and "essentially, there are no generally accepted and clear cut criteria to distinguish it from other forms of writing in education (McDonald, 1975, p. 5). In response to the question of what curriculum theorising is (Kridel, 2008), Tillman (2008) asserts that:

> scholars in curriculum studies realize that there is no one-size fits all definition, no one way to theorize, design, and practice curriculum studies, and no one solution to answering critical questions about how we will educate every child (p. 26).

Considering the discussion of curriculum above, it can be theorised as a *pharmakon* (Spivak, 1992), both a medicine and a poison. As a medicine, curriculum 'makes up' subjects that are willing to care for the environment and allows for an ecology of knowledges; and as a poison, curriculum works to marginalise local ecological knowledges and excludes certain ways of being by colonising their knowledge-subjectivity. Theorising curriculum as a *pharmakon* understands curriculum as both a humanising and dehumanising force.

Curriculum co-presences

Far from being a "dead, established and revered text" (Snaza & Tarc, 2019, p. 1) curriculum is a "particular, historically formed knowledge" (Popkewitz, 1997, p. 132) that aims at conceptualising and perpetuating a particular power matrix (Paraskeva, 2014a). Curriculum constitutes epistemicides (De Sousa Santos, 2006, 2007; Paraskeva, 2014, 2016) through an "enactment of world knowledge" that "regulates, organizes and sets the course of something called human beings" (Snaza & Tarc, 2019, p. 1). Knowledge, according to Weheliye (2014), is not only concerned with providing us with the content of our lives, but also the procedures and terms of reference by which the subject of *ergo cogito* confirms, validates and pronounces some existences as superior, desirable and human, and downgrades others to the status of "not-quite-humans, and nonhumans" (p. 4). Based on this inscription, curriculum as knowledge is implicated in questions of "what/ whose knowledge is of most worth, for whom, as well as the way such knowledge has been produced, packaged, legitimised, taught, and evaluated" (Paraskeva, 2014a, p. ix). This makes the curriculum a "beacon of epistemological cleansing […] an epistemicide, an epistemological field of blindness" (Paraskeva, 2014a, p. ix) whose knowledge is rooted in how the human is conceptualised. Desai and Sanya (2016) note that "this normalised notion of the human rooted in the legacies of colonialism has shaped curricula

[…] informing what knowledge is considered valuable, thus teaching us what we should strive for" (p. 715).

Current curriculum theorising, therefore, is characterised with "the impossibility of co-presences of the two sides of the line" (De Sousa Santos, 2007, p. 47). Curriculum theories not only fail to consider epistemic diversities beyond the Global North, but also fail to recognise the existence of the Global South's knowledges and subjectivities as existent. Curriculum theories from the Global North fertilise "noisy silences and shameful absences" by supporting a "specific growth pattern of knowledge and science" (Paraskeva, p. ix).

Theorising curriculum as co-presence does not entail reconciling dominant and counter dominant perspectives. Rather, it is about looking beyond Western epistemological and ontological frameworks towards an ecology of knowledges (De Sousa Santos, 2007, 2014, 2016), a hybridised subjectivity (Wynter, 2001, 2003) and "cognitive justice" (De Sousa Santos, 2007, 2014, 2016). Curriculum co-presence questions the often taken-for-granted assumptions that critical alternatives are by their nature emancipatory. In many cases, critical approaches are based on the same line of thinking that divides social realities through abyssal forms of binary thinking (Miles & Nayak, 2020). Co-presence points in a more productive direction that transcends critical and normative approaches to curriculum that foster unhelpful dualities, constrain linearities or approaches that do harm by foreclosing spaces to seriously consider alternative ways of thinking and being (Miles & Nayak, 2020).

In this light, curriculum co-presence champions a non-heirarchical co-existence of various forms of knowledge by recognisng the equal value of different forms of knowledge. Curriculum co-presence, therefore, involves a) problematizing curriculum's embodiment of a Western modern episteme, b) demonstrating how curriculum epistemicide occur, and c) promoting an "ecology of knowledges" and "hybridised subjectivities". Conceptualising the curriculum in terms of co-presence enables a radical exploration of possibilities and puts forth "an alternative way of thinking about alternatives" (Paraskeva, 2016, p. 225). It enables a consideration of questions of valid environmental knowledge, bodies with power to select knowledge, and bodies presented as 'desired' and validated as acceptable forms of environmental subjectivity.

3.3 DISCOURSE, POWER, KNOWLEDGE, AND SUBJECTIVITY

In this section, I discuss the relationship between Foucault's conceptions of discourse, power, and subjectivity. Foucault asserts that power, knowledge, and subjectivity are central to any form of power relations and thus cannot be separated. They operate in a complementary

manner and cannot be "explained in terms of the other, nor be reduced to the other" (Dreyfus & Rabinow, 1983, p. 114). While power, knowledge and subjectivity are often understood as one totality, investigating how each element operates or contributes to the totality uncovers extra layers of the assemblage (Simola et al., 1998). Foucault's triad of power, knowledge and subjectivity "resembles an onion revealing layer after layer when peeled" (Simola et al., 1998, p. 69). Below I examine layers of the Foucauldian triad begnning with the notion of discourse, and then moving on to power and knowledge and finally subjectivity.

3.3.1 Discourse

The Foucauldian notion of discourse can be understood as a "regulated practice that accounts for a number of statements" (Foucault, 1972, p. 8) and "practices that systematically form the objects of which they speak" (p. 49). Discourse directs the "games of truth" that define which "things become articulable as knowledge" (Deleuze, 1988, p. 63) within a given society, as it is a "system that structures the way we perceive reality" (Mills, 2003, p. 55). Discourses are thus the lens through which we come to know about the world. They presuppose assumptions, ideas and rationalities that support the practices we take for granted, including the structures and episteme (knowledge systems of a given moment) that either permit or incapacitate certain thoughts and objects of knowledge from ocurring. In this way, discourse not only describes the social world but also constitutes it. What this means is that knowledge about the world stems from discourse and not through direct observation. Foucault illustrated this in his investigation of sexuality, madness, and punishment, showing that knowledge systems concerning these subjects are discursively produced through certain statements and rules about what can be thought or said about them at a paricular moments. Discourse is truth concerning how what is thought and said obtains authority. Overtime, discourses become attached to, or detached from, different truths, practices and rules.

For Foucault, discursive statements and practices are inseparable. Discourse construction materialises at the interstices of language and the material world, and are saturated with power relations. It is through statements and practices about environmental governance that the environment and the environmental subject, including the knowledge about them, are produced. The constitutive process of discourse is dynamic as Dryzek (2005) notes. Discourses are "always accompanied by language that establishes the meaning of action" (p. 3), operating not only to shape, but also to challenge, certain ideas and practices. Attending to the way the environment, environmental governance and 'desired' environmental subjectivity are

discussed in the literature, interviews and policy documents enable the detection of discursive constructions that form the objects of which they speak.

Foucault further suggests that statements and practices that constitute objects of knowledge are historically and socially produced. These discursive formations comprise events and statements made at a particular historical moment, and in a particular place, to produce knowledge by which we come to know and implement certain 'truths' in specific times and places. As such, an analysis of environmental sustainability discourse needs to be conducted within a specific historical and spatial context to distinguish discourses in relation to contextual conditions. Foucault cautions against the application of one analysis of discourse to another time and place.

3.3.2 Power

Foucault's articulation of power, knowledge, and subjectivity questions the taken-for-granted 'truths' that function in different historical practices. Foucault's interest was in "how systems of knowledge organise our being in the world through the construction of rules of reason, the ordering of the objects of reflection, and the principle of action and participation" (Popkewitz, 2015, p. 5). As such, Foucault's interest was the historical relations between power and knowledge operating within various institutions, and how such relations regulated the behaviours of those brought within the boundaries of such institutions (Fejes, 2006).

For Foucault, power and knowledge are neither external to each other, nor are they identical. Rather, they are interconnected in a correlative relationship which is determined in its historical specificity (Dreyfus & Rabinow, 1983). Foucault asserts that if power is to function, it needs to be rooted in knowledge about things it operates on and in relation to (Fejes, 2006). For instance, knowledge about the deviant, produced by medicine or education, represents the deviant as abnormal through the operation of power. Thus, a power/knowledge nexus constitutes and determines what is intended, what is desirable to be achieved, and how people and fields of objects are to be understood, organised, related and controlled. For instance, the knowledge about the environment and human behaviour towards the environment can be understood in terms of, and disseminated in the form of, an ideal of desirability. This knowledge makes possible the ability to assess and monitor a population such as that of students, with the aim of identifying, disciplining and correcting undesirable behaviours towards the environment. In the same vein, power related to this knowledge makes it possible to normalise individuals' behaviours. As such, power and knowledge work together to

determine what is 'desirable' and 'undesirable' behaviour towards the environment. In this way, there is a constant and mutual articulation "of power on knowledge and knowledge on power" (Foucault, 1989, p. 51). Knowledge constitutes power relations, and the exercise of power itself creates and causes to emerge new objects of knowledge (Foucault, 1989, p. 51).

The Foucauldian power/knowledge nexus allows for an understanding of power as productive of 'truth' claims and rationalities constituting Zambian institutions such as the university, the House of Chiefs and different line ministries. Foucault (1979b) asserts that "every point in the exercise of power is a site where knowledge is formed. Conversely, every established piece of knwoledge permits and assures the exercise of power" (p. 74). Using this perspective, the curriculum and its practices of environmental governance can be understood as mechanisms that create space for various forms of knowledge, as well as the exercise of power. Sensitivity to multiple forms of knowledge can provide a better understanding of the complex 'regime of truth' (Foucault, 1977), shaping curricula and environmental management knowledge.

Power is a grid of analysis rather than a theory (Foucault, 1980). It is "more-or-less a coordinated cluster of relations" that requires one to "provide […] a grid of analysis which makes possible an analytic or relations of power" (p. 199). A Foucauldian analysis of power breaks free from the juridical model of power (Foucault, 1981), which is vulnerable because it requires suppression and is "worked only through the modes of censorship, exclusion, blockage and repression" (Foucault, 1980b, p. 59). Power does not have a metaphysiacal existence (Foucault, 1972). It is impersonal (Miller, 1990) as it is not a thing or commodity that can be possessed by anyone, a group or an entity. It is relational and:

> must be analysed as something which circulates, or rather as something which only functions in the form of a chain. It is never localised here or there, never in anybody's hands, never appropriated as a commodity or or a piece of wealth. Power is employed and exercised through a net-like organisation. And not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising this power. They are not only its insert or consenting target; they are always also the elements of its articulation. In other words, individuals are the vehicles of power not its points of application (Foucault, 1980, p. 80).

Power is produced in the micropractices of relations such as a prison, a factory or a classroom. Everyone undergoes and exercises power at the same time (Fejes, 2006) and the

exercise of power needs to be interrogated in its extreme point of exercise, where it is in an intermediate connection with its target, that is the object, and where it positions itself and produces its effects (Fejes, 2006).

3.3.3 Governmentality, Environmentality and Multiple Approaches

Governmentality

The Foucauldian concept of governmentality has two strands: the 'art of government' and the 'conduct of conduct' (Gordon, 1991). As an art of government, governmentality involves "a historical analysis of the logics of government by the state" whereas the conduct of conduct is concerned with examining the "forms of governing others and the self, instantiated throughout society in institutions, organizations, and regimes of self-care" (Huxley, 2008, p. 1635) In both instances, governmentality is a mechanism that aims at policing society. Osborne and Rose (1999) assert that governmentality is "a plane of thinking and acting concerned with the authoritative regulation of conduct towards particular objectives" (p. 737). It operates not only on the actions of others to bring about certain behaviours, comportments, and subjectivities, but also on the ways in which subjects act on themselves to produce certain bodily habits and attitudes to the self (Huxley, 2008).

Governmentality consists of a wide range of practices, from macro (administrative) order of governances to the micro practices of self-management. Consisting of a 'bio-politics', this form of government takes as its target the 'population', and "political economy as its major form of knowledge, the apparatuses of security as its essential technical instrument" (Foucault, 2007, p. 108). It is thus contrasted to coercive and disciplinary forms of power that seek to shape people's conduct through supervision in restricted spaces such as prisons, asylums, and schools. Rather, through technologies and rationalities involving "institutions, procedures, analysis and reflections, calculations and tactics that allow the exercise of this very specific, albeit very complex, form of power" (Foucault, 2007, p. 144), it seeks to mould "governable domains and persons" (Rose et Al., 2006, p. 101) through "educating desires and configuring habits, aspirations and beliefs" and placing artificial conditions in a way that individuals are regulated to do what they are expected to do without necessarily being conscious of how their conduct is being guided from a distance (Li, 2007a, 2007b). Governmentality, therefore, employs "tactics rather than laws, and even using of laws themselves as tactics-to arrange things in such a way that, through a certain number of means, such-and-such ends may be achieved" (Foucault, 1994, p. 211).

The study of governmentality requires focus on rationalities and technologies of government (Bacchi & Goodwin, 2016). The tactics in governmentality assemble governing modes of thought "structuring a field of knowledge and power so that power itself is seen as rational" (Hanson, 2007, p. 248). Scientific knowledge as a means of instituting this non-coercive power on the subjects is an essential element of governmentality. Statistics, as a science, is one such tactic used in the regulation of the population (Foucault, 1991). The use of power in the making of desired subjectivities has both individualising and totalising effects (Foucault, 1982, 1984). Governmentality "accomplishes both totalising and individualising effects on the populace" (Gordon, 1991, p. 3) and can be seen to create both individual environmental subjects and groups of environmentalists.

The concept of governmentality provides this thesis with a flexible and effective approach to analysing different governing practices and the exercise of power within the curriculum and environmental policies informing it.

Green governmentality and environmentality

The notion of environmentality is an adaptation of governmentality (Agrawal, 2005a, 2005b; Fletcher, 2010, 2017, 2019; Luke, 1995, 1999a, 1999b) and it was first coined by Luke (1995, 1999a, 1999b) who understood it as a form of 'green governmentality' that considered how states frame 'the environment' in particular ways to justify interventions. Foucault's theory of governmentality has thus been extended to conceptualise the governance of non-human life and practices governing socioecological relationships (Agrawal, 2005a, 2005b; Birkenholtz, 2009; Darier, 1999; Goldman, 2004; Haggerty, 2007; Malette, 2009; Rutherford, 2007). Green governmentality focused on institutions that established a new regime of global environmental governance (Luke, 1999a, 1999b) justifying environmental policies and practices such as the use of protected areas. The notion is underpinned by a discursive construction of technoscience that transforms nature into an environmental object that can be managed, controlled, shaped, and improved by Western scientific ecological knowledge. Nature is both 'the environment' and 'natural resources' that legitimate interventions of governance (1995, 1999a;1999b).

Environmentality was first used to understand the production of environmental subjects by Darier (1996), and later expanded by Agrawal (2005a, 2005b) who used it to refer to "the knowledges, politics, institutions and subjectivities that come to be linked together with the emergence of the environment as a domain that requires regulation and protection" (p. 226). Ecological systems become objects of government and thus governable through the calculative

practices associated with scientific knowledge (Agrawal, 2005a; Boer, 2017). Such technologies allow the state to set targets and implement policies to produce certain responses within the ecological system being managed. These tactics enable certain forms of power and knowledge and marginalise others. Local ecological knowledges and interactions become objects of government themselves (McGregor, et al., 2015).

Agrawal (2005a) also used the concept of environmentality to describe an environmental governance that employs disciplinary forms of engagement to shape particular "'environmental subjects' - people who care about the environment" (p. 162). Environmentality constitutes institutions, scientific knowledge, and subjectivities that collectively reconstruct environmental ecosystems into a calculable, and manageable domain (Boer, 2017). The central concern of environmentality is thus to understand ways in which governmentality is applied to analyses of both the environment and its governance. In such an analysis of both, the environment is an object of knowledge in which particular 'truths' can be constructed. These 'truths' necessitate the management, regulation, and governance of the environment (Rutherford, 2007).

Multiple approaches to environmentality

To explain the different ways that environmental interventions seek to control, manage, and govern the environment, Fletcher (2010), drawing on Foucault's (2008) multiple governmentalities, developed a multiple environmentalities framework in which four types of environmentalities can be discerned: a) disciplinary environmentality, b) neoliberal environmentality, c) sovereign environmentality, and d) truth environmentality. These different modes of environmentalities are concerned with how environmental interventions attempt to 'discipline' the way people think, speak, and act in particular ways to achieve their objectives (Foucault, 1980, 1994). They are based on different assumptions with regards to the major problems limiting the success of environmental management, and therefore, the solution necessary to motivate the desired behaviour change (see Figure 5).

Disciplinary environmentality centres on the character of the individual to render them compliant (Dean, 1994). Disciplinary environmentality is thus concerned with creating environmental subjects who internalise certain pro-environmental norms and values (Fletcher, 2010; McGregor, et al., 2015) through, for instance, EE. Disciplinary environmentality has implications for understanding educational spaces which operate through internal motivators of behaviour aimed at setting understandings of the environment (Deutsch, 2020). Educational spaces like EE and its curricula rely on the tactics of disciplinary

governmentality/environmentality, insofar as they seek to inculcate subjects with certain ethical norms resulting in pro-environmental behaviour and actions that are not necessarily tied to market justifications (Fletcher, 2015).

Neoliberal environmentality stems from Foucault's (2008) theorising of neoliberalism and neoliberal governmentality. Foucault (2008) conceptualises neoliberal governmentality as "permanent vigilance, activity, and intervention" (p. 132) in the structuring and management of the conditions the market (Fletcher, 2010). Unlike disciplinary governmentality, the action on society "is brought to bear on the rules of the game rather than on the players" (Foucault, 2008, p. 260). It is concerned with applying "economic analysis […] to domains of behaviour or conduct which were not [previously] market forms" (Foucault, 2008, p. 268).

Following the tenets of neoliberal governmentality, neoliberal environmentality aims at preventing environmental degradation "through the creation of incentive structures intended to influence individuals' use of natural resources by altering the cost-benefit ratio of resource extraction" (Deutsch, 2020; Fletcher, 2010, p. 176; Lloro-Bidart, 2017; Wieckardt et al., 2020) It seeks to increase the economic value of nature in order to incentivise its protection and conservation (Chambers et al., 2020 Fletcher, 2010; McAfee, 1999). A focus on neoliberal environmentality is that subjectivities are driven by a 'rational' economic and individualistic concerns. The central concern of neoliberal environmentality, therefore, is the "creation of social conditions that encourage and necessitate the production of Homo economicus, or 'economic man', a historically specific form of subjectivity constituted as a free and autonomous 'atom' of self-interest" (Hamann, 2009, p. 37). The neoliberal subject is increasingly construed as a free autonomous individualised self-regulating act that is understood as a source of capital as human capital (Bondi, 2005; Foucault, 2008; Gershon, 2011; Kiersey, 2009; Lemke, 2001; Rose, 1990; Walkerdine, 2003; Weidner, 2009).

Sovereign environmentality functions through "top down creation and enforcement of regulations" (Fletcher, 2010, p. 178). The notion of sovereign environmentality helps us to understand the role IOs play in creating regulations like the creation of protected areas for forests and game management has played globally (Chambers et al., 2020; Fletcher, 2010).
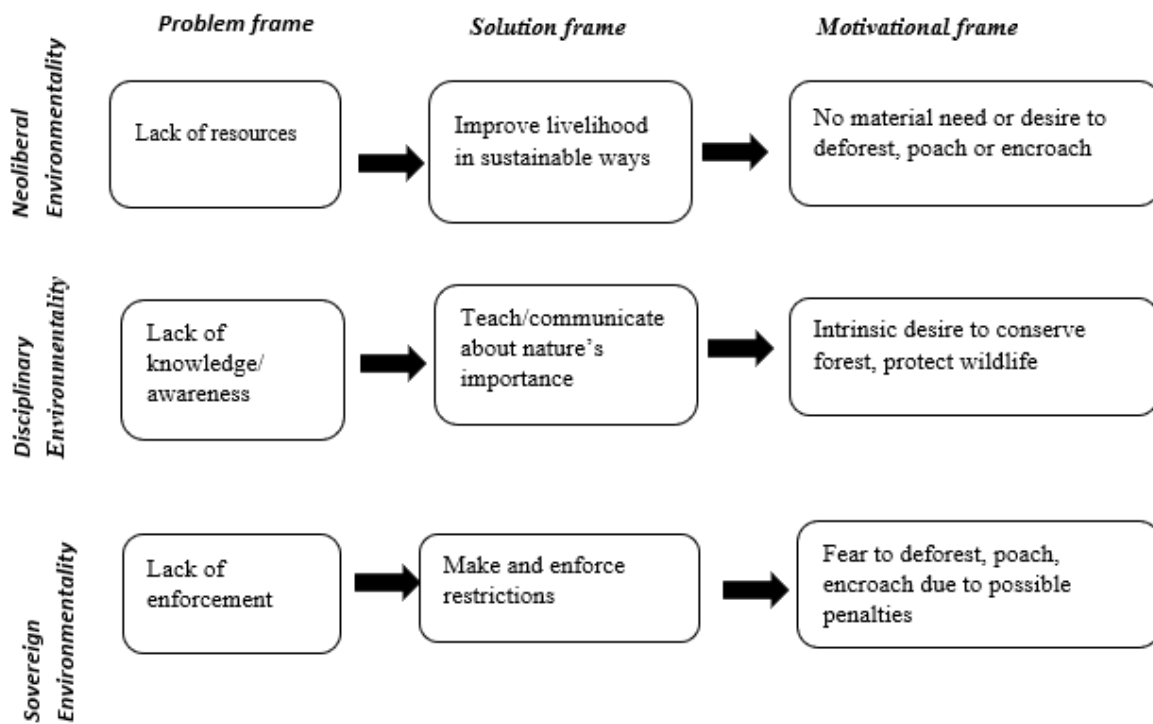
Figure 5: Fixed assumptions of each environmentality regarding the main problem to address, solution offered, and motivational result that creates environmental subjects (adapted from Chambers et al., 2020).

While these environmentalities are distinct, they are not mutually exclusive and may co-exist in certain contexts (Fletcher, 2010, p. 177). Various forms of environmental subjectivity may be nurtured through different networks of actors that do not necessarily include the state agents. For instance, the conservation of wildlife may jointly employ material incentives and/or EE with the supposition that these will enhance conservation. Intervention projects often combine environmentalities assuming complementary effects (Fletcher, 2017). A multiple environmentality framework can be used to explore the intricacies of environmental policies, curricula, and behaviours formed.

The notion of environmentality has been criticised for being an overly monolithic and top-down approach that both disregards individual agency in subject formation (Acciaioli, 2008; Cepek, 2011; Faye, 2016; Gupta, 2005; Jepson et al., 2012) having an ahistorical view of different identity classifications and positions (Hathaway, 2005), and for inadequate engagement with "complex and deeply biological practices" (Singh, 2013, p. 2) in which environmental subjects make themselves and are made. Critiques of environmentality also argue that environmentality tends to privilege technologies of power, while paying inadequate attention to techniques of the self (Cepek, 2011; Singh, 2009, 2013). They argue that a focus

on top-down exercise of governmentality may conceal the ways that subjects employ creative agency to resist or transform efforts to control their conduct when taking part in environmental intervention programs (Cepek, 2011; Singh, 2009, 2013; Youdelis, 2020). The argument is that subjects often respond in meaningful ways to express altenative beliefs and values instead of just simply conforming to subjectifying pressures (Cepek, 2011; Jepson et al., 201; Singh, 2009, 2013).

3.4   (DE)COLONIALITY: HIERARCHIES-DIVISIONS- EXCLUSIONS

Decoloniality is a combined analytic praxis (Yates, 2020) which "involves the unpacking of modern civilisational worldview and the inclusion of non-modern systems of knowledge and categories of thought as legitimate ways of knowing" (Shahjahan et al., 2017, p. 52). It is an epistemic, political or pedagogical context project. Decolonialty is thus concerned with the "towards possibilities of other modes of being, thinking, knowing, sensing, and living" (Walsh, 2018, p. 81) and seeks to disconnect from existing colonial systems of power to reconstruct thought and co-existence (Mignolo, 2018). It refers to:

> efforts at rehumanizing the world, to breaking hierarchies of difference that dehumanize subjects and communities and that destroy nature, and to the production of counter-discourses, counter knowledges, counter creative arts, and counter-practices that seek to dismantle coloniality and to open up multiple other forms of being in the world (Maldonado-Torres, 2016, p. 31)

Decoloniality stems from, and acknowledges, coloniality and the ongoing existence of colonial processes and conditions. It is a form of struggle against the 'colonial matrix of power' and opens the possibility of thinking and living differently (Walsh, 2018, p. 17). Coined by Quijano (2000), the 'colonial matrix of power' refers to a rigid subjugating hierarchy of power. Decoloniality problematizes the modern-capitalist and Cartesian premise of science and knowledge that establishes the hierarchy of knowing-being and privileges the Global North as the only legitimate source of knowledge and science. Decoloniality achieves this by seeking to make visible, and advance, radically dinstictive perspectives and positionalities that displace Western rationality as the only framework and possibility of existence, analysis and thought (Walsh, 2018, p. 17). It performs a distinct epistemic operation that includes decolonial geopolitics and corpopolitics of knowledge, being and perception (Tlostanova & Mignolo, 2012) and a decolonial aesthesis (Mignolo, 2011; Tlostanova, 2017) that is concerned with who produces knowledge, from where and why. Decoloniality opens up space for cosmologies, ontologies and epistemologies that have been relegated to the margins by the global hegemonic

modern-colonial-capitalist regime. It calls for pluriversality (Mignolo, 2011) and an ecology of knowledges (De Sousa Santos, 2007), where multiple cosmologies, epistemologies and ontologies co-exist in a non-hierarchical manner.

Undoing coloniality is fundamental to decoloniality. It signals a move away from forms of power, knowledge, being and social order intimated in, and often outlasting, colonisation (Mignolo, 2011; Mignolo & Escobar, 2013), and towards the politics of knowledge production in emerging 'Epistemologies of the South' (De Sousa Santos, 2007, 2014, 2018) and southern theories (Connell, 2007, 2014). The politics of knowledge production gestured to by decoloniality lead towards futures of increased self-determination (Mignolo, 2011) through an 'ecology of knowledges' based on a recognition of the "plurality of heterogeneous knowledges […] and on a sustained and dynamic interconnection between them without compromising their autonomy" (De Sousa Santos, 2007, p. 55).

3.4.1 Key Decolonial Concepts and Ideas

This sub-section clarifies key decolonial concepts and ideas used in this thesis to analyse dominant knowledge/power systems and those marginalised by them.

Coloniality/ Modernity

Decoloniality points to the analytic concept of 'coloniality', different from colonialism, that brings to the fore the knowledge, power and being embedded in imperialist cultural ideologies of Western modernity. Modernity, following Mignolo (2005) is "[…] a European narrative that hides its darker side, coloniality" (p. 39). The co-constitution of coloniality/ modernity is hidden by the rhetoric of progress and discourses of modernity (Giraldo, 2016; Mignolo, 2005;) The concept of coloniality makes visible how a language of salvation and progress justifies notions of environmental sustainability in educational policy and curricula. It unpacks the logics that underlie and legitimate environmental policy discourses, and subsequently environmental curriculum knowledge in higher education. For instance, environmental policy is constructed with an underpinning logic that it is "good for everyone" (Rizvi & Lingard, 2010). Such a logic erases or masks power interests that shape it (Shahjahan, 2013).

The (post) colonial matrix of power and abyssal Lines

The colonial matrix of power has four levers: the control of the economy, control of authority, control of gender and sexuality, and control of knowledge and subjectivity. These levers, Quijano (2007) argues, are founded on racial constructs, and are now objectified. These

differentiating classifications operate on a global scale and continue to order social relations that transcend race to justify the Eurocentric "capital colonial/ modern world power" (p. 171). In post-colonial contexts, coloniality of power is made manifest through the continued "control of economic, cultural, political structures of society" (Quijano, 1993, cited in Grosfoguel, 2000, p. 368). Coloniality of power is used in this thesis to explore how the contemporary 'global political' order of environmental sustainability is constructed, constituted, and configured into a "racially, hierarchised, Euro-American-centric, Christian-centric, patriarchal, capitalist, heteronormative" (Seroto, 2018, p. 4), dominant, asymmetrical and modern power structure. The thesis will also use the concept to make visible that in post-colonial times, this dominant power has shifted to "a series of distant powers (including state and transnational organizations) that seek to maintain asymmetrical power relations" (Lee-Koo, 2011, p. 735), and how such a power works in an elusive manner whereby "actors and institutions working within and for the colonial matrix of power remain unaware of others and the overarching logic that links them (Mignolo, 2018, p. 145).

Coloniality of power is made visible and accessible through De Sousa Santos' (2007) concepts of abyssal lines and abyssal thinking. De Sousa Santos (2007, 2014) argues that modern Western thinking functions as an abyssal thinking that divides the North from the South in the name of progress, science, and reason. The abyss is used metaphorically by De Sousa Santos (2007) to demonstrate how modern Western thought radically divides social reality into two different realms of thought based on "this side of the line" and "the other side of the line" that is founded on "a system of visible and invisible distinctions, the invisible ones being the foundation of the visible ones" (p. 45). This side of the abyss implies the Global North while the other side of the line implies the Global South. De Sousa Santos (2007, 2014) associates the Global North with the paradigm of regulation and emancipation. In this way, the Global North has the power to regulate and the capacity to lead emancipation programs like environmental sustainability. The other side of the abyss (shifting colonial territories) is associated with appropriation and violence (epistemic and being) committed by this side of the abyss. The modern abyssal line, however, is not fixed to any geographical position (De Sousa Santos, 2007, 2014). But, its position is heavily policed and controlled. The concept of the abyss facilitates the examination of how the Global North through transnational organisations such as the UN and its subsidiaries use power to formulate environmental policies, and to understand how such geopolitics of power function to make up 'desired' environmental subjects based on geopolitical configurations.

Coloniality and epistemicides

Decolonial theory also uses the concept of coloniality of knowledge. Coloniality of knowledge refers to the difference made between Western and non-Western knowledges and symbolic systems (Alvarez & Coolsaet, 2020). The latter are considered as inferior and deprived of scientific validity. Defined as 'traditional', they are seen as having only practical and local applicability, and their theoretical relevance is limited to their status as objects of study which allow for the comprehension of local modes of life. In comparison, Western knowledges are described as having universal validity, regardless of the place and moment of their production (Alvarez & Coolsaet, 2020). Coloniality of knowledge thus makes visible how coloniality of power through Eurocentrism filters what knowledges are, or are not, validated and accepted in a specific historical and cultural context. Eurocentrism as abyssal thinking validates scientific-technical rationality of the Global North as the only valid episteme, that is, as the only episteme qualified to generate real knowledge about the economy, society, morality, and nature (Castro-Gomez, 2007). As such, coloniality of knowledge shows how modern knowledge production processes are embedded in the brutal rejection of knowledges from the Global South which are relegated to the sphere of *doxa,* as if they are part of modern science's past and, in some instances, are considered an 'epistemological obstacle' to achieving the certainty of knowledge (Castro-Gomez, 2007). This abyssal thinking thus constructs the Global South and its knowledges as invalid, esoteric, and irrelevant. Grosfoguel (2013) asserts that:"any knowledge that [is] opposed to the myth of unsituated knowledge of the Cartesian ego-politics of knowledge is discarded as biased, irrelevant, unserious and inferior (p. 76). In this way, since knowledges from the Global North are positioned as 'universal', the co-existence of different ways of producing and disseminating knowledge is eliminated, as all forms of knowledge are ordered on an "epistemological scale from tradition to the modern […] from the orient to the occident" (Castro-Gomez, 2007). This colonial strategy of producing silences and absences is an act of epistemicides (De Sousa Santos, 2006, 2007) and it is made possible through the abyssal social divide. De Sousa Santos (2007) asserts that:

> The division is such that the 'other side of the line' vanishes as reality becomes nonexistent and is indeed produced nonexistent. Nonexistent means not existing in any relevant or comprehensible way of being. Whatever is produced as nonexistent is radically excluded because it lies beyond the realm of what the accepted conception of inclusion considers to be its other (p. 45)

From this, it becomes visible that Western knowledges and epistemologies are synthesized through a division of other knowledges. This articulation of divisions relates to Foucault's (1980) understanding of "subjugated knowledges" (p. 82) where certain types of knowledges are not perceived as worthy of entering in the domain of validated knowledges, especially in disciplines such as EE. Foucault (1980) describes these knowledges as: "falling into disuse whenever they are not effectively and explicitly maintained" (p. 82). For De Sousa Santos (2018), subjugated knowledges are needed for framing of the episteme as validated knowledge, although such knowledges constantly struggle for recognition. This difficulty emanates from the fact that in post-colonial contexts, it is difficult to recognise the division as colonial thinking and the construction of the 'Other' continues to naturalise and normalise it. Such a construction leads to epistemicides, that is, the ways in which knowledges belonging to the other side of the line are produced as non-existent and thus exterminated through abyssal thinking. In this thesis, therefore, the concept of coloniality of knowledge and epistemicide is used to examine the producers of environmental sustainability knowledge, their recognition in relation to whose environmental sustainability knowledge they promote, for whom, why and for what uses (Walsh, 2007). I am interested, therefore, in the forms of knowledge that are validated and accepted, as well as those that are perceived as peripheral, local, and thus ignored and excluded from environmental policies and curricula.

Coloniality of knowing-subjectivity

Decolonial theory also demonstrates that subjectification is immanently political, that is: "if subjects are dependent on symbolic networks for their becoming, then power is always already implicated in processes of subject production" (Hanchey & Jensen, 2021, p. 4). Subjectification is thus embedded in political relations where: "there is no subject prior to infinitely shifting and contingent relations of belonging" (Carrilo Rowe, 2008, p. 27) and this "belonging is political" (Carrilo Rowe, 2008, p. 3). The processes of subject formation are underwritten by social forces of racialisation and coloniality and the presumed 'universal' subject promoted in environmental sustainability only reflects a liberal, bourgeois, masculine conceptualisation of what it means to be human, depriving raced others from humanity (Lowe, 2015; Towns, 2018; Wynter, 2003)

The concept of coloniality of knowing-subjectivity, therefore, makes visible a particular politics of knowing that is naturalised, and universalised in order to legitimate the logics of modernity and capitalism (Motta, 2016). This coloniality of knowing is constituted in the processes of subjectification that (re)produce a particular kind of knowing-subjectivity, a

Westernised and individualised subject epitomised in Descartes' articulation of the ego cogito, that is, the knowing subject of *I think therefore I am.* This subject, Wynter (2003) argues, is embodied in the figure of Man, a Western bourgeois that "over represents itself as if it were the human itself, and that of securing the well being, and, therefore, the full cognitive and behavioural autonomy of the human species itself/ourself (p. 260). This subject, as Lugones (2010) argues, is founded on the dualistic exclusion of the feminised less-than-human others. This subject "comes to know through a violent separation from this rest and gendered other that is rendered invisible, mute and absent" (Lugones, 2010, p. 745). Maldonado-Torres (2007) argues that within these logics, the experience of the other is characterised by invisibility, the white gaze of suspicion, as well as the denial of capacity of the gift. Invisibility is constituted through denying knowledges to the 'Other' and the gaze of suspicion is cast against in which questions of whether the other is human are asked, and denial of capacity of the gift validates and legitimises the idea that there is nothing to learn from the 'Other'. As such, the figure of knowing of Man (Wynter, 2003), a monological subject naturalised through the Monoculture of classification (De Sousa Santos, 2014), speaks for and erases the 'Other'. In this thesis, I am interested in examining how colonial *dispositifs* of racialisation fostered certain knowing-subjectivities over others and how they work through the internalisation and (re)production of particular discursive and non-discursive practices.

3.5   A LOOK TO THE SOUTH: *UBUNTU/ UKAMA*

3.5.1 *Asili, Utamawazo and Utamaroho*

To theorise *Ubuntu/Ukama* as a necessary complement to environmentality, the concepts of concepts *asili, utamawazo* and *utamaroho (*Ani, 1994) are valuable. *Asili*, means 'origin' and is related to words such as 'seeds' and 'beginning'. *Utamawazo* and *Utamaroho* coined from the word *Utamaduni,* means civilisation; *wazo* and *roho* mean 'thought' and 'spirit-life' respectively (Ani, 1994; Mokuku, 2012). *Asili* is the cultural essence, the logos or "the matrix of a cultural entity which must be identified in order to make sense of the collective creation of its members" (Mokuku, 2012, p. 161). It is the insignia of a culture or the developmental seeds of culture (Mokuku 2021). It constitutes the ideology, essence and the matrix of a culture which, when combined, give a culture its identity as well as make sense of the collective creations of its members (Ani, 1994, Mokuku, 2012, 2021)

Utamawazo involves the structured thought within a culture. It is the reasoning of a culture and is a product and expression of *asili* (Ani, 1994, Mokuku, 2012, 2021). It is thus a

way in which the thoughts of a given culture are patterned to attain asili. *Utamaroho,* on the other hand is the vital force of the culture that is set in motion by *asili.* It is a force or energy source that gives a culture its emotional tone and influences the collective behaviour of its members. Both *Utamaroho* and *Utamawazo* emanate from the *asili* and in turn affirm and sustain it (Ani, 1994; Mokuku, 2012, 2021). *Utamaroho* and *Utamawazo* are thus manifestations of *asili* (Ani, 1994, p. 29).

The asili (culture) of Ubuntu/ Ukama

Ubuntu is a sub-Saharan *asili.* It is predominantly found and practiced among the Bantu ethnic groups of East, Central and Southern Africa (Samkange & Samkange, 1980). The *Ubuntu asili* as understood and practiced by the Bantu ethnic groups has no literal translation in the English language (Weisman, 2012). However, it is commonly understood in the Xhosa proverb of '*Umuntu ngumuntu ngabantu'* which is most often translated as "*a person is a through other persons"* (Broodryk, 1997, 2002, 2006, 2008; Forster, 2010; Letseka, 2012; Robinson-Morris, 2015; Waghid, 2014; Wu et al., 2018). An extension of the meaning of the of *Ubuntu asili* is provided by Mbiti (1971) in the maxim: *I am, because we are; and since we are, therefore I am.* Although the the concept of *Ubuntu* varies in its phonology, the understanding and application of this *asili* is 'universal' to the ethnic groups. This shared *asili* of Ubuntu is a

> comprehensive ancient worldview based on the core values of intense humanness, caring, sharing, respect, compassion and associated values ensuring a happy and qualitative human community life in a spirit of family (Broodryk 2002, p. 26).

Ubuntu asili is thus multidimensional as it represents "the core values of African worldviews: respect for any human being, for human dignity and for human life, collective shared responsibility, obedience, humility, solidarity, caring, hospitality, interdependence and communalism" (Asante et al., 2008, p. 114). To this extent, *Ubuntu asili* is "interpreted as both a factual description and a rule of conduct or social ethics. It both describes human being as 'being-with-others' and prescribes what 'being-with-others' should be all about" (Louw, 1998). *Ubuntu asili* is thus typically "a nexus of body, mind, soul and spirit" (Mokuku, 2021, p. 771) and is concerned with the reinforcement of relationality, unity, oneness, and solidarity. The *Ubuntu asili*, however, cannot be thought separately from *Ukama*, a Bantu word that means "being related or belonging to the same family" (Murove, 2009, p. 316). The meaning of *Ukama* not only extends to ties with all people, that is present, past and future generations, but

also transcends these familial and human ties to include the entire cosmos (Murove, 2009). *Ubuntu* (humanness), then, is the concrete form of *Ukama* (relatedness) in that "human interrelationship within society is a microcosm of the relationality within the universe" (Murove, 2009, p. 316). *Ukama,* therefore, "provides the ethical anchorage for human social, spiritual and ecological togetherness" (Murove, 2009, p. 317).

3.5.2 *Ubuntu/ Ukama*, Knowledge (*Utamawazo)* and Power (*Utamaroho*)

The *Ubuntu/Ukama asili* is manifested through the *Utamaroho* (power or spirit force) and *Utamawazo* (thought-system). The *Ubuntu/Ukama asili* is a multifaceted philosophical system that includes logic, epistemology, ontology, metaphysics, and ethics (Ramose, 1999). According to Ramose (1999), this *asili* is not only "the root of African philosophy" (p. 230) but is also a "philoso-praxis upon which the be-ing in the universe is separately anchored" (p. 230). The *Ubuntu/Ukama asili* is thus an onto-epistemological philoso-praxis, that is, "it is the indivisible oneness and wholeness of ontology and epistemology" (Ramose, 2002, p. 230). The complexity of *Ubuntu/Ukama asili thus* lies in the fullness of its ontological, metaphysical, ethical, and epistemological implications. Nabudere (2005) asserts that Ubuntu as a philoso-praxis "in its different settings, is at the base of African philosophy of life and belief systems in which the people's daily lived experiences are reflected" (p. 1). Below, *Utamoroho* and *Utamawazo of Ubuntu/Ukama* are discussed separately even though they are embedded within each other.

Utamoroho of Ubuntu/ Ukama

Unlike the Eurocentric asili which is aggressive, reductionist, dualistic, de-spiritualised, and competitive (Ani, 1994; Mokuku, 2021; Mokuku & Mokuku, 2004) the *Ubuntu/Ukama asili* is anchored in a "nexus of the body, mind, soul and spirit" (Mokuku, 2021) in its generation of knowledge. As such, the *Utamoroho* of *Ubuntu/ Ukama* follows a complex web of relationships and interdependencies that are devinely ordained to not only promote, but also to sustain, life for both human and non-humans. Thus, unlike the Eurocentric *asili* which embodies domination and subjugation of other forms of life, knowledges and cultures in the name of progress, the *Ubuntu/Ukama asili* intricately connects life and knowledge to the cosmos. Ani (1994) asserts that the *utamoroho* in *Ubuntu/ Ukama* is one in which:

> the universe to which they relate is sacred in origin, is organic, and is a true 'cosmos'. Human beings are part of the cosmos, and as such, relate intimately with other cosmic beings. Knowledge of the universe comes through relationship with it and through perception of spirit in matter. The universe is one; spheres are joined because of a single

unifying force that pervades all being. Meaningful reality ensues from this force. These worldviews are reasonable but not rationalistic: complex yet lived. They tend to be expressed through logic of metaphor and complex symbolism (p. 29).

In *Utamoroho Ubuntu/Ukama,* there is no requirement to define, separate or distinguish one element form the other. *The Utamoroho* of *Ubuntu/ukama* is deeply entangled in African religion and ethics. There is no separation between religion and ethic, and between between one's beliefs and one's actions towards others. "Ethics is an integral part of religion" (Kasanene, 1994, p. 140). Religion is constituent of lifestyle and practices of Africans and it permeates

all departments of life, there is no formal distinction between the sacerd and the secular, between the religious and non-religious, between the spiritual and material. Wherever the African is, there is his religion (Mbiti, 1970, p. 1).

In the *Utamoroho* of *Ubuntu/Ukama* the "daily normal activities of the people are at the same time acts of worship" (Mbiti, 1970, p. 1). It is imbued in holism or terms a 'generous ontology' (Forster, 2010) in which "no dichotomy exist in […] body and soul, or between theory and praxis- or in the present instance between the body and knowledge" (Bujo, 2001, p. 26). It "recognises that truth is neither static, nor absolute" (Forster, 2010, p. 4). Because of its spiritual base, the *Utamoroho* of *Ubuntu/Ukama* is antithetical to "rationalism and objectification as the valued epistemological modes […] they do have rationalistic and pragmatic modes but these do not dominate" (Ani, 1994, pp. 98-99). What the *Utamoroho* of *Ubuntu/Ukama* has is the sacred science (De Lubicz, 1982).

In the *Utamoroho* of *Ubuntu/Ukama,* interconnectedness and interdependence of all creation, human and non-human is emphasised. There is thus a complex interconnection between humans and non-humans. Human beings cannot be defined or separated from the cosmos that enables their existence (Chuwa, 2012). This is because the human is an organism within the wider organism, the society and its environment (Somé, 1998). The human is thus both socially and ontologically a product of interactions with humans and non-humans. Everything in this *Utamoroho* belongs together: humans and non-humans. Independent existence is inconceivable (Chuwa, 2012) and knowledge rests on the cosmic interrelationship. Such a conception forms the basis for a communal and sympathetic relationship with the environment as "a cosmic cannot objectify the universe (Ani, 1994, p. 45). The Universe is personified and conceived of as a spiritual whole in which "beings are organically interrelated and interdependent… nature is spirit, not to be exploited…all being exist in reciprocal

relationship to one another (Richards, 1980, pp. 76-77). This harmonious relationship, however, does not exclude the ability to struggle as the "spirit is primary, yet manifested in material being" (Richards, 1980, pp. 76-77).

In *Utamoroho* of *Ubuntu/Ukama,* power is conceived of as immaterial, rather than as material, resources (Tavernaro-Haidarian, 2018, 2019). As suggested by Tempels, wherever the European *asili* thinks of "being or substance", the *Ubuntu/ Ukama asili* "thinks of force" (cited in Shutte, 1993, p. 52) or the "vital force of participation" (Setiloane cited in Shutte, 1993, p. 55). According to Chasi (2014a), "Africans traditionally understand that agency or power should be measured in terms of the sustainability of the effects associated with humans actions" (p. 290). Sustainability points to something that transcends temporary material personal gain in preference to the wellbeing of the human community (Tavernaro-Haidarian, 2018) and that of the more than human. The *Utamoroho* of *Ubuntu/Ukama,* foregrounds the intrinsic value of human life, rather than human capital (Ramose, 2002) "ending dominance of capital; sovereignty of people over capital" (Van Norren, 2020, p. 439). *Ubuntu/Ukama* strives at collective agency where 'we', including 'I', is central. This has vast implications for socioecological practices, favouring, for instance, collective decision making processes. In the *Utamoroho* of *Ubuntu/Ukama,* identity is shaped by the understanding of 'we', which is bound up in others and the cooperative nature, and solidality carries the notion of 'agency' towards actions that benefit and improve the wellbeing of 'we/others' (Metz, 2015; Tavernaro-Haidarian, 2018). Given this, then, in the *Utamoroho* of *Ubuntu/Ukama,* power is relational as it emanates from the cooperative and collaborative efforts which 'we' put forth. In this sense, the *Ubuntu/ Ukama* conception of the 'Other' for both human and nonhuman is not fixed but open-ended and negotiated in relational terms. This is because in the *Utamoroho* of *Ubuntu/Ukama*, there are no entities but fields of forces, and everyone and everything is a process of relational negotiation (Christians, 2004).

The Utamawazo of Ubuntu/Ukama

The *Utamawazo* in *Ubuntu/Ukama* is spiritual and relational in nature and manifested through sacred science. This *Utamawazo*, therefore, is embedded in African religion and practices (Eagle, 2005; Tangwa, 2010) and

> Founded on an irrational basis and therefore not rational science. It rests on the assumption of a 'common energetic origin of all bodies', an ultimate spiritual source 'which alone is able to animate matter', 'an undefined cosmic energy' (Ani, 1994, p. 99).

In the *Utamawazo* of *Ubuntu/Ukama*, reality is signified in in terms of "relational interdependence" (Murove, 2009, p. 316) between the living (*abantu*), the living dead (*mizimu*) and the yet to be born (Ramose, 1999). *Ubuntu/Ukama* is not "a mere social construct", rather it is an "existential reality that permeates everything that exists" (Murove, 2009, p. 197). Belief in the creator and ancestors is central in *Utamawazo*, as reality is unity (Chuwa, 2012) in which God is both transcendent and immanent (Chuwa, 2012). Thus, in the *Utamawazo* of *Ubuntu/Ukama,* reality is certainly not a division of matter and energy, or spirit and matter. Rather, this reality is singular in the shape of two phenomena. Energy and matter are two features of a single being, and there is an "inseparable interconnectedness and interdependence" (Chuwa, 2012, p. 5) them. Energy cannot be reduced to matter, and neither can matter be reduced to energy (De Chardin, 1969). In the *Utamawazo* of *Ubuntu/Ukama,* the living and non-living, the spiritual and the physical and the human and non-human are inevitable in the sustenance of life. The goal of *Utamawazo* and practices of the Indigenous people is thus to foster *Ukama* (relationality) between the living and non-living, and the humans and non-humans. Within this *Utamawazo,* it is the *Ukama* "between the living and ancestors that immortality of values is found" (Murove, 2009, p. 316). The *Ukama* between the living and the dead is conveyed through an amnestic solidarity when the ancestors are remembered through ritual practices of which it is believed that destruction would follow whoever overlooks them (Gelfand, 1970; Bujo, 1998). Here, harmony between the dead and the living, that the past, the present and the future are actualised. It is in this sense, therefore, that the values are said to be immortal as they promote a harmonious existence between the past, present and future (Murove, 2009, p. 319). In this *Utamawazo,* there is no clear binary relationship between the mind and body, or the dead and the living, or nature and culture. The dead continue to live on as 'shades' and play a crucial role in guiding and mentoring, with elders as future ancestors acting as mediators between the living and the dead (Rico, 2016). In this way: "ancestors are the real school of the living" as they "are always available to guide, to teach, and to nurture" (Somé,1994, p. 9).
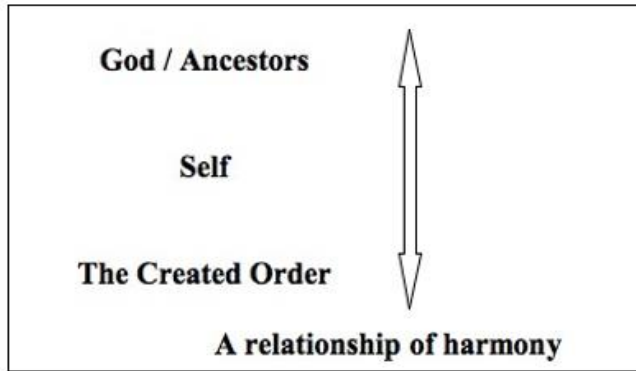
Figure 6: The Vertical element showing the wholeness and harmony of all reality (Forster, 2010).

In *Ubuntu/Ukama Utamawazo*, a healthy *Ukama* between humans and the cosmos, the material and the immaterial, the living and the dead, is significant. Bujo (2001) considers *Ukama* (relatedness) as "the decisive issue […] it signifies merely an openness that goes beyond what is present and visible in a given situation" (p. 3). *Ukama* not only makes possible individuation and intelligibility of reality, but it is the essence that keeps unity of reality and thus its very existence (Chuwa, 2012). Reality and existence are functions of unity (Bujo, 2001; Chuwa, 2012) and *Utamawazo,* symbols play a crucial role in the expression of meaning. For instance, a spiritual imbalance between the creator and ancestors is symbolically communicated through dreams and settled through rituals. These symbols, therefore, provide the existence of ecological intelligence (Shumba, 2011). Rather than the determination to subjugate nature: "the awareness of meaning of life comes from observing how the various living things appear to mesh and to provide a whole tapestry" (Ani, 1994, p. 102). Symbols such as dreams, rituals, and totemism are used to communicate this tapestry. The practice of totemism is a manifestation of *Ukama* between humans and the non-human:

> Totemism shows well one characteristic of the Bantu mind: this strong tendency to give a human soul to animals, plants, to nature […] a feeling that there is a community of substance between various forms of life (Junod, 1939, p. 112).

Within the totemic system, there resides a strong convinction that *umuntu* (a human) is not only related to other *abantu* (humans), but also to the natural environment (Murove, 2014). Totemism, therefore, demonstrates the existence of an insoluble solidarity between humans and the natural environment.

3.5.3 *Ubuntu/Ukama* and Identity Construction

The construction of 'identity' in the *asili* of *Ubuntu/Ukama* is a matter of relatedness rather than individuality (Keane et al., 2016). In *Ubuntu/Ukama,* human beings are not individuals represented by bodies, but a collective spirit that has taken an embodied form (Somé, 1994). Subjectivity is sacred and not simply established in social and material realms (Shahjahan et al., 2017). Furthermore: "identity is developmental and complexly related to aspects of being that are not only subjectively experienced but objectively observed" (Forster, 2010, p. 4). Identity formation in *Ubuntu/Ukama asili* is a continuous motion of enfoldment of the universe (Ramose, 1999). In *Ubuntu/Ukama asili* the abstract of *Ubu-* is brought to life by the force of *'ntu-'* (Van Norren, 2020). In fact *Ubu-* evokes the idea of be-ing' in general: "it is enfolded be-ing before it manifests itself in the concrete form or mode of exi-stence of a particular entity" (Ramose, 2002, p. 230). As an enfoldment, *Ubu-* is always oriented towards unfolding into concrete manifestations. Therefore, identity formation in *Ubuntu/Ukama* is always oriented towards be-ing becoming. *Being becoming* is always a process of the becoming of being (Ramose, 1999, 2002) and has an element of impermanence because it is ongoing (Forster, 2010; Weisman, 2012). What this means is that one's being is relational and formed through active engagement with the cosmos. In *Ubuntu/Ukama asili* identity is: "formed in contemporaneous relationship not only with each other, but in a web of interconectedness with holonic agential power" (Wu et al., 2018, p. 514).

Ubuntu/Ukama is an "alternative to alternatives" (De Sousa Santos, 2007) and enables the exploration of other formations of environmental subjectivity in post-colonial contexts where non-dual and symmetrical human-human-nonhuman relations are promoted. It draws attention to non-dual human-nonhuman relations enacted by non-modern technologies of the self. *Ubuntu/Ukama* thus halts boundaries between nature and culture.

3.6 THE *SOUTHERN ENVIRONMENTALITY DISPOSITIF*

The aim of this chapter is not to put different theoretical perspectives into competition with each other, but rather to complement each other to assemble analytical tools that could explain environmentality in post-colonial contexts. This chapter thus integrates of decoloniality, post structuralism, *currere* and *Ubuntu/Ukama*. The Foucauldian concept of *dispositif* was used to bring these different theoretical perspectives together. The *dispositif* is often recognised as an analytical tool (Deleuze, 1990) and is a "constellation of heterogeneous elements within a system, and the relationships between them which produce a particular

tendency" (Basu, 2011, p. 34). The *dispositif* is thus a system of relations between a particular arrangement of elements which are relations of power and knowledge and constitute subjectivities (Basu, 2011). The *Southern environmentality dispositif* is thus a constellation of post structural, decolonial, curriculum and indigenous perspectives that bring together the concepts of discourse, power, knowledge, and subjectivity.

The analytical framework (see Figure 7) represents the *Southern environmentality dispositif* and, decoloniality, *currere*, *Ubuntu/Ukama* and governmentality have their foundation in the Foucauldian concepts of discourse, power, knowledge, and subjectivity. The *dispositif* relies on each of these theories to make sense of complicated relations of power, knowledge, and subjectivities in post-colonial contexts. In other words, decoloniality and *Ubuntu/Ukama* complement the Foucauldian notions of discourse, power, knowledge, and subjectivity in interrogating and rethinking curriculum and environmentality in post-colonial contexts.

Since governmentality/environmentality seems to be critiqued in the fields that promote more subject-oriented perspectives, the research makes the argument that environmentality can exist with a diversity of different layouts and connections involving both discursive and non-discursive practices. Along with critiques of governmentality/environmentality that call for increased emphasis on agency and ethics, this study complements governmentality/environmentality with decolonial and indigenous theories that embrace perception, identity, and values. It allows for a novel exploration of power, knowledge and subjectivity manifest in post-colonial contexts so that decoloniality, *currere*, post structuralism and *Ubuntu/Ukama* are brought together in a complementary way.

While decoloniality allows for the integration of cultural perspectives regarding the environment and further aids the emphasis on curriculum as a discursive process, *Ubuntu/Ukama* emphasises non-hierarchical power relations in human-nonhuman interactions and resource use. Discourse, power, knowledge, and subjectivity from a decolonial perspective allow for a critique of Western dominance to envisage a non-hierarchical form of power, a co-existence of knowledge and knowing subjectivity for re-existence. These concepts engender the 'transformative vision of an alternative society'. Decoloniality then opens spaces for *Ubuntu/Ukama*. While decoloniality through the concepts of power, knowledge and being contains potentialities and possibilities for creating another world, it is when it is interpellated with *Ubuntu/Ukama* that decoloniality becomes a sound basis for re-imagining power,

knowledge and being that promotes sustainability. Nature-culture binaries inherent in the EE curriculum are opposed by *Ubuntu/Ukama*.
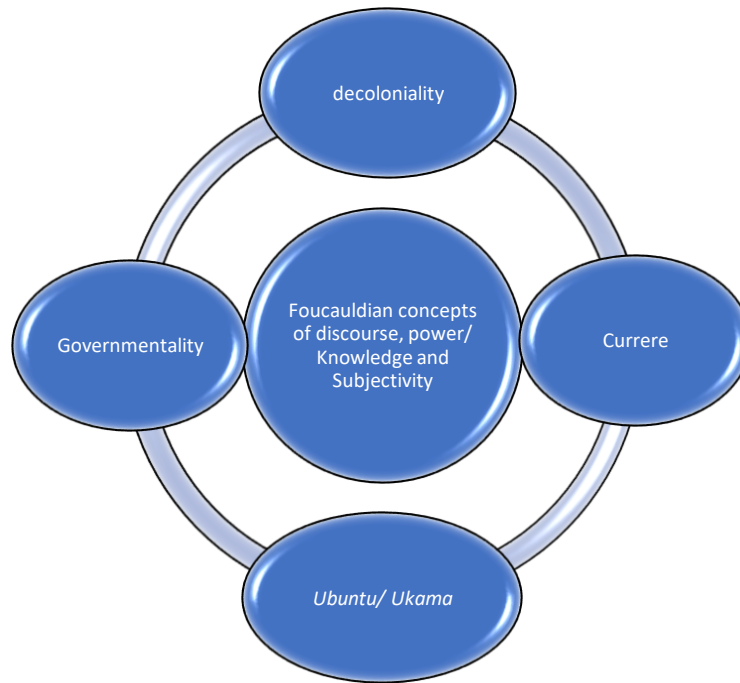
Figure 7: The Southern environmentality dispositif

In the *Southern environmentality dispositif,* the theories complement and strengthen each other, as they draw attention to specific areas of thought and action that, when considered as a whole, may inform, and greatly enrich approaches to a re-imagined curricula and environmental subjectivity in post-colonial spaces. Of particular importance is the *dispositif's* determination to transition towards co-existence of knowledges in the curriculum that promote cosmological subjectivities for the environment: subjectivities that transition away from Western binary conceptions of human-subhuman-nonhuman interactions. Widespread perceptions of environmental knowledges and subjectivities as limited to Western conceptions necessitate deep critical engagement (Sonu & Snaza, 2015), and the analytical tools developed in this study afford opportunities to challenge such Eurocentric perceptions.

The chapters that follow uses the *Southern environmentality dispositif* to make sense of the Zambian experience of environmental governance as the nation not only grapples with the colonial past but also the global role of neoliberal capitalism, and how such experiences inform the Zambian population's interaction with the environment through global discourses of environmentalism and sustainability. Chapter 5 explores the historical role of environmental

governance informing contemporary Zambian environmental knowledges and practices. Decolonial understandings of governmentality and the coloniality of power examine various environmentalities which produce the 'problem' representations of environmental conduct and governance. Chapter 6 examines how through 'problem' representation, informed by the colonial past, local ecological knowledges, values, and beliefs, are marginalised by dominant Western discourses of environmental governance. It deploys decolonial understandings of power/knowledge. Chapter 7 interrogates the HEd EE curriculum as a colonising and governing tool. The chapter highlights the reactive force of *currere* and uses decolonial notions of power/knowledge and being, and Foucauldian concepts of governmentality/environmentality to examine how the HEd EE curricula marginalise certain bodies and knowledges and constructs certain subjectivities as desirable. A Southern environmentality approach recognises the role of governmentality and coloniality in the construction of environmental subjects. Finally, Chapter 8 concludes the study by summarising the findings and considering ways in which the curriculum might be decolonised.

Before exploring the data, however, the following chapter overviews the methodology used in the study.

Chapter 4: Decolonial Genealogy

4.1 INTRODUCTION

This chapters explains the methodological principles and research design used to collect and analyse data. Set in a post-colonial territory, this study is interested in the happenings of power relations in terms of what the curriculum does. It uses a decolonial, post structural and the indigenous epistemology of *Ubuntu/Ukama* to inform data collection and analysis. The decolonial genealogy developed in this chapter provides a critical interpretive orientation of power relations. Decolonial genealogy unites problematisation, sociology of absences, sociology of emergences and diatopic hermeneutics into a conceptual and analytic framework.

4.2 GENEALOGY

Genealogy, as described by Foucault (1984), is a method of analysing history that does not rely on continuity. Rather, it is a historicisation that emphasises how a plurality of events lead to the present. Genealogy offers a map of a history of the present by interrogating values and demonstrating that the taken-for-granted reality is not a single truth (Foucault, 1977). It thus places distributed events, accidents, and actions together to determine how elements that are perceived as important, such as those relating to environmental governance, have come to exist (Macintosh, 2009). Genealogy enables the present to be considered within its conditions of possibility, and enables the complexity, contingency, and fragility of an analysis of historical events to be emphasised (do Ó, Martins, & Paz, 2013).

The matter of concern of genealogy is not the past, but the present (Meadmore et al., 2000; Tambokou, 1999). Unlike historicism (Popkewitz, 2013), genealogy does not use chronology, but rather a reverse research process (Christensen, 2016). A genealogical research, takes its outset in the contemporary phenomena and tries to investigate its genesis as descent (*Herkunft* in opposition to *Ursprung)* (Christensen, 2016). As Foucault (1984) notes, a genealogical investigation identifies the discursive sediments, ruptures and transformations, which have been an essential part of the descent of the phenomena:

[…] it is to identify the accidents, then minute deviations- or conversely, the complete reversals- the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value for us […] (p. 79).

Foucault points to three fundamental conditions for genealogy: (a) the genealogical perspective suggests a rejection of the phenomenon as natural; (b) the powers that are responsible for the origin of the phenomenon are not perceived as founded on particular conditions or persons; and (c) searching for the truth of the origin of a phenomeon is never a goal. Genealogy seeks to outline a "*possible* account for the origin of the phenomenon to write of the in-principle multitude of its descent" (Foucault, 1984, p.63). For example, a conventional 'history of ideas' approach to the environment and its sustainability would assume that environmental sustainability has existed in one form or the other and would attempt to outline its existence from early times, examining how it has been dealt with during these historical periods and tracing the ways in which science and technology have responded to issues of unsustainability. Contrastingly, a genealogy and 'history of the present' does not assume that environmental sustainability is a natural phenomenon but explores it as a concept that has been immersed in a system of 'truth' creation which interacts with power. The history traced by genealogy is not a stable, continuous progression, but is rather "an unstable assemblage of faults, fissures, and heterogeneous layers that threaten the fragile inheritor within and from underneath" (Foucault, 1991, p. 80). A history of the present:

> directs attention to discontinuities and ruptures in thought and involves recognition of multiple determinations and the role of chance. It is a method that has an explicit theoretical political goal for: to disrupt the taken-for-grantedness of the present and to show how things could be different […] it is not an attempt to understand the past from the point of view of the present, but rather to disturb the self-evident present with the past (Petersen & Bunton, 1997, p. 4).

Genealogy, then, does not seek to confirm the present by constructing a linear chain of events that are supposedly grounded in objectivist truths. Instead, it attempts to disrupt complacency about what *is,* by intimating what could have been, who is included, who has benefitted and who has been excluded by the conceptual form environmental sustainability has taken. It asks within which discourses and power relations has environmental sustainability been developed in this form?

Doing genealogy, therefore, implies a critical approach, which does not simply accept practices as they are, nor conceive of them a result of 'natural development' that is always oriented to the improvement of society and the life of human beings. Critique is rooted in an

insight into the historicity of the phenomena as well as into the discursive relations of power, which are attached to the process (Guess, 2002; Meadmore et al., 2000).

When applied to this study, genealogy offers the opportunity to gain insight into the assumptions of contemporary environmental curricula and to consider them from a different perspective. It implies a derivative of the struggles, which have taken place during their genesis. It is a method that offers the opportunity to analyse the remnants of former understandings in contemporary discursive formations as a powerful constitutive for the construction of the subject of the practice of EE.

4.2.1 Problematisation

Central to Foucauldian genealogy is the concept of problematisation (De Lucia, 2019). Problematisation is the first step of genealogy and, according to Rose and Rabinow (2003), it is an essential concept used in the 'critical history of thought'. Foucault (1984) describes problematisation as "the development of a domain of acts, practices, and thoughts that seem to pose problems for politics" (p. 384). For Foucault, it is important to "ask politics what it had to say about the problems with which it was confronted" and to "question it about the positions it takes and the reasons it gives for this" (p. 385). Foucault (1998) uses problematisations to question and make visible the taken for granted 'truths' in society, especially assumptions that underpin expert knowledge. These truths are constituted in discourses which regulate what can be, or not be, made to become true (Carrabine, 2001). For instance, the 'truths' in EE, curriculum and the standards for who can become a desirable environmental subject and who cannot, and what and whose knowledge is to be used to cultivate the environmental subject has been normalised in the curriculum and EE discourses. Identifying an idea that has become naturalised, but is disintegrating under its own weight, and then making it a problem and an object worth interrogating, produces problematisation.

Foucault understands problematisation as an activity that is a 'critical inquiry' (De Lucia, 2019). As an activity for critical inquiry, problematisation is a process (Akor, 2015; Bacchi, 2015) that questions 'truths' that have been normalised and accepted, "not as an arrangement of the representations but as a work of thought" (Foucault, 1984, p. 390). In questioning 'truths', problematisation makes visible reified phenomena by showing their genealogy and emergence through time and space: "their connections, encounters, supports, blockages, plays of forces, strategies and so on" (Foucault, 1991, p. 76). In this way, problematisation works to render visible and problematic certain rules, practices, evidence, institutions, and habits that have been stabilised and normalised (Foucault, 1984). Problematisation is a methodology that

critically interrogates taken-for-granted truths to clarify them and raise consciousness about the way hegemonic groups in society use them to marginalise and subordinate groups. As a methodology, then, problematisation challenges the assumption that any given state would be the only one possible. Problematisation, therefore, is used to open up spaces into which alternative forms of thought and practice might develop (Koopman, 2013). It is a methodology, and form of critique (Koopman, 2013) that uses historical analyses to root out contemporary objects from their normalised perch of certainty, and to offer them as contingent (Pickup & Kuntz, 2013).

Problematisation shapes objects of thought through processes that examine "how and why certain things (behaviour, phenomena, processes) become a problem" (Foucault, 1984 p. 115), and how they are shaped as particular objects for thought (Bacchi, 2012; Deacon, 2000) For instance, environmental sustainability policies, curricula and expert discourses are constructed as problems in particular ways within specific socio-political circumstances, which become socially normalised. In this sense, they do not 'exist' as objects of thought until they are produced as practices (Bacchi, 2012). A focus on "how men govern (themselves and others) by the production of truth" (Foucault, 1991, p. 79) highlights how forms of rule develop to maintain order in populations. Problematisation has a specific interest in the knowledges through which rule takes place.

Rabinow (2009) explains that problematisations are a demonstration of how things that seem most evident, such as environmental governance and the construction of environmental subjects, are fragile and rest upon certain circumstances (which are usually changing) and can be attributed to historical conjectures that have nothing necessary or definitive about them. The understanding that 'facts' about the environment, and what it means to be an environmental subject that we hold as foundational, could be constantly changing. The process of problematisation renders fixed objects such as the environment and environmental subjects fragile (Mort and Peters, 2005). Fragile entities shape our experience of who we are and what we may know. Problematisations thus have the capacity to reconstitute our identity as well as our scope of knowledge.

4.3   A DECOLONIAL GENEALOGY

As stated in Chapter 3, this study interrogates what the curriculum does as a modality of colonial government that subjugates certain knowledges and subjectivities. Also, because of the multifaceted and contextual specificity of environmental issues and the post-colonial

context of this study area, it cannot be confined to reductive concepts and methods. Transcending the rules of conventional social science inquiry, the study goes beyond problematisations of environmental discourse to examine the decolonisation of environmental knowledge production and subjectivity imbued in power relations. The decolonial genealogical approach following Foucault, offers a porous analysis shaped by perspectives that emerge within post-colonial spaces. It is concerned with making visible emergent and heterogeneous forms of living that are not about destruction or mere survival within the post-colonial zones, but about the creation of emergent alternatives like *Ubuntu/Ukama-Currere.*

A decolonial genealogy connects De Sousa Santos' (2004) epistemologies of the South to Foucault's (1984) understanding of the history of the present, affirming that: "the understanding of the world and ways it creates and legitimises social power has a lot to do with time and temporality" (p. 158), which in Western (liberal) rationality: "on the one hand, contracts the present and, on the other, expands the future" (p. 158). De Sousa Santos proposes "a sociology of absences" to expand the present, and a sociology of emergences to contract the future. I explain the sociological procedures in detail in Section 4.5.2.

4.4 APPLYING A DECOLONIAL GENEALOGY AS METHODS OF DATA COLLECTION

A decolonial genealogical research involves the inclusion of multiple personal, institutional, and geopolitical realities generated through a diversity of relevant social actors and textual resources such as policy and curricula documents. The decolonial genealogical approach allows me to ground my analysis of socioenvironmental realities in the post-colonial context.

4.4.1 Identifying and managing access to conversation participants

Inclusion criteria for conversation participants

Decolonial genealogy stresses heterogeneity, complexity, and difference (Klein, 2013; Pohl, 2011) and it starts with the 'Other'. This directed the first phase of data collection in decolonial research towards conversations with local traditional leaders or 'Others' who had previously been disregarded from curriculum and environmental policy development and implementation. The second phase required conversations with other socio-environmental actors directly or indirectly involved in curriculum development and implementation. These conversations offered insights with which to answer the research questions. Conversations were held with various social actors between July 2019 and December 2020. These

conversations were designed to bring light to 'problem' representations in environmental policies and curricula, the bodies involved in both policy and curriculum-making processes and the knowledges present or absent in environmental policies and curricula.

The aim of the study, the research questions and its theoretical orientation guided the identification of potential participants for these conversations. For instance, to answer the question of what the curriculum included and excluded, insights were generated from conversations with socio-environmental actors directly or indirectly concerned with curriculum development and implementation. I identified university lecturers, local traditional leaders, and policy makers as respondents most able to give insights about who gets to be included or excluded in the processes of curriculum and policy formulation, as well as what and whose knowledge inform the environmental policies and curricula. When it came to the question of what influenced the development of HEd EE in Zambia, I sought the insights of policy makers, and lecturers to understand their knowledge about processes and politics, and the struggles and negotiations through which current 'problem' representations travelled from the past to inform the present. This also enabled the understanding of how they morphed from the dominant geopolitical space into the Zambian geopolitical space. These conversations generated valuable insights to the way international and local geopolitical realities have, over time, shaped and reshaped both environmental policies and curricula 'problem' representations, knowledge, and subjectivities. Making visible these historical specificities, though a daunting challenge, is a crucial element of decolonial genealogy.

Figure 8 below shows the number of selected conversation participants. This involved 14 local traditional leaders, 4 lecturers of EE, 5 policy makers and 3 NGO representatives.
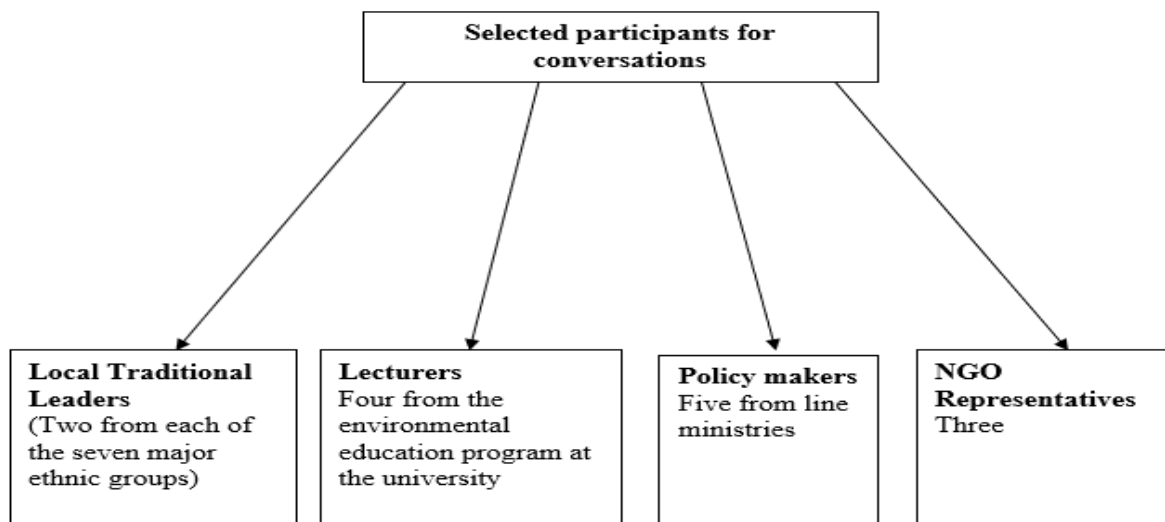
Figure 8: Selected conversation participants

Participants were selected on the basis that they were:

- directly involved with the formulation and implementation of EE
- responsible for environmental and developmental policy making.
- perceived to be custodians of local knowledges; and
- environmental activists (NGO representatives).

The degree of expertise in any of these areas was considered a necessary criterion to narrow the sample choice. Suitable potential lecturer participants were identified from academic experience and expertise through cross-checking staff profiles to establish teaching and research interests in environmental and sustainability issues. Potential policy maker participants were selected on the basis of their experience and expertise in policy formulation, particularly with regard to the environment, sustainability and /or climate change policies. Potential local leader participants were selected based on their advocacy of sustainability and the use of local knowledges. NGO potential participants were selected based on their activist profiles with regard to working with local people in sustainability programmes and the use of Indigenous knowledges. All these actors were selected for the sole purpose of generating more information based on the augmented set of questions for analysis as described in Table 1 below.

Table 6: Conversation participant inclusion criteria

Participants	Why they were selected	Data collection period	Data sought
Local traditional leaders	Custodians of Indigenous ecological knowledges	August 2019 to April 2020	- Indigenous ecological knowledges and practices - Whether they are involved in environmental policy and curriculum making
Lecturers	Expertise in environmental education	October 2019 to January 2020	- Bodies involved in curriculum making process - Knowledge informing higher education EE curriculum - Subjectivities sought in higher education EE curriculum
Policy makers	Expertise in environmenmtal policy	July 2019 to January 2020	- Bodies involved in environmental policy making - Knowledge informing local environmental policies
Non-Governmental Organisation (NGO) representaives	Expertise in environmental sustainability issues	November 2019 to February 2020	- Knowledge informing their practices - Whether Indigenous ecological knowledge has

	Indigenous knowledges		potential to inform policy and curricula

Recruitment strategy

To recruit conversation particpants that met the criteria, I used a multiple strategies to locate "information-rich key informants or critical cases" (Patton, 2002, p. 237). The strategy involved identifying "cases of interest" through people who might be "good interview participants" (Patton, 2002, p. 243). Local traditional leader participants were identified through the Ministry of Chiefs and Traditional Affairs. Other conversation participants were identified through their heads of departments in relevant ministries, organisations and institutions. I considered these people to be "gate keepers" as they were able to connect me to potential participants. It was, however, difficult to reach out to good conversation participants due to government and institutional restrictions and reluctance by heads of department in the identified ministries and institutions. I, therefore, had to enlist the help of a law maker (Minister) who was well-situated to access a network of line Ministries and institutions that had potential participants for the study. I was then introduced to these various Ministers and their Ministries that provided me with participants that potentially met my inclusion criteria. Where possible or necessary, after the conversation I asked participants if they had suggestions for other potential participants that could be interested in the research. In other instances, after recruiting someone, I would find that the participant had recruited other potential participants as a 'directive' from their Head of Department or Minister. Other participants, especially local traditional leaders would invite their 'cabinet' for rich raw data. For all the recruited participants, participant information sheets (see Appendix 3) and consent letters (see Appendix 4) were provided a few days before the interview so that participants would understand what the study was about. My sample thus snowballed and accumulated through these recruitment processes.

Recruitment procedure

After ethics clearance (see Appendix 1) was approved by the Human Research Ethics Committee of the University of Adelaide, participants were recruited through relevant ministries, institutions, and organisations. In the initial stage, email addresses and office telephone numbers of the heads of department of relevant ministries, institutions and organisations were obtained from websites, and recruitment emails (see Appendix 2) were sent to request potential participants to participate. Most of these emails did not obtain a response.

The next step involved using telephone numbers to call heads of departments. Most of these calls were also unanswered. The final and most effective recruitment strategy used involved reaching out to the law maker who spoke to colleagues in other ministries and institutions of interest. Recruitment emails/letter with participant information sheets and consent letters were re-sent, and this time, the researcher received a positive response and was able to recruit participants.

Primary potential participants were contacted by phone to review and explain the study and consent processes. Phone calls were also made to ascertain whether potential participants met the inclusion criteria and were able to take part in the study. If the potential participant made a verbal agreement to take part in the study, an interview was setup with a mutually agreed upon time and location that was private and quiet. The participants were asked to review and sign the consent letter at the interview.

Description of participants

I set the target of sixteen participants for this study. Kuzel (1999) suggests that the optimum number of participants in qualitative research is between twelve and twenty. However, during data collection, this number increased to twenty-nine. This was because the local traditional leaders invited members of the 'cabinet' (elders) to also take part in the conversations. The aim of the conversation was to generate information-rich practical texts in the form of conversation transcripts. In summary, five policy makers, four lecturers, three NGO representatives and fourteen local traditional leader and three elders had conversations with the researcher. Of these participants, thirteen were female.

4.4.2 Policy and curriculum documents reviewed and analysed

Foucault (2010) claims that genealogy is documentary and "it operates on a field of entangled and confused parchments on documents that have been scratched over and recopied many times" (p. 76). This indicates a need to commence data collection using documents. Following Foucault (1981), documents should be considered as a series of texts of different types that operate as circulations for discourses, statements, and interpretations of what is in the true. They evaluate the truth, what is said to be true about a historical transformation, and, in case of the curriculum, how it makes subjects. Documents contain heterogeneous statements, and their appearance in particular historical moments may reveal discursive formations.

The documents analysed in this study were concerned with environmental governance, EE, curriculum, education, and higher education. Data selection procedures "began somewhat

wide, then increasingly narrowed with each step, much like an inverted pyramid" (Gleason, 2016, p. 93). My initial data set included policy documents and legislation about Zambia's development plans, education, curriculum, climate change and sustainability that were available online and associated with relevant ministries. This produced a robust, but broad range data pool which comprised of some fifty documents. Selecting those pertaining to environment, sustainability and education, particularly higher education, narrowed the data pool. This narrow pool was further reduced by setting aside documents that were related to environment, sustainability, and education, but lacked specific applicability to higher education. The documents delimited for this research were as follows:

- Official legislation, reports, correspondence produced by the Government of Northern Rhodesia (National Archives of Zambia documents)

- International declarations, policies, and agreements pertaining to environmental governance and EE

- Official legislation, Acts, reports, plans, and policies produced by the Government of the Republic of Zambia through its various line ministries and the University of Zambia, entrusted with policy making and dissemination of environment, development, sustainability, and educational issues.

As a way of narrowing the criteria of these official documents, four types of documents were selected:

- reviewing the historical environmental governance

- Reviewing the current state of education with regard to development, the environment, sustainability, and education.

- Articulating environmental sustainability and curriculum reform as a national priority

- Articulating the role of EE with regard to responding to development, environment, sustainability, and quality education issues

- Higher education EE rationale, syllabi, and course modules

The selected documents were similar in as much as they sought to describe the same 'problem' (Glesne, 2011) and thus brought into view the rationalisation of government that legitimised and justified particular policy proposals.

Bacchi (2009) explains that policy documents are raw data for analysis and can be regarded as practical texts or prescriptive texts "since they tell us what to do" (Bacchi, 2004, p. 34). Documents were sourced from:

- National Archives of Zambia

- International policy documents

- National Environmental Policy Documents

- National Educational and Curriculum Documents

- National Legislation

- National Development Plan Documents

- University environmental education curricula, syllabi, teaching and learning materials

Documents were analysed to understand how environmental sustainability was constituted as a 'problem' with and across them, how these understandings of the problem shaped 'problem' representations, and their effects. Documents identified as key contained in them statements that carried unquestioned truth claims concerning the objectification of populations and constitution and selections of governable citizens. Selected statements also contain truths that subjugated certain sections of the population. Data generation and analysis was also guided by an augmented set of questions described later in detail in Section 4.5.3.

4.5 MOBILISING A *SOUTHERN ENVIRONMENTALITY DISPOSITIF*

To historicise, contextualise and highlight the way in which power operates in curriculum, environmental policies and socio-environmental practices in Zambia, decolonial genealogy 'unites' Bacchi's (2009, 2016) 'what's the problem represented to be?' (WPR) approach and De Sousa Santos' (2004, 2006, 2007, 2015, 2018) Epistemologies of the South, the sociology of absences and emergences and diatopic hermerneutics to operationalise the *Southern environmentality dispositif* discussed in chapter 3. When merged, these approaches highlight the relationship between knowledges such as between science or Indigenous knowledges or ways of being. This draws attention to 'subjugated knowledges' and the disqualification of bodies of knowledges deemed to lack scientificity (Foucault, 1980) and epistemicide which is the silencing, annihilation or devaluing of a way of knowing (De Sousa Santos, 2007; Patin et al., 2021). Evidence-based policy and curriculum making in Zambia

prioritises scientific knowledge over Indigenous knowledges, and thus influences "who can speak, when, where and with what authority" (Bacchi, 2009, p. 237; Cherryholmes, 1988) and whose ideas are heard and considered important, relevant and useful. As this study pays attention to the discursive power of curriculum and policy text and the way they construct actors, the general population and learners, and the kind of knowledges that they draw upon and annihilate to establish 'truths' about the environment and its care, these two approaches are used as a vehicle within which the analytical framework of *Southern environmentality dispositif* discussed in Chapter 3 is mobilised and made operational. These methodological approaches help me to decentre environmental knowledges and the ideal environmental subject, and open up new possibilities of knowledge, being and doing environmental subjective diversity in both academic and environmental governance contexts.

4.5.1 The 'WPR' Approach

Bacchi's (2009) approach to post-structural analyses of policy is aimed at investigating how governing takes place. The emphasis is on making policy visible, re-examining how policy and its "'things' are constituted or brought into being" (Bacchi & Goodwin, 2016, p. 4). WPR is a Foucauldian influenced post structural perspective concerned with the rules and regulations that order our lives, with attention "directed to the heterogeneous practices, in particular the knowledge and practises, that produce hierarchical and egalitarian forms of rule" (Bacchi & Goodwin, 2016, p. 3). The knowledges that inform policies and curricula are called into question so as to understand their contingent and constructed nature as well as to make visible the effects of such knowledge practices in the way governing takes place. This includes the effects on objects, subjects, places and even the kinds of problems that emerge as important for policy makers.

Inherent in the approach is an understanding of policy that transcends conventional legislated institutions and spaces to include broader societal movements across "numerous sites, agencies and 'ways of knowing' that interrelate in important ways to shape social rules" (Bacchi & Goodwin, 2016, p. 5). Drawing on the Foucauldian notion of governmentality, policy for Bacchi and Goodwin (2016) refers to "how order is maintained through politics, understood as the heterogeneous strategic relations that shape lives and worlds" (p. 6). The WPR approach is guided by a series of questions that enable an anlaysis of how problems are consituted through policies, in this case curricula. The approach entails working backwards from the solutions suggested in policies. Texts are "levers to open up reflection on the forms of governing and associated effects, instituting through a particular way of constituting a

'problem'" (Bacchi & Goodwin, 2016, p. 18). The emphasis is on the solutions presented in policies as "the effects of policy proposals and the representations they necessarily contain" (Bacchi, 2009, p. 13). Foundation to Bacchi's (2009) WPR to policy analysis is the idea that "we are governed through problematizations" (p. 263) and that critical analytical insights can be gained from analysing these problematisations, that is, how problems are constructed rather than the problems themselves. The approach thus challenges the 'problem-solution paradigm' which Bacchi argues dominates political agendas in most industrialised Western countries and supranational orgaizations.

To analyse the policy construct, Bacchi proposes six interrelated questions listed below:

- What is the problem represented to be?
- What presuppositions or assumptions underlie this representation of the problem?
- How has this representation of the problem come about?
- What is left and problematic in this problem representation? What are the silences? Can the problem be thought about differently?
- What effects are produced by these representations of the problem?
- How/where have these representations of the problem being produced, disseminated and defended? How could they be questioned, disrupted and replaced?

For Bacchi (2009), the first step in the analytic is the question "what is the problem represented to be in a specific policy or policies?" (p. 12). This approach to problem representation is different from other forms of policy analysis, many of which implicitly accept the 'reality' of problems they seek to address (Bacchi, 2016). In contrast, WPR suggests that problems are made up through their representations and do not exist until represented to exist in policy or policies (Bacchi, 2009, 2016). The second question is about making visible the deep-seated assumptions that are inherently constituted in problem representations and are proposed as solutions by comparing how the proposed solutions inform the problem. These questions also try to bring into focus how objects and subjects are positioned in ways that result in the creation of seemingly rational narratives of justification for the control of individuals. The third question brings to light which factors, such as particular objects, subjects, or histories, were necessary for the problematisation to be represented as logical. The fourth question is a set of questions whose intention is to highlight some of the gaps in the problematisation. This draws attention to spaces for alternative conceptualisations and problem representations. The fifth and sixth questions unpack what those problem representations do and how they are

reproduced in the world. These questions are not intended to interpret or explain what policy is doing, but to recognise and highlight ways that the policy has been taken up and to draw attention to the notion that those enactments are inevitable.

The WPR approach is used in this thesis to consider the question of the 'problems' that the curriculum is supposed to respond to and how this way of thinking about 'problems' in the curriculum works to govern in specific ways. The curriculum can be conceived as giving shape to specific 'problems' that are offered as a solution (Philips, 2019). The WPR approach provides a tool that enables the assessment of how 'problems' are produced and represented within a curriculum text. When specifically applied to HEd EE curriculum, the WPR questions notions of literacy, action and responsibility, citizenship, disadvantage, and notions of population growth. All of these become 'problems' to be to be addressed through education.

While the WPR approach has been a very useful methodological tool in the Global North and has been adopted and used by Indigenous scholars such as Maxwell et al. (2010) in Australia, it has not been adopted by decolonial scholars in post-colonial contexts. Merging the WPR with Epistemologies of the South, sociology of absences and emergences and diatopic hermeneutics is crucial to this study in that whilst the WPR approach provides this study with the questioning tools, Epistemologies of the South, sociology of absences and emergences and diatopic hermeneutics offer decolonial dispositions.

Applying De Sousa Santos' sociology of absences and emergences, and diatopic hermeneutics to policy and curriculum, makes operational the questioning of epistemic politics of environmental policies and education (curricula) and how abyssal logics of neoliberalism and scientisation permeate EE curricula thus affecting who is conceptualised as desired environmental subject and who is not. In context of environmental policies where scientific expertise plays a major role in framing policy, the conception of the world which becomes dominant in policy reflects the norms through which people are governed.

Epistemologies of the South, on the other hand, in liaison with WPR make possible the interrogation of notions of representation, highlighting the lack of Southern knowledges in the curricula and policies, and how they contribute to the 'problem' of population conduct in threatening the health of the environment and humans.

4.5.2 Sociology of Absences, Sociology of Emergences and Diatopic Hermeneutics

I use De Sousa Santos' (2006, 2007) sociology of absences, sociology of emergences and diatopic hermeneutics to complement policy-as-discourse analysis. I do so to illuminate the

various practices and discourses that have been made invisible in curriculum and policies, as well as to illustrate how they can be made visible.

Sociology of absences

The sociology of absences is an inquiry whose aim is to make visible that which does not exist in policies and curriculum and is invisible to the hegemonic reality of the world (De Sousa Santos, 2003, 2007, 2018; Escobar, 2016; Stanek, 2019). It "seeks to show that what does not exist is, actually, actively produced as non-existent, that is, like a non credible alternative to what exists" (De Sousa Santos, 2003, p.15). Applying a sociology of absences in the interrogation of the curriculum, for instance, helps to make visible the absence of local environmental practices and knowledges. It also makes visible how 'problem' representations of other social actors are produced as non-existent by policy representations. As a practice of interrogation, the sociology of absences makes visible how and why certain groups of people, forms of life and knowledges are produced as "non-existent, invisible, radically inferior and/or radically dangerous" (De Sousa Santos, 2018, p. 25) in and through the curriculum. It also makes visible the way that notions of rationality and efficiency are crucial to making invisible knowledges and forms of being. There are various logics and processes in which the hegemonic criteria of rationality and efficiency are used to produce non-existence. For instance, non-existence is produced every time a certain entity is disqualified and rendered unintelligible, or irreversibly discardable, for instance the environmental knowledges and practices of socio-environmental actors such as those in rural areas or the 'villagers'[1].

As a mode of critique, it uncovers ways of knowing and existences that are made invisible through the monoculture of modern science (de Oliveira, 2017; De Sousa Santos, 2014, 2018; Stanek, 2019). These are logics that reproduce coloniality of power, knowledge and being de Oliveira, 2017; De Sousa Santos, 2014, 2018; Stanek, 2019) and they include the monocultures of: rigour/validity of knowledge (Eurocentric environmental studies and scientific knowledges), linear time (velocity of production), the logic of social classification/naturalisation of difference (dividing practices), the universal and global (the universal and global overriding the local and contextual), and the criteria of productivity (capitalist performativity) (De Sousa Santos, 2014). The methodological use of sociology of absences in educational research leads to the need to delve into those existing worlds made

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[1] Villagers in this thesis is used as a political terminology and not a derogatory term. It is understood in the contexts of socio-ecological struggles and contested modernities in Zambia. As such, its use is empowering and a reappropriation of those living off natural resources on a small-scale, subsistence basis.

invisible by prior studies of educational models. For instance, utilising the sociology of absences in research makes visible the uneven distribution of economic, political, and epistemological power between the Global North and the Global South, a distribution which expands the possibility of destructive practices (Goyes, 2019). The fact that the Global North is credited for producing most of what is socially and environmentally qualified as valid knowledge, and thus universal, while the Global South is only qualified as locally relevant and is made visible through an inquiry that utilises the sociology of absences. The sociology of absences shows how Southern environmental knowledge is rendered non-existent and thus radically excluded from the production of the visible curriculum. The sociology of absences has three levels of inquiry:

1. an internal critique of the socio-scientific knowledge produced in order to establish hegemony,

2. an external critique of the West through the recognition and enactment of other ways of knowing and highlighting how they offer alternative interpretation of social transformation, and

3. a pragmatic contextual interpretation in which prior phases interact within particular struggles of the social groups involved (De Sousa Santos, 2018).

Sociology of emergences

De Sousa Santos (2016) argues that capturing reality through sociology of absences is in itself insufficient. To remedy this, a sociology of emergences is needed. A sociology of emergences is a mode of inquiry that contracts the future by challenging narratives of progress and emancipation, and substituting their 'emptiness' with "a future of plural and concrete possibilities, utopian and realist at one time, constructed in the presnt by means of care" (De Sousa Santos, 2004, p. 180). The socioology of emergences makes visible the available alternatives that fit on the horizon of possibilities. Despite the 'possible' being the most uncertain, it is the most ignored concept in western philosophy (De Sousa Santos, 2003). The 'possible' has the potential to make visible the inexhaustible wealth of the world. A sociology of emergences is thus premised on the 'possible" that imagines the not-yet. It is an inquiry that carries out a symbolic extension of knowledge, practices and agents in order to identify and envision them as the not-yet future trends (De Oliveira, 2014; De Sousa Santos, 2003, 2007, 2014, Escobar, 2016) upon which it is possible to intervene through struggles. The not-yet is a complex category as it expresses what exists as mere tendency, nevertheless, it is a way in

which the future is inscribed in the present (De Sousa Santos, 2003). The not-yet is the central premise of the sociology of emergences as it neither represents an indeterminate nor infinite future, but a concrete possibility that neither exists in a vacuum nor in a predetermined future.

The sociology of emergences takes it that "reality is not restricted to what there is; but also contains the not carried out possible or better still, the not carried out yet" (De Oliveira 2017, p. 59). The sociology of emergences, therefore, is an attitude whose intention is to analyse the possibilities of future practices, experiences and ways of knowing (after invisibilities have been made visible by the sociology of absences). To do this, it proposes taking into account both capacities and possibilities by making inquiries into the absence of a future possibility not yet identified, formed or realised. Following Wallin (2010), the sociology of emergences can be thought of as a "thought experiment" (p. ix) as it opens up new ways of thinking and doing research. In education and education research, the sociology of emergences "*opens new ways for thinking the course of a pedagogical life*" (Wallin, 2010, p. ix, emphasis original). Through the sociology of emergences, individual and collective subjectivities emerge. They emerge by going against those 'regimes of truth' that operate in modern education (Wallin, 2010). This approach reinvents hegemonic inquiry and opens up the possibility for the visibility of Southern ontologies and epistemologies. To think new thoughts requires a move out of the epistemic space of Eurocentrism into the epistemic configurations associated with the multiple ontologies of worlds in struggle, like Zambian local ways of knowing-being. It is in the sociology of emergences that non-Eurocentric concepts such as Ubuntu, Ukama, and Ubuntu-currere are accommodated.

Diatopic hermeneutics

De Sousa Santos (2014) argues that the fact that it is impossible to grasp the infinite epistemological diversity of the world does not prevent us from trying to know it; instead, it demands that we do so. Doing so, however, needs challenging the rules of the 'game', as such, the task requires constituting the complex and challenging task of validating "non-Western knowledges as relevant, comprehensible and carriers of truth" (Zembylas, 2017a, p. 403), while stripping Western knowledge of its assumed power. An intercultural dialogue is crucial if power, authority and control are to shift (Odora-Hoppers, 2009) and would facilitate a change in the structure of privilege, power, and oppression. Diatopic hermeneutics is one such tool that can be used to convert the diversity of knowledge made in the present through a sociology of absences and emergences.

Diatopic hermeneutics is a decolonial attitude that answers the question of incommensurability. It is a basis for cross-cultural conversation (Santos, 2002a) in which the South disobeys the totalitarianism of Western knowledge by speaking, reasoning, arguing, and inventing, while looking in the eyes of the North (Tlostanova & Mignolo, 2009). It is thus a refusal of what De Sousa Santos (2004) terms 'laziness of modern reason' – a logic that refuses to recognise the diverse universalisms of humanity. For De Sousa Santos (2002a), diatopic hermeneutics is based on the idea of incompleteness of knowledges and cultures:

> Diatopic hermeneutics is based on the idea that the topoi of a given culture, no matter how strong they are, are as incomplete as the culture they belong to… The purpose of diatopic hermeneutics is not, however, to reach completeness- an unattainable goal- but, rather, to broaden as much as possible the awareness of the mutual incompleteness through a dialogue that is developed, so to speak, with one foot on one culture and another foot on the other. Therein lies its diatopic nature (De Sousa Santos, 2006, p. 448).

Explaining the impossibility of seeing such incompleteness within the culture or knowledge itself, De Sousa Santos (2002a) observes that this is because an aspiration to totality usually induces *par pro toto* where the Global North comes to stand for the totality (De Sousa Santos, 2002a).

A decolonial approach points to cultural blind spots and the partiality of cultural viewpoints (Nascimento & Lutz-Bachmann, 2018). It is a construction of senses, negotiation of meanings, interpemeability of experiences, preventing as much as possible, judgements and preconceived ideas that initially had neutralised the Other's experiences (Salem, 2016). It is perspective that requires the collective production of interactive, intersubjective, and interwoven knowledge, based on affective and cognitive changes that take place through deepening of reciprocity among them. It gives privilege to the emancipation (De Sousa Santos, 2002a; Salem, 2016) of knowledge and ways of knowing from the other side of the abyss against scientific knowledge. To do this, it requires a different process of knowledge production. One that is not only collective and participatory, but based on equal cognitive and emotional exchange, a knowledge as emancipation rather than knowledge as regulation (De Sousa Santos, 2002a).

4.5.3 The Augmented Analytic

The analysis of participant data is informed by an in-depth examination of variegated individual memories, narratives, and experiences of environmental protection. I analyse, in detail, memories, accounts and practices of local traditional leaders, policy makers, lecturers, and NGO representatives in order to show different environmentalities operate and are transformed at the level of everyday practices of situated individuals. For this analysis of local traditional leaders' experiences, I make use of an approach that considers practices as particular ways of operating, of carrying out an action and activity, a way that bears its own meanings, senses, and forms (De Certeau, 1984).

The notion of practice shares common points with Ingold's (2000) 'dwelling perspecive' which considers that people perceive and reproduce the environment differently depending on how they relate to it and how they appropriate it. It takes the being-in-its-environment rather than the self-contained individual as the starting point for analysis. Studying 'our-being-in-the-world' as acting and sensing bodies is crucial to understanding the form in which we see and relate to the environment (Glasseni, 2009). In this way, I look at practice not as a calculative rationality, but an act of exploratory improvisation embedded in networks of meanings, relations and interactions whereby people's lives continually unfold (van Manen, 2007). As such, talking about the environment involves talking about ourselves (De Breton, 2006, Ingold, 2000) and how the environment and the individual merge through action (Ittelson, 1978) from a 'dwelling perspective' (Ingold, 2000). De Sousa Santos et al. (2008) argue that "all social practices involve knowledge" and that "the production of knowledge is in itself a social practice" (p. xxi).

The critical questions that need to be answered here are: what happens to the WPR approach when it is used to study problems in post-colonial contexts, a scope beyond Bacchi and Foucault's own geopolitical space? What happens to decolonial thought when a non-hierarchical understanding of power relations is used in local post-colonial contexts, a scope that is beyond decoloniality's understanding of power relations? I argue that a more complex understanding of power and colonisation must consider both the local and the global. Combining a WPR approach and sociology of absences and emergences and diatopic hermeneutics, I argue, bridges this gap by examining the microphysics of power without discarding the macrophysics of power in the formulation of environmental policies, curriculum, and subjectivities. Thus, decolonising the curriculum, and the subjectivities that it forms, and to broaden environmental knowledge and subjectivity requires complementing the WPR with

sociology of absence and emergences and diatopic hermeneutics. These, then, are the questions emerging from such an augmentation of WPR and sociology absences and emergences and diatopic hermeneutics:

a) What is the problem represented to be in policy and local practices?

b) Who/what is taken to exist (not exist) in the problem representations? How are certain modes of knowledge, practices and existence made to count in policies? How are policy problems and local practices foregrounded in colonial epistemological framings?

c) How are meaning and value (social reality in Zambia) determined? How may this power be resisted through local practices? What are the specific configurations of power and knowledge and how do they privilege and attempt to fix particular social and environmental formations?

d) What are the effects: discursive, subjectification, lived of the problem representation? How are subjects constituted in the policy problem representation and local practices (of Ubuntu and Ukama) in relation to power, knowledge, and subjectivity?

e) Can the problems in policy be thought of differently? How can local actors be 'walked with' to assert silent/silenced perspectives like Ubuntu? What may emerge from the encounter? What is the implication for curriculum and fostering sustainability in Zambia?

4.5.4 Data Analysis

Since this study is concerned with gaining an understanding of inclusions and exclusions in the curriculum, the effects of these exclusions on Zambians and how they can be addressed, a thematic analysis was a useful tool with which to code rich data. As Braun and Clark (2006) indicate, "thematic analysis […] seeks to theorise sociocultural contexts" and conditions that allow inidvidual accounts that are provided (p. 85). It allows the researcher to identify, analyse and generate themes using a *Southern environmentality dispositif* and decolonial genealogy to identify emerging themes.

The six types of data analysed in this study were:

- Transcripts of each local traditional leader conversation (seventeen).

- Transcripts of each lecturer, policy maker and NGO representative conversation, twelve in number.

- Environmental policies, Acts, strategic plans, declarations (fifteen)

- Education policies (three)

- Zambia National Curriculum Frameworks (one)

- Environmental education teaching and learning materials (modules), rationale, syllabi (twenty two).

Conversation transcripts, policies, acts, strategic plans curriculum framework, EE teaching and learning materials, and declarations were organised by adapting Braun and Clark's (2006) thematic analysis as follows:

Table 7: Phases of thematic analysis (Braun & Clark, 2006)*.*

	Phase	**Description of process**
1.	Familiarisation with data	Transcribing data, reading and rereading the data, noting down initial ideas
2.	Parameters of analysis	Makind decisions about the parameters of the analysis in relation to 'problem' representation, effects and inclusions and exclusions
3.	Generating initial codes	Systematic coding of entire data set, collating data relevant to each code
4 .	Integrated analysis	In-depth interrogation of identified problematisations and their effects
5.	Focus on alternative ways of thinking	Destabilise and decolonise taken for granted truth by suggesting *Ubuntu/Ukama* and *currere* as alternative approaches
6.	Producing and reporting	The final opportunity for analysis. Selecting vivid, compelling extract examples relating to research questions and literature

Stage 1: Familiarisation with the data

The first stage of the analysis process involved transcribing conversation data. In general, the transcription process did not pose any significant difficulties. Field notes helped to rebuild the tone and arguments of each interview. I then read and re-read the transcribed data and the environmental policy and curriculum data until I was completely immersed and familiar with all aspects. During this process, I also noted down interesting points and initial ideas relating to theories and concepts generated in Chapters 3 and 4.

Stage 2: Setting parameters

This stage involved making decisions about the boundaries of the analysis. Goodwin (2011) suggests that marking off and marking out boundaries for analysis is an interpretive

process in which the researcher's choices are already involved in the analysis. The process involved making decisions about which texts or selections of text would provide the initial object of the analysis. While the recommendation made by Bacchi (2009a) in relation to policy is to narrow the focus of analysis to concrete policy proposals or 'prescriptive texts', "designed to be read, learned, reflected upon, and tested" (p. 12), I chose statements made by local traditional leaders in the conversation transcripts to provide the initial object of the augmented analysis. As such, local traditional leaders' memories, accounts, and practices provide a framework for reading and using environmental policies and curricula texts. The local traditional leaders' memories, accounts and practices were selected as the focus of the study as they provide understandings of inclusions and exclusions regarding what is to be done in and through EE curricula.

Stage 3: Generating initial codes

At this stage, research questions became central to data analysis. The data corpus was organised and filed into a dataset (Braun & Clark, 2006) so that the data could be easily managed and accessed. Data items were selected to be analysed for each research question based on whether the items were useful in helping to answer each research question (see Table 8 below).

Table 8: Data items analysed for each research question

	Research Question	Data type	Data Source	Method for generating data	Data analysis method
1	What informed/influenced the development of HEd EE in Zambia?	Problem representations	Conversations		Problematization,
		Historical records (documents)	National Archives of Zambia Ministry of Higher Education Ministry of National Development and Planning Ministry of Chiefs and Traditional Affairs Ministry of	Document analysis	Deductive and inductive analysis to trace descent, emergence, and discontinuities
		Information about EE initiation/formulation	EE lecturers Environmental policies EE Rationale	Semi-structured conversations	Deductive analysis
		Information about international policy influence on EE	International declarations on EE, Local environmental policies Four HEd EE lecturers	Document analysis Conversations	Inductive analysis

	Research Question	Data type	Data Source	Method for generating data	Data analysis method
2	What does HEd EE curriculum in Zambia include and exclude?	Information about bodies included and excluded from curriculum making processes	Twenty-three local Traditional leaders, Four HEd EE Lecturers, Five policy makers, three NGO representatives		
		Information about authors included in the curriculum	Teaching and learning materials (modules)		
		Information about knowledges included and/or excluded from the curriculum	Four HEd EE lecturers		
3	What is the effect of inclusions and exclusions in HEd EE curriculum in Zambia?	Information about what kind of environmental subject is 'desired'	Twenty-one teaching and learning materials (modules), Four EE lecturers, Zambia Curriculum Framework	Document analysis Conversations	Deductive
4	How can the exclusions be addressed?		Twenty-three local traditional leaders, five Policy makers, four HEd EE lecturers, three NGO representatives	Conversations	Deductive

All the data analysis, in different forms, was in reiterative relation to theoretical assumptions and concepts generated in Chapters 3 and 4, as a dialogue between theory and empirical evidence, as well as a way of testing the applicability of theory in this research, its possibilities of adaptation, translation and contestation.

Stage 4: Integrated analysis of 'problem' representations and Effects

The fourth phase involved the identification of an in-depth examination of the identified 'problem' representations and their effects. The genealogical work began once the key 'problem' representations were identified and enabled examination of particular ways of thinking lodged within, and firmed up, by EE curriculum and policies.

Each 'problem' was examined using the augmented frame for thinking that guided a discussion of the shape of the problem, where it came from, and the potential effects of the problematisation. After reading the initial proposals by local traditional leaders, lecturers, policy makers, NGO representatives and policy and curriculum documents to identify specific 'problems', the analysis considered the conditions of possibility that enabled the specific representations of the problem to be intelligible, before taking into consideration their potential effects. The genealogical work explored the intelligibility of each problematisation through the bodies of literature of environmental governance and EE.

Table 9: Data analysed through an augmented frame.

Overarching Objective	Research Objective	Data Source		Theoretical assumption	Data analysis
		Interview with	Documents		
Problematizing Local Traditional Leaders' problem Construction	Identify problems as represented by Local Traditional Leaders	Local Traditional Leaders, some social actors		Knowledge, representations	What is the 'problem'? What other problems are subjugated? What knowledges do local leaders have?
Government Texts Problem Representation	Identifying government texts' problem representations and discourses underpinning them	Policy makers, Some lecturers, Some NGO representatives	EE Rationale, NCS, NEAP, NEP, NPCC, NPHE, ZECF, National Policy on Education		What is the problem? What assumptions underpin these problems?

Overarching Objective	Research Objective	Data Source		Theoretical assumption	Data analysis
		Interview with	Documents		
Investigating policy (curricula) genesis (Discursive and non-discursive practices			Archive documents	Historical understanding of the problem	How the 'problem' representations came to be
How the 'problem Representations came to be	Investigate their historical construction	Local Traditional Leaders, Policy makers, lecturers, NGO representatives	Archive documents, EE Rationale, NCS, NEAP, NEP, NPCC, NPHE, ZECF, National Policy on Education	Historical understanding of the problem	How the 'problem' representations came to be
The violence of the curriculum	What knowledges and bodies are	Local traditional leaders, Lecturers, policy makers	EE modules Education (1996)	Absences and presences of bodies and knowledges	What bodies are present/absent in the curriculum making process? What knowledges inform the HEd EE curriculum
What is at stake	Examine the effects produced by the implementation of the government texts problem ensemble	Lecturers	EE modules Rationale, ZECF (2013), National Policy on Education (1996)	Construction of desired subjectivities	What subjects are (de)mobilised in the HEd EE curriculum?

Stage 5: Focus on Alternative thinking

This phase involved destabilising the taken for granted 'truth' or norms, as well as decolonising them. This stage of the augmented framework consisted of how representations of the problems as disseminated by EE curricula could be questioned and decolonised. *Ubuntu/Ukama* as an alternative way of thinking was considered and discussed in relation to how they might decolonise the curriculum.

Stage 6: Reporting Findings

Findings for each research question were reported in the four data chapters.

4.6   ETHICAL CONSIDERATIONS

This research involved interacting with local traditional leaders, lecturers, policy makers and NGO representatives. For any research involving humans, "ethical issues relating to the protection of the participants are of vital concern" (Bloomberg & Volpe, 2008, p. 85). Issues of betrayal of trust, deception, harm, consent, dissimilation, confidentiality of data and invasion of privacy need to be central to any research study (Vasconcelos, 2010). Ethical clearance for this study was approved by the University of Adelaide's Human and Research Ethics Committee and the researcher was bound to the ethics and ethical practices endorsed by the committee. I adhered to the research ethics which outlined the need to respect and keep the data confidential. Kumar (2011) outlines several ethical issues that need consideration with regards the participants of a research activity. Issues relevant to this study were:

4.6.1 Collecting Information

Information collected was used only for the purposes of the research and relevant to the aims and research questions of the study.

4.6.2 Informed Consent

According to Kumar (2011), "in every discipline it is considered unethical to collect information without the knowledge participants, and their expressed willingness and informed consent" (p. 244). Written informed consent was obtained from each particpant in this study. Following Coady's (2010) proposal and the University of Adelaide's Human and Research Ethics Committee's requirements, each participant was informed verbally and through the information sheet about:

- the nature of the research and its benefits.
- what was expected of them.
- any possible risks attached to the researched.
- the ability to withdraw from the research at any stage along with their unprocessed data.

4.6.3 The Possibility of Causing Harm to Participants

Harm includes "any social research that might involve such things as discomfort, anxiety, harassment, invasion of privacy, or demeaning or dehumanising procedure" (Bailey, 1978, cited in Kumar, 2010, p. 245). In this study, physical harm or discomfort was avoided by making sure that all participants had prior knowledge of the information sought in the conversations and were not pressured to share any information that they were not willing to give. Prior to the conversations, participants were sent the information sheet, and phone

conversations were made to get to know them, explain the study as well as create an initial relationship.

4.6.4 Maintaining Confidentiality

For Silverman (2006), confidentiality is key consideration in order to ensure that

> people particpate voluntarily, ensuring people's views and comments remain confidential, protect them from harm and ensuring mutual trust between research and people studied (p. 323).

In this study, confidentiality was achieved by following ethical guidelines and securing informed consent, so that participants had a clear understanding of the research and understood that they could withdraw at any time without any penalty. All participants and the university will remain anonymous. After the data was collected, pseudonyms were assigned to the participants and the university so that the data collected could not be identified. Each conversation participant was made aware that his or her personal information and conversation transcripts were confidential. They were also advised and assured that information about each conversation participant was not to be shared with others for any purpose other than the research (Kumar, 2011). To ensure data confidentiality, Coady (2010) explains that specific procedures and protocols are needed:

> These procedures include coding of data and keeping the key to the code to separate from the data, keeping data in secure, locked storage, making sure that only those researchers authorised by the appropriate ethics committee have access to the data, and making sure that reports, articles and conference papers do not contain identifying material (p. 77).

Following the approved ethics protocol, all the data, including the audiotapes of the interviews are secured in a locked cabinet and password-secured computer.

4.7   CONCLUSION

The objective of this chapter was to provide a theoretical grounding for the methodology and analysis of curriculum as a modality of colonial government. To achieve this, the first part of the chapter dealt with the theoretical orientations that governed methodology. It was argued that decolonial genealogy provides a focus that permits the identification and exploration of power strategies and transformations within a post-colonial historical context. The second part detailed how the decolonial genealogy governed methods of data collection and data itself. The following data chapters present the findings in relation to the research questions.

Chapter 5: Problematising the Local: Tensions in 'Problem' Representations

5.1   INTRODUCTION

The preceding two chapters of this thesis introduced and discussed concepts and constructs providing a theoretical and methodological framework for this study. Chapter 3 introduced and discussed the *Southern environmentality dispositif* as a set of heterogeneous concepts that form the analytic of the study. Chapter 4 introduced and discussed decolonial genealogy as a methodology that unites Foucauldian problematisations to De Sousa Santos' sociology of absences and emergences and diatopic hermeneutics. The latter chapter argued that decolonial genealogy, through Bacchi's WPR questions and De Sousa Santos' sociology of absences and emergences and diatopic hermeneutics provides a vehicle through which the *Southern environmentality dispositif* is mobilised and becomes operational.

The genealogical analysis framing this chapter traces the descent of the problematisation of human conduct. It responds to the 'problems' as they are 'represented to be' (Bacchi, 2009) by local traditional leaders, lecturers, policy makers, NGO representatives and environmental and curriculum policy documents. These concerns necessitate examinations of how problem representations constitute particular kinds of environmental subjects. The chapter examines how certain ways of thinking about the environment makes it possible to constitute environmental subjects determined by moral and economic worth. To achieve this, the chapter mobilises the concepts of discourse, power, knowledge and being, which are key elements of the *Southern environmentality dispositif* discussed in Chapter 3 and which enable close examination of environmental conduct as a social and governmental 'problem'. Attention is thus paid to the tensions that arise from the different ways in which the 'problem' of human environmental conduct is represented.

Structurally, the chapter is divided into two sections. The first section of the chapter examines and discusses how the 'problem' of human environmental conduct is represented by local traditional leaders and compares their problematisations with those of lecturers, policy makers, NGO representatives and environmental policies and curriculum documents. I rely on

local traditional leaders' memories and accounts to understand how and why they represent the 'problem' as they do. The second section of the chapter is concerned with how the 'problem' of human environmental conduct is represented to be in environmental policy and curriculum documents. The chapter then turns to the accounts of lecturers, policy makers and NGOs, and compares their problematisations with those of environmental policy and curriculum documents.

5.2 IDENTIFYING 'PROBLEM' REPRESENTATIONS IN LOCAL LEADERS' ACCOUNTS AND MEMORIES

> The land is alive, populated, storied by the spirit- and she is known as a mother to those whose memories are long enough, expansive, and flexible enough, to be able to carry this knowledge (Holmes & Tolbert, 2020, p. 113).

This quote stresses the importance of local traditional leaders' memories with regards to knowledge about the environment and draws attention to discourses of human-nonhuman relations often cited by local traditional leaders. This section, therefore, uses local traditional leaders' memories and accounts obtained from conversation data sources conducted as field work to locate the 'problem' of environmental conduct as represented by local traditional leaders. The section pays particular attention to memories and practices because local traditional leaders

> awaken memory, enacting, engaging, and embodying knowledge that comes from within the interaction and exchange of the generation with each other, our relations with the rest of the Creation, to the land as alive with relatives, with story, with language and ethical protocols of activity, ancient systems of knowledge that understand and perceive how to be in places and with relations they have been gifted to live with and respect and take care of, a sacred compact with their Creator: Intergenerational wisdom practices and knowledges (Holmes & Tolbert, 2020, p. 113).

Since local traditional leaders embody this intergenerational generosity and knowledge, a process of ethical reciprocity to the past is a means of circulating ways of knowing and being, such that their problematisation of human environmental conduct provides an understanding of the present. Local traditional leaders' memories, accounts and practices are crucial to this study as they allow for an exploration of diversity, complexity, and entanglements in 'problem' representation of everyday social practices. They provide a rich understanding of how and why 'problems' are represented in this manner and help unfold the historical present.

This section shows how coloniality of power has overwritten Zambia's indigenous ecological knowledges and practices. Using the concept of *Ubuntu/Ukama,* indigenous ecological knowledge and practices of resilience and wellbeing are examined. Decolonial perspectives of power and knowledge enable an examination of how Indigenous ecological knowledges and practices are overwritten. These concepts allow exploration of how Indigenous ecological knowledges and practices indicate that Zambia's current environmental problems are not fundamentally related to a lack of knowledge or will by the Zambian population, but to an intrinsically violent and unsustainable modern-colonial-capitalist habit-of-being (conduct) that arose due to the country's entanglements with missionisation and colonialism.

5.2.1 Core Problematisations by Local Traditional Leaders

Analysis of the conversation transcripts of local traditional leaders, lecturers, policy makers and NGO representatives reveal human conduct towards the environment as a 'problem'. This 'problem' representation manifests itself in three elements: (a) 'a shift in power structures', (b) 'denial of entanglements', and (c) 'a matter of survival and not a knowledge issue'.

Analytic Focus	Key Statements
Conduct (a habit-of-being)	A shift in power structures Denial of entanglements A matter of survival, not a knowledge issue

A shift in power structures

Local traditional leaders explained that the reason Zambia is experiencing unprecedented environmental degradation is because local power structures have been overwritten by modern forms of government. Local traditional leaders complained that the emergence of the colonial administration reduced their institutions to ceremonial ones. They added that this has remained the case in all successive governments after independence. One local traditional leader explained that "with the power stripped from us, means that our duty to the environment as it stands is only ceremonial" (Conversation 19, Local traditional leader). Another local traditional leader added that:

> The power structures we have in place are a white man's creation. Traditional leaders were economic, cultural, social, and political leaders. Traditional leaders were there before the White man came. The white man found institutions of traditional leaders

functioning […]. Even when the colonial masters came to start governing us, they used us the traditional leaders to help them govern […] so if we have to have proper management of the environment, I feel the government must respect the traditional leaders and involve us in the governance system because we are the owners of the governance system (Conversation 10, Local traditional leader).

The local traditional leaders also indicated that they lacked the drive and motivation to involve themselves in conservation efforts as they felt sidelined by the government. One local traditional leader explained that:

The challenge we are facing now is a lack of drive to conserve our natural resources. Most of the powers that we had have been taken by the government. Our governance system has been rendered powerless. For example, it was a punishable offense to cut down a fruit bearing tree. So, if one was caught doing so, the *kuta*[2] had the power to punish or charge the culprit. As it is now, we cannot punish anyone. We don't have those powers anymore (Conversation 18, Local traditional leader).

The statements above show that the colonisation of Zambia brought with it a different type of governance. Although local traditional leaders continue to hold a symbolic cultural role, their roles have drastically transformed due to the consolidation of the modern nation state (Tieleman & Uitermark, 2019). The colonial administration and modern nation state stripped local traditional leaders of their previous powers. Before colonialism, the function of local traditional leaders included the regulation of natural resources by punishing those that were found wanting. However, these regulatory powers have been eroded. Post-colonial institutional frameworks in Zambia limit traditional leaders from exercising authority over the environment and offenders. Rather, authority has been shifted to line ministries such as the Ministry of Lands and Natural Resources, the Ministry of National Development and Planning and the Ministry of Water Development, Sanitation and Environmental Protection. These now have responsibility for the protection and management of the environment and natural resources. Policy reforms have not only undermined the role of local traditional leaders in the protection and management of the environment but also continue to be weakened by lack of clarity regarding their role and responsibility relative to the new structures of governance (Rihoy et al., 1999).

Local traditional leaders also complained that their role had been reduced to informal administration and as points of liaison between local communities and state institutions. They

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[2] Kuta is a traditional court

indicated that in most cases, the government never involves them in anything, and their importance has continued to diminish:

> The government keeps sending people to cut our trees without consulting us. We also see mining corporations operating in our chiefdoms. In all this, we are never consulted. Now look at this, who is suffering from these consequences of tree cutting or opening of mining activities? How can our people behave responsibly if it is the government that is in the forefront of making a desert out of our forests?" (Conversation 20, Local traditional leader).

The diminishing significance of local traditional leaders has occurred in both the modern state and the operation of power at local levels. The government is issuing licences to people and corporate organisations without notifying local traditional leaders or even monitoring the activities of those they issue the licences to. The government has been in the forefront of deforestation, and local traditional leaders have no power to protect and manage them in the absence of local powers to regulate the use of natural resources. As discussed in chapter 3, *Ubuntu/Ukama* as a conservation ethic embodies solidarity with nonhuman others through intergenerational relatedness that plays a critical role in influencing an individual's attitude towards nature. Within the *asili* of *Ubuntu/Ukama,* everything in the cosmos is related. That being so, the current generation operating from the *asili* of *Ubuntu/Ukama* see themselves as having a moral responsibility towards the environment through their respect for the past generation. Gratitude towards the past generation motivates the continuous guardianship of nature and treating nature with respect and dignity (Terblanche-Greeff, 2019). However, the modern-capitalist regime has turned local traditional leaders into a residue of a bygone era (Tieleman & Uitermark, 2019).

In contrast to this problematisation of the government's powers, one local traditional leader indicated that:

> I am an induna in charge of fisheries and wildlife. If we are to equate my position to the modern governance system, I am more like a Minister of Fisheries and Wildlife in the modern Zambian government. Only that ours is a traditional setup but we are accorded the same powers by our people and the kuta as they would accord a modern Zambian government official (Conversation 18, Local traditional leader).

An NGO representative agreed with this, but claimed that in most cases, local traditional leaders abuse it. She explained that:

> Most of our local traditional leaders are elitist and money oriented. They will just tell someone to say; give me money and cut as many trees as you want without thinking of

what will remain for him and his subjects. They are the worst abusers of the environment (Conversation 24, NGO representative).

It is evident that power is not always exerted in a hierarchical manner from the government to local traditional leaders, leaving them without, or with only, ceremonial powers. However, local traditional leaders do have the power to sell natural resources. Power between the modern state and local traditional leaders is not hierarchical but strategized to maximise advantage. As discussed in Chapter 3, power is relational and not a substance that can be given or taken. Entities normally marked as locations of power such as the State or local traditional leaders, as in this case, are in fact 'terminal forms' of power (Foucault, 1978). As such, power cannot be measured, interrogated, or observed directly. Rather, it can only be known by its effects. While local traditional leaders claim to have no power, their power can be known through their ability to sell natural resources.

Denial of entanglements

Through their reflections, memories, experiences and practices, local traditional leaders drew attention to when Zambian people were mutually entangled with the nonhuman other and how their relationship has changed in contemporary times. They explained that their relationship with the environment was intimate, and that morality and humanity were bound to how well they treated the environment. In the following conversation, a local traditional leader remembers how during his childhood forests were thicker than they are today:

> I remember that just before independence, we had very thick forests in Barotseland. Our forests were conserved for long periods of time using our traditional knowledges and conservation practices […] Our people were closer to nature than now. From childhood, we were taught to support nature so that it could support us back. We benefitted from nature, so we didn't want to upset it. You know that nature gets upset too, right? Even now we still benefit much from nature, but we don't take care of it. All we know now is to extract from it, but we don't give back (Conversation 21, Local traditional leader).

In line with this memory, another local traditional leader from the Western Province added that conservation during that time was made possible through language, and explained that language played an important role in protecting the environment:

> We were close to nature in that even our language, the idioms, proverbs, they were talking about and communicating about nature. We have lost this language. Especially our young generation, they don't make use of our rich language (Conversation 20, Local traditional leader).

The separability from, and loss of, language can be attributed to missionisation and colonialism:

> The worst thing that happened to us is that through the coming of the white man, we have lost out languages and how we did things. We no longer have an identity. It is gone. We have also lost our connection with our ancestral spirits and our religion. Everything that our forefathers did was with the guidance and blessings of our ancestors. […] for example, this new religion tells us that nature and ancestral worship is evil. But is it evil? I don't think so. They just brainwashed us into believing in their religion (Conversation 14, Local traditional leader).

The coloniality of power exercised through missionisation and colonisation not only threatened the survival of Indigenous ecological knowledges, practices, and languages, but also the identity of the Indigenous people in Zambia, and subsequently biodiversity and the environment in general. Mignolo (2003) makes it clear that:

> 'science' (knowledge and wisdom) cannot be detached from language; languages are not just a 'cultural' phenomenon in which people find their 'identity'; they are also a location where knowledge is inscribed. And since languages are not something human beings have but rather something of what human beings are, coloniality of power and of knowledge engendered the coloniality of being (cited in Maldonado- Torres, p. 243)

Local languages are the custodian and embodiments of identity, culture, and the knowledge about the environment that emerges from the understanding of nature. This knowledge is entangled within the culture and its language. There is an intimate relationship between language, knowledge, and the conservation of the environment as language nourishes the intimate material and spiritual ties with their environment. For instance, *Ubuntu/Ukama* become material entities when expressed through language. They suggest that once this interconnectedness of the three elements (language, culture, and knowledge) is disbanded, an individual loses themselves (identity) and the environment suffers through that person's conduct. Specific lexical terminologies like idioms and proverbs preserve a rich tradition of Indigenous ecological knowledge that is prevalent to an area (Krauss, 1996; Maffi, 2001). People who lived in these lands had their lives, cultures, and languages firmly bound to specific pieces of land. Missionisation and colonisation led to the death of not only the languages (linguicide) but also local religion and the cultural environmental ethics of *Ubuntu/Ukama* and thus some local ecological knowledges and conservation practices. The rapid decline or death of languages presents a parallel risk to the rapid decline of the environment (Sutherland, 2003). The Indigenous People's Earth Charter explains that:

people who lose their linguistic and cultural identity may lose the essential element in a social process that commonly teaches respect for nature and the understanding of the natural environment and its processes (as cited by Posey & Dutfield, 1996).

This is because language is perceived as a medium of communication and a conduit of knowledge within which complex place-specific livelihood systems shape and maintain local biodiversity and environments (Posey, 2001). Threatening the existence of language leads to loss of knowledge of biodiversity and the environment, which in turn leads to separation of humans from nonhuman others and subsequently the degradation of the environment: "the world's biodiversity will be effectively preserved only with the protection of the diversity of the human cultures and vice versa" (Toledo, 2001, p. 485). Closely related to the importance of language is Indigenous religion and its connection to nature. Local traditional leaders explained that before the coming of Europeans and subsequent introduction of Christianity, nature was one with the gods and they worshipped their god through nature:

> For us the Lozi, the natural environment is to us life […] We consider nature as a gift from the gods. So, we regard nature as we would regard babies. You see, when a baby is born, it needs a lot of care and nurturing to grow. Equally, for nature to support us, we need to take care of it. Besides, it is in nature that you can find and experience God. So, to us, nature is God and God is nature and we are also nature but not God […] nature helps us to have a better life. For this reason, we are obliged to take care of nature and our resources (Conversation 20, Local traditional leader).

This observation is supported by a lecturer who explained that:

> […] before they imposed Christianity on them, […] they knew their God […] they were worshipping in nature…deliberately, consciously, or unconsciously, we have killed that knowledge especially with Christianity and secondly with education. Currently, Christianity is enshrined in the national constitution…we, however, don't pay attention to what else this Christianity is killing. We have been very uncritical there. It is killing a lot of other things at Indigenous levels […] look at the environmental ethics promoted by the Bible […] it gives power to the humans to dominate and subdue the environment (Conversation 4, Lecturer)

Explicit in these problematisations is Christianity, a missionisation act that colonises knowing-subjectivity, resulting in a lack of connection to the environment. The power and knowledge of Christianity overwrote Indigenous knowledges about nature:

> I come from a clan that makes rains. That is why I am a leader. Our forefathers relied on ancestors for guidance. For example, if there was a looming drought, my clan

would invoke the ancestors and pray for rains. Rains would come. Even now, we still pray for rains and rains still come but it is becoming difficult as people believe that praying for rains at the shrine is evil. In the future, no one will pray for rains anymore. Our ancestors are becoming more and more angry with us that is why you see droughts everywhere (Conversation 13, Local traditional leader)

It is evident a coloniality of power has marginalised Indigenous religion and through a coloniality of knowing-subjectivity, the Zambian population has changed the way they interact with their environment. They now possess a hegemonic knowing-subjectivity that allows them to 'subdue' the environment. White (1967) asks: "what did Christianity tell people about their relations with the environment?" (p. 1205). The responses of the participants indicate that Christianity promotes the dominance of humans over nature and is premised on the human-nature divide. Christianity "illicitly placed humans in a cosmologically privileged position, one in which we were seen as created fundamentally separate from and superior to the rest of the natural world" (Minteer & Manning, 2005, p. 163). Modernity and Christianity were imposed on Zambians through colonialism, and this radically shifted Indigenous Zambians' perception and treatment of the environment. Nature became radically instrumentalised and this led to an exploitative attitude towards nature and the present environmental crisis. The new religion alienated people from their relationship to nature and introduced a Judeo-Christian ethic that allowed them to exploit nature for their own benefit. In Judeo-Christianity, nature exists to serve the needs of humans, a belief White (1967) argues, makes it "the most anthropocentric religion that the world has ever seen" (p. 1205). He continues: "Christianity in absolute contrast to ancient paganism, […] not only established a dualism of man and nature but also insisted that it is God's will that man exploits nature for his proper end" (White Jr, 1967, p. 1204). Through Christianity, modernity and colonialism, Zambians exploit nature in a "mood of indifference to the feelings of natural objects" (White Jr, 1967, p. 1205). In contrast, before colonialism, people were close to, and cared for, nature. A traditional leader recalls:

When I was growing up, my great grandfather used to tell me that when you injure the environment, you automatically injure man. Humans and the environment are one. For example, he would tell me that we need reeds for building. If we do not take care of these reeds by allowing people to burn them anyhow, then it means that we will not have proper shelter. What happens if there is no proper shelter? If we allow deforestation, how are we going to do our farming since rains will be affected? In short, if we destroy the environment, we destroy ourselves. I remember when I was a child, no one was allowed to cut fruit trees; it was a taboo. It was a punishable offense. If one set fire on the forest, depending on the magnitude of the damage, such a person could

either pay a fine in form of cattle or the kuta could decide on other forms of punishment (Conversation 18, Local traditional leader).

Another remembers that:

When growing up, I was made to fear certain trees. I was taught by my grandparents that these trees were home of ancestral spirits. Therefore, cutting such a tree would invite the wrath of the ancestral spirits through sicknesses, famine and in worst cases death. We, therefore, refrained from cutting down such trees. Even now, I still tell my people about these trees, but people think that we are too superstitious and don't listen to us anymore (Conversation 14, Local traditional leader)

This denial of the population's entanglement with nature is further captured by a local traditional leader who explains that "currently, people have lost the connection that they had with nature" (Conversation 19, Local traditional leader). This loss of connection is supported by a lecturer who explains that:

The fights that we have, the war that we are fighting, the devastation of the environment is all about lack of respect and connection. We have lost respect for the relationship that we had with the environment […] we have lost our *ubuntu*. We need a humane and ecological future. People should start thinking and acting the correct way. If we value interdependency and respect the environment, our interactions with the environment and other human beings would change (Conversation 2, Lecturer).

These problematisations connect the illusion of separation to Zambia's colonial history. The modern-colonial-capitalist system was premised on the binary distinction between humans and non-humans (Lugones, 2010). This distinction characterises Zambian behaviour towards the environment. Zambia's entanglement with the modern-colonial-capitalist system is problematised by local traditional leaders as a reason for Zambians' environmental conduct which lacks, and has lost, *Ubuntu*. *Ubuntu* is not only about the human, rather, it hinges on an inseparable triad of the human, natural and spiritual (Chibvongodze, 2016). *Ubuntu* is an African ethic articulated in the framework of anamnesis, a framework that "involves remembering one's ancestors" (Bujo, 2001, p. 34). Through remembering one's ancestors, "human actions are sensitised to all dimensions of existence - past, present and future" and that "the connecting thread in all three dimensions of existence are the moral values that have been inherited, treasured and passed on to future generations" (Murove, 2009, p. 319). Thus, *Ubuntu* through *Ukama* embodies an inseparable oneness between the past, present and future generations.

Ukama and *Ubuntu* are invoked as a solution to help people reconnect with the environment through Indigenous religion:

> Indigenous religion is the mother of our knowledge […] We were governed by taboos. For example, you couldn't kill certain species of birds because they were god's messengers […] remove this belief, what happens to the birds? It can be killed anytime without fear. There are also places where one would not cut down a tree because in these places stood a shrine […] So, remove this taboo; What happens to the trees in these places? So, you can see what keeps people; it is a triangular relationship between people, the gods and nature. Break this triangle; either religion will suffer, or the environment will suffer…it is this triangle that sustained nature (Conversation 4, Lecturer).

Indigenous religion, according to the above lecturer, is presented as a mother of Indigenous knowledge. The spiritual world manifests itself in the landscape through phenomena such as trees, animals and rocks (Fontein, 2006). Tradional religion shares an intimate relationship with nature and culture and traditional religion constructs the central elements of a distinct culture of local people in their situatedness (Sibanda, 2000). The utilisation of resources goes beyond immediate satisfaction to include conservation and a celebration of life (Rusinga & Maposa, 2010; Sibanda, 2000). People's utilisation and management of resources is also regulated by taboos. Taboos are crucial to the regulation of individuals' behaviour towards the environment and the use of natural resources: "the success in managing nature is inextricably linked to proper management and control of society" (Rusinga & Maposa, 2010, p. 204). In an African context like Zambia, the use, management, and conservation of natural resources is based on people's spirituality, practices, knowledges accumulated overtime and taboo systems (Sibanda, 2000). Taboos are crucial in shaping environmental ethics in African cultures (Ndlovu & Manjeru, 2014) and Zambians perceived themselves as interdependently related to nature and the spritual world as shown in the diagram below:
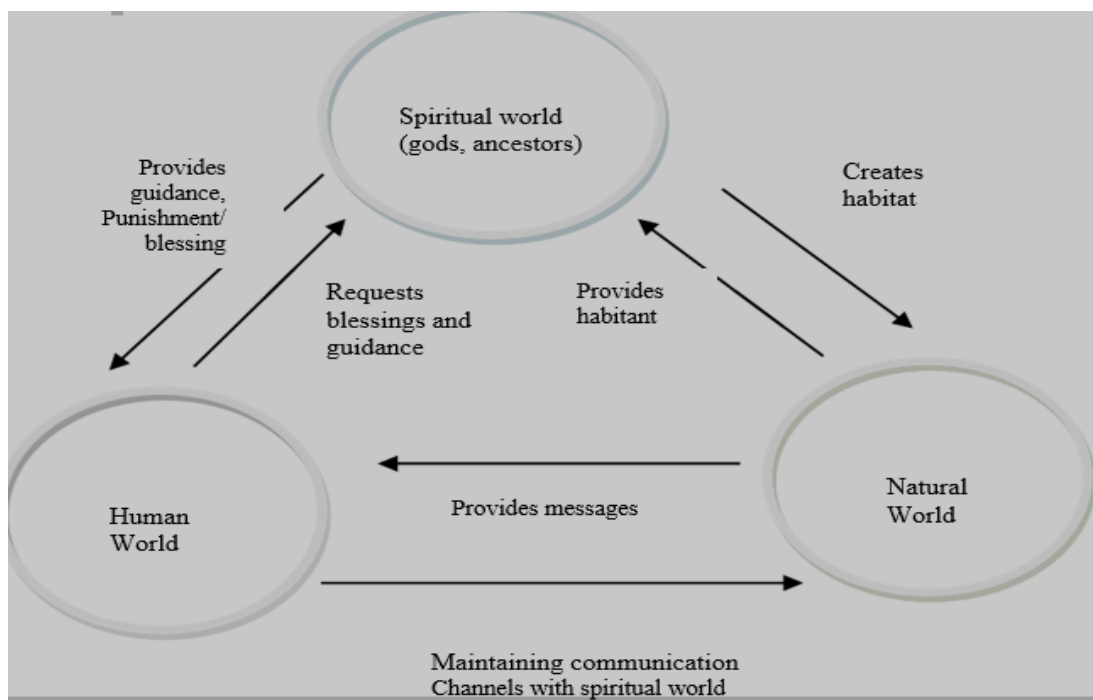
Figure 9: Zambia's indigenous cosmovision *(adapted from* Haverkort et al., 2003, p. 142)

The taboo system and environmental practices are grounded in this religio-cultural milieu which shapes the local people's interpretation of their perception of the accessibility and utilization of available resources (Rusinga & Maposa, 2010). Taboos operate to shape identity and limit the use of some species of birds, trees, and animals through "emotional and ethical norms designed to govern behaviour and the context of resource utilization" (Mandondo, 1997, p. 353). Taboos are concerned with (a) all the social mechanisms of obedience which have ritual significance; and (b) with specific restrictive behaviour in dangerous situations. To this, a local traditional leader explains that:

> It was taboo to trap animals at burial sites or to kill certain species of birds. If one did that, certain rituals had to be performed to cleanse the land and the person involved. Failure to do so, would cause calamities (Conservation 22, Local traditional leader).

This is supported by Chemuhuru and Masaka (2010) who explain that the "violation of taboos is thought to invoke the anger of the spiritual world". Taboos are used as a form of environing mentality that regulated the conduct of people towards the environment as well as working to protecting and managing the environment.

Unlike contemporary forms of environmentality discussed in Chapter 3 which are based on individual choices, taboos among Zambian communities that still practice them are an obligation and not a matter of choice. In these communities, taboos are taken seriously as they

are believed to have been imposed by forebearers for the interest of the community. Although taboos offer the best explanation for ecological practices of Indigenous Zambians towards the governance of the environment, they have been dismissed in dominant ecological and sustainability discourses. Dominant Western ways of knowing-subjectivity concerning environmental degradation and governance of the environment still act as powerful narratives in the condemnation of Indigenous environmental practices. Powerful Western narratives prevail as they 'meet a need' and provide a useful discourse for three main constituencies: the national government, intenational organisation bureaucracies and some groups of scientists (Swift, 1996). Subsequently, Indigenous environmental practices continue to be ignored or labelled as unsustainable and rendered invalid or unintelligible in both national and transnational environmental protection and management. Where local practices are adopted, they are judged against Western science, and adopted through a colonial mentality of ecological imperialism which justifies the superiority of Western knowledge over indigenous ecological knowledge and practices. This mentality is adopted in both national environmental policies and curricula without regard for local socioenvironmental structures and is an effect of colonial discourses that devalue local indigenous people and their knowledge. This produces a distinct discord between official environmental policies and local environmental practices as one. A lecturer observed:

> There is so much destruction now because people have no reason to obey the Indigenous law anymore. In legal empiricism for instance, you must have a reason to obey the law. Why do people obey the law? In my Indigenous culture, people obeyed the law because it was part of them […] they saw their gods in the law. But if people do not see anything in the law, they will break it […] In post-colonial rules of the environment, we have adopted the same philosophy that was hidden in colonial rule. We have not radically disintegrated from them. We are using the very knowledge that was used to colonise us […] we have continued with the same tools that were used to colonise us but it is hidden in text […] you can't see it. But if you have to see it, it is the effects on the ground (Conversation 4, Lecturer).

Colonialism is regarded to be the problem that alienated Zambians from the religio-cultural milieu. Colonialism, as discussed in Chapter 3, is founded on the nature-culture divide (Lugones, 2010). As a foreign culture forced on Indigenous Zambians, colonialism not only imposed a culture of separation from the environment, but also altered interaction with nature. People stop caring for the environment because they do not see any reason to. The Western *asili* introduced individualistic values (Murove, 2014), and the coloniality of knowledge subjugated *Ubuntu/Ukama* so that it is perceived as a "phenomenon of human primitivity and

a manifestation of an infliction of dependency complex syndrome" (Terblanche-Greeff, 2019, p. 100) which should be conquered by modern Western values. Coloniality is the darker side of modernity (Mignolo, 2011) and presents *Ubuntu/Ukama* as an inferior ethic that:

> side-steps the slow Western development of the idea of personal responsibility […] Without this consciousness the fruits of technology cannot be enjoyed […] It teaches Africans to evade responsibility, rather, to hide behind the collective decision of the group (Theron, 1995, p. 35).

Coloniality is kept alive "in cultural patterns, in the self-image of the peoples, in aspirations of self […]. In a way, as modern subjects, we breath coloniality all the time and everyday" (Maldonado-Torres, 2007, p. 244). Given this, the Zambian population are living and breathing coloniality in their interactions with the environment. The environmental and sustainability crisis that we face today is understood by Kimmerer (2012) as being about resource degradation and species extinction rather than about the degradation of our relationship with the more-than-human world and the extinction of the ethical responsibility for the environment which sustains us. *Ubuntu* operated through taboos, totems, clan names, folklore and proverbs (Chibvongodze, 2016). When *Ubuntu* is lost, there is nothing to bind Zambians to the environment. Where once they were afraid of annoying the gods, now they have no reason to fear them. Although issues of rules contribute to the degradation of the environment, with appropriate modifications and interpretations, taboos could be transformed into highly effective instruments for promoting sustainability.

A NGO representative explained the magnitude of the breakdown of human relations with the biophysical world:

> What does the household think about its own environment? Nobody talks about the environment […] as such we get solid waste management challenges. We get all sorts of challenges because people feel that it is somebody else's responsibility to care for Waste management. For instance, the attitude is, I can throw trash anywhere, it is for somebody else and not mine to take care of (Conversation 24, NGO representative).

There is a lack of intimacy with nature, and it is regarded as a threat to the environment and, consequently, national security. Detachment from the environment is ethically harmful and ecologically unsustainable, as it is premised on the denial of interdependence between humans and non-humans. Currently, separation from nature is one of the most fundamental obstacles to the effective environmental governance (Kareiva, 2008; Pergams & Zaradic, 2006, 2008; Wells & Lekies, 2006). People "are increasingly disconnected from nature and as a

result, are less likely to value nature". This dynamic "may well be the world's greatest environmental threat" (Kareiva, 2008, pp. 2757–2758). Responsibility to, and relationality with, others (humans and nonhumans) are matters of choice and rational calculations of utility maximisation (Stein, 2019a). Thus the fundamental 'problem' is the population's alienation from the environment ,and it is this that creates irresponsibility towards the care of the environment.

A matter of survival, not a knowledge issue

The colonial discourse is material and discursive (Foucault, 1970). Colonial mechanisms manifest themselves at the symbolic and material levels through the exercise of power in classifying, making legible, representing, and evaluating local populations' places and ecologies (Grosfoguel, 2007; Mitchell, 1991; Ndhlovu-Gatsheni, 2015; Scott, 1999; Smith, 1999; West, 2016). Power is exercised through the reduction of complex socio-ecological relations into universalising, positivist, and Western Cartesian frameworks (Goldman, 2020; Mignolo, 2011; Smith, 1999; Sungusia et.al, 2020). What emerges from the problematisation of the Zambian population's environmental conduct, manifested through their alienation from the environment, is that it is not a knowledge problem. Rather, it is a matter of survival. Traditional leaders and other social actors agree that Zambians possess knowledge about the environment and its problems (See Appendix 5 for indigenous knowledges). One local traditional leader pointed out that "forests are disappearing because of economic activities such as charcoal burning and timber exportation" (Conversation 18, Local traditional leader). Another added that:

> The way my people are relating with the environment now is not good. But I don't blame them. It is a matter of survival. Others have to cut grass and sell. Others use illegal fishing methods, and many are cutting down trees indiscriminately for charcoal and timber. It is not their fault [...] they don't have any other source of income [...] they don't have jobs, so they depend on the environment and its natural resources (Conversation 10, Local traditional leader).

Other social actors indicated that the disappearance of forests, for instance, is not a result of lack of knowledge about environmental problems by local people; rather, it is a matter of survival. One participant, a policy maker, explains that in her work which requires interactions with the local people she learnt that local people do not lack knowledge about environmental problems, rather:

Zambians are very much aware of environmental problems because of the way climate variations have impacted them at the household levels […]. I will give an example of charcoal burning. If you go round, even in rural areas you ask them about the dangers or consequences, they will tell you, yes, I know it is wrong. I know this will affect me. But what can I do? This is my only source of livelihood. So, I think for the Indigenous people, we need to provide an alternative livelihood (Conversation 7, Policy maker)

An NGO representative added:

Because people need to sustain their livelihoods, it is difficult for them to adhere to policies that ask them to care for the environment. Imagine you need money to send your children to school, you will cut the tree for charcoal so that you sell and have money. Another example is people using poisonous stuff to kill fish so that they can sell. Also, when the government gives people mosquito nets to protect themselves against malaria, they use them to catch fish, even the small ones. All this is a way of protesting, to show that they are not happy with the policies as well as have an income (Conversation 24, NGO representative).

It is the need to survive, not a lack of knowledge about environmental problems, that is the problem. Poverty and a lack of alternative income among Zambia's disadvantaged groups are the major drivers of the loss of biodiversity, climate change and environmental degradation. Poor people are often presented by local traditional leaders, policy makers, NGO representatives and lecturers as the primary drivers of environmental destruction. It is ironic that the poor are presented both as the victims of environmental degradation and agents and perpetrators of environmental degradation because they are forced to exploit their environment to survive. The 'problem' representation of the poor as drivers and victims of environmental degradation is based on the discursive power of international organizations such as the World Bank (WB) and the UN. They function as colonial epistemic tools that promote and sustain coloniality by creating and circulating discourses of SD that link poverty and environmental degradation. These institutions advance attempts to bridge the development field with the environmental field by suggesting that "poverty itself pollutes the environment", in as much as "those who are poor and hungry will often destroy their immediate environment in order to survive" (World Commission on Environment and Development [WCED], 1987, p. 28). The World Bank (1992) claims that "the poor families who have to meet short term needs mine the natural capital by excessive cutting of trees for firewood and failure to replace soil nutrients". The WCED (1987) further indicates that:

Many parts of the world are caught in a vicious downward spiral: poor people are forced to overuse environmental resources to survive on a daily basis, and their

impoverishment of their environment further impoverishes them, making their survival more uncertain and difficult (p. 27).

International organisations' definitions of SD take for granted the assumption that "poor people are forced to degrade in order to survive […] that they cannot think about the future" (Broad, 1994, p. 812). For instance, the WECD (1987) states that "poverty reduces people's capacity to use resources in a sustainable manner: it intensifies pressure on the environment" (p. 49). The poor have a small margin for suppressing or foregoing present consumption to avoid damaging or depleting the natural resources on which they depend for survival (World Bank, 1989). Here the poor are presented as finding themselves locked in a 'downward spiral' (Leonard, 1989) of environmental degradation, leading to increased poverty forcing them to further degrade the environment. What emerges from this problematisation is the normalisation of the idea that poverty and environmental degradation are inseparable, and what is excluded is that the poor may pursue sustainable livelihoods despite their condition of poverty (Bryant, 1997; Etongo et al., 2016). For instance, one participant observed that:

> I have come to realise that the people we consider as poor are the closest to their environment. They know that it is a source of their livelihood, so they take care of their environment compared to others in much better conditions (Conversation 23, NGO representative)

Problematising the poor obscures the differentiation of the poor by class, race, or gender, and eliminates the need to search elsewhere. Apart from this, this problematisation represents poverty as an original state of being which can only be rectified through economic development (Bryant, 1997). This view fails to relate poverty to historical processes when precolonial modes were overwritten by colonial powers as part of the integration of regions into the globalizing capitalist system. This problematisation thus fails to link poverty to political and economic interests that perpetuate poverty. Environmental degradation by the poor may also represent a form of protest against unreasonable environmental policies as discussed in Chapter 6. It is evident that operations of power can be resisted. Importantly, if it were simply that the problem was knowledge, then giving the population more knowledge and better information would correct the problem. However, it is not simply that we have a knowledge problem, rather we have a habit-of-being problem (Shotwell, 2016, p. 38). This point is reiterated by a lecturer who notes:

> There is one thing that I have come to learn in my line of work […] the value and behaviour gap, I mean the gap between knowing and doing […]. I know

that Zambians, for instance, know that littering is bad for the environment, but they still litter. So, to say that they don't know about environmental problems would be problematic. I think they know but their behaviour doesn't show that they know (Conversation 2, Lecturer).

So, it is better to suggest that behaviour is a hindrance to protecting and managing the environment in a sustainable manner than to suggest that knowledge about the environment is problematic. Human behaviour towards the environment as a 'problem' representation is premised on discourses that promote behaviour as a right step towards fostering sustainability. This problematisation of human behaviour appeals to individuals by making them feel guilty about the behaviours they currently exhibit.

5.2.2 Section Summary

This section examines local traditional leaders' representation of the problem as one of habit-of-being. There are three interrelated elements of this problem representation:

a) Economic: where survival is a necessity in a modern capitalist post-colonial country which places a market value on nature.

b) Cultural: where the alienation from nature results in the abandonment of ritual practices and lack of access to ancestral sites.

c) Western/modern/colonial: where a reliance on Western ways of knowing-subjectivity "overvalues independence, autonomy, intellect, hierarchy, domination, transcendence, product and death" while undervaluing "interdependence, community, connection, sharing, emotion, body, trust, absence of hierarchy, nature, immanence, process, joy, peace, and life (Jagger, 1992, p. 364).

5.3 IDENTIFYING 'PROBLEM' REPRESENTATIONS IN ENVIRONMENTAL POLICY AND CURRICULUM DOCUMENTS

This section uses Foucauldian notions of discourse, power/knowledge, and subjectivity, and decolonial concepts of coloniality of power, knowledge, and being to examine and discuss the 'problem' of human conduct as represented by policy and curriculum documents. The policy and curriculum documents analysed in this section are:

- The National Conservation Strategy (NCS) (1985)
- The National Environmental Action Plan (NEAP) (1994)

- National Policy on Education, Educating Our Future (1996)

- National Environmental Policy (NEP) (2007)

- Environmental Management Act (EMA) (2011)

- Zambia Education Curriculum Framework (ZECF) (2013)

- National Policy on Climate Change (NPCC) (2016)

- The Constitution of Zambia (CoZ) (2016)

- The Seventh National Development Plan 2017-2021 (7NDP) (2017)

- National Policy on Higher Education (NPHE) (2019)

- Implementation Plan for the National Higher Education Policy (2019)

- Vision 2030

- Environmental education programme Rationale (EE Rationale; see Appendix 7).

Structurally, the section is divided into two parts. The first part analyses how and why the 'problem' of human conduct is represented by policy and curriculum documents. The second part analyses how the problem is represented by lecturers, policy makers, and NGO representatives who support policy and curriculum documents, as well as the tensions that emerge from this 'problem' representation.

5.3.1 Core problematisations in the Policy and Curriculum Documents

An analysis of the policy and curriculum documents reveals a 'pattern' of problem representation. All policy and curriculum documents analysed contain proposals for change. While some are explicit, some carry several implicit 'problem' representations. For instance, a policy that aims "to generate better knowledge of what natural resources are capable of, the consequences of using them and the precautions to be taken to ensure that their use is sustainable" (The Government of the Republic of Zambia [GRZ], 1985, p. 8) implies that the problem is the population who currently demonstrate insufficient knowledge with which to understand the consequences of their behaviour to the wellbeing of the environment. Policy and curriculum documents are also explicit in their construction of a wide range of issues in Zambia as 'problems'. For instance, the NEP presents itself as a response to the "danger" of environmental and sustainability problems which are "daunting challenges" (GRZ, 2008). The NCS is presented as a response to 'severe constraints' (GRZ, 1985). The NPCC, on the other hand, is a response to the 'pressing' issues of climate change which are a 'serious threat' and 'serious risk' to Zambia's development (GRZ, 2016). While the NEAP responds to those environmental concerns and attitudes that 'pose a threat' (Ministry of the Environment and

Natural Resources [MENR], 1994) to achieving sustainability, the NPHE is a response to quality education that has been 'elusive' and 'a source of concern' (Ministry of Higher Education, 2019). To all these problems, HEd EE is positioned to "provide educational knowledge, skills and values" about the environment "which are not widely available in Zambia today" (EE Rationale). But what is exactly being constituted as the 'problem' in policy and curriculum documents? Key statements listed below indicate that lack of knowledge about the environment and its problems are the core 'problem'.

Analytic Focus	Key Statements
The 'problem' of Knowledge	Zambians lack knowledge about environmental problem
Local ecological knowledges	Lack of ecological knowledges in policies and curricula lead to environmental degradation

The 'problem' of knowledge

This sub-section analyses how environmental conduct is represented as lack of knowledge about environmental problems. It begins by examining how environmental problems have been constructed by successive Zambian governments and what this means for the "making" of environmental subjects. The section then examines how the construction of environmental knowledge as a particular 'truth' worthy of institutionalizing classifies the population as ignorant, thus justifying EE as a 'solution' for the 'making up' of desired environmental subjects. Finally, the section explores how the construction of certain 'truths' about the environment, and desired environmental subject, is a cultural construct that marginalizes or subjugates other environmental subjectivities.

All policy and curriculum documents analysed begin with the situational context of the country. These texts discursively construct Zambia's environmental problems as follows:

The country at present faces *daunting challenges* of deforestation, land degradation in many places verging on desertification: *wildlife depletion especially in protected areas* and all accompanied by soil erosion, loss of productivity, inadequate sanitation and air and water pollution (GRZ, 2007, p. 1 emphasis added).

Climate Change has emerged as one of the *most pressing issues* in Zambia [...] the country is already experiencing climate induced hazards, which include drought and dry spells, seasonal and flash floods, and extreme temperatures (GRZ, 2016, p. 1 emphasis added).

Zambia faces various environmental problems which are *a source of concern*… these problems include deforestation, land and water degradation, unsustainable use of human and natural resources as well as heaps of garbage and loss of biodiversity (EE Rationale, para. 2 emphasis added).

Education is the proposed solution in all government texts to perceived 'daunting challenges', 'most pressing issues' and 'sources of concern'. Not surprisingly, the rationale for one HEd EE programme indicates that "the chief response to these problems is education: education to reach child and adult actors about the need to operate in the environment sustainably" (para. 2). Such a 'solution' implies that the 'problem' with the protection of the environment is students' lack of knowledge. The educational 'solution' is characterised as a suitable and beneficial intervention to respond to problems through the acquisition of environmental "knowledge, skills and values" (EE Rationale, para. 3).

Zambia's environment is not only discursively constructed as in crisis and needing remedial action, but also the environment and environmental problems are not fixed. Different Zambian governments construct the environment and environmental problems in different ways according to the different ideologies, actors, and agents at play. For instance, there is a difference between policies of the African Socialist government of the United Party for National Independence (UNIP) and the liberal governments of the Movement for Multiparty Democracy (MMD) and the Patriotic Front (PF). However, the 'solution' proposed by successive governments is invariably education, namely an education that would "prepare people with skills and knowledge needed to identify and shape the quality of the world we share with others - humans and nonhumans" (Gruenewald, 2004, p. 72). The particular type of education needed is regarded as absent in Zambia: "unfortunately, educational skills for such a response are not widely available in Zambia today" (EE Rationale, para. 2). Proposing a particular kind of education as the 'solution' draws on discourses concerning the environment, population and security which not only legitimise environmental politics by rendering them intelligible to state elites, but also shape and circumscribe the range of possible responses to environmental degradation and climate change. Further, proposing a particular kind of education as a 'solution' legitimises discourses which normalise the idea that (i) people lack the necessary values, skills and knowledge to care for the environment; and (ii) there is a need for EE. Taken for granted is the 'truth' that people need to be given certain knowledges and understandings of the environment for them to perform 'reasoned action' (Liobikiene &

Poskus, 2019) towards it. As Foucault observes, "the most insightful way to understand society is to consider it from the perspectives of professions that have emerged to contain its failure" (cited in Gruenewald, 2004, p. 72). A particular kind of education is deemed crucial to keep under control both general education and society's failure to advocate for the care of the environment.

The failure of the current type of education and society to promote pro-environmental behaviour is noted in the Seventh National Development Plan of Zambia which indicates that:

> Zambia needs an attitude, values and behavioural change tailored towards transforming the national development pathway […]. Zambians lack patriotism, especially with respect to cleanliness of the environment and prudent and sustainable use of our natural resources (GRZ, 2017, pp. 29-30).

The Plan explicitly states that Zambians must change their attitudes and behaviour towards the environment if it is to sustainably develop. This problematisation is based on dominant discourses about environment and sustainble development that normalise and present as a regime of 'truth' the need for behaviour and attitude change. The consequence of such discourses is that in the name of SD and environmental risk management, a new set of administrative 'truths' and knowledges must be developed. These knowledges enable human stewardship over nature (Rutherford, 2009). Behaviour change is required at the level of the individual, and parameters are set for the kind of attitudes and behaviour an individual needs to possess in order to forster sustainability. Behavioural change is fast becoming the 'holy grail' of sustainable development policy (Jackson, 2005, p. xi) and stems from discourses of ecological modernisation which address environmental problems by turning the tools of modernity towards a new liberal form environmentality (Hajer, 1995). Zambians, as sovereign individual consumers of natural resources, are thus required to be educated to hold pro-environmental attitudes and behaviour. Environmental problems are translated into individual behavioural imperatives, a standard that regulates the desired and normal behaviour as well as "makes prescriptions and executes practices in order to supply the lack or correct the abnormality" (Rawlinson, 1987).

To generate desired environmental subjects, policy and curriculum documents expect Zambians to behave rationally towards the environment and utilise resources in an efficient manner (GRZ, 1985, 2007, 2011, 2016; MENR, 1994). Article 43, Section C of the Constitution of Zambia (CoZ) expects a responsible citizen to "protect and conserve the environment and utilise natural resources in a *sustainable manner*" (GRZ, 2016 emphasis

added). The National Conservation Strategy adds that the population needs "a *reasonable ability* to assess the impacts and possess the *knowledge* to make their activities compatible with sustainable development and a healthy environment" (GRZ, 1985, p.

10 emphasis added). This will lead to "ensuring *greater efficient* resource use" (MENR, 1994, p. 18 emphasis added). These statements are premised on dominant ecological discourses that hold that the truth of the environment comprises its problems. They define the desired environmental subject, and have the following discursive implications: (i) nature is an entity that is separate from humans and is endangered by Zambians' irrational or unreasonable actions, and (ii) the endangered nature is in need of protection which can be generated through careful government (Agrawal, 2005). These discourses are hegemonic in that they effect a powerful constitution of 'truth' and moderate what can and cannot be made 'true'. What has been made 'true' is the hegemonic understanding of environment knowledge. Defining the desired environmental subject, the statements follow discourses which regard ecological knowledge as (i) knowledge about the existence of environmental problems; (ii) action-oriented knowledge about the impact of behaviour on the environment; and (iii) effective knowledge which addresses the tools about how to minimise environmental impacts (Gruenewald, 2004; Hajer, 1995; Liobikiene & Poskus, 2019).   From a Foucauldian perspective, this discourse carries "the status as an outcome of relations concerning the hegemony of science as the most legitimate knowledge" (Walton, 2005, p. 60). It serves as a regime of 'truth' that defines what counts as a fact, and determines the mode of comprehension and action that is best suited to the understanding of the environment. There are material and embodied implications for people's lives, and how they relate to the environment in this form of environmental knowledge. This regime of truth has the power to pathologise and normalise people's subjectivities. It has power to determine who is (not) normal, in this case, who is and/or is not an environmental subject. Foucault (1971) argues that being in a discourse, belonging there, and being regarded as 'normal' means being in the truth.

The desired environmental subject is based on a 'truth' about what the environment and environmental knowledge is, and thus brings into being the 'truth' concerning the problems of the environment and sustainability. By appealing to normalised ideas of reason and normality, hegemonic discourses of the environment (re)produce cultural understandings of who lives a life that promotes sustainability and who needs to change so as not to risk or threaten the world with their lack of environmental knowledge. The concept of coloniality alerts us to how particular 'truths' about what environmental knowledge is, and what it takes to be an an environmental subject, are normalised and universalised by subjugating certain knowledges

and ways of being. This acts as a kind of governing technology that organises what is possible to know and be. Such an articulation leads to a coloniality of knowing, which is constituted through processes of subjectification (Motta, 2016) which create and (re)produce a particular kind of knowing subject: a westernised and individualised subject encapsulated in Descartes' articulation of the ego-cogito (I discuss this in detail in chapter 7). The environmental subject, as articulated by policy and curriculum documents, is a monological subject, speaking for, and erasing, the other. In this way, hegemonic environmental discourses in policy and curriculum documents do something to us; they make us talk and act in specific ways, as well as stop us from acting or talking in other ways.

Policy documents refer to nature as natural resources. This is visible in the CoZ which states that "natural resources have an environmental, economic, social and cultural value and this shall be reflected in their use" (Article 255 Section A). This representation is reiterated throughout other policy documents analysed in this study. The 'truth' about nature being a natural resource is rendered intelligible by dominant discourses that repress Indigenous knowledges and ways of being. The repression and transformation of nature into natural resources is a cultural process, and not independent of power relations. It affects the way nature, environment, environmental knowledge and environmental subjectivity are known and acted upon. The way the environment, environmental knowledge and environmental subjectivity are understood in Zambia, and by Zambians, is a result of overlapping material and discursive practices which are related to the governance of nature and the environment. Specifically, the modern-colonial-capitalist system is connected to a specific conceptualisation of nature, environmental knowledge and environmental subjectivity, according to which local understanding and knowing-subjectivity of nature and the environment are represented as the 'Other', and contrasted to Western scientific knowledge. Conversely, local understandings of nature are represented as irrational, primitive, unreasonable, uncivilised and static, and Western science is characterised as rational, dynamic, developed, civilised and progressive (Breidlid, 2013).

A problem representation based on Western conceptualisations of environmental knowledge and nature defines parameters of what is to be known, and whose knowledge is worth knowing in order to meet the standards of the desired environmental subject. In policy and educational discourse, it is generally taken that knowledge is crucial. Therefore, the question of what ,and whose knowledge, is valued becomes a crucial framework (Fendler, 1998) for deciding what or whose knowledge should (not) be included in the policy or curricula,

or what or whose knowledge should (not) be considered as valuable and valid environmental knowledge. This not only subjugates other ways of knowing and relating with the environment, but also makes particular kinds of subjects. The standard of what it means to be an environmental subject emerges through assumptions about what and, most importantly, whose knowledge is worthy.

An analysis of policy and curricula documents reveals that the most compelling and totalising level at which 'problem' representation occurs is the problematisation of the Zambian population as having "limited understanding of environmental problems" (GRZ, 2007, p. 1). The Zambian population is explicitly problematised as lacking environmental knowledge. This problematisation is further developed in Chapter 6, and is based on hegemonic knowledge/power relations that validate certain 'truths' and invalidate others. The problem representation hinges on environmental and developmental discourses that classify populations, and learners in particular, as either desirable or dangerous in relation to what counts as 'truth'. Such a problematisation is grounded in discourses of rationality and reason, which constitute a coloniality of knowledge or what De Sousa Santos (2007, 2014, 2018) terms abyssal thinking. This problematisation masks alternative knowledges that fundamentally challenge western ways of knowing, being and doing. Through problematising the Zambian population as lacking environmental knowledges, particular kinds of actions and inactions are privileged, and particular modes of thought and action are justified.

Policy problematisations indicate that the Zambian population lacks objective knowledge with which to act reasonably in and towards the environment and that this lack of objective knowledge is contributing to environmental degradation. The problematisation reinforces a colonial gaze which marginalises and externalises local ecological knowledge and knowing-subjectivities. The policies not only portray the population's purported ignorance as undermining environmental security, but also privilege conceptual over the corporeal (Plumwood, 2002). A conceptual focus on the notions of reason, rationality and efficiency (De Sousa Santos, 2003) is prominent in the articulation of policy statements, and stems from ideas which "organise perceptions, ways of responding to the world and the conceptions of self" (Popkewitz, 1997). Reason and rationality are perceived as "central to social efforts to improve our human condition" (Popkewitz, 1997, p. 139). Hegemonic modern thought uses reason and rationalism to grant itself the means and power to identify, validate or hierarchise "the relations between western based scientific knowledge and other knowledges derived from other practices, rationalities or cultural universes" (De Sousa Santos, 2003, p. 237). Reason, as

Plumwood (2002) observes, has been a vehicle for domination and death, specifically the domination of Others and the death of knowledges and nonhumans. Reason and rationality are crucial to the validation of what is perceived as environmental knowledge and environmental problems. The problematisation of a particular population for lacking 'objective' knowledge generates a particular kind of subjectivity.

Policy and curricula documents further state that "the future dvelopment of every country is intimately bound up with the manner in which natural resources are husbanded" (GRZ, 1985, p. 7). The NCS indicates that it was "prepared to generate better knowledge of what natural resources are capable of, the consequences of using them and the precautions to be taken to ensure their use is sustainable" (GRZ, 1985, p. 8). The NEP adds that it was designed "to create a framework for effective natural resource utilisation and environmental conservation" (GRZ, 2007, p. 1) and it is envisioned that the policy will "help overcome deficiencies in knowledge and will usher in a period of coordination that will reverse prevailing trends of over-utilisation, waste and environmental degradation" (GRZ, 2007, p. 1). To attend to the deficiencies in knowledge, policy and curriculum, documents stress the importance of "spreading amongst the people of Zambia an understanding and value of forests" (Ministry of Environment and Natural Resources [MENR]1994, p. 34). This will occur by incorporating "environmental education into existing school curricula and university teacher training programmes" (MENR, 1994, p. 66).

A problematisation explicitly concerned with ecological problems and environmental crisis can be understood in terms of regulatory biopolitics of the population (Foucault, 2008). Policies and curricula are not neutral tools, but rather the product of discursive struggles and normalising strategies that extend control over the environment and populations. In order to effectively manage the population and the environment, policies favour certain discourses and, in turn, these discourses favour certain 'truths' and empower certain actors while marginalising others. Representing the 'problem' in this manner indicates that there is a relationship between environmental knowledge, attitude and environmental awareness and vice versa. It assumes that without sufficient and appropriate knowledge about environmental problems and correct husbandry through conservation, the country would suffer "catastrophic environmental problems" (GRZ, 1985, 2007; MENR, 1994). There is a consensus among all the documents analysed that increased knowledge about the environment leads to greater environmental concern. Indeed, many scholars argue for the crucial role that environmental knowledge plays in producing ecological behaviours that make individuals aware of the actions they need to

take. They argue that environmental knowledge is an intellectual prerequisite to performing ecological behaviour (Gardner & Stern, 2002; Frick et al., 2004; Otto & Kaiser, 2014; Otto & Pensini, 2017).

The 'problem' representation in the Zambian policy and curricula documents analysed normalises and contributes to implicit cultural protocol concerning what to know and how to act, in order to be a good environmentally concerned person. They shape desirable individuals to whom the future can be entrusted and undesirable subjects who become a risk for the world (Ideland, 2016). They indicate that lack of environmental knowledge leads to behaviours that degrade the environment. For instance, the Seventh National Development Plan claims that "Zambia's efforts towards achieving social economic transformation" are constrained by "moral decay", "lack of adherence to rules", "lack of cohesion", "high corruption levels", "lack of patriotism" and "docility and complacency" (GRZ, 2017, pp. 30-31). Zambians lack patriotism "especially with respect to cleanliness of the environment and prudent and sustainable use of our natural resources" (GRZ, 2017, p. 30). Both child and adult actors are problematised for their lack of responsibility and action about environmental issues. To "effectively and efficiently address all aspects of environmental degradation", there is a need to "strengthen human resources capacity" (EE Rationale). Here, both child and adult actors are positioned as the much needed resource whose participation is necessary for social, economic and environmental sustainability.

The Zambian population's lack of knowledge about environmental problems is placed within a cosmology of Western progress, a cosmovision that coerces Zambians to embody a particular subjectivity that enables them to see the environment in relation to Western notions of the environment. It is embeded in what is possible to know; a shift from the realm of the sacred and the mysterious to the realm of the worldly and secular where nature is separate from culture and the body from the mind; where the *cogito ergo sum*, the dominant 'I', is celebrated over the ecological 'I' embedded in *Ubuntu/ Ukama* (Le Grange, 2012a).

Lack of Local Ecological Knowledge in Policies and Education

Ironically, policy and curriculum documents problematise the lack of indigenous knowledges in Zambia's curricula and policies as one of the causes of environmental degradation and climate change. They sate that there is an "absence of local knowledge input" (MENR, 1994, p. 67) in both Zambia's education system and policy implementation. Of concern is the "break down of traditional values" (GRZ, 2007, p. 1), "erosion of appreciation

for indigenous knowledge" (GRZ, 2017, p. 31), and "absence" (MENR, 1994, p. 67). The texts stress the inadequate use of local ecological knowledge and the "total disregard of positive culture and indigenous knowledge" (GRZ, 2017, p. 31) perpetrated by a general "perception of our Zambian culture as backward and primitive" (GRZ, 2017, p. 31). This problematisation indicates that development and sustainability in Zambia is not to be solved by Western knowledge alone. Likewise, Plumwood (2002) argues that despite Western scientific knowledge's important role in exposing the degradation of the environment, it has also contributed to the crisis. Local ecological knowledges are deemed to play a crucial role in achieving sustainability. For instance, the the Seventh National Development Plan states that local ecological knowledges have the potential to "foster national development" (GRZ, 2017, p. 31) and that "achieving sustainable development […] will require putting in place measures and activities that reflect the complex and multi-dimensional nature of the Zambian culture" (GRZ, 2019, p. 29). The absence of indigenous knowledges, the texts argue, is "alienating us from the environment" (GRZ, 1985) making it a "constraint to achieving and promoting sustainable development "(GRZ, 2017, p. 29). The National Environmental Policy, for instance, observes that the increased depletion of natural resources is compounded by the:

> breakdown of traditional values and practices which previously ensured a high degree of social responsibility and equitable sharing of resources within a natural equilibrium (GRZ, 2007, p. 1).

There is recognition that "the education system, curricula and teaching materials focus on the European system and young Zambians tend to grow up with knowledge from outside" (MENR, 1994, p. 69). This situation "extends to universities where much of the teaching materials are sourced from outside" (MENR, 1994, p. 69). The coloniality of Western thought permeates not only everyday practices, but also school practices. To intervene in the coloniality of knowledge, the texts propose the need to "promote our positive cultural practices and indigenous knowledge, to foster national development" (GRZ, 2017, p. 31). This is achieved by focusing "on addressing negative cultural attributes while enhancing the positive traits" (GRZ, 2017, p. 29) and "localisation of the curricula" to produce an individual who "appreciates Zambia's ethnic cultures, customs and traditions" (MESVTEE, 2013, p. 17). It requires the involvement of local authorities and traditional leaders in climate change education, public awareness, including the use of Indigenous knowledges (GRZ, 2016) and for "formal education to integrate traditional and modern knowledge systems and values into the curricula" (MENR, 1994, p. 69).

The deployment of contradictory discourses about the environment, and knowledges that construct environmental subjectivity, the modern Zambian Government works subtly to regulate and manipulate the population (Rose, 1989). The policy and curriculum documents use social consensus as a technology of 'modern' disciplinary power, to legitimise preventive and regulative practices. By speaking of the need to have local ecological knowledge in the policies and curricula, the Zambian Government uses subtle means of surveillance and control to discipline citizens to become environmental subjects. Citizens become typical objects of control and surveillance of policies and curricula. However, in late modernity, a different conceptualisation of the environmental subject is developed, as the sustainability of the current dominant neoliberal regimes that presupposes different environing mentalities. This new environmental subject is discussed futher in Chapter 7.

Although there is a sympathetic approach to the discussion about the need for indigenous knowledge in the curriculum and policies, local ecological knowledge does not stand in its own right as a knowledge system that can help foster sustainable development. Rather, it is used as an object viewed through the lens of Western science. It thus ends up reinforcing coloniality of knowledge and abyssal thinking, allowing modern science to continue enjoying its monopoly (De Sousa Santos, 2007).

5.3.2 Summary

This section undertook an analysis of the 'problem' of human environmental conduct as represented by policy and curriculum texts using Foucauldian concepts of discourse, power, knowledge and subjectivity and decolonial concepts of coloniality of power, knowledge and knowledge-subjectivity.

5.4 IDENTIFYING 'PROBLEM' REPRESENTATIONS OF SOCIAL ACTORS

The previous sections explored how the curriculum and policy documents problematise the Zambian population as lacking knowledge about environmental problems, and how such a problematisation is premised on dominant discourses of ecology and sustainability that define the environment, environmental knowledges and what it means to be an environmental subject. The sections then discussed how such definitions have serious implications for the subjectivities of Zambians. This sub-section analyses the 'problem' representation of lecturers, policy makers and NGO representatives who agree with policy and curriculum documents, and then use the local traditional leaders' 'problem' representation to highlight the tensions.

Analytic Focus	Key Statements
The 'problem' of Knowledge	Lack of knowledge about the more-than-human

5.4.1 Lack of knowledge about the more-than-human

Some lecturers, policy makers and NGO representatives agree with policy and curriculum documents' problematisation of Zambians as lacking knowledge about environmental problems. Hajer (1995) alerts us to how agents are embedded in discourses (p. 61) and how those discourses are inconceivable without taking into account subjects or agents that interpret, articulate, and reproduce storylines congruent with certain discourses. For instance, the following interview excerpts problematise knowledge in a similar manner to government texts:

> Currently there are not so many Zambians that know about environmental problems or even appreciate the environment (Conversation 1, lecturer).

> I think we need to up our game in raising awareness on climate change because we do realise that a lot of our people still don't know what climate change is all about (Conversation 6, Policy maker)

> What does the household know and think about the environment? Nobody talks about the environment, and this has contributed to the ignorance about environmental problems (Conversation 24, NGO representative).

> I have seen that people do not know that the environment can be so cruel when you ruin it, when you push it (Conversation 23, NGO representative).

> If you are in the village and you have land in the village, the trees on the land are for who? They are yours. So, tell this person not to cut this tree for malasha, they will ask who the hell you are and tell you that this is my forefathers land, I can do what I want. So, there is that fight between us and them… What they need is knowledge that when I cut this tree, I am actually causing this drought which we are experiencing… we need to empower people with this knowledge" (Conversation 5, Policy maker).

These statements are explicit in their problematisation of the Zambian population as lacking knowledge about the environment. People's lack of knowledge leads to environmental degradation and climate change, and if people are empowered with the right knowledge, their

attitude and behaviour towards the environment would change and lead to sustainability. The implication is that the role of government is to equip its citizens with the right knowledge so that they become environmental subjects capable of taking care of the environment. These problem representations are totalising in that they characterise Zambians unaware of their own environment.

Earlier interviews demonstrate that local traditional leaders did have knowledge about environmental problems and the changes in the environment problems, and the changes in the environment that were taking place in their communities. Most notably, these participants noted problems related to weather, climate variability and landscape transformations through statements like; "this area used to be wooded", "we used to see wild animals on a daily basis", "the land is too bare now", as well as changes in the availability of certain species of animals, birds and trees. The participants also described changes that were affecting their farming in terms of rising temperatures and unpredictability of rains. Within the collected accountsextreme climate events such as droughts and floods mentioned, especially those that caused famines in 1995 and 2018, and floods in 1997. These observations are collaborated by scientific analyses of Zambia's annual rainfall. Scientific evidence confirms both the shift in the rain season and the fluctuations of rainfall for the period 1940 to 2015 (See Appendix 8). Zambians, especially those who rely on the utilisation of natural resources, possess a wealth of knowledge about environmental problems (see Appendix 5 for Indigenous diagnoses of climatic changes as described by local traditional leaders). Clearly, "people do not live in ignorance about the world around them" (Mandondo, 1997, p. 353).

Local knowledge has cognitive, emotive and corporeal aspects (see Appendix 6 for the faces of indigenous knowledge) which are situated in the current way of life and in the historically accummulated experience. It encompasses knowledge in the strict sense of shared information and 'ways of knowing, ontology, framing reality', 'being acquainted with' and 'bodily knowledge' which transcends the purely cognitive realms" (McGregor, 2018). As one local traditional leader explains:

> As an induna and a village headman of two villages, it is my duty to take note of these signs so that we take precautions like asking the spirits of our ancestors to provide us with rains and if they are angry with us for anything and do not provide us with the rains, we encourage everyone to preserve the fruits that nature has given us, so you now see why it is a serious offense to cut fruit bearing trees? (Conversation 20, Local traditional leader)

This empirical knowledge indicates that local Zambians have, over time, developed reliable diagnostic systems about elements surrounding them, especially with regard to forecasting rains and impending droughts. This has not only helped them with decision-making, but also in the management and protection of the environment. These knowledges give shape to the realities of local Zambians. Coloniality makes local knowledges invisible in both the policies and the curricula. They are relegated to the margins, due to the colonial entanglements that post-colonial Zambia finds itself in and the hegemonic tendencies of Western thought. The experiences, perspectives and ways of knowing by local Zambians are dismissed by policies and some lecturers, policy makers and NGO representatives for being 'irrational'.

A lecturer problematises the population's lack of knowledge by suggesting that;

> You see, many of our citizens have no idea that these droughts and the load shedding we are experiencing are a result of climate change and other environmental problems… these challenges affect us in different ways. If there is a drought, there will be food insecurity and food insecurity threaten the general security of the country… have you noticed the migrations that are taking place from the Southern Province to Central and Northern Provinces? Those are related to climate change. So, you see that security is threatened? Land disputes are looming (Conversation 2, Lecturer).

In this problematisation, lack of knowledge about the environment and its problems is characterised as a threat to both the environment and the security of the country. The statement assumes that possessing environmental knowledge is an essential characteristic of a thriving environment and country. Environmental degradation is characterised as a security problem with the potential to affect national and human security. Although the security of the state is not primarily guaranteed by a control over territory, but rather by monitoring, shaping, and controlling the people living that territory (Darier, 1999, p. 23), such problematisations lead to the monitoring, shaping, and controlling of people through policies and education.

As a solution, one participant suggested the following:

> There is need to intervene…to make people aware of environmental problems and this can only be done if we transformed our education…there is need for the grass roots to be educated about the environment and the problems we are currently facing…students would be great ambassadors of sustainability. For example, if you teach one, he or she would teach others (Conversation 1, Lecturer)

Other participants added:

> Zambia needs citizens that know the implication of their activities on the environment. We need to possess knowledge that will help us develop an attitude of wanting to leave a healthy environment when we die… we feel some of these mistakes that the people normally do, is lack of knowledge, so we want to impart that knowledge into the community so that even when we say climate change, the effects, what is causing that? They should be able to know the effects of their actions (Conversation 3, Lecturer).

> We need as many knowledgeable people as possible to take up the responsibility of sensitising the masses on the effects of climate change. Do my subjects know what climate change is? Do they know that if they cut trees then that would be the effect of climate change? (Conversation 11, Local traditional leader).

Again, EE is regarded as necessary for the construction of environmental subjects. The relationship between science and governmentality indicates that knowledge creates and enhances power diffusion among societal agents, constituting the production of power, and implementation of knowledge does not diminish the power of the state. Rather, it enhances the state's ability to exact compliance. For Foucault (1980), knowledge is already a function of human interests and power relations. The constant interplay between the exercise of power and the production of knowledge leads to the continued expansion of both sources of power and new disciplines of knowledge (Foucault, 1980).

5.4.2 Section Summary

This subsection undertook an analysis of the problem of human conduct as represented by lecturers, policy makers and NGO representatives who agreed with policy and curriculum documents' problematisation. Just like policy and curriculum documents, these social actors problematised the Zambian population as lacking knowledge about the environment. The subsection used Foucauldian concepts of power, knowledge, and governmentality and decolonial concepts of colonial of power, knowledge and being.

5.5 CONCLUSION

This chapter used a genealogical analysis to examine how the 'problem' of human conduct was represented to be by local traditional leaders, lecturers, policy makers, NGO representatives and policy and curriculum documents. The chapter discussed problematisations using conceptual elements from the *Southern environmentality dispositif:* discourse, power, knowledge, and subjectivity. In the analysis, local traditional leaders problematised

colonialism and missionisation manifesting through shifts in power structures, denial of entanglements and a need for survival as responsible for Zambian's poor relationship with the environment. Policy and curriculum documents, some lecturers, policy makers and NGO representatives problematised the Zambians as lacking knowledge about the environment and its problems. The 'problem' as represented by policy and curriculum documents was a manifestation of power asymmetries worked through hegemonic discourses of ecology, environment, development, and sustainability that set parameters on what and whose knowledge is valued, and which make inferior local ecological knowledges. Thus, while policy and curriculum documents, lecturers, NGO representatives and policy makers problematised the Zambian population based on irrational attitudes and action towards the environment, local traditional leaders, some lecturers, policy makers and NGO representatives regarded Zambians as being aware of environmental problems and had mechanisms in place to mitigate environmental degradation and its impacts.

Chapter 6: Entangled Historical 'Problems'

6.1 INTRODUCTION

The previous chapter examined and discussed the historical present's 'problem' of human conduct as represented by local traditional leaders, policy makers, lecturers, NGO representatives and policy and curriculum documents. What emerged from the interrogation were tensions around how the 'problem' of human conduct is represented to be by local traditional leaders on one hand, and policy and curriculum documents on the other.

This chapter examines and discusses the historical past of the 'problem' of human conduct. The chapter conducts a genealogy of modern environmental governance in Zambia from the colonial period until the present. It considers the historical colonial entanglements between the metropole (Imperial Government of Britain) and the periphery (colony of Northern Rhodesia now Zambia), as well as international events in the fields of conservation and education. The chapter thus presents *a* history rather than *the* history of the present of environmental governance (Gough, 2013). This chapter is influenced by Foucault's genealogical method as a historical analytical approach to study changes in practice and discourse. As the method prescribes, the chapter will seek 'discontinuity' rather than 'continuity' in the study of the changes in, and the development of, environmental conservation models in Zambia (Andersen, 2003; Peet & Hartwick, 2009). In other words, it is the emergence of human conduct as a 'problem', and the *shift* in discourse and practice of environmental governance that is the main focus of the decolonial genealogy. In describing how the 'problem' of human conduct came about, the chapter traces the development of modern environmental governance to the colonial actors, social trends, and external influences which shaped this development.

The chapter divides Zambia's history of environmental governance into two main periods: the first is the colonial period from late 19th century ending with independence in 1964, and the second is the post-colonial period. The post-colonial period in turn is divided into two parts: The First and Second Republics with President Kenneth Kaunda's UNIP based on African socialism which ran from 1964 to 1991, and the second period ran from 1991 to the liberalisation of the country. The reason for splitting up Zambia's modern environmental

governance in this way is to show how different types of socio-political interests, colonialism, African socialism, and neoliberalism, produced different sets of environmental conservation. These socio-political interests are representative of the colonial 'governmental apparatus' (Foucault, 1991) pertaining to environmental governance, and constitutive of the context in which problem representations now sit. The socio-political agendas of these periods were shaped by interests of actors such as colonial administrators, international and local conservation agencies and NGOs, and international discourses of development and conservation. It is in the interest of this chapter to use the *Southern environmentality dispositif* concepts of discourse, power, knowledge, and subjectivity to explore how particular actors, events and trends have shaped the development and shifts in environmental governance in Zambia over time. This enables examination of how particular perceptions of human-wildlife/human-wilderness and human- not-so-human interactions have informed different regimes of environmental governance, and how these regimes perpetuate culturally induced 'problem' representations of human conduct.

6.2 THE EMERGENCE OF MODERN ENVIRONMENTAL GOVERNANCE IN ZAMBIA

This section examines the enabling conditions of conservation science as a mode of modern environmental governance in Zambia. Enabling conditions are the conditions of possibility for the emergence of a discourse. This section thus explains the 'origin' of scientific conservation and presents some of the enabling conditions that allowed the 'problem' of human conduct to emerge and become a significant discourse structuring modern environmental governance and education. That is, the section explains how conservation science began to insinuate itself into the discourses and practices of modern environmental governance, and how its perceptions influenced a colonial induced environmental governance.

6.2.1 The ~~Origins~~ of Modern Environmental Governance

This section argues that there was no single point of origin of the discourse of conservation science. Origins suggest a grand beginning to a concept or phenomenon, when instead, according to Foucault (1977), most beginnings are lowly and accidental. Conservation science was mandated in environmental governance based on perception. That is, the *idea* that the environment, when left untouched by humans, would produce pristine nature (Siege, 2001) served as the rationale for conservation science. Consequently, conservation science has no

rational, scientific foundation, although it has garnered truth-value. It is a discourse that is neither real nor true.

Conservation science, sometimes referred to as nature conservation or fortress conservation, refers to the principles and methods of understanding, governing, and managing the environment and its resources (Sungusia et al., 2020). These were developed in connection with the emergence of modern bureaucracies as a means of rendering the environment, particularly forests and wildlife, legible for central oversight, taxation, and management by modern early states (Schabel, 1990; Scott, 1998; Sungusia et al., 2020; Vandergeest & Peluso, 2006). Conservation science uses a 'fences and fines' approach (Siege, 2001) to maintain nature's pristineness, by carving large tracts of land for forest and wildlife out of the landscape through demarcation and reservations. It relies on forest and wildlife inventories, modelling tree growth and animal populations, and estimations of the amount of timber and/or wildlife that can be harvested or sustained (Hansen & Lund, 2017). Embedded in this conservation strategy is a conceptual boundary between humans and nature in which 'wilderness' is envisioned as a phenomenon distinctly lacking the presence of humans (Adams & Hutton, 2007; Barton, 2001; Cronon, 1995; Lee, 1984; Peluso, 1992; Scott, 1998; Singh & van Houtum, 2002). In the nineteenth and early twentieth centuries, environmentalists and legislators found the fortress conservation strategy to be a useful model to persuade the public that the reservation of vast areas of the public domain served not only environmental but also industrial settlement. The fortress conservation model served as a regime of truth that resolved the tension between romantic and preservationist notions of laissez-faire policies (Barton, 2001).

With the spread of British Imperialism in the late nineteenth and early twentieth century, conservation science emerged as a dominant discourse that swept away previous formations of *raison d'état,* ushering in distinctively modern forms of environmental management. Imperialism opened a discursive space in which environmental government practices could no longer take the shape of unchecked command (Singh & van Houtum, 2002). Approaching modern environmental governance as a set of "phenomena, processes and regularities" which occurred naturally and intelligibly, and which could be allowed to unfold unimpeded by governmental practices, fortress conservation operated as "a certain naturalness specific to the practice of government itself" (Foucault, 2010, p. 15). Conservation science thus emerged as a new 'regime of truth' (Foucault, 2010, p. 18) where a protected area acted as a "site of veridiction" (Foucault, 2010, p. 32) for government practice. Governmental practice in these areas could be evaluated correlative to protected areas and deemed inapt if disrupted by human occupation. Foucault's (1991) articulation of "how to be ruled, how strictly and by

whom, to what end, by what method" (p. 88) leads to a better understanding of the role of science and knowledge creation and their influence on governance. As discussed in chapter 3, the relationship between science and governmentality is indicative of how knowledge enhances power. For instance, through conservation science as a regime of truth, the Imperial Government of Britain had environmentally protected a land mass ten times bigger than Britain, and America had set aside fifteen percent of its land mass for different forms of protection (Barton, 2001).

While the international trail of scientific conservation discourses and practices began in India in 1855, it spread to the British colonies in Africa, Australia, and Canada. By the beginning of the twentieth century, the United States of America and other countries had also 'imported' and adopted the innovations of 'empire forestry' (Adams & Hutton, 2007). By the late nineteenth century, the new scientific ecology, born out of imperialism, had spread across the globe. In Africa, the seeds of a 'truth regime' in nature conservation were sown through colonialism. This regime of truth was produced as a disciplinary tool for the expansion of colonial state control through the domain of public lands, and enhanced rulemaking and was supported by actors and agents responsible for the dissemination of conservation knowledge. Conservation as a science valorised public ownership and management of land threatened by the visual and physical ravages of the industrial laissez faire economy. It established 'truths' such as the need for parks and protected areas to sustainably manage natural resources. Knowledge creators such as biologists, ecologists and social scientists validated these 'truths' for colonial states (Ferguson, 1997). In foreign territories, colonial conservationists grappled with the enormous task of asserting control over, and profitably managing and exploiting, huge tracks of largely unknown plant and animal species and poorly understood socio-ecologies (Schabel, 1990; Sunseri, 2009).

6.2.2 Colonial Regime of Governance: Taming the Savages

To contextualise modern environmental governance in Zambia, this section considers the historical conditions under which state-controlled environmental governance emerged, as well as the formations of governmental practices which preceded it. Understanding the conditions of modern environmental governance's emergence enables understandings of what was historically unique about scientific conservation. This regime of truth addressed the questions of how to best organise and govern the new state, or how to institute and elaborate a regime of governance that would be dense, rigid, and total. The late nineteenth century saw the new modern state of Zambia beginning to take shape through colonisation. In this new regime

of rule, sovereign power was exercised in the form of direct intervention at socio-ecological levels. Colonial rule was achieved through total control over production, circulation, and the conduct of citizens.

This section uses historical documents from the National Archives of Zambia to examine the mechanisms that the colonial administration used to improve the conduct of the 'savages' towards the environment. What emerges from the analysis are governing technologies such as the use of census, the invention of 'tribes', the introduction of native authorities and the invention of native reserves to control the conduct of local communities.

Analytical Focus	Interventions
The will to improve through social ecological reordering	o Spatialisation o Invention of tribes and conducting census o Introduction of Native Reserves

Nature making and state-building were processes that occurred simultaneously in colonial settings. The modern state of Zambia is entangled in the histories of modern conservation science. Occupied for being the "finest hunting grounds in the world" (Johnston, 1984), Zambia, previously known as Northern Rhodesia, was officially declared a British colony in 1888 when Britain granted the Royal Charter to the British South African Company (BSAC) to administer and exploit the territory. The initial years of the BSAC were turbulent as the pacification of Indigenous resistance and exploitation of mineral and wildlife resources held top priority:

> From the time the British South Africa Company came to the territory up to 1924, when the British Colonial Office took over the administration of the territory, very little was done. […] The main reason for this was because the Company had no intention of investing in the country, its main interests being the mineral deposits (Colson, 1969, p.208).

By 1893, the extensive hunting of elephants resulted in the export of "1,912 tonnes of ivory, which then was its most valuable export" (Marks & Fuller, 2008, p. 3). The BSAC's commissioner, Harry Johnston, expected this export to grow once control over the Arab slave traders and the protectorate's population was established. The BSAC was faced with the challenge of how best to regulate the extraction of wildlife and control the trade in ivory

(Steinhart, 2006; Waweru, 2001) in face of the local population who they described as "treacherous" and "far removed from any form of civilisations" (Grey, 1901, p. 71). The BSAC held the view that African traditional hunting practices were depleting game (Musambachime, 1993). Johnston, the BSAC's commissioner, reported that "natives armed with guns […] indiscriminately shoot every elephant they come across" (Johnston, 1984), and that they needed to be regulated. It was further suggested that the country could not truly be claimed until it had become conquered in accordance with the colonialist's perception of civilisation: "the objective should be to insinuate government control, wherever possible, with the ultimate objective of gaining complete control"[i].

The growing export was wholly predicated on drawing the territory into the productive capacities of colonial capitalism. For instance, John Cecil Rhodes wrote that the new territory would "provide new lands to settle the surplus population to provide new markets for the goods produced in the factories and mines" (Chamberlain, 1984, p.148). Much of the natural resources sought in the new territory were to 'feed' European markets. The BSAC was a profit-seeking enterprise whose aim in securing the Royal Charter was to make financial returns from colonial administration. The BSAC was explicit in its aim as its director Wilson Fox observed in 1910:

> The problem of Northern Rhodesia is not a colonization problem. It is […] the problem of how best to develop a great estate on scientific lines so that it may be made to yield the maximum profit to its owner[ii].

Colonial capitalism rendered Zambia a country of natural resources able to be "demarcated, parcelled out, commodified, and purchased, not for its intrinsic but potential value" (Yeoh, 1996, p. 282) for capital accumulation. Zambia and its control were, fundamentally, about the accumulation of wealth, power, and the potential for capitalist expansion (Harvey, 1989). Utility was the primary means by which value and meaning was assigned to the Zambian territory. Access to natural resources like minerals and wildlife was a major driver of European colonialism, and Northern Rhodesia's natural resources were considered a crucial source of raw materials for the industrialisation process that was taking place in the West.

To govern these natural resources, the BSAC introduced legal mechanisms to assert and safeguard state control over forests and wildlife. The BSAC sought to decrease the unregulated access to wildlife and forests enjoyed by indigenous populations. For instance, in

1902 the indigenous population's scattered settlement were deemed wasteful and the administrator for the eastern half of Zambia reported that:

> large villages ceased to exist, the population being distributed over a much larger area than formerly […] gardens are the principal consideration in selecting new sites[iii]

The spread of the local population over a wide area meant that they were outside the immediate orbit of colonial administration. This was considered a "conflict with the orderly system of district administration" (Musambachime, 1993). Colonial experts argued that if the dispersal was allowed to continue unchecked, it would lead to the "gradual deforestation of the country" (Musambachime, 1993).

These statements are representative of colonial discourse. Colonial discourse is a "form of discourse crucial to the binding of a range of differences and discriminations that informs the discursive and political practices of racial and cultural hierarchization" (Bhabha, 1994, p. 67). Here one is confronted with the violent operations of colonial discourse where indigenous people are constructed as "a population of degenerate types on the basis of racial origin, in order to justify conquest and to establish systems of administration and instruction" (Bhabha, 1994, p. 70). Through the operation of coloniality of power and knowledge, Northern Rhodesian landscapes were ordered in terms of their eonomic potential, and the population described as uncivilised. This 'differencing function' of colonial discourse is a "discursive formation that connects across [the]…spectrum of [racial and cultural] discriminations" (Childs & Wiliams, 1997, p. 124). The colonial climate was like no other (Bhabha, 1994; Fanon, 1986; Mannoni, 1990). Asymmetries of power played out with extreme imbalances of privilege and possession separating marginal from dominant groups. The BSAC's violence and dehumanising practices generated 'knowledge of cultural and racial 'Others'' (Hook, 2005). The 'truth' of colonial others was established, and indigenous ways of relating with nature were rendered inferior. The interior of Africa was deemed a space which invited colonial penetration on commercial and moral grounds, an order which reflected the economic and political objectives of European imperialists. Problematising local communities as ignorant justified their need for salvation. Here, colonial discourses "fostered the impression of the colonies as primitive places inferior to Europe" (Stafford, 1990, p. 84). It, then, became clear to the colonial administration that the natural resources of the newly acquired colonies were not, and could not, be effectively used and protected by indigenous owners who possessed inferior knowledge (Scott, 1998). The indigenous popualation, as an irrational inferior Other, was unable to operate within the realm of civilised thought, and thus unable to produce worthwhile

knowledge about the environment and natural resource use (Bhabha, 1983, 1994; Fanon, 2001; Grosfoguel, 2008). European rational scientific thought was privileged as superior, and the irrational savage was meant to be the recipient of that knowledge because the "master is the subject of science or knowledge" (Spivak, 1985, p. 286). This discourse justified and naturalised colonial conquest and legitimised the establishment of systems of control, including administration and instruction (Hook, 2005; Quijano, 2000).

To improve the welfare of the environment, the inferior Other had to be regulated. As Sir Herbert Stanley, Northern Rhodesia's first Governor, put it:

> [...] the objective should be to insinuate government control, wherever possible, with the ultimate objective of gaining complete control[iv].

Both the BSAC and the Colonial Office sought to shift forms of rule to prevent the indigenous population from being destructive. This change in rule saw a shift in aims, targets and techniques of power to efficiently optimise relationships that created "the right disposition of things" to produce increased welfare for the subjects of power: the 'population' (Foucault, 1991, p. 93). The Colonial Office sought to reshape conditions of life by changing the rules about how the local population conducted their lives, to realign social and socio-environmental relations, and to produce self-regulating, self-improving subjects through more efficient and disciplinary techniques of power shaped by what Li (2007) calls "the will to improve".

A key objective of the colonial administrators was to produce African subjects with 'modern' habits of progress by inculcating certain forms of ecological, economic, and political rationality. As Northern Rhodesia Government Secretary Logan argued, the Colonial Office aimed to "help the Africans build up a healthy mind and healthy body" and "encourage them to think out schemes for their own improvement" (Logan, 1939, p. 53). To consolidate power over the local populations, mechanisms such as conducting census, inventing tribes and the policy approaches of Native Authorities and Native Reserves formed the central thrust of the new mode of engagement.

Making Spaces 'Legible'

Now colonised, the newly acquired colonial space presented a field of intervention, or what Foucault calls 'milieu', that needed planning for the uncertain and 'making of a subject' (Butler, 1997, p. 84) that was compliant to the new capitalist political economy. This subject needed to summarily be knowable, regulated and secured as well as mobilised in the context of new capitalist colonial economy (Morrissey, 2012). To achieve this, the new administrators

were entrusted with governing aspects of the colonial milieu that they had little knowledge of (Kalpagam, 2000; Morrissey, 2012). The first task was to map and script the newly acquired space, a task which involved various government agents playing a part in the construction and registering of new knowledges, "all oriented towards the development of a new political economy" (Morrissey, 2012, p. 3). Such an exercise involved mapping out the area that was to comprise Northern Rhodesia:

> The territory known as the Protectorate of Northern Rhodesia lies between latitudes 22° E. and between longitudes 8. 15° S. and 18° S. …comprising in all an area which is computed to be about 291,000 square miles…with the exception of these river valleys, the territory consists of a tableland varying from 3, 000 to 4,500 feet in height, though in the north-eastern portion, and especially in the vicinity of Lake Tanganyika, the altitude is higher (Government of Northern Rhodesia, 1926, p. 3)

Surveying and mapping the territory brought modern Zambia into what Foucault (1979) describes as the "explicit realm of calculations" (p. 143). Northern Rhodesia's political economy became the target of intervention and control through the general disposition of people:

> … in their relations, their links, their imbrication with those other things, which are wealth, resources, means of subsistence, the territory with its specific qualities, climate, irrigation, fertility, etc. (Foucault, 1979, p. 11).

Creating the colony from diverse Zambian landscapes and disorderly kingdoms required that it be reterritorialized and made into a new unit, with new maps and rules to suit the British Empire. The official recoding of the Zambian milieu and ideas was as partial as it was elaborate. This was an attempt to control the spatial contours of the colony and to secure boundaries through which various subjectivities of the colonial project could be rendered intelligible. With the colonisation of the territory, Northern Rhodesia came into the geopolitical imaginary of the British Government. Through this process, the indigenous population of Northern Rhodesia became recognised as subjects of the Crown. In 1924 when Northern Rhodesia became a colony of the British Empire, the new Governor held audiences with groups of traditional leaders in each region delivering the message of a new era of rule in which the native population was now direct subject of "His Majesty the king, who was anxious for the welfare and prosperity of the people" (cited in Ranger, 1980, pp. 352-353). An observer of the Governor's noted that:

> Sir Herbert Stanley, clad in white…., sailed like a majestic swan. The lesser swans from the Boma gathered around him… His Excellency's address told of the good will of His

Most Gracious Majesty King George towards his African subjects, of his desire that they should live peacefully and in tranquilly and serve him with loyalty. That they should aspire to a wider and more useful life. That they should till the soil for their own uses in order that they might not suffer from want…(All) designed as a parade (in the kindergarten sense) of His Majesty's benignity towards his untutored African subjects. (Tapson cited in Ranger, 1980, p. 353).

Lodged in these proclamations was a new agenda of governance. An agenda that emphasised the kind-heartedness of the rulers' intentions and the duties that could be expected of the governed. This was part of a broader social programme, an 'announcement' to colonial presence that was different from the BSAC approach to colonial government. A single imperial polity was declared: one population under one king. A new form of government was established that brought in new relationships between the governors and the governed. Rights and responsibilities emerged. The governors took on the aim of 'improving the well-being' of the population. In response, the governed were to seek to improve themselves and their own welfare. It was through this milieu that the 'Other' was posed as a potential threat to the social and ecological order. Distinctions were marked through discourses and practices that were at once material/spatial and epistemic:

The 'Other' is a by-product of social spacing; a left-over of spacing, in which guarantees the usability and trustworthiness of the cut out, properly spaced habitable enclave…the *otherness* of the Other and the security of the social space (also, therefore, of the security of one's own identity) are intimately related and support each other (Bauman, 1995, p. 189)

Western conceptions of space contributed to the mischaracterisation of indigenous peoples, and consequently transformed indigenous conceptions of space not only through ferocious violence of removal and ecological damage, but through renaming places. As Smith (2012) puts it:

renaming the land was probably as powerful ideologically as changing the land […] newly named land became increasingly disconnected from the songs and chants used by indigenous people to trace their histories, to bring forth spiritual elements or to carry out the simplest of ceremonies (p. 54).

Census, Invention of Tribes, and Conservation Science

As a new colonial milieu, Northern Rhodesia presented the Colonial Office with a field of intervention in which the challenge of effecting colonial subjects lay in the problem of circulation (Morrissey, 2012). Throughout the colonial era, the Colonial Office effected

different procedures and mechanisms to gain greater and more efficient control of natural resources. Colonial governmentality in Northern Rhodesia was predicated on a unique relationship of State to economy and environment. While Foucault's modern state defined its relationship to the economy that it sought to manage with a view to increasing national wealth (Kalpagam, 2000), the Colonial Office established a parasitic relationship with a view to increasing the wealth of the British Imperial Government. Accordingly, the Colonial Office's relationship with indigenous populations was set within the parameters of increasing disciplinary control over labour and the environment, rather than the enhancement of indigenous welfare. The key instruments of securing and governing populations are the science of "statistics and probability" (Dillon, 2007a, p. 46). Since it is impossible to "secure anything unless you know what it is", it is necessary to translate "people, territory and things" into "epistemic objects" (Dillon, 2007b, p. 12). To know the characteristics of the indigenous population in order to improve regulatory mechanisms (Kalpagam, 2000), the Colonial Office's preoccupation was knowing, quantifying and transforming Northern Rhodesia.

The Colonial Office invented 'tribes' by profiling indigenous populations. The hut tax revenue census was used to profile indigenous populations into tribes, as well as to make decisions about what the State needed. The profiled tribes between 1911 and 1963 ranged between 70 and 73, with 'important' tribes being the Bemba, Bisa, Chewa and Ngoni in the North-Eastern districts and the Ilas, Kaonde, Lenje, Lozi, Lunda, Luvale and Tonga in North-Western districts (Northern Rhodesia Government, 1921, 1931, 1933). Table 10 shows the 'new' tribes and their populations.

Table 10: Native African tribes and population profiling (GNR, 1926, 1928, 1932).

Tribe	Region		Population	
	Districts	*1928*	*1930*	*1932*
Bemba	Northern	108, 310	110, 659	113, 506
Chewa	Eastern	71, 488	75, 108	77, 713
Ngoni	Eastern	49, 131	50, 632	53, 989
Bisa	Eastern	46, 549	41, 706	41, 483
Lozi	Western	110, 079	55, 123	65, 298
Tonga	Western	95, 818	95, 445	78, 623
Lenje	Western	39, 675	39, 580	38, 287
Luvale	Western	31, 173	58, 853	61, 375
Kaonde	Western	30, 182	33, 642	35, 783

Ila	Western	-	21, 632	17, 339
Lunda		56, 609	66, 445	

A crucial aspect of the population data was the size of the indigenous population in relation to the European settler populations. This data was crucial to driving policy agendas regarding land and resource allocation based on racial differences. Table 11 below shows the African and European population of Northern Rhodesia from the census conducted in May 1911, May, 1921 and May 1931 (Government of Northern Rhodesia, 1912, 1922, 1932).

Table 11: Northern Rhodesia's population (Government of Northern Rhodesia 1912, 1922, 1932).

Year	Europeans	Increase in Percentage	Africans	Increase in Percentage	Proportion of Africans to one European
1911	1, 497	-	821,063	-	548.47
1921	3, 634	143	979,704	19	269.59
1931	13, 846	381	1, 372,235	49	99
1932	10553	23.1 decrease	1,382, 705	.763	131

Colonial census served the epistemic function of rendering 'legible' the society as an entity that could grow or decay. The population thus emerged as a field of intervention and an object of government techniques and the problem of the environment. The statistical framing of the political economy rendered possible the population as objects of management "on which and towards which mechanisms are directed to have a particular effect on it" simultaneously as environmental subjects "called upon to conduct itself in such and such a fashion" (Foucault, 2009, pp. 42-43). This was an anticipated endgame of the local population. For the new colonial administration, the subjection and regulation of the colonial population was central to securing nature and consequently the new political economy.

Under protectionist laws and policy, indigenous populations' knowledges were rendered suspect, excluded, discredited, and disqualified (DuBois, 1991). The 'truth' regime of purified knowledge (Sibley, 1995), and local indigenous knowledge, was assigned to categories of hierarchisation which lay "beneath the required level of cognition or scientificity"

(DuBois, 1991, p. 7). The epistemicide was achieved through "high modernism ideologies that valorize the use of Western rational science which compartmentalizes the state's function into distinct bureaucracies" (Scott, 1998). This not only augmented the Colonial Office's reach, but also legitimised the rule and validated the power-knowledge nexus between the colonisers and the colonised.

Creation of Native Authorities

The most important use of scientific conservation for the Colonial Office was the way in which the link between population and the environment was translated into policy. Once the tribes were profiled, the Colonial Office sought to "to effect sufficient control over them"[v] by introducing the policy of Native Authorities. However, the BSAC's initial approach to governing the population undermined tribal cohesion and left the 'tribes' "in a very disorganised state" (Secretary for Native Affairs cited in Chanock, 1985, p. 112), necessitating the use of Indirect Rule in some districts. In 1902, a BSAC official wrote:

> It is our settled policy to administer […] through native authorities and not to supplant them […]. It would be far more expensive to try and administer so large and unhealthy territory through white officials[vi]

In 1929 the Colonial Office introduced new policies and mechanisms for engaging with the local population. The introduction of 'indirect rule' provided a two-tiered structure, in which the colonised and the colonisers worked in separate but interdependent spheres:

> The Ordinance empowers the Governor to appoint in specified areas Native Authorities, consisting of one or more chiefs or other natives, to be responsible for the performance of the obligations imposed upon them by the Ordinance and for the maintenance of order and good government in the area (NRG, 1932, p. 6).

Unlike the BSAC, the Colonial Office attempted to regulate the conduct of local population through non-coercive measures. Indirect rule through Native Authorities emerged as a new mode of governing and reorganisation of power. This policy replaced the direct rule policy. Although indirect rule facilitated a mutiny in India, "it was in Africa […] that it reached its zenith in terms of the breadth of application, institutional application, and theoretical elaboration (Mantena, 2010, p. 173). Through the Native Authorities Legislation of 1929, the Colonial Office codified the relationship between the colonial legal system and the 'existing' customary legal system, transferring to local traditional leaders many of the tasks of the colonial state, in ways they believed would preserve 'traditional' political structures and empower them to govern "those matters which are to them the most important attributes of

rule" (Lugard, 1965, p. 197). This, however, did not mean that the policy was implemented in the same way with the same intentions across time and space. The Northern Rhodesia colonial administration is one typical example where indirect rule exhibited conflicting wishes and designs (Mantena, 2010).

The Native Authority system was constitutive of 'Native Courts' where:

The duties of the Authorities are clearly defined in the Ordinance which confers upon them power to make rules for certain objects. It is the duty of all natives to assist such Authorities in the work of administration (Northern Rhodesia Government, 1932, p. 7).

These courts gave local traditional leaders the power to make arrests, try cases and levy fines and punishments in terms of beatings, forced labour and prison sentences. Customary law was allowed to prevail as long as it did not undermine British supremacy and was not 'repugnant to natural justice or morality' (Frederiksen, 2014). The extension of authority to local traditional leaders, however, was not without conditions. It was a thoroughgoing hierarchical reorganisation and rationalisation of traditional powers (Logan, 1939). Different groups of traditional leaders were integrated and structured into clear hierarchies that were set out by the Colonial Office. Out of this emerged a three tiered system of chiefs[vii]. To recognise and symbolise this new, standardised and more efficient system of traditional rule, black staves were given out. Paramount chiefs were given the longest staves surmounted by a Rhodesian lion, and lesser chiefs received shorter staves with a silver sphere[viii]. When handing them the staves, Governor Maxwell asked the chiefs to "show their appreciation of this act of recognition by acting rightly towards their people"[ix]. The Native Authority system operated as a colonial mechanism that instilled in local traditional leaders habits of 'good governance', and with restructuring and new powers came the burden of expectations of 'rational' (Frederiksen, 2014) environmental governance.

Native courts were a technology of power through which new habits of environmental governance were made operational. By empowering local traditional leaders to hold court, try cases and impose punishments, local traditional leaders were encouraged to "learn to be just and fair" (Chipungu, 1992). A key technique here was increased surveillance by colonial officials who regularly visited to check court records and observe how native courts worked[x]. Court clerks were trained in "writing, reading, case recording, personal conduct and general running of Native Authority Affairs" (Chipungu, 1992, p. 59). In this way, the Colonial Office sought to generate institutions of rule which would produce desired self-regulating and gradually modern environmental subjects that internalised these new legal norms. These mechanisms were disciplinary in nature.

The Colonial Office not only eroded the institution of local traditional leaders, but also changed their role. The colonial state sought to legitimise chiefs, to establish their ranks and delineate (usually arbitrarily) their territories, thus establishing a stable hierarchy of tribes, chiefs, and headmen. State agents changed the 'traditional' role of chiefs by institutionalising their positions within a fixed colonial chain of command. Local traditional leaders became agents of the colonial state, and headmen became monitors for compliance (Marks & Fuller, 2008). Knowledge of the tribes and changed roles of chiefs proved crucial in implementing environmental policies.

Dispossession through Native Reserves

For the newly integrated and structured systems of indirect rule to operate efficiently and reduce fierce opposition from indigenous populations whose country was persistently being drawn into the colonial capitalist web, the Native Reserves were established on their own lands. The Colonial Office justified the use of Native Reserves by noting that:

> the chiefs and headmen cannot control their people scattered in small villages and single huts. if people collect in larger villages, the chiefs and headmen will look after their villages […] and help the Boma by reporting crimes (Mukula, 1980, p. 11).

The Native Commissioner for Livingstone in the Southern Province also reported that:

> A good deal of work has been done in gathering scattered villages and individuals together under their headman. Practically, every native in the district must be now aware that he can no longer move about to build and cut timber from land he chooses with impunity and has been warned that prosecutions will be commended during the year of damage to the trees[xi].

In a similar vein, the Native Commissioner for Batoka in Southern Province reported that:

> During my tour, I spoke to the chiefs and pointed to them the necessity of keeping their people concentrated, of preventing indiscriminate destruction of trees […] I pointed out to them that for their own wellbeing, it is necessary that they should concentrate as much as possible (cited in Musambachime, 1993, p. 11).

> In selecting the reserves, we are recommending, we have endeavoured to adhere to the principle that they should be tribal or for a portion of a tribe. We have made them generous in size, allowing for future economic development. We are causing as little movement of the natives as possible and have done our best to keep the paramount chiefs, and more important sub-chiefs on their lands.[xii]

Native Reserves were intended to make the Zambian landscape 'legible' and manageable, while controlling prime productive areas (Hughes, 1999; Neumann, 1998; Peluso, 1993; Singh, 2001). As Native Authorities came into being between 1920 and 1930, Native Reserves gave clear boundaries of power and land of Native Authorities. Where initially there had been general areas in which local populations could settle, there was now a detailed formal demarcation of thirty-seven territories for 525,000 people across the country (Frederiksen, 2014). The Native Reserves were designed to overlap with areas which were already occupied by local populations, however, half of them involved relocations. In the Native Reserves, local populations became targets of development and environmental interventions, and were considered key areas for developing more 'rational' and 'efficient' habits of agriculture. Having condemned and undermined the agricultural practices of local populations as destructive, the Colonial Office sought to rebuild it along more 'rational' lines.

Rationalisation and efficiency for colonial authorities came at a painful price for local communities in Northern Rhodesia. The system of Native Reserves failed to improve the wellbeing of local communities. Instead, they undermined wellbeing and worked as tools of dispossession. The reserves were too small. In 1933, the average population density across the territory was 4.7 per square mile; on the reserves it was 38.7[xiii] with low soil fertility and the inability to shift cultivate sites every five years,

Restrained to small areas with acute water shortages and unable to move, Native Reserves proved to be disastrous for local communities, forcing many to seek alternative livelihoods. Further, communities were dislocated from areas where they knew how to control tsetse fly and were forced into new areas where the fly and the disease it carried were prevalent. The introduction of state-controlled environmental governance was so tyrannical that the Colonial Office in London wondered:

> how far the Government had power with or without the consent of the Chiefs to regulate and […] appropriate to the Administration a share of the measure of profits derived from there (Colonial Office Dispatch 1902, cited in Egboh, 1985, p. 43)

Colonial conservation sought to quickly rationalise a profound socio-ecological reordering, which immediately pointed to the privileged position of the white colonisers and Eurocentrism. Colonial conservation was characterised by violent state policies that changed local settlement and land use patterns (Neumann, 2000). The introduction of Native Reserves advanced a Eurocentric agenda which delegitimised indigenous ways of living with the land, forests, and wildlife. The approach was based on the 'logic' of dehumanising 'scientific'

racism. The first feature of this logic was the way in which the notion of scientific 'protection' of nature was expressed as necessary to ensure that the 'welfare' of the environment was protected from people deemed as ignorant and incapable of utilising natural resources in a sustainable way. The imposition of dehumanising controls was justified as being "for their own good" (Haebich, 1992) and for good of the environment. The notion of 'protection' involved the construction of natives and their knowledges as inferior and uncivilised (Altman & Rowse, 2005, p. 160) and a colonial government as their benign and paternalistic protectors. The second feature of colonial conservation was the extraordinary level of control that the colonial administration exercised over the lives of indigenous populations through an elaborate network of legislation and administration (Moran, 2005, p. 173, 1991, p. 7). Dehumanising laws and policies forcibly relocated indigenous populations (Hughes, 1999; Neumann, 1998; Peluso, 1993; Singh, 2001). Colonial environmental governance not only enclosed wildlife and forests, but also indigenous populations. When colonial environmental governance is examined as a set of human relationships rather than an ecological science based on irrefutable 'truth', it becomes possible to understand the role of Western knowledge in terms of "how to be ruled, how strictly, by whom, to what end, and by what methods" (Foucault, 1991, p. 88). In their desire to create order, the Colonial Office decided who belonged on prime lands and who was excluded from using resources, what was perceived to be lawful and lawlessness, and ultimately, the colonial administration distinguished between legitimate and waste product (Bauman, 2004).

6.2.3 The Emergence of State Controlled Environmental Governance

When colonial administration was established, the environment emerged as a category the Colonial Office sought to monitor. To establish control of wildlife and forests, it made structural changes to the wildlife and forestry sectors. This was the beginning of formal environmental governance in Zambia. The main objective, as revealed in Commissioner Harry Johnstone's report, was to exploit wildlife and forest resources for the economic interests of the BSAC and the Imperial Government. The discontinuity in colonial governmentality necessitated the development of a particular domain of scientific disciplines focused not on the life of the human species, but on the life of *plantae* and wildlife. Associated with disciplines like botany, forestry and zoology was a new set of professionalised figures, beginning with a set of experts from the London-based Society for the Preservation of Flora and Fauna of the Empire (SPFFE). The scientific domain pertaining to forestry and wildlife led to a series of surveys, which were 'truths', to not only understand local populations and their behaviours

towards the environment and natural resource use, but also to bring the domain of nature into the governance system. For, example, *A Report on a Faunal Survey Northern Rhodesia with Special Reference to Game, Elephant Control and National Parks* conducted by Pitman in 1934 observed that the growing population of natives had a negative impact on the conservation of wildlife. He had this to say:

> There is no doubt that recent years have seen a marked diminution in many species of game… a process which has latterly been accelerated by the large quantity of firearms which the native population has been permitted to acquire; and I anticipate, particularly in these times of stress that illicit game-killing will increase extensively unless a definite attempt is made to control hunting and enforce existing legislation. (p. 2)

To this, Pitman recommended that (a) "a revised ordinance on the lines of modern… game legislation should be introduced without delay"; (b) "a Game Department is a necessity and should be created as funds are available"; (c) "certain existing game reserves can be conveniently extended"; (d) "definite protection, by the creation of new, or the extension of existing reserves should be afforded"; and (e) "the native population should be removed from the game reserves as soon as possible" (Government of Northern Rhodesia, 1934).

The power of the modern state is exercised through its writing practices, that is, its surveys, reports, and statistics (Scott 1998). Although the survey conducted by Pitman considered local circumstances, his strong universalising method pointed to the growing influence of Imperial 'experts' whose knowledge was perceived as transplantable. His survey was crucial to helping create a growing corpus of regional and empire-wide knowledge which suggested the conservation of wildlife was a critical moral and administrative imperative.

To discipline the action of populations towards land, forests and wildlife, the colonial State used Western scientific knowledges, classifications and definitions of land, forest, and wildlife. By defining and classifying 'forests', 'land' and 'wildlife' scientifically as 'natural categories' of land-cover, and politically as state territory, the colonial State defined the basic terrain on which future struggles over the roles of states in managing and imagining nature would be played out (Peluso & Vandergeest, 2001). Thus, Foucault's notion of the diffusion of power among social agents constituting the production and implementation of knowledge does not diminish the power of the state; rather, it enhances the state's ability to exact compliance (Singh & van Houtum, 2002).

Based on earlier surveys and recommendations made by Pitman, unsettling game laws were devised to prevent wholesome game slaughter of elephant, rhinoceros, eland, hippopotamus, and other larger animals (Musambachime, 1993). While these laws were being

strictly enforced on local populations, there was a "promiscuous granting of licences" to European big-game hunters who "operated freely killing game and leaving carcasses all over the veld to rot" (Musambachime, 1993, p. 13). Table 12 below lists the colonial laws and ordinances regulating the use of wildlife and forests intended to set utilisation standards and protect wildlife and forests by mainly prohibiting local use of forest and wildlife resources.

Table 12: Colonial laws and ordinances regulating the use of wildlife and forest

Year	Law, declaration, policy, ordinance	Objective
1912	Ostrich Export Prohibition	• Prohibited unlawful exportation of ostriches.
1925	Game Ordinance	• To create protected areas
1931	Game Ordinance	• To repeal the 1925 Game Ordinance • To restrict the number of animals that could be killed by certain licence holders • To provide for the creation of protected areas
1941	The Forest Ordinance	• To supply timber at an economic rate to industries and maintain a stable export rate • to protect land against erosion • to promote the practise of sound forestry under precision of the value of forests and their resources among the local people
1944	Game Ordinance	• To provide the provision for establishing a National Park
1948	Forestry Policy	• To provide the provision National Forests
1954	Fauna Conservation Ordinance	• To provide for the declaration of four more game areas

The colonial governance of nature and natural resources were regulated through restrictive measures and the creation of protected area or conservation territories. In the wildlife sector, these included controlled hunting and the creation of national parks, game-controlled areas, and game reserves. Legislation validated these mechanisms. Although the 1912 Ostrich Export Prohibition Chapter 115 of the laws was the first recorded piece of legislation for Northern Rhodesia (NRG, 1948a), it was the 1925 Game Ordinance that set precedence for the many other wildlife legislations that sought for the creation of game reserves, national parks, and controlled hunting areas. Under the 1925 Game Ordinance (appendix 5), the colonial State was granted power through the Governor to "declare any tract of land to be 'a game reserve' and define or alter the limits and boundaries" (article 3, section a) and "prescribe from time-to-time conditions, as to the numbers, sex, or age of game which may be hunted by virtue of a

licence either in the territory as a whole or any part thereof" (article 3, section, c). In 1941, the Governor of Northern Rhodesia, using Chapter 106 of the Laws, declared a vast piece of land to be a national park, that is, the Kafue National Park. In the assembly for the Slaughter of Game in Northern Rhodesia. On 21st January 1953, Lord Lloyd assured the British National assembly that:

> The Government of Northern Rhodesia are confident that the measures which are being taken to conserve wildlife will ensure that game will always be present in considerable numbers. These include the creation of the Kafue National Park, the establishment of game reserves covering 6.5% of the territory's land area, the strict control of purchase of firearms by Africans and the revision of the fauna conservation laws

By 1962, the 1954 Fauna Conservation Ordinance No. 3 and the 1962 Game Ordinance had been enacted drawing other land into national parks and game reserves. The colonial State declared large sections of land as game reserves and controlled hunting was re-established.

The forest sector was another area that saw many pieces of land turned into protected areas. In 1948, the first scientific forestry policy to regulate the use of forests was drafted; it was approved in 1949. The new policy was concerned with (a) land protection, (b) wood supplies, (c) conservation of policy resources, (d) education, (e) land use, and (f) extension. The aim of the policy was to reserve parts of the country as gazetted forest, for both production and protection, ensuring a reliable supply of wood fuel for mining operation and safeguarding important water catchment areas nationally. Power and authority was given to the colonial State to set aside pieces of land for the conservation of forest resources and declare them in the government gazette as protected areas. These gazetted forests were to (a) protect land against desiccation, erosion as well as to maintain stable river flow; (b) supply timber at an economic rate to industries and maintain a stable export rate; and (c) promote the practice of sound forestry and appreciation of the value of forests and their resources among the local people.

Based on the recommendations of the surveys, the Game and Tsetse Control Department was created in 1940 and the Forestry Department in 1948. These departments introduced a series of brutal environmental laws. The creation of protected areas was one of the worst. It gave powers to the colonial State to manage and protect all forest and wildlife activities. To achieve this, the Department of Wildlife and Tsetse Control took a hostile view of poaching and encroachment.

The creation of these Departments marked a qualitative shift in colonial perceptions of the central value of wildlife and forests. The scientific domain of knowledge pertaining to wildlife and forestry allowed them to introduce a series of environmental manipulations which

favoured the production of, and regeneration of, certain animal and plant species with economic value. Scientific surveys legitimised and justified the creation of protected areas, revolutionising the livelihood of local populations and creating new, almost inescapable, means of imagining land, resources, and people (Peluso & Vandergeest, 2001). The individualising and totalising power relations in relation to land, forests and wildlife made intelligible the resources contained in the territory. The Forestry Department was instituted as the sole policy actor in the forestry sector, and from 1948 to 1963 the Department had explicit and implicit power. It was the largest and most formidable estate agent and manager in the country (MENR, 1998).

Fortress conservation or territoriality is a technology of government. 'Territoriality' is "a spatial strategy to affect, influence, or control resources and people by controlling the area" Sack (1986 p. 1). Fortress conservation is premised on the belief that environmental protection and management is "best achieved by creating protected areas where ecosystems can function in isolation from human disturbance (Freudenthal et al., 2012). Game legislation was enacted to protect game from the African hunter (Vail (1977) because: "the native as you know, has no thought for the future and will go on killing til no buck worthwhile are left" (GNR, 1934, p. 85). It is assumed that "local people use resources in irrational and destructive ways, and as a result cause biodiversity loss and degradations" (Robbins & Doolittle, 2012). Armed with this perception of local populations, the colonial government sought the use of space in the 'exercise of power' (Foucault 1991 p. 252). Foucault (1994) elaborates the notion of space through the concept of territory, explaining that "territory is no doubt a geographical notion, but first of all a juridico-political one: the area controlled by a certain kind of power" (p. 32). This notion forms the basis for understanding and justifying the creation and securing of protected areas (Bluwstein & Lund, 2018; Lunstrum, 2013; Masse, 2020) like Crown Lands, National Forests, National Parks, and Game Reserves. Conservation territoriality is an environmental governance strategy manifested in the protected area model. Authorities such as central colonial government map, legislate, demarcate, and use force and violence to produce discrete spaces where certain types of nature and activities are allowed, and others are excluded (Brockington , 2002; Spirerenburg & Wels, 2006).

6.3   COLONIAL FOTRESS HERITAGE IN THE FIRST AND SECOND REPUBLICS

The first post-independence period in Zambia ran between 1964 and 1991 and is divided into two phases. The First Republic ran between 1964 and 1973 and was characterised

by African socialism and multiparty democracy. The second phase, known as the Second Republic, was a one party African socialist government which ran from 1973 to 1991. The first post-independence periods aimed at consolidating territorial control and modernising the country.

Zambia's independence in 1964 came at a time when there was a growing international focus on the environment. This trend also resonated in Zambia, and in the country's political decolonisation two trends concerning the environment can be observed. The first is the concern of IOs about the implications of decolonisation for nature (Jensen, 2009, p. 15). The second is Zambia's response to the environmental debate. International conservation agencies have played an influential role in the development of Zambia's strategies for environmental governance. For instance, the Worldwide Wildlife Fund (WWF) was concerned that with political decolonisation major game species would disappear as soon as Africans managed their resources (Mgaya, 2016). The view was that Africans had a general lack of knowledge about their nature-degrading activities (Jensen, 2009, p. 16). However, the newly elected UNIP government premised on African socialism and led by Kenneth Kaunda counteracted this discourse. Although before independence Kenneth Kaunda had decried the punitive and exclusionary nature of colonial wildlife and forestry, he passed laws to strengthen and broaden them after independence. The UNIP government endorsed the colonial conservation strategy which saw a growing number of protected areas and evictions, and conflict with protected area-adjacent communities (Gibson, 1999). By 1971, the Zambian Government had gazetted 32 game management areas (GMAs) to replace the controlled hunting areas, and in 1972, the government established eighteen national parks, replacing the reserves, in which hunting was completely prohibited. Taking GMAs and National Parks together, more than one third of Zambia's land mass came under significant restrictions and the authority of the Wildlife Department at the start of the 1970s. Table 13 below presents the major policies and laws enacted between 1964 and 1991.

Table 13: Major environmental policies and laws enacted in the First and Second Republics

Policies and Acts	Year	Main Objectives and purpose
Forest Act	1974	• To provide for the establishment and management of National Forests and Local Forests • To make provision for the conservation and protection of forests and trees • To provide for the licensing and sale of forest produce
National Parks and Wildlife Act	1968	• To repeal and replace colonial Acts • To provide for the president to declare any area in National Park
National Parks and Wildlife Act	1991	• To repeal and replace the 1968 Act

Reaffirming the colonial fortress conservation model, more national parks, game reserves, game-controlled areas, national forests, and local forests were created in line with the socialist policies of the time. The culmination of these were the National Parks and Wildlife Act in 1969 and the Forestry Act in 1973. These Acts declared that:

ownership of trees, standing on, and all forest produce derived from, the State Lands, Customary areas, National Forests and Local Forests is vested in the President on behalf of the Republic (The Forestry Act, 1973, Section 3).

The Acts also gave power to the president to:

declare any area of land within the Republic to be a National Forest and may in like manner declare that any that any National Forest or part thereof cease to be a National Forest or that the boundaries of any National Forest shall be altered or extended (The Forestry Act, 1973, Section 8).

By 1971, eight statutory instruments detailing hunting licence requirements, protected animals and legal methods of hunting were declared. In the 1970s, the UNIP government, following UNESCO's 'Man and the Biosphere Programme', adopted the buffer zone model and made the first attempts to involve local communities in environmental governance (Lungu, 1990). The Game Management Area Declaration Order of 1971 was declared and introduced the objective of conserving wildlife and integrating its management into rural economy (Lungu, 1990). This Order provided for the involvement of communities in wildlife management decisions and the transfer of a share of hunting revenues to them to stop or reduce land degradation activities that threatened wildlife habitat. However, the legislation embedded in the Order did not include specific provisions to enable communities to meaningfully participate in wildlife management (Lungu, 1990). Conflicts between communities, government and safari

hunters escalated. Locals saw no benefit from conservation as commercial poaching became a profitable business given that Western countries had increased their demand for wildlife products (Gibson & Marks, 1995).

The forest sector was not exempt from the modernisation project. The government focused on the development of both indigenous and plantation forests as an important revenue base. Plantations were considered important undertakings to boost the wood industry and to generate timber-dependent employment. The belief that industrial forestry could provide an important base for economic growth was further supported by the International Development agencies. In 1968, the government was given a loan by the International Bank for Development and Reconstruction for its industrial print plantations, the first of its kind for forest resources (GRZ- FD, 1974). It was argued that the growth of the forest sector required the massive, short-term liquidation of forest resources capital investments in timber industries and later reinvestment in plantations (Pretezch, 2005). Accordingly, Zambia increased its protected areas from 7, at the time of independence, to 484, covering 9.6% of the country's landmass and 50,000 hectares of plantations were established (Mbindo, 2003).

During this period, the UNIP government strengthened the Forestry Department by giving it exclusive powers to manage the country's forests, making it the most powerful institution for the management of forests and forest products. The main provisions of the Forest Ordinance of 1941 were retained, and some were adjusted to give the department more authority. The Forestry Department operated as a police department, and its power to protect forest resources was extended to searching rural people's homes without a warrant.

Although Kenneth Kaunda was an ardent conservationist, his one-party state parliament failed at times to pass his preferred wildlife legislation:

> Mr. Speaker, when the registration of voters was taking place, I did not hear of any animal being asked to go and register as a voter; I heard the campaigners only ask human beings. Maybe the animals were asked in a different language (Hon. J.M Kalenga addressing the National Assembly, December 10, 1982).

Nevertheless, the Second Republic saw a breakdown of the often-unpopular imposed conservation strategies. Many people ignored measures, and poaching and encroachment into protected areas became rampant, often supported by politicians who denounced the colonial heritage of legislation (Power, 1997, p. 27). It is estimated that between 1960 and 1985, poachers had killed 75% of Zambian elephants. While Zambia exported $10 million worth of legally documented ivory from 1979 to 1988, nearly $172,800,000 left illegally (Barbier, 1990;

Caughly & Goddard, 1975; Douglas-Hamilton & Douglas-Hamilton, 1993; Kaweche et al., 1987). To curb poaching and encroachment, more laws with punitive measures were enacted. For instance, the Forestry Act of 1973 and the National Parks and Wildlife Act of 1969 made it a criminal offence for any individual to:

> Squat, camp, reside, build, or excavate, or construct or use any enclosure, construct, reopen or use any road other than public road, or operate any plant, machinery, or equipment" or "Graze domestic animals or allow domestic animals to trespass.

Environmental protection measures transformed resource use and gave rise to conflicts and resistance by local communities (Newman, 2001; Tsing, 2005; West, Igoe, & Brockington, 2006). In both the First and Second Republics, local communities resisted by either engaging in illegal hunting or encroaching on protected areas. Poaching was considered an act of rebellion against hunting privileges or imposed alien cultural values; a form of collective resistance, a violation of culturally human-nature interactions and co-existence and/or an exercise of traditional rights.

Wildlife and Forestry policies created and upheld territories in part by creating criminals or *homo penalis*, the man who can legally be punished" (Foucault, 2008, p. 249). Policies criminalised and outlawed the activities of native populations that were perceived as inconsistent with the administrations' objectives of conservation. The creation of *homo penalis* and the ability to punish individuals who collected, hunted, or squatted in protected areas reflects notions of sovereign power and environmentality. Sovereign power operates by punishing and deterring individuals from acting in certain ways. The creation of an environmental *homo penalis* enabled the legitimate use of punishment to protect the protected territories, resources, and non-human life. Policies, sovereign power, and territoriality not only coexisted, but were co-produced. Policies intended to protect wildlife and forests also generated a wildlife and forestry crime problem, because the local population lacked the 'knowledge' and skills required of eco-rational subjects dictated by the new economy.

6.4 VARIEGATED ENVIRONMENTAL GOVERNANCE IN THE THIRD REPUBLIC

6.4.1 Shifts in environmental governance 1991-present

This section examines shifts and continuing governing mechanisms that that emerged in Zambia in 1991, after the introduction of a liberal democracy. It explores how current environmental governance in Zambia entangles with global environmental governance

structures, as well as being reflective of continuities with the past. Using decolonial concepts of coloniality and the Foucauldian concepts of governmentality and variegated environmentality, the chapter examines how environmental governance in both local and global structures of domination are distinctly late modern forms of interventions; from high surveillance unleashed on the population to their interpellation of participation, to seemingly paradoxical combinations of technologies of control and regulation, from the direct use of surveillance to community participation to pedagogical aspects that come in the form of educating for the environment.

Liberal Democratic Governments

The political changes of 1991 brought about two changes in Zambia: (a) the end of an era of a one party African socialist Government of Kenneth Kaunda, and (b) the ushering into power of a democratic government under the Movement for Multiparty Democracy (MMD) led by Frederick Chiluba, which saw a marked shift in mechanisms of environmental governance. The Chiluba Government not only changed the country's political ideology but also changed its economic ideology. The new president announced that Zambia was now a "liberal democratic society" (GRZ, 1996, p. 1) whose "economy was undergoing a period of liberalisation" (MENR 1994, p. viii). The liberal government came with a total shift in aspects of Zambians' lives. The emergence of a liberal democracy meant that it is the "values of liberal democracy that must guide the formulation of […] policies and their implementation (GRZ, 1996, p. 1). This period saw the beginning of a new political discourse as well as the new forms of environmental governance discussed below. Although a decentralised governing system was proposed as a suitable governing system, centralised governance has continued to exercise power in political and environmental policy and decision making.

The change in political and economic ideologies helped successive governments after 1991 enact and establish local environmental policies and institutions. The constitution continued with land tenure system under the control of the president (MENR, 1994). Table 14 below details the environmental policies, acts and action plans that have been effected since 1991.

Table 14: Environmental policies, acts and action plans enacted in the Third Republic

Policy/Act, Action Plan	Year	Objectives, purpose, and principles
National Environmental Action Plan (NEAP)	1994	The NEAP was founded on three fundamental principles: • The right of citizens to a clean and healthy environment • Local community and private sector participation in natural resource management • Obligatory environmental impact assessment of major development projects in all sectors.
National Forestry Policy	1998	• To set aside areas and provide guidelines and supervision of their management • To encourage community participation in the management of the environment and natural resources. • To raise the level of awareness amongst the people of Zambia on the values and sustainable management of natural resources.
Zambia Wildlife Act	1998	• To provide for the establishment, control, and management of national parks, and for the conservation and enhancement of wildlife ecosystems, biodiversity, and objects of aesthetic, prehistoric, historical, geological, archaeological, and scientific interest in national parks • To provide for the establishment, control, and management of game management areas. • To provide for the sustainable use of wildlife and effective management of the wildlife habitat in game management areas. • To provide for the regulation of game ranching, for the licencing of hunting and control of the processing cell import and export of wild animals and trophies • To provide for the implementation of the conservation of international trade in endangered species of wild flora and fauna

Policy/Act, Action Plan	Year	Objectives, purpose, and principles
National Policy on Environment (NEP)	2007	• To increase public and political awareness and understanding of the need for environmental protection • To create a legal framework for the implementation of the National Policy on Environment and sustainable environmental management
Environmental Management Act (EMA)	2011	• To provide for integrated environmental management and the protection and conservation of environment and the sustainable management and use of natural resources
The Zambia Wildlife Act	2015	• To provide for the winding up of the affairs of the Zambia Wildlife Authority • To establish the Department of National Parks and Wildlife • To provide for the establishment, control, and management of National Parks • To provide for the promotion of opportunities for the equitable and sustainable use of the special qualities of public wildlife estates • To provide for the establishment, control, and co-management of Community Partnerships Products for the conservation and restoration of ecological structures for non-consumptive forms of recreation and EE
National Forest Act	2015	• To provide the establishment and declaration of National Forests, Local Forests, joint forest management areas, botanical reserves, private forests and community forests • To provide for the participation of local communities, local authorities, traditional institutions, NGOs, and other stakeholders in sustainable forest management. • To provide for the implementation of the UNFCC on international trade and endangered species of wild flora and fauna • To repeal and replace the Forest Act 1999
National Policy on Climate Change (NPCC)	2016	• To promote and strengthen the implementation of adaptation and disaster risk reduction measures. • To promote communication and dissemination of climate change information to enhance awareness and understanding of its impact • To promote investments on climate resilient and low carbon development pathways in order to generate core benefits

With the introduction of a liberal democracy in Zambia in 1991, new governmental apparatuses were created and enforced in the hope of engendering new conduct in environmental governance. The NEAP referred to this as an era to "integrate environmental concerns into social and development planning processes of the country" (MENR, 1994, p. viii). Central to the new liberal democratic era were attempts by the State to establish more powerful legal-disciplinary surveillance and enforcement mechanisms, to shift resource users' conduct towards a more environmentally friendly approach:

in the move to a market economy government will have to rely on sound economic and legal instruments to achieve sustainable development and environmental management […] the focus of these instruments should be to influence patterns of resource use by providing resource users […] with incentive structures encouraging utilisation of resources at socially optimal levels (MENR, 1994, p. 16)

To this effect, the state introduced privatisation, capacity building and empowerment, decentralisation, and community participation, as mechanisms through which resource users' interactions could be managed.

Lack of knowledge of environmental problems as discussed in Chapter 5 is linked to a lack of positive behaviour, action and responsibility. The attack on (lack of) knowledge asserts that the Zambian population cannot behave properly, act sustainably or be responsible in their interactions with the environment. Policy documents suggest that the market economy, privatisation and deregulation are the way to protect and manage the environment (GRZ, 2007; MENR, 1994, 1998). They claim that "the market economy…offers new opportunities… for economic development and environmental management" (MENR, 1994, p. viii) as it "reduces the role of government in the management of natural resources, freeing budgetary and management of resources to focus more on relevant activities" (MENR, 1994, p. 18). They further claim that sound environmental management is to be achieved though mechanisms such as the use of economic incentives that promote resource use (GRZ, 2007; MENR, 1994).

Capacity building is perceived as integral to governing the environment and utilising resources: "capacity building through training and EE and awareness is recommended" (MENR, 1994, p. viii). The NPCC reiterates this point by indicating the need to: "strengthen the institutional and human resource capacity in order to effectively and efficiently address all aspects of climate change at national, provincial, district and local levels" (GRZ, 2016, p. 14). According to these policy documents, critical environmental management can only be achieved through capacity building. Capacity-building efforts assist people to acquire certain skills and participate in environmental and developmental transformations. However, capacity building techniques also work to govern groups and populations by making them self-regulating and responsible through new market-based relations. This makes capacity building a technology of neoliberal governance, that is, an apparatus of rule that requires a diverse range of new rationalities that attempt to 'grow' institutional frameworks, enhance the skills of people, and transfer knowledge through the formation of new partnerships. Government operates through the capacity of those who govern and those who are governed to regulate themselves.

Community participation is another governing technology used in neoliberal environmentality. In Zambia from 1991, environmental policies have sought to decentralise and secure the participation of local populations by trying to redistribute power, authority, resources, and accountability to lower levels. The decentralisation of environmental governance arose out of the need to correct the inefficiencies of the centralised governance systems introduced by colonialism. The Government of Zambia through its policies recognises that:

> Natural resource conservation, protection, and sustainable utilisation of can only be promoted if local authority and community participation, empowerment and social and economic benefits from natural resources are guaranteed (MENR, 2007, p. 24).

Colonial neoliberal environmentality in Zambia emerged with the transitioning of the country to a liberal state and was adopted as a mechanism to counter the failure of sovereign colonial environmentality. The 'participation' of local natural resource users has now become the new neoliberal environmentality, albeit colonial. However, in this global regime, the 'participation of local communities is only limited to the efficient implementation of project designs and priorities set by national and international environmental experts and bureaucrats' (Randeria, 2007). Although the Zambian Government promises local participation, democratisation, accountability and devolution, the decentralised governance of the environment does not seem to be implemented as such ideologies suggest. Central government actors, in this case policy makers, council workers, and forestry and Wildlife Department officials, often seem reluctant to redistribute power and resources to local authorities and traditional leaders. In effect power is recentralised while decentralising it (Ribot et al., 2006) Despite 'community participation' rhetoric, Zambia's Central Government, through the Forestry Department (for instance) still solely manages the bulk of the country's forests. Of 40% of the total forest cover, only 2.8% is designated to local forests (MENR, 1998). Thus, in neoliberal environmentality, local communities are not perceived as owners of common property resources, their customary use of forest resources and wildlife is obliterated and deemed local, and their knowledge of nature does not form the basis of context-sensitive conservation strategies (Randeria, 2007).

6.4.2 Environmental Policy Making

This subsection examines colonial power dynamics to examine asymmetries in environmental policy making both locally and internationally. The subsection thus has two

objectives; (a) to examine how power dynamics shape the discursive space for local indigenous voices and knowledges in the arena of environmental policy making, and (b) examine how environmental global power structures influence Zambia's environmental decision making.

Whose voices?

The Seventh National Development Plan of 2017 to 2021 asserts that engaging the public in environmental policy making is crucial to fostering development:

> It is the aim of the government to promote citizens' participation in issues that are pertinent to their wellbeing […] Zambia has to be inclusive in its development trajectory by harnessing people's voices in augmenting the nation's development agenda" (GRZ, 2017, p.9).

Public participation is perceived as important to making environmental decisions "more democratic, legitimate and effective" (Chen, 2017, p. 1), and policy and curriculum documents examined indicate that environmental decisions were made in a participatory manner. For instance, the NEP indicates that it was developed using the "consultative process involving all the major stakeholders" (GRZ, 2007, p. iii). The ZECF also indicates that it had been "developed through a consultative and participatory process" (MESVTEE, 2013, p. iii). In Zambia there are a large number of different steakholders: government officials, NGOs, traditional leaders, religious leaders, and environmental experts. One policy maker had this to say regarding public participation in environmental decision-making:

> Broadly speaking, I would say all the voices are present in our policies. We consulted the traditional establishment, civil society, the academia, and the private sector…maybe we could have included the youths and women, but then, they are represented by civil society. A wide spectrum of society was consulted…I think it has some aspirations of people (Conversation 6, Policy maker).

Interestingly, although the NPCC also makes mention of the various stakeholders that were involved, none were traditional leaders, rather participants were from government, NGOs, academia, experts, and consultants. In environmental decision making, the failure to solicit public input under the existing institutional frameworks leads to "participatory gaps". A lecturer indicated as much:

> There is a very huge gap. The gap comes from the process of the formulation of the policies […] because at a certain level, there are real people on the ground that need to be consulted (Conversation 4, Lecturer).

A 'participatory gap' exists where the inputs of citizens living the effects of the environment are missing from the decision-making processes. These gaps limit the categories of 'voices' heard in the process, one of them being local voices. What counts as local voices? Local voices include farmers, local people, fishers, often living in out-of-the-way places, frequently marginalised politically and economically, and those who are delegated to speak for local or indigenous communities like the traditional leaders in the case of this thesis.

Knowledge custodians express frustration at the way their knowledge is overlooked:

> We are the custodians of traditional ecological knowledges, but our knowledge is not considered useful. They don't even want to listen to us but they expect us to listen to them. I don't even know what the government is doing. We are just told that we need to or not do certain things. We feel sidelined (Conversation 25, Local traditional leader).

Expert knowledge is privileged over local ecological knowledges, and the cognitive aspect of engagement is emphasised (Chen, 2017). This power asymmetry penetrates and constitutes society and the production, reproduction, and dissemination of knowledge. Within local institutional structures, groups like the local traditional leaders and their knowledges are relegated to the other side of the abyss as they are not perceived as having credible knowledge for local environmental decision making.

All traditional leader participants indicated that their voices were muted in environmental decision-making processes:

> Our voices are not heard in both policy and curriculum formulation […] the government does not involve us. If they could come to my office, despite them thinking that I am a common man, I can share with them our ways and practices of living in harmony with the environment. Our traditional laws can still be applied and cultivate positive feedback with regards to the management of the resources. They need to work hand in hand with us because …we are closer to the people than them (Conversation 18, Local traditional leader).

Rooted in abyssal thinking, dominant discourses occlude worldviews based on different conceptions of value, often held by local community members. After colonial rule, local Zambians seized state power, but they continued with features and variations of colonial mimicry. Post-colonial Zambia has not only reproduced certain mentalities and colonially induced cultures and knowledge but has continued to impose forms of social organisations which limit who get to participate in environmental decision making, what knowledges are deemed credible for solving environmental problems and governing the environment, and how populations should interact with the environment.

Participation is necessary during the process of policy making not after:

> If only we could be taken on board when these policies are being designed, we could contribute effectively. Many times, we only get to know there is a policy, we did not participate in the designing of the policy. So, it doesn't help much because people on the ground understand issues better than people in the offices in Lusaka or elsewhere. We need to be involved right from the beginning … for example with the ministry of lands, they sat to design a new land policy…chiefs were not invited…now they came to want to validate that policy and they invited us to go. We asked them how we became part of a process that we have never been part of from the beginning…there are many instances…we are left out (Conversation 12, Local traditional leader)

Privileging government officials, NGOs and experts in environmental decision-making leads to policies that rely on specialised knowledges and practices. This technocratic model assumes that communities lack the knowledge with which to address problems and engage in decision making processes. Traditional leaders, who represent their subjects and communities, are rarely engaged as knowledge persons, and policies problematise and intervene upon conduct that is inherently dependent on "knowledge and knowledgeable persons" (Rose, 1994, p. 363). Local leaders are not invited to participate in environmental policy making and agenda setting processes, and even if they make formal or informal contributions, they are rarely taken into consideration in environmental policy making and implementation.

Global Environmental Policies in Local Policies: The 'colonial situation' in post-colonial contexts

In this section, I examine globalised forms of environmentality and their effects on local policy making. To achieve this, I use the colonial matrix of power and knowledge to examine and uncover power effects of the discursive constructions of environmental policy. I also examine how SD works as a government rationality to create a particular truth on environmental sustainability, and how it works to create a system of environmental governmentality which underpins the circulation of power at a global level.

As problems relating to environmental governance lend themselves well to systems of global governance (Forster, 2011), international environmentalism has gained importance and increasingly influenced Zambian environmental governance and debates. Table 15 below lists the various international environmental agreements that continue to exert an influence on the country's environmental governance.

Table 15: International agreements influencing Zambia's environmental policies

1	UN Convention on Biological Diversity 1992
2	UN Framework Convention on Climate change 1992
3	UN Convention to Combat Desertification 1992
3	Convention on wetlands of international importance especially as waterfowl habitat 1971
4	Convention on international trade in endangered species of world fauna and flora, 1981
5	International Plant Protection convention for the prevention and control of the introduction and spread of pests of plants and plant products
6	Stockholm convention on persistent organic pollutants 2001
7	Statutes for the International Union for the conservation of nature and natural resources, 1985
8	Convention concerning the protection of world culture and natural heritage, 1975
9	Convention on the Conservation of Nature and Natural Resources, 1968
10	Vienna Convention of the law for treaties 1961

Articulated as a series of threats that the whole planet faces, environmental degradation is presented as necessitating a global response: "it is common wisdom that environmental degradation is everybody's problem" (Hajer, 1995, p. 1), and one that cuts across the boundaries of nation states. Responses to these problems are increasingly sought at a global level through systems of global governance. The discourse of environmental degradation as a global or transnational problem needing a global or international solution, and the concept of sustainable development, has become the key prescriptive logic of environmental governance activity (Foster, 2011). In the case of Zambia, one of the national values and principles that has been enshrined in the constitution is "sustainable development" (CoZ, article 8, section f). Sustainable development, according to policy documents is "aimed at guiding decision-making on the development process for Zambia" (GRZ- UN, 2020, p. i). Policy documents further indicate that:

> Sustainable development also takes centre stage in the development of policies and strategies of all economic and social policies that the country has developed […] all of this is a demonstration of Zambia's resolve […] to embrace and pursue a transformative global development agenda (GRZ- UN, 2020, p. i).

The sustainable development discourse (SDD) and trajectory embraced by Zambia is premised on the WCED's (1987) definition of SD as:

a process in which the exploitation of resources, the direction of investment, the orientation of technological development and institutional change are all in harmony and enhance both current and potential to meet human need (p.46).

This definition integrates social and economic global capitalist development goals with environmental concerns (Tulloch, 2016), thus seeking to establish a balance between anthropocentric priorities of development and the eco-centric requirements of enviromental protection and management. The reconciliation of economic growth and environmental protection has its emergence in the 1992 UN Conference on Environment and Development (UNCED) and the Rio Earth Summit. Principle 12 of the Rio Declaration sanctions the integration of SD with discourses of neoliberalism stating that "States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries". The UNCED "institutionalized the view that liberalization in trade and finance was consistent with, and even necessary for, international environmental protection and that both are compatible with the overarching goal of sustained economic growth" (Bernstein, 2002, p. 2). Subsequently, environmental protection and management, globally, has been pursued within the values and norms that foster and sustain the post-liberal economic order of market and policy hegemony (Elie, 2020). This understanding of SD is adopted for universal application. This is why an understanding of environmental policy making in Zambia requires an examination of international institutions and the policy-making bodies they spawn. Such an understanding is crucial to describing bureaucratic contexts, decoding the discourses of various interest groups and the abyssal thinking perpetuated in these processes.

In Zambia, the Ratification of International Agreements Act of 2016 "provides for the ratification of international agreement and the domestication processes" (article 3, section 1). The act further states that an agreement is ratified if it "is in the best interest of the state to ratify the international agreement" (article 3, section 1). Through ratification, Zambia has domesticated global development agendas such as the sustainable development goals (SDGs), Agenda 2016, Agenda 2030, and others. The justification for this is explained by a participant who suggested that:

> We live in a global world. The issues that we are trying to solve are global. They are a global response. For instance, Zambia is one of the 193 countries that signed the SDGs. In policy making, you must recognise that you live and belong to the global world, the regional economic bodies and you have domestic needs. As such, we must strike a

balance between these international obligations and domestic needs (Conversation 5, Policy maker)

As environmental problems are considered transnational, the need for cooperation between and among nation states is crucial (Duffy, 1997). It is in these articulations that SD is described as a global project, in which 'everyone' must be included to secure a sustainable future (Ideland & Malmberg, 2014).

The participant above continues by explaining that:

We broadly have three international policies on climate change. The UN Framework Convention on Climate Change (UNFCC), UN Convention to Combating Desertification (UNCCD) and the UN Convention on Biological Diversity (UNCBD). These together with SDGs affect our policies. These conventions have subsidiary instruments like the Paris Agreement and the Kyoto Protocol which are under UNFCC; UN Convention on Wetland is under Biodiversity, that is, the Ramsar Agreement. What we do is to domesticate via ratification and mainstreaming. If you check Articles 43 and 257 of our constitution you will realise that we got them from international obligations and we have integrated them into our laws. Article 257 (a) is from the UN Convention on Biodiversity. Also, our policy making systems ensure that we consult specialists and organizations. Naturally, you cannot, for instance, do a labour policy without consulting ILO, an economic policy without IMF consultations, environmental or climate change policy with consulting the IPCC or UNEP (Conversation 5, Policy maker)

International organizations like the UN and epistemic communities like the International Panel on Climate Change (IPCC) are the main 'authoritative voice' on the science of climate change and environmental degradation. They have authority to speak about environmental issues. By restricting access to the IPCC, and by choosing scientists who are mainly from the Global North, governments are able to influence who qualifies to speak. Establishing this authoritative voice is an essential foundation for policy making (Shaw, 2003) and means of silencing other views (Brunner, 2001):

You know, all these international commitments we have like the Paris Agreement, Sendai Framework for Disaster Risk Reduction, the Istanbul Plan of Action. All these must be put in our plans and development frameworks because we have committed to them [….] First of all, we are a sovereign state, and we make our rules. But we can be advised and there are certain things which we completely have no knowledge of, especially something new like biofuels. But there can be a bilateral which is good at doing something or an international organization like the UN can help us with expert knowledge (Conversation 5, Policy maker)

Emphasizing a knowledge economy and ascribing epistemic authority to those who are predominantly from the Gobal North, SD reorganises the capitalist economy (Castro-Gomez, 2007) through global articulations of power and knowledge. In this articulation, postmoderm capitalism is a biopolitical regime that constructs both nature and bodies through a set of biopractices where knowledge is crucial. SD places the generation of 'human capital' at the centre of its concerns and promotes knowledge that converts a social actor into economically productive knowledge (Castro-Gomez, 2007).

In its current form, SDDs are now a neoliberalised explanatory framework through which all hegemonic forms of environmental discourses are produced and reproduced. The influence of international organizations to transmit knowledge is explicit and knowledge becomes the basis of the new global economy (Dryzek (2005). The emergence of SD is thus related to a historically specific configuration of the capitalism-state-society complex (Cox, 1981). Sustainable, economic growth should be capable of generating 'human capital' which means improving knowledge, expertise, and the ability to manage social actors to utilise them efficiently (Castro-Gomez, 2007). IOs like the UN are instrumental in the development of SDDs and their global to local dissemination. IOs are the new empire where dominant production is no longer premised on material work; rather, hegemonic strength in the contemporary world comprises agents capable of producing and administering knowledge and information. The capitalist economy is being reorganised based on the knowledge that science produces. Postmodern neoliberal capitalism is a biopolitical regime that constructs both nature and bodies through a series of biopractices where it turns out knowledge is crucial:

> You see, in policy making, you have to recognise that you live and belong to a global world, you also belong to regional economic borders and you have domestic needs […]you have to strike a balance between these international obligations and your domestic needs (Conversation 9, Policy maker)

Globalisation describes an interconnected world across environments, societies, and economies (Lemos & Agrawal, 2006). In globalisation, there are a multiplicity, interdependence, diversity, and flow of influence and materials. The current age of globalisation is capitalist-oriented and embedded in the transnationalisation of the state. A state like Zambia is not a "relatively independent national actor driven by geopolitical competition with other states (Robinson, 2001, p. 190), rather, "boundaries are transcended as a new economic order of the global rather than national circuits of accumulation emerge" (Tulloch, 2016, p. 172). This new configuration changes the structure of the State and is connected to

the rise of transnational State bureaucracies that not only supersede, but also incorporate, the nation-state and redefine the nature of social order. In this new social order, IOs play a significant role in the making and influencing both of environmental policy and higher educational policy (Henry et al., 2001; Shahjahan, 2016, 2012; Tulloch, 2016; Vaira, 2004). IOs, crucial to the global flow of new ideas and the institutional imperatives of HEd and environmental policy (Tulloch, 2016; Shahjahan, 2012; Spring 2009; Vaira, 2004), are complex hubs of policy communities (Shahjahan, 2016) which are derived from unions of nation states and they tackle domestic and foreign policy issues at regional and or international levels. The Zambian NPHE is for instance: "premised on national, regional and global aspirations for education and skills development" (GRZ, 2019, p. iv).

SDDs are disseminated by the UN to environmental and HEd policy makers in Zambia. SDDs apply neoliberal principles of privatisation, commodification, and marketisation to the environment, and these are broadly conceived in colonial and anthropocentric terms. Discourses based on abyssal logic shape environmental policies and educational programming in Zambia. The formation is not a simple reproduction of SDDs, rather through domestication, versions of SDD may vary from those of the UN, even though many ideas appear almost verbatim. As neoliberal SDDs go through the process of domestication, they come into contact with the local contexts and discourses. This means each country has its own version of SD (Tulloch, 2016). Each location ends up with variegated neoliberalistions comprising "market-disciplinary logic that may take different forms in different territories" (Brenner et al., 2010, p. 192). It is through these channels that neoliberalised and scientised SDDs are disseminated from the UN to Zambian policy. This process involves mutations and disruptions (Tulloch, 2016) so that Zambia implements a kind of prototype that moves from an embryonic form within global institutions to co-evolve, and mutate, into specific forms in national policy contexts form (Brenner et al., 2010; Tulloch, 2016).

6.4.3 Governing through protected areas

This section traces forms of colonial environmental governance that survive in the post-colonial Third Republic, despite the emergence of neoliberalism. The section also examines and discusses the effects of these continued practices on local practices and how they are resisted.

The colonial narrative of environmental management and protection that favours the isolation of nature still prevails in Zambia today. Currently, Zambia has 481 forest reserves

comprising of 173 National Forests, and 308 Local Forests, and 20 National Parks and 36 Game Management Areas as shown in Figure 10.
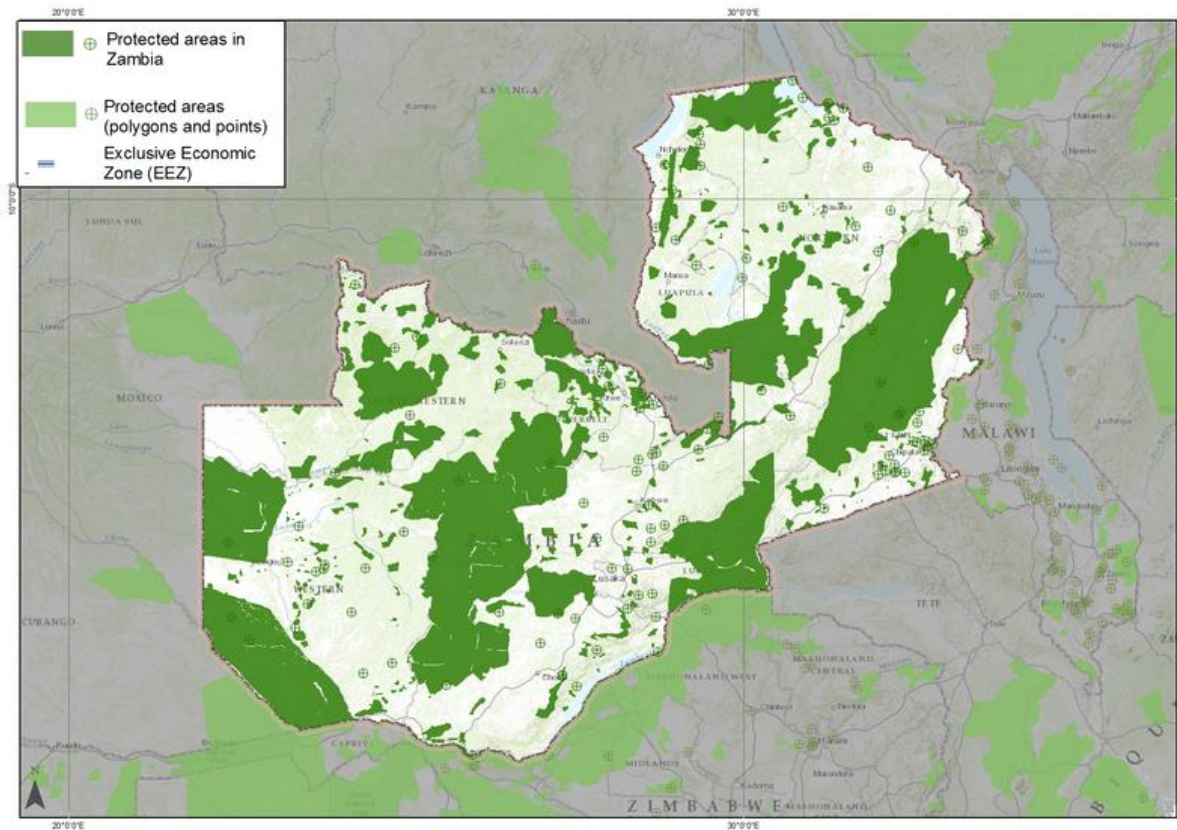
Figure 10: Current protected areas in Zambia

National forests and parks are generally larger and under more strict protection than local forests and game reserves. The total land area covered by protected areas is 40%. Unlike in the colonial period where the environment was classified and exploited for the benefit of imperial powers, these protected landscapes in Zambia are subject to "new efforts to classify, colonize and transnationalize territory in the name of 'eco-governance'" (Randeria, 2007, p. 17) according to the "scientifically defined environmental needs and ecological sensibilities of experts" (Goldman, 2001, p. 499). Due to international agreements, protected areas form what Randeria (2007) terms 'global localities', that is, spaces whose significance can only be ascertained by global comparisons and measurements based on scientific mechanisms of ecological surveillance. Such global assemblages are premised on a biocentric view that excludes the consideration of the interests, experiences and knowledge systems and survival strategies of local populations. In addition, nature is represented as a self-regulating, pristine wilderness threatened by the unsustainable resource use and ecologically harmful lifestyle of the local population (Randeria, 2007).

Relationships between natural resource dependent people and state environmental management institutions are at the centre of explicit and implicit assumptions, discourses and outcomes of environmental policies and practices in the Global South (Vasan et al., 2019). These relationships are influenced by rules and norms that are constantly being formed and transformed through specific historical and political contexts. Currently, Zambia's state and community-based environmental management institutions and practices are constituted in unequal and hierarchical societies. They emerge from, are embedded in, and function as, political, and social actors, rather than formal, neutral institutions as often imagined, theorised, and claimed. What emerges from this analysis is that protected areas are "natural resource battlefields" as they are characterised with competition and conflicts arising the interests of diverse actors (Vasan et al., 2019).

Currently, the Zambia Wildlife Act No. 14 of 2015 and Forestry Act of 2015 govern Wildlife and Forestry Crimes in Zambia. These pieces of legislation establish control and management of National Parks, birds and wildlife sanctuaries and National Forests, they provide hunting licences, and control the processing, sale, import and export of wild animals and trophies. Both policies stipulate that it is a criminal offense to enter, squat or graze domestic animals without a licence or permit. The Forest Act of 2015 states that "a person shall not enter any National Forest without a licence or permit" and anyone who does that "commits an offence and is liable, upon conviction, to a fine […] or to imprisonment for a period not exceeding two years, or to both" (Article 16, section 1).

Based on neoliberal colonialism, such measures derive from historically oppressive structures rooted in western dualisms between nature and people, and are based in neoliberal economic hegemony (Peterson, von Essen, & Hansen, 2017). Colonial neoliberal environmentality operates by displacing local communities from protected areas, or severely restricting their rights of access. One village headman explained that this works to instil fear such that people are forced to self-regulate:

> we are near the National Park and many people may be tempted to engage in illegal poaching activities for food and income. So, I usually hold meetings with my people to warn them of what would befall them should they be found on the wrong side of the stipulated regulations… What we do is first the culprit is brought to the village headman, if they fail to co-operate and comply with what we require of them, they are taken to the chief and last to ZAWA. The fine increases as one goes through the hierarchy. For poaching, there is a jail term (Conversation 25, Local traditional leader)

In this case, the local population in this village exercise caution whenever they need to use natural resources. The punitive implementation of environmental policies shows that the Zambian government allocates rights to extract and protect resources in ways that benefit the state itself. As the state benefits, the local population loses. This happens simultaneously to impoverish local communities:

> These policies are making us poorer. We are poor because of them. It is no secret that we depend on natural resources like trees and fish. We cut the trees for charcoal to sell. When we take our charcoal, we are taxed, we catch fish during the times we are not allowed, we are fined. How do we survive with our people? Sometimes we bribe the Council Officials, and in this way, we still must part away with our money. Either way, we are losers (Conversation, 13, Local traditional leader).

Resistance to dominating power

Following Foucault, Li (2007) points to the possibility of claims and tools of government being repossessed by those marginalised. Local traditional leaders and their people reframe the idea of protected areas, challenging its assumptions and re-embedding them within a longer history of community values and practices. Local traditional leaders not only stress their deep-seated ethical care for nature, but also infuse their sense of morality and fairness into the world's relationship with them and their environment. Emphasizing their historical and continued commitment to protecting wildlife and forests, local traditional leaders espouse a sense of unconditional entitlement.

All local traditional leaders indicated that they sometimes resist the norms and regulations they are expected to follow. Notably, 'law enforcing' agents, who are supposed to regulate natural resource use by local communities, face a dilemma and conflict of interest because they are expected to enforce rules that counter their own basic needs:

> The same policy maker, the Department Officers and Council Officials who are enforcing these policies experience load shedding and need charcoal as fuel. For them to survive, they need charcoal. There lies the problem. How can they effectively implement the policies when they are encouraging our 'crimes' by buying charcoal from us? We, therefore, resist the policies (Conversation 16, Local traditional leader)

The 'counter conduct' response of this community represents "resistance to a special kind of power which makes individuals subject" (Foucault, 1982, p. 781). Unfortunately, state policy actors may regard the local population as "ignorant ecological disruptors" (Vasan et al., 2019): "we can't leave it to them and expect to see trees. We need to continuously monitor them and revise our policies" (conversation 8, policy maker), and thus efforts are doubled to

implement flawed policies. Policy failure, as noted by the traditional leader below, is fundamentally a problem of incoherence:

> The government has made so many policies without a legal framework. A policy should be governed by a legal framework […] people must be told that if they did this, they would be arrested. In this way, the policy will effectively work. But currently, there is nothing in policies. It is just policy after policy without any effect on the people. That is why it fails (Conversation 16, Local traditional leader)

Other traditional leaders suggested that policy brought divisions between themselves and their people:

> Even if I see someone or someone is reported to me that they are doing illegal fishing, or cutting down trees for timber or charcoal, I will not restrain them because they will ask me how I am surviving. Moreover, the government sends outsiders to cut down our trees. Ask the government who cuts our *Mukula* trees. So, who are we to restrain each other or our subjects? I cannot stoop that low to put another person in need of survival in trouble. How do I expect them to survive? That is against our Ubuntu, our cohesion as a people. As a leader, I want to see the wellbeing of my people. If trees given to us by God helps them to survive, let them go ahead (conversation 10, local traditional leader)

The practice of *Ubuntu* here shows how local traditional leaders operate in the face of asymmetrical power relations. By identifying with others' survival needs, they show solidarity with their subjects because they consider themselves as part of the whole, belonging and being bound up with others. Exhibiting solidarity with others means achieving the good for all, being sympathetic, advancing the common good and being committed to the common good of others. This creates a dilemma for leaders:

> We are currently experiencing droughts and hunger…Charcoal burning is the most prominent problem in my chiefdom. It is a challenge that is being derived from being poor. Right now, people are engaging in charcoal burning because of hunger. They need to make money to alleviate their hunger. Of course, this has effects on the environment. But what can I do? I can't let my people die of hunger. The government is not helping us in any way (Conversation 15, Local traditional leader).

6.5 CONCLUSION

Drawing on the *Southern environmentality dispositif* discussed earlier, this chapter maps a genealogy of modern environmental governance in Zambia and subsequently answers the first research sub-question about what influences and informs HEd EE in Zambia. The chapter discussed the dominance of colonial, sovereign and neoliberal environmentality

discourses that predominantly draw on Western scientific conservation knowledge to conceptualise the environment, environmental problems, and environmental subjectivity. Taken-for-granted assumptions of how the environment and environmental subjects should be addressed by governmental and international institutions affects Zambians citizens and overwrites non-hegemonic ways of understanding the environment and ways of interacting with it.

The chapter discussed how, from its inception in colonial times, environmental governance has engendered broad recognition of institutions, decision-making processes, and incentives in the environmental domain. Modern environmental governance, however, is not without critique, the strongest being a continued emphasis on prescriptive and technocratic solutions from the global to the local (Backstrand, 2004; Mol, 2001), the reproduction of a global modern colonial world order (Castro-Gomez, 2007) and neoliberal political economy premised on economic growth (Newall, 2008; Tulloch, 2016). The solutions simplify and commodify the environment based on market regulatory mechanisms (Robertson, 2007; Smith, 2007), narrowly conceived definitions of participation (Harvey, 2005; McCarthy, & Prudham, 2004).

Modern environmental governance is predicated on discourses of 'good governance' which conceal the teleology that places Europeans and their knowledges at the top of the global hierarchy (Gruffydd Jones, 2013). Such discourses obscure colonial histories and power dynamics. It this very history and ongoing asymmetrical power relations that have maintained the hegemony of Western technocratic ideals in global and local environmental governance and consequently marginalise alternative approaches to environmental knowledge and governance.

The chapter argues that modern environmental governance is a coloniality of power that continues to order and organise the logics of power and environmental knowledge and subjectivity. The chapter details the devastation of Empire and the horrific realities of colonialism (Cornell, 2014) as they inform present day 'problem' representations that inform modern environmental governance in Zambia. The transplantation of northern environmental governance to the South hampers contextualised and localised understanding of the environment and its protection. Even though modern environmental governance has, over time, been adapted to local circumstances and has been reformulated as being adaptable to different geopolitical contexts, there is still a need to move beyond northern understandings of environmental governance (Lawhon, 2013). The universal approach towards environmental governance is widely demonstrated in the wildlife and forest conservation efforts in Zambia.

Resource dependent communities are obliged to present themselves as homogeneous communities and adopt "dominant ways of knowing nature and living with nature" (Martin et al., 2013, p. 123) in order to improve the quality of the environment. Hegemonic power in neoliberal environmentality reinforces the issues of 'misrecognition' (Young, 2011). Harsh and highly interventionist forms of environmental governance pursued by post-colonial Zambia bear the marks of their colonial origin. This legacy of ideas about the control of nature and of populations dependent on natural resources has been built on institutions and practices of colonial Zambia.

Overall, the chapter has shown a typical use of variegated environmentalities and how new globalised forms of environmentality have been adopted and implemented in Zambia, as well as how these new forms of environmentality have been morphed to suit the Zambian context to form what I refer to as 'Southern environmentality'. Finally, this chapter has examined entanglements of governing practices across periods, from the colonial dispositif based on racialized environmentality, to a neoliberal dispositif. In these dispositifs, local communities continue to use their practice and knowledge within their spatialities.

In the following chapters, I examine how higher education in Zambia has been mobilised and the consequences on curriculum-making processes, knowledges validated in the curriculum and the subjectivities desired.

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[i] Sir Herbert Stanley (Northern Rhodesia Governor) to Colonial Office, 16 May 1926, CO 533/360

[ii] Wilson Fox, "problems of development and policy" copy in Gell Papers, BSA 4/444

[iii] BSAC, Reports, 1900-1902, p. 407

[iv] Stanley to Colonial Office, 16 May 1926, CO 533/360

[v] Lundazi District Notebook, Account of the Indaba (meeting) held on 17 August1908, NAZ/ KST/ 3/1

[vi] Gell to Farnell, 26 June 190, Gell papers BSA 9/50, and Gell to Milton 17 July 1902, Gell Papers BSA 9/54

[vii] Native Affairs General 1926-28, Ndola Correspondence, NAZ

[viii] Native Affairs General 1926-28, NAZ

[ix] Minutes of the Native Indaba held at Ndola Boma 6/7/1928 Native Affairs General 1926-28, NAZ

[x] Native Court Powers and Organisation, 1929-36, NAZ

[xi] Annual Report for Batoka for the year ending 31 March 1914, NAZ/2AZ/2/3

[xii] Report of the Native Reserves Commission (Tanganyika District) 1927, National Archives of Zambia, ZP1/1, Zambia

[xiii] Native Affairs, Department Reports, 1931 NAZ

Chapter 7: What is at Stake?

7.1 INTRODUCTION

The previous chapter examined the conditions of possibility afforded by colonial and international discourses of the environment, environmental problems, and environmental subjectivity and environmental governance. This chapter frames HEd EE curriculum within the historical, colonial, and IOs' entanglements. The chapter is situated in the history of the present of EE and 'problem' representations discussed in Chapter 5. The chapter uses the *Southern environmentality dispositif* concepts of power, and knowledge to analyse policy and curriculum documents and the conversation transcripts of local traditional leaders, lecturers, and policy makers.

Structurally, the chapter is divided into three parts. The first part examines international and national events, policies and politics that are representative of the governmental apparatus concerning EE, and constitutive of the context in which it now sits. This part addresses the HEd EE curriculum as a disciplinary environmentality. A history of HEd EE must consider colonial history, international and national events in the field of EE. The first part of the chapter deals with the history of the latter half of the 20th century, when Zambia gained independence and environmental governance emerged as its priority.

The second part of the chapter uses decolonial concepts of power and knowledge, which are made operational through the decolonial genealogy concept of sociology of absences, to examine *what the curriculum does*, that is, what HEd EE includes and excludes. This part of the chapter examines the bodies that are included and/or excluded from the curriculum making process. It then examines whose knowledges are considered valuable in curriculum. This is achieved by examining what has been selected as prescribed and recommended readings in HEd EE curriculum, and who and where the authors of these prescribed readings are situated. The final section of this part examines HEd EE curriculum as an epistemicide that exterminates and excludes certain knowledges.

The third part of the chapter examines curriculum and policy documents and conversation transcripts of local traditional leaders to interrogate HEd EE curriculum as a mode

of government. The section uses concepts of governmentality/environmentality and coloniality to examine the lived effects of exclusions that function to shape and construct the 'desired' subject of the environment based on Western conceptions of what it means to be, and not to be, human and, consequently, an environmental subject.

7.2   THE EMERGENCE OF ENVIRONMENTAL EDUCATION IN ZAMBIA

This section examines HEd EE in Zambia as a disciplinary environmentality that works to govern the conduct of students as users of the environment by inculcating social norms that allow subjects to govern themselves. The section examines HEd EE curriculum in Zambia by paying attention to its emergence and its "dense entanglements, interdependencies and interconnections" (Brenner et al., 2010, p. 217) with colonial history and international events and organizations.

Internationally, EE as discussed in Chapter 2 emerged in response to the growing awareness of human damage to the environment (Gruenewald, 2004). The location and timing of its first use internationally is, however, disputed (Glackin & Greer, 2021). In Zambia, formal EE is entrenched in wildlife and forest conservation (Mweemba, 2018). It emerged as a new priority for environmental governance in the early 1970s when the National Parks Department launched EE programs for children as part of public education efforts to counter local resistance to the creation of protected areas. By 1972, the EE movement had become consolidated with Wildlife Conservation Society of Zambia (WECSZ) partnering with the World Wildlife Fund for Nature (WWF), mining companies and the MoE for the purposes of sponsoring and creating an opportunity to influence the formal education system (Chipatu, 2011). In 1973, the WECSZ, in conjunction with WWF and the Bata Shoe Company, supported the launch of the *Chongololo Club* (Carwardine, 1987) as a formal wildlife conservation educational programme. This was the first attempt to formalise national conservation education programmes (Aongola, et al., 2009). These clubs initially targeted children in upper primary schools and expanded to secondary schools in the 1980s. The key element of the WECZ EE programmes was the production of EE material such as the *Chongololo* and *Chipembele* magazines. These were freely distributed to schools and community-based conservation clubs in Zambia in order to raise awareness about Zambia's wildlife resources. The National Conservation Programme also raised awareness through lectures and education tours. In 1980, a sister club to the *Chongololo Club*, *the Wildlife Conservation Club*, was launched under the WECSZ to secondary schools and college students. Through these clubs, a weekly thirty-minute radio

programme called *Chongololo Club of the Air* was launched and it has since been running on Radio Two of the Zambia National Broadcasting Corporation (ZNBC), disseminating environmental awareness messages to a wide audience. The *Chongololo Club of the Air* has been trying to put nature on local and national agenda (Thompson, 1998) as well as provide some form of EE and awareness to the general public (Carwardine, 1987).

In 1985, five years after the publication of the World Conservation Strategy (Carwardine, 1987), the Zambian government adopted the National Conservation Strategy (NCS) (GRZ, 1985) as the principal policy to guide the sustainable use of the country's natural resources. This resulted in the formation of the Ministry of Environment and Natural Resources in 1991. Through the NCS, there was a shift from targeting primary and secondary students to all citizens: "Politicians; planners, developers and administrators; Teachers and extension workers; School children and students; Resource users and the general public" (GRZ, 1985, pp. 10, 72). The aim for this shift was to:

> create an understanding and appreciation of natural resources, their interrelationships, and their interactions with man, in order to foster responsible actions in all environments […] by developing the necessary skills, particularly in natural resource planning and use and in enjoying the environment (GRZ, 1985, p. 72).

Responding to the Zambian government's need for a comprehensive EE as identified in the NCS, the WWF International created the WWF Zambia EE Programme, now called the WWF Zambia Education Project (WWFZEP) in 1989. The project's initial activities were the production of materials for primary schools, to meet the dire need for educational materials. Later, the project changed hands for funding purposes, from WWF International to WWF United Kingdom (WWF UK) under a joint funding scheme with the Department for International Development (DfID) of the British government. The focus of the WWF ZEP thus shifted according to donor demands. Although initially the project was concerned with the production of education materials for the lower basic primary school level, the focus shifted to include poverty alleviation in selected communities in line with the DfID interests (Lupele, 2002). Community EE under the DfID was thus necessitated by the need to develop an integrated strategic plan for WWF in Zambia and the Southern region.

By the 1990s, growing media attention to, and public debate about, the rapid deterioration of Zambia's air, water and land urged the state, education, and nongovernmental leaders to discuss how comprehensive EE could be integrated into the school and university curriculum. In 1992, following the Rio de Janeiro Earth Summit, the Zambian government

endorsed Agenda 21 Plan of Action and other agreements. With the support from UNDP, the World Bank, and the Norwegian Agency for Development Cooperation (NORAD), the National Environmental Action Plan (NEAP) was developed and adopted in 1994 (MENR, 1994). The NEAP identified five major areas of environmental concern in the country as:

- wildlife depletion

- air pollution

- land degradation

- deforestation

- water pollution and inadequate sanitation

The NEAP strongly recommended the need to "incorporate EE into existing school curricula and technical and university teacher training programmes" (MENR, 1994, p. 66). In collaboration with WWF ZEP, the MoE published new guidelines requiring that environmental knowledge, attitudes, and values be integrated into school and university curricula. Five environmental trends were central in shaping these guidelines: (a) the expansion and marketisation of post-secondary schooling, (b) the inclusion of environmental training in teacher education programs and research institutions, (c) the emergence of NGO activism, (d) the emergence of NGO and state supported green clubs and (e) the development of integrated textbooks and teaching (Aongola, et al., 2009; Lupele, 2002).

The first attempt to integrate EE into the Zambian school system occurred after the 1993 National Symposium for the Basic School Curriculum Review. However, this effort only considered environmental issues from a Western scientific biophysical perspective. This meant that only a few subjects like social studies and science were identified as 'carrier subjects' that could 'carry environmental messages' (Lupele, 2002). Influencing the formal education system was, however, only achieved when the WWF initiated the Zambia EE programme to be incorporated into the school curriculum. To incorporate EE in the non-formal and formal education, the 1994 NEAP provided finances for public information and environmental awareness under the Environmental Support Programme (ESP) (Aongola, et al., 2009). EE has currently expanded to address other environmental issues such as forest conservation, waste management and climate change.

In higher education, EE cannot be separated from international environmental governance efforts. This is because HEd EE is shaped by colonial histories sedimented in racialised subjectivities and related environmental management practices (Collins, 2019). The first formal mention of HEd EE in policy documents appeared in the NCS where "a

comprehensive programme of conservation education" was considered as the "surest long-term strategy for bringing about the sustainable use of natural resources in Zambia" (GRZ, 1985, p. 72). Since the 1992 Earth Summit in Brazil, Zambia, like many other African countries, has signed several multi-lateral environmental agreements, including Agenda 21. This led to the intensification of policy calls to develop HEd EE in Zambia. In 1994, the NEAP iterated calls for the need for EE in the country by stating the need "to incorporate EE into […] technical and university teacher training programmes" (MENR, 1994, p. 66). These calls were further reiterated in the NEP that "EE and awareness need to be promoted through formal and non-formal education channels" (GRZ, 2007, p. 23).

Although challenges of integrating EE into Zambia's HE system have persisted, it has received considerable attention from HEIs such as the University of Zambia (UNZA), the Copperbelt University (CBU), and the Natural Resources Development College (NRDC). Currently, only one HEI in Zambia offers EE at both undergraduate and postgraduate levels. EE in higher education in Zambia is generally offered as an interdisciplinary programme and was introduced to respond to the myriad of environmental risks and vulnerabilities caused by unsustainable use of resources:

> This programme started with the realisation that Zambia as a country has a lot of environmental challenges […] this programme is a response to these problems (Conversation 2, Lecturer).

This is similar to Chapter 36 of Agenda 21 which states that:

> Education is critical for promoting SDand improving the capacity of the people to address environmental development issues […] critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with SD (UNCED, 1992).

The emergence of HEd EE in Zambia has both local and international influences. On the international front, it is is shaped by the Tbilisi Declaration of 1977 and Agenda 21 of 1992. Transnational organisations played a crucial role in shaping HEd EE:

> There are a lot of international organizations like the UN that influence our program. The problem with international organizations is that they drive the agendas of the international community … the UN for example uses an international framework and then as a country, we have to fit in the international framework…Any piece of national sectoral framework, any act of parliament in Zambia, take any natural resource act in Zambia, you will see that it does domesticate international principles. When it domesticates international principles, then it formulates rules that can respect that

international principle but at a local national level. In this way, you are still operating under international frameworks (Conservation 4, Lecturer).

The history of EE in Zambia indicates a discursive congruence between colonial environmental policies, environmental policies at global and local levels, that is, between IOs and Zambian environmental policy, and the subnational level between environmental policy and educational policy sectors.HEd EE is entangled in technologies of power that emanate from global environmental policy agendas articulated and disseminated by international organizations and key EE players. At the local level, HEd EE is deeply rooted in colonial wildlife and forest policies. It is also a response to Zambia's National Environmental Action Plan (NEAP) of 1994; the National Environmental Policy (NEP) of 2007 which saw the "need to increase public and political awareness and understanding of the need for environmental protection, sustainable natural resource utilisation, conservation and management as essential partners of development" (MENR, 2007, p. 23); the National Policy on Education (1996), the Environmental Management Act of 2011, the National Policy on Climate Change of 2016 and the National Policy on Higher Education of 2019.

7.3 THE MAKING OF ENVIRONMENTAL EDUCATION CURRICULUM: NOISES AND SILENCES

> Any curriculum must, by definition, exclude - the question is what is excluded and why, and whether the purpose of our education system should be to perpetuate existing power structures and norms, or equip students with the critical tools to question them (Gebrial, 2020, p. 26).

This section uses *Southern environmentality dispositif* concepts of power and knowledge and the decolonial genealogy concept of sociology of absences to examine how HEd EE curriculum operates as a colonial tool. The section analyses conversation transcripts with local traditional leaders, lecturers, and policy makers to examine bodies that are present and absent in the HEd EE curriculum making process. As one way to unravel the understandings of the colonial matrix of power, lecturers, policy makers and local traditional leaders' accounts unearth how institutionalised patterns of curriculum-making processes discursively produce normalising hierarchies that play into the formation of 'expert' and 'Other' positions. For local traditional leaders, the curriculum-making processes often involve the regulation and Othering of local ecological perspectives and practices in ways that re-inscribe normalising judgements about what and who is considered acceptable and worthy.

7.3.1 Body Presences and Absences

This sub-section examines the bodies and practices rendered visible and invisible in the HEd EE curriculum-making process. The section uses decolonial concepts of coloniality of power and knowledge to investigate how the curriculum-making process is power laden. It presents and analyses body presences, followed by an analysis of bodies that are overlooked by hegemonic approaches to curriculum making. The analysis of absences opens up spaces for alternative modes of engaging with them. This section thus addresses the question of coloniality of knowledge and power at the nexus of environmental knowledge production and curriculum formation.

Contestations between experts in the UNZA EE curriculum knowledge production

The colonial era in Zambia laid a foundation that created a structural opportunity for racialised power hierarchies to be normalised and institutionalised. The HEd EE curriculum-making process was shaped by direct and indirect continuities from the colonial era characterised by the expansion of epistemic violence. The coloniality of the present global, regional, national, and local systems remains the enabler of power and epistemic hierarchies in curriculum making. As Foucault (1980) claims, "truth […] is produced only by virtue of multiple forms of constraint" (p. 131). Zambia's HEd EE curriculum is influenced by power relations involving state institutions, regional organisations, IOs, NGOs, and HEIs, all of which provide multiple forms of constraint that discipline EE and limit the kinds of curriculum knowledge that can be produced. The lecturer below voiced such a concern:

> In the process of formulating the curriculum, who do we consult? What is the framework that we use? That framework will determine who we listen to and whom we don't (Conversation 4, Lecturer).

Education is closely connected to the content and organization of society (Williams, 1976). What counts as 'curriculum' and curriculum knowledge is regulated by the conscious and unconscious choices that are made to determine what and whose knowledge is worth knowing (Shay, 2015). The consequence of this decision making creates a pattern of inclusions and exclusions in terms of bodies involved in the curriculum making. Although the HEd EE curriculum espouses social and ecological harmony, the curriculum making process "reinforces many social hierarchies" (Ray, 2013, p. 17). The HEd EE curriculum is imbued in conscious and unconscious choices of who should and should not be involved in the process of curriculum making. Lecturers are aware of the involvement of various organisations in the process of curriculum making:

We develop our courses here […] We incorporate suggestions from different organisations, mostly through our interactions with them. For instance, we are members of the EE Association of Southern Africa, and our practice is largely influenced by our interactions with colleagues in this association […] Some of the ideas we have been infusing into our curriculum have been coming from there. For example, I have restructured my course mostly to respond to the general conversations of the association […] We also interact with the local UNESCO Office for expert advice and materials (Conversation 2, Lecturer).

We need to maintain international standards. So, when we are selecting content for our program, there are certain organizations, scientific organizations […] and people that we work with (Conversation 1, Lecturer).

The EE curriculum is a preserve of lecturers and various international and local epistemic communities such as UNESCO, UNFL, UNEP, the Regional Centre for Expertise (RCE), the Zambia Environmental Management Agency (ZEMA), the Forestry Department, and other epistemic communities. What becomes visible here is the need for scientific expertise to produce knowledge that contributes to "rational problem solving" (Kleinschmit et al., 2009) of environmental concerns. These epistemic communities produce rational scientific knowledge about the environment and the problems they identify are validated and accepted. These experts and epistemic communities reproduce a coloniality of power and knowledge (Shahjahan, 2016) through discourses about environmental sustainability. The curriculum is thus a technology of power that is constantly shaped by experts. It involves the exercise of social control of local traditional leaders. It is a process that is exclusionary as it is embedded in "deep-seated cultural beliefs grounded in […] Eurocentrism, and an exclusionary focus" (DeLuca & Demo, 2001, p. 541). Asymmetrical power dynamics resonate as 'experts' dominate curriculum making. How responsive a curriculum is to socioenvironmental needs is a function of who shapes the discussion and what the vision for the curriculum is (Fomunyam & Teferra, 2017). Those who shape curriculum discourses determine what direction HEd EE should take and influence the country's response to environmental degradation as well as the lives of people.

The curriculum-making process also emerges as a 'tension point' (Flyvbjerg et al., 2012, 2016) of different 'experts' as many have not been allowed to contribute to its making:

When policy is disseminated, we expect our colleagues, the lecturers to adopt it in their curricula so that the curriculum can align with the aspirations of the policy […] we expect our colleagues to involve us in their curriculum making processes so that we can guide and share knowledge. However, they do not involve us […] we don't even know if their curriculum aligns with the policies (Conversation 7, Policy maker).

Lecturers also stated that policy makers did not involve them in environmental policy making and conversely found it difficult to involve policy makers in curriculum making: "Policy makers don't involve us in their policies. We find it difficult to involve them […] we do our own things" (Conversation 1, Lecturer). However, policy makers felt that they involved HEIs in their policy making process:

> As government, we make sure that when policy is being formulated, all stakeholders with their various knowledges are involved in the process […] when we request the university to send people to come and contribute to the formulation of policy, it is very important that the representatives they send go back and report to colleagues what the institution contributed […] you will find out that a person that attends the consultative meeting and made valuable contributions, goes back without informing others about the meeting […] so there is that gap in the institutions (Conversation 8, Policy maker).

This section has discussed HEd EE curriculum making as a preserve of 'experts', and how these experts are always in tension to have their views of environmental knowledge to be included in the curriculum. The next section discusses the bodies and voices that are excluded from curriculum making and the implication of these exclusions.

Silencing local traditional leaders in the curriculum knowledge production process

The curriculum is a violent space of power relations where Western scientific knowledge as expert knowledge has become a form of epistemic violence (1988). Alternative voices and knowledges, or what Foucault (2003) terms 'subjugated knowledges", are marginalised, silenced, or erased through the authority of knowledge production and expertise (Adams & Mulligan, 2003; Amo-Agyemang, 2021; Davis, 2007; Mbembe, 2015; Todd, 2016). Participants stated that boundaries about who could participate in curriculum making were set. Some lecturers stated that they did not feel the need to involve local traditional leaders because they (lecturers) were experts in their fields and had enough knowledge about what they needed to include and/or exclude: "I am the expert here. I was trained to perform this job" (Conversation 3, Lecturer). In agreement with lecturers, some local traditional leaders agreed that there was no need to include them in curriculum making as they lacked expertise:

> The lecturers and Ministry have the knowledge and therefore the power to create content of what is to be taught to our children. What can a village headman like me really contribute? I have no expertise or even the power to change things. Whatever they bring to us, we obey even when we know it is not good (Conversation 16, Local traditional leader).

The environmental knowledge, ethics, and practices of local traditional leaders often lie outside accepted norms of the curriculum-making processes:

> representation and racialization sustain the way many […] think about the natural environment […] both processes have the power to determine who participates in environment-related activities and who does not; what voices are heard in environmental debates and what voices are not (Finney, 2008, p.58)

Policy makers and curriculum developers in Zambia's higher education are informed by class positions and are mostly middle class 'experts' whose knowledge stems from a 'Western and Cartesian, enlightenment point of view' (Leibowitz, 2017): "This hegemonic notion of knowledge production has generated discursive scientific practices […] that make it difficult to think outside these of frames" (Mbembe, 2016, p.33).

Local traditional leaders understood their exclusion and the importance of local knowledge to environmental challenges:

> When policies and the curriculum are being made, our voices are not heard. […] the government and universities do not involve us. If they called on me, despite them thinking that I am a common man, I can share with them our ways and practices of living in harmony with the environment. Our traditional laws can still be applied to policies, and they can cultivate positive feedback with regards to the management of the resources. They need to work hand in hand with us (Conversation 18, Local traditional leader).

> As traditional authorities, we are not involved in anything. As such, we have no input in them […] we must be involved in the formulation of policy and educational activities of our young ones. We should not just be made to follow and implement something that we have no knowledge of. If we were involved, we were going to subscribe our traditional norms and values in these policies and educational activities (Conversation 10, Local traditional leader).

> We are custodians of traditional ecological knowledges, but our knowledge is not considered useful. They do not even listen to us but they expect us to listen to them. I don't even know what the government is doing in terms of stopping deforestation and poaching. We are just given instructions on what we can or cannot do. They are the experts. We feel sidelined (Conversation 17, Local traditional leader).

The exclusion of local traditional leaders from participating in curriculum making is premised on the taken-for-granted branding of EE as techno-scientific and apolitical. This works to effectively exclude local traditional leaders who are everyday 'experts' and whose first-hand knowledge of the environment and environmental problems illuminates what is often

wilfully overlooked by 'experts' (Alaimo, 2012; Byrnes & Davis, 2021). The higher education curriculum-making process is constituted through exclusionary dynamics of local traditional leaders and their voices. The process configures itself through assumptions of the importance of certain bodies of expertise and by marginalising and rejecting local traditional leaders who are 'Othered' in the process. By presenting themselves as experts, lecturer and policy maker participants construct themselves as Cartesian thinking individuals. This construction not only rejects and 'Others' but creates those who feel they own the sole right to curriculum knowledge production. Accordingly, drawing boundaries between the Cartesian thinking subject (expert) and the 'Other' (non-expert) is not only an effect of power relations between experts and non-experts, but an effect of coloniality which naturalises the curriculum's power to validate and invalidate certain bodies and knowledges. Crucially, as Stanek (2019), De Sousa Santos (2014) and Tyler (2013) have shown, classed and racialised subjects tend to be positioned as 'Other', thus reserving the ability to produce meaningful environmental knowledges to 'experts' like lecturers, policy makers and others from epistemic communities. Those considered outside the realm of what is perceived 'human' as conceptualised by the West are not only considered sub-human, but also devoid of knowledge and thus incapable of producing meaningful knowledge (Weheliye, 2014; Wynter, 2003). In this way, the process of curriculum knowledge production elevates the Cartesian thinking subject while rejecting the 'othered' bodies and silencing their voices.

Some lecturers saw that the implication of exclusion was a gap between curriculum knowledge and people's experience of environmental challenges:

> There's a very huge gap. The gap comes from the process of the formulation of the curriculum itself because at a certain level, there are real people on the ground that need to be consulted […] the lowest the lecturers would come to the community is the community representative like the chiefs. These chiefs speak as individuals […] how the chief would perceive an issue would be different to that of the people who are leaving the effects. The chief may overlook the real issues that people are going through. For example, a chief can be a rich man in a very poor community […] there is no guarantee that what the chief is telling you is representative of the community. Currently our curriculum is elitist […] it is for the elite. It targets the elite. It is learning for technocrats. It is knowledge that comes from the technocrats and targets the technocrats. It is not knowledge that speaks to the common poor person in the community. It is a curriculum that is disconnected from the reality. What we learn or teach in school is not what we see in the field […] Who you involve when you are making the curriculum would reflect the relevance of the curriculum (Conversation 4, Lecturer).

there is a gap between what is offered here and what society needs from us. There is a lot that the grassroots can teach us" (Conversation 3, Lecturer).

Higher education EE curriculum formulation in Zambia is not only selective but also elitist in nature. What endures is a 'transcendental curriculum' that marks a dissociation between schooling and society, a feature of colonial curriculum. The socio-environmental milieu is conceived of as "an obstruction rather than an asset for education" (Kumar, 1992/2009, p. 16). Here, is a form of power that creates structural oppression over local traditional leaders whose alternative *asili* of *Ubuntu/Ukama* is devalued and stigmatised in Eurocentric discourses. The coloniality of power perpetuates misrecognition within the context of a prolonged history of marginalisation. Systematic misrecognition is a symptomatic disease of the colonial relationship (Fanon, 1986). Given the local traditional leaders' "lack of control over the terms of recognition" in curriculum making, "they find themselves trapped in a colonial hall of mirrors that leads to a never-ending cycle of failures of, and thus further need for recognition" (Anker, 2014, p. 29). As long as the HEd EE curriculum-making in Zambia is driven by expert knowledges from the Global North, and local ecological knowledges and the *asili* of Ubuntu*/Ukama* are cordoned off and not mobilised to inform curriculum making and praxis; EE in Zambia can be equated with an act of epistemic violence, an epistemicide.

7.4   A GAZE AT THE CANONICAL LIST

This section examines the HEd EE curriculum in relation to the question of what is inscribed as worth knowing (Schubert, 2009), what knowledge is considered as valid (Pinar, 2007), whose knowledge is considered worthy (Paraskeva, 2014), and what HEd EE curriculum does in centring these questions (Desai, 2012). Attending to these questions leads to "conceptions of knowledge, about what it means to know, of what counts as knowledge, and how and where that knowledge is produced" (De Sousa Santos et al., 2008, p. xxi). The section thus entails a close examination of knowledges worth internalising as prescribed and/or recommended in the twenty-one course modules of the national HEd EE curriculum. By looking at introductory course readings, the section gained insights into the diversity (or lack of) of authors. It takes account of geopolitical location, types of narratives about specific topics, and the structures of courses that lecturers rely on in their pedagogies. The examined syllabi represented a sample obtained from lecturers of EE.

The knowledge considered worthwhile takes the form of prescribed and recommended readings (see Table 16) and are the foundational texts of each course in the HEd EE programme. Each course module has several foundational texts which can be regarded as 'canonical lists'. In the same way that church leaders exalted what was worth knowing (Shubert, 2009), the HEd EE curriculum exalts foundational texts. The table below illustrates the canonical list of a HEd EE curriculum in Zambia.

Table 16: Part of the canonical list of higher education environmental education in Zambia

Course	Prescribed Readings		Recommended Readings	
	Author(s)	*Publisher/City*	*Author(s)*	*Publisher/City*
Environmental Law and Ethics	Kubasek & Silverman	Pearson Education	Bernie & Boyle	Oxford University Press
	Stallworth	Sweet & Maxwell	Caldwell	Duke University Press
	Vig & Axelrod	CQ Press		
	Wolf, White & Stanley	Canvendish Publishing Limited		
Environmental Health	Frumkin, Frank, & Jackson	Island Press		
	Grifo & Rosenthal	Island Press		
	Goldman & Hume	Island Press		
	Laboy-Nieves & Schaffner	CRC Press		
	Nadakavukaren	Waveland Press		
	Raffensperger & Tickner	Island Press		

Course	Prescribed Readings		Recommended Readings	
Environmental Governance	GRZ	Government Printers	Carter	University of Glasgow
	Guzman	The University of Oklahoma Press	Baghel & Nusser	Water Alternatives
	Le Billon	Political Geography	Murphy	University of Kentucky
	Najam, Papa & Taiyab	International Institute for Sustainable Development	Schubert	NCCR North-South
			Shreurs	University of Cambridge Press
Introductory Ecology for EE	Verman & Agrawal		Sambasiviah, Kamalakara & Agustine	S. Chand and Company Limited
	Pickering and Lewis	Buther & Tanner	William & Thomas	Delmer Publishers Inc

Table 16 shows that colonial formations of environmental knowledges and discourse remain prominent (Baldwin et al., 2011; Brahinsky et al. 2014; Escobar, 2016). The list discriminatorily creates an abyssal divide between environmental knowledge produced by scholars/authors of the Global North and the Global South. Most of the scholars/authors and publishers of these foundational texts are from the Global North, and most of what is worth knowing is based on their ontologies and epistemologies. For instance, in one of the courses, *Environmental Law and Ethics*, there are four prescribed and four recommended readings. All these foundational texts are written by scholars/authors from the Global North and published by prominent publishing houses based in the Global North. Likewise, the *Environmental Governance* course has most of its foundational texts written by scholars/authors from the Global North except for two. Apart from one reading authored and published by the Zambian Government, all foundational texts were published in the Global North. Where scholars/authors and publishing houses from the Global South are present, they are either from Latin America or India. Those from Zambia are government texts such as policies, action plans, and/or strategies. In instances where scholars/authors are from the Global South, the texts are

published by large publishing companies in the Global North, thus making them more influential.

Premised on abyssal thinking (De Sousa Santos, 2007) a canonical list ensures that: "the foundation of modern knowledge production remains both territorial and imperial" (Tlostanova & Mignolo, 2009, p. 206) and has the power to define and select what counts as valid knowledge (Bernstein, 1971). The Cartesian thinking subject who has authority to produce valid knowledge is conditioned upon a colonial "I exterminate, therefore I am" (ergo extermino) (Dussel, 1994). Despite having notable environmental scholars/authors and publishing houses in Africa, these are shunned as a consequence. Zambia continues to rely upon, and reproduce, Western notions of nature relying on Western authors. Problematically, Western frameworks frequently disregard indigenous knowledges, histories, and issues, and essentialise nature and create binary views of nature and culture (Baldwin, 2009a, 2009b; Erickson, 2010). As argued in Chapter 6, the validation of Western scholars and onto-epistemologies can be traced to the colonial history of EE and the foundational role that colonial scientific conservation played in its inception. Scientific conservation and EE are led by Western scholars and are harmful to content selection in the HEd EE curricula of Zambia.

Despite the substantial growth of EE scholarship emanating from Africa from scholars such as Lesley Le Grange, Mokuku, Oliver Shumba, Heila Lotz-Sisitka and others, their works are missing from the canonical list because they are not "as prolific nor ascribed the same gravitas as those of the west" (Matos-Ala, 2017). The selection of texts and scholars, and the structuring of foundational texts, clearly shows that environmental knowledge selection in HEd EE curriculum is based on what Wynter (1992, 1995, 2003) refers to as "the organisation order of knowledge" and its "descriptive statement" whereby knowledge arrangements and production are shaped by the discursive constitution of the descriptive statement. This descriptive statement of Man as discussed in Chapter 3, is premised on a biocentric model to which humanity and subhuman articulations are given. Braidotti (2020) explains that "not all humans are equal and the human is not at all a neutral category. It is rather a normative category that indexes access to privileges and entitlements" (p. 2). This descriptive statement is implicated in guiding "differential distribution of knowledge and how value is ascribed to different knowledges" (Desai & Sanya, 2016, p. 715). In this descriptive statement, Southern bodies, in this case EE scholars form the south, are perceived as incapable of producing any knowledge (Smith, 2006). Since the descriptive statement ordered humans and classified irrationality and otherness through theological terms, and later bio-economic terms, HEd EE's

canon does the same by ascribing irrationality to Global South scholars /authors. The selection of Global North-based scholars demonstrates the hegemony of Western environmental politics and reinforces the power disparity in knowledge production between the North and South (Medie & Kang, 2018). This is a problematic situation, not merely because environmental knowledge in HEd EE curriculum emerges from the Global North, but because it assumes universal ontology and epistemology for the discipline of EE. As a result, the perceived superiority of Global North scholars is taken as an entitlement to set an agenda (Mignolo, 2009). If one particular type of scholarship is heavily overrepresented in the production of knowledge, the ensuing curriculum risks being parochial (Tripathi, 2021), raising important questions about what valid knowledge in HEd EE curriculum is. This 'coloniality of knowledge' (Tucker, 2018), where power differentials associated with colonial times continue to produce a 'colonial matrix of power' and an 'asymmetry of ignorance' (Chakrabarty, 1992), results in various forms of domination and contributions to Eurocentrism in the HEd EE curriculum.

The HEd EE curriculum is produced within a hegemonic social and cultural space that entails machinery, routine and cultural practices concerned with the production of kinds of environmental knowledges. It is thus central to mobilising exclusions and inequalities, and Eurocentric westernised scientific canons are still considered the only true knowledge produced (Castro-Gomez, 2007; Mbembe, 2016).

7.5   DESIRED ENVIRONMENTAL KNOWLEDGE: EPISTEMIC PRESENCES AND ABSENCES

Modes of knowing, of producing knowledge, of producing perspectives, images, and systems of images constitute a crucial site of contestation and a key dimension to coloniality. In light of current struggles in global and local environmental governance, this section examines the knowledges informing HEd EE curriculum. Using the *Southern environmentality dispositif* concepts of power/knowledge, the section examines questions of what knowledges are rendered visible or invisible in HEd EE curricula.

7.5.1 Epistemic Presences

The impact of modernity and the consequences of colonisation on education in Zambia are alive and visible. Colonial power dynamics are manifested in Zambia's higher education spaces where they have been maintained:

the background of our education system in Zambia is completely foreign. This foreign influence has continued to inform our education system, especially our curriculum and we cannot run away from it (Conversation 1, Lecturer).

The NEAP also adds that:

The main education problems in Zambia are; absence of local knowledge input. Much of the education in Zambia puts much emphasis on formal education at the expense of traditional knowledge system. The education system, curricula and teaching materials focus on the European system (mainly the British) and Zambians tend to grow up with knowledge from outside. This difficulty extends to the two universities where much of the teaching materials are sourced from outside (MENR, 1994, p.68).

Zambia's higher education system is not only entangled in the episteme of globalisation but is also embedded in the country's colonial history. Zambia's higher education like many modern HEIs around the world developed alongside and through colonialism and remains structurally dependent upon colonialism for its continued existence (Stein, 2017; Wilder, 2013). Despite HEIs in Zambia being conceptualised and erected by post-colonial governments, they replicate the tenets of colonialism, that is, (re)producing and disseminating knowledge that is embedded in Eurocentric epistemologies that are posited as objective, disembodied and universal, where knowledges from the Global South are ignored, dismissed, or marginalised (Cupples, 2019; Dear, 2019). Ndlovu (2018) indicates that "the major question that universities in Africa have to confront is that of whether they are 'African universities' or merely Westernised universities on the African continent" (p. 101). The process of Westernisation, as discussed in Chapter 6, is characterised by "the study of difference and the 'Other' as objects rather than knowledge producing subjects" (Dear, 2019, p. 24). The Westernised university does not only exist in the West or Global North; rather, Westernised universities with their disciplinary divisions and their racist/sexist canons of thought are also found in Africa (Grosfoguel, 2013).

The higher education curriculum in Zambia still largely reflects colonial worldviews disconnecting it from local Zambian's lived realities. The curriculum perpetuates a "cultural dependency" (Mazrui, 1992) that "attributes truth only to the Western way of knowledge production" (Mbembe, 2016, p. 32). Its dependence on a Eurocentric epistemic canon has consequences for the development of students' critical and analytical skills to understand and move the country, and the African continent, towards sustainability. The "brutal inheritances" (Gqola, 2008) of coloniality contribute to ignorance about local sustainability issues and allow "the faceless African man and woman to remain throw-away people" (Gqola, 2008, p. 222).

The curriculum, in its current articulation, contributes to epistemic violence and the erosion of cultural consciousness by maintaining a colonial legacy under the guise of modernity. Epistemic violence is evident in the following statement:

> Environmental issues are more related to science. […] my students need to know concepts in science and how to use scientific knowledge to solve environmental issues. For my course, it is purely science that informs the content […] it's scientific. For ecology, there is nothing like non-scientific, it's scientific. You see, from concepts, you go to applied ecology, you go to habitat ecology, basically you are looking at animal systems, fresh water, it's purely science. Mine is purely science (Conversation 3, Lecturer).

The curriculum provides a disinterested view of the environment. It reifies the belief that the environment and its problems can only be known and solved in, and through, science and techno-scientific progress (Bader & Laberge, 2014). Consequently, technological expertise is valued "at the expense of political analysis, ethical, and/cultural values" (Bader & Laberge, 2014, p. 425). The complexity of ecosystems is simplified through universalising ecological knowledge into a single unified way of perceiving it and its function. Indigenous scientific approaches to the environment and local ecological knowledges are rendered invisible (Byrnes & Davis, 2021; Dudgeon & Berkes, 2003), as are place-based knowledges cultivated over time, where careful attention is paid to the specifics of various environments and relations they sustain.

Western science, characterised by body-mind dualisms (Sjostrom, 2007), is presented through what De Sousa Santos (2004) terms 'metonymic reason' or 'lazy reason' based on the idea of totality. It is considered as the only valid way of thinking about the environment and its problems. Western science, based on the works of white European scientists and scholars as discussed above, is not only seen as the only valid way of thinking but also as the only way of knowing about the environment and its problems. Western scientific environmental knowledge is presented by lecturers as the 'truth'. It emerges as the "monopoly of universal knowledge between true and false" (De Sousa Santos, 2007, p. 47). Because Western science assumes a hegemonic position to speak the truth about the environment, it becomes the sole knowledge that informs HEd EE curriculum. With these hegemonic tendencies, *abantu's* (local traditional leaders and their people) voices and their ways of knowing-subjectivity in EE curriculum are marginalised, and silenced. Consequently, students are exclusively exposed to Western understandings, and it becomes impossible to think outside this totality. Environmental knowledge based on indolent reason wastes local socio-ecological experiences, knowledges,

and practices (De Sousa Santos, 2004; 2007; 2014), such as those discussed in chapters 5 and 8. Existential and experiential, the intuitive, and embodied ecological knowledges are actively (re)produced as non-existent and colonial perspectives of nature are reified.

Lecturers and policy makers also believed that local ontologies and epistemologies lacked a comprehensive scientific system. They felt that science was about 'facts' needed to solve environmental problems:

> The league is difficult. Science believes in facts and there is evidence. Science is evidence based. But our local knowledge isn't. I'm not saying there is no science in our local knowledges, it is there, but it's difficult to prove it (Conversation 3, Lecturer).

Scientifically valid knowledge is associated with Western ideals of objectivity and local ecological knowledges deemed supplementary or unworthy:

> I think broadly the curriculum is informed by Western science, but in passing we also talk about indigenous knowledge (Conversation 2, lecturer).

> There is a bit of indigenous knowledge but currently we are not focusing so much on Indigenous knowledge. We are just focusing on sustainability through science. I would like as much as possible to design a course under indigenous knowledge systems […] we need as much as possible even in this programme to focus on indigenous knowledge which at the moment is not coming out strongly, but it's difficult to do so (Conversation 1, Lecturer)

The intrinsic 'governance value' or scientific value of irreplaceable sources of guidance for indigenous resurgence and nation building is subsequently disregarded. When faced with rival knowledges, the hegemony of Western science either turns rival knowledges into objects or raw materials, for example, as in conservation or biodiversity, or it "rejects them based on their falsity or insufficiency in the light of hegemonic criteria of truth and efficiency" (De Sousa Santos, 2003, pp. 237-238). Although lecturers wanted to include local ecological knowledges in the curriculum as they considered them beneficial, this failed due to Western science's denial of other epistemologies (Andreotti et al., 2011). Non-western ways of thinking, knowing, and acting in the environment are deemed inferior and unimportant, and thus are eliminated, silenced and made absent in the curriculum. Further, forms of inclusions are superficial and serve to reproduce and reiterate powerful messages surrounding what and whose knowledge counts (Bishop et al., 2021; Leonardo & Grubb, 2014). The curriculum is linked to a racial

organisation of higher education itself and the broader reproduction of race and knowledge hierarchies (Bishop et al., 2021; Leonardo & Grubb, 2014).

7.5.2 Epistemic Absences

Some participants were uncertain about the usefulness and validity of local ecological knowledges in the curriculum. They explained that local ecological knowledges lacked validity and utility in the modern world compared to Western scientific knowledge. They also explained that local ecological knowledges lacked a comprehensive scientific system that could back their validity:

> People think that it is primitive. It is inferior. It can't surely be compared to science. That is why it is done in passing, like when we want to give examples […] I think that students would just be laughing, like it is not making sense to them. It has become irrelevant to this generation. For example, to use a tree's bark for medicine, our elders would say cut the bark from the eastern side because this back is the most potent and if you cut from the other side, the medicine would not be potent […] tell me, can the student believe such? I don't think they would believe it (Conversation 2, Lecturer).

> You see, for Western science, wherever you go it is the same. For instance, the formula of water is H_2O here in Zambia and wherever you will go. So, for Western science, it doesn't really matter where you will go because the knowledge remains the same. However, local ecological knowledge is as the name suggests local. Some of the knowledge is only found in Zambia. It cannot be found in other countries or parts of the world (Conversation 7, Policy maker).

Lecturers and policy makers are dismissive of local ecological knowledge. For them, local ecological knowledges are inferior. Western science is universal and generally progressive, while local ecological knowledges are culturally located, particularistic and regressive. Local ecological knowledge is essentially depicted as irrational knowledge that is possibly only useful for the preservation of culture. Here "the persistence of western hegemony […] positions Eurocentric knowledge as 'universal', while localising other forms of knowledge at best as folkloric" (Walsh, 2007, p. 225). Scientific knowledge is a Western hegemonic way of thinking about the world, which claims superiority over other ways of thinking (De Sousa Santos, 2006).

Policy makers and lecturers also indicated that it was difficult to pinpoint at what stage indigenous knowledges could be included in policy or the curriculum:

We have failed to include indigenous knowledges […] like at what point do we bring in the indigenous component? Maybe that is one failure we can say […] We have not included it in our policies or education system (Conversation 7, Policy maker).

Higher education EE curriculum is an abyssal thinking (De Sousa Santos, 2007) that materialises as a site that naturalises the epistemologies and ontologies of the Global North. It thus works to reinvest learners in the hegemonic Western paradigm of thinking, knowing, and acting in the environment. Participant statements vividly illuminate the operations of a monoculture of knowledge and scientific rigour (De Sousa Santos, 2006) that consider Western scientific knowledge as the only valid and acceptable episteme for knowing about the environment and its problems. Silences, absences, and overt acknowledgement of indigenous ecological knowledges in the curriculum are part of master narratives that construct truths about environmental sustainability.

7.6   CURRICULUM AND THE SHAPING OF THE DESIRED SUBJECT

Previous sections examined and discussed how HEd EE curriculum in Zambia is a violent space that invisibilises local traditional leaders, authors from the Global South and local ecological knowledges. The sections argued that HEd EE curriculum in Zambia is an epistemicide that thrives on experts and Western scientific environmental knowledge.

This section examines how the curriculum operates as a mode of government within the changing contours of the present. By historicising the present and following Foucault's (1977, 2003) concepts of genealogy and governmentality, and decolonial concepts of coloniality, the section intends to answer the questions: What visions of the future and sustainability are constructed in Zambian HEd EE curricula documents? What subjects are constructed and what are they to become? Using these concepts, the chapter analyses HEd EE policy and curriculum documents and conversations with lecturer and policy makers. This analysis makes visible how power constructs desired environmental subjects and operates to include and exclude certain subjectivities.

7.7   GOVERNING THROUGH THE ENVIRONMENTAL EDUCATION CURRICULUM

As discussed in Chapter 5, the 'problem' of the environment in Zambia is represented as to do with lack of knowledge. Education emerges as a response and students are constructed as "relevant human resources" (MoHE, 2019) that must be empowered to respond to

environmental problems in the country. Policy and curriculum documents make explicit reference to the necessity and important role of the EE curriculum in shaping human conduct:

> Learning institutions at *all* levels should provide aspects of education for sustainable development and environmental education in their programmes so as to impart knowledge, skills, positive attitudes, and values. EE and education for SDfocus on certain values, knowledge perspectives and attitides which can contribute to friendly action and solving environmental problems (MESTVEE, 2013, p. 22).

Higher education EE curriculum constructs fields of action for the Zambian Government's environmental 'governing ambitions' in education. The curriculum thus regulates the possibility of different practices (Weate, 1998). As discussed in Chapter 3, governing is understood as the "conduct of conduct" (Foucault, 2008) and operates through technologies that are systematised, regulated, and reflect modes of power to include forms of self-regulation (Foucault, 1997). Governing people is thus not a:

> way to force people to do what the governor wants; it is always a versatile equilibrium, with complementarity and conflicts between techniques which assure coercion and processes through which the self is constructed or modified by himself (Foucault, 1993, p. 204).

Education is an important form of modern government, and subjectivity is formed with the use of technologies of curriculum. The curriculum is a way of controlling students' conduct towards the environment as it instils norms of reason in students in both productive and constraining ways. The curriculum is not only a process of knowledge objectification, but also a process of subjectification. It is a technology for the government of others through reason and calculation practices, where the desired subject is able and willing to think and speak and act reasonably in, and through, the environment. The curriculum is thus a complex, contradictory, shifting and historically specific assemblage or regime of practices, tactics, forms of knowledge, rationalities, techniques, capacities, identities and agencies through which the desired subjects of the environment are shaped, formed, included, and excluded (Dean, 1999, p. 29), and students are invited to change through practices of 'improvement' (Pechtelidis & Stamou, 2017).

The curriculum contains symbolic articulations between power and knowledge that control the way the environment and environmental subjectivity are understood and shaped. It serves as a technology of power exerted on the bodies of students, taking the form of guidance towards particular socio-political, economic, and environmental goals. It intervenes and

regulates students' bodies through subtle ways of control, as discussed in the sections below. Students' bodies are simultaneously the target and instrument of disciplinary power.

Environmental subjectivity is a result of this complex overlapping material and discursive practices related to the governance of students' bodies. The processes of subjectification occurring in the curriculum can be understood in the wider context of the governing project of the curriculum. The subjectifying possibility provided by curricula interventions is summarised by Rose (1999):

> They dreamed that one could produce individuals who did not need to be governed by others, who would govern themselves through introspection, foresight, calculation, judgement and according to certain ethical norms. In these ideal individuals the social objective of the good citizen would be fused with the personal aspiration for a civilised life (p. 78).

The strategies used in the curriculum to entice and shape students into desired environmental subjects might simply be seen as a strategic refinement of the broader goals of environmental governance.

7.7.1 Sustainability and Environmental Cosmopolitanism as Norms of Reason

To justify governance, people are 'invented' in and through the curriculum. Environmental subjects are not born, but made (Cruikshank, 1999). As stated earlier, liberal governments like Zambia often seek to address 'problems' by calling on individuals to be responsible and self-governing (Ferreira, 2007). The curriculum is one such technology that guides the conduct of individuals towards self-governing. Crucial to shaping students' conduct towards the environment are political rationalities. Political rationalities are an intellectual "apparatus for rendering reality thinkable" (Rose, 1996, p. 42). They are accepted ways of thinking and justifying governance. Rationalities function through specific epistemologies and styles of reasoning that contribute to the construction of rationality as 'obvious' and rational (Hillbur et al., 2016; Rose & Miller, 2010). To improve the environment, and the population's conduct towards the environment, the curriculum needs a distinct governmental rationality:

> We have to make sure that the environment and development in Zambia are *sustainable*. When you look at our constitution, the sixth value is about *SD* (Conversation 5, Policy maker).

> The purpose of this programme is to produce a cadre of environmental educators who are going to work with different population groups to bring about awareness and

knowledge, and to impart skills which will help people to work in the environment *sustainably* (University of Zambia, n.d, p. 2).

Sustainability is a governmental rationality used to empower students to be responsible and act for the environment. As a governing knowledge, sustainability is formed and constituted by a range of practices and strategies, and governed by the rationalities that make them possible, visible, and knowable (Kuntz, 2014). It is through sustainability as an enabling governing rationality that knowledge about the environment is made productive, "making select realities possible (and encouraging select interpretations and engagements within those same realities)" (Kuntz, 2014, p. ix). Sustainability as a knowledge formation is historically and dynamically involved with developing social practices and subjectivities to create materially established and socially shared experiences of being in the environment (Kuntz, 2014).

Sustainability is thus a principle for ordering, classifying, and giving truth claims to what is seen, talked about, and done in everyday life. It is presented as the accepted way of thinking about and interacting with the environment and the Zambian curriculum (re)produces this way of thinking and acting. The articulation of sustainability is, however, done from a Western perspective. Sustainability, then, is a cultural artifact that circulates in the university curriculum and prescribes how to be and act, to be able to pass as a desired environmental subject. It promotes Western values, knowledges, and attitudes, and as a hegemonic discourse, it often neglects those traditions that originated outside Western borders (Savelyeva, 2017). As discussed in Chapter 6, it falls short of acknowledging alternative non-Western perspectives as significant factors in shaping EE. This being the case, sustainability resembles Rose and Miller's (2010) notion of epistemology, whereby knowledge about the environment constitutes 'truth'. As a way of thinking and acting in the environment, sustainability helps the curriculum shape how students are taught to think and act in the environment, as well as requiring that they orient themselves to specific kinds of social investments such as proper waste management and norms such as recycling as worthy of pursuit.

Sustainability in the curriculum is a form "of knowledge whose function is to regulate and discipline the individual" (Popkewitz, 1997, p. 140). It is constituted as a posited 'truth' that provides language, epistemic frameworks, and regimes of practice that mould, and simultaneously limit subjects' processes of self-formation and self-intelligibility. Within this mentality, the environment and the future are constantly changing, as so 'must' the desired subject of the environment. The desired environmental subject does not stand by itself within

the discursive practices of HEd EE policy and curricula. It is overlapped by various discourses through which knowledge of the subject is placed in relation to visions of the future. The way the curriculum attracts a subject to moral environmental responsibility seems to be based on specific ways of speaking and reasoning that permeate the entire curriculum and gain a truthful place in it. 'Truth' as discussed in Chapter 3, is not to be seen as an undeniable fact, but rather as "something that can and must be thought of" (Foucault, 1985, p. 7). Truths have consequences for social reality; they justify and legitimise certain concrete acts and determine the identity of actors. One of the fundamental 'truths' of HEd EE curriculum in Zambia can be seen through the articulation of environmental sustainability issues as global, complex, and uncertain. The uncertainty, complexity and global nature of environmental sustainability challenges is presented as obvious, and this has direct impact on the student (subject). Such 'truths' can be found in statements like:

> We are currently experiencing complicated environmental problems that require immediate attention and concerted effort (Conversation 4, Lecturer)

> The curriculum will aim at making it possible for citizens to lead useful lives, considering […] the complexity of the modern world and the environment (MESTVEE, 2013).

> The earth is our home. We live in a global and complex world […] we do not restrict our learners to local environmental problems. You see, these environmental problems are global. As such, our students need to know about these environmental problems on a global scale and their impact locally. Besides, in this interconnected world, it is difficult to predict where a student might find themselves in the future, so they need to be prepared to work anywhere in the world (Conversation 2, Lecturer).

'Truth' about the modern world and environmental problems are presented as complex and needing solutions that require one to think, learn and act beyond their geopolitical spaces. The planet earth is also expressed in metaphorical expressions like *'our home',* and environmental problems are understood as *'our problems'* in which *'all of us'* need to participate to solve them (Ideland & Malmberg, 2013). Environmental problems are thus understood as global and complex, transcending boundaries of space and time, and environmental sustainability is described as a 'global project' that responds to these 'complex' environmental issues (Ideland & Malmberg, 2013). The ZECF states that the curriculum at all levels must produce "learners who are connected to […] community, national and global" (MESTVEE, 2013, p. ix) environmental and developmental issues and who "should be able to

participate in the preservation of the ecosystem in one's immediate and distant environments and for the future generations" (MESTVEE, 2013, p. 8); are "capable of learning and living with others" (MESTVEE, 2013, p. ix) and possess values that promote "equity and empathy, diversity, relationship with others, tolerance, respect, honour, and ecological sustainability" (MESTVEE, 2013, p. ix).

To show how HEd EE curricula respond to complex environmental problems, one lecturer explained:

> Our programme is holistic. It is not just the physical environment that we are concerned about but also the social, political, economic and all those other considerations […] You see, environmental problems are broad and therefore need a broad perspective if they are to be solved. Our programme is quite broad because we have incorporated both the natural and social sciences. We have environmental health, ecology, environmental law, environmental management and so on. So, it's quite a broad field. Unlike some time back when EE was dominated by natural science, it now has social science because some problems need social solutions (Conversation 3, Lecturer)

By painting scenarios concerning the complexity of environmental threats and what can happen if certain measures are not taken, students are governed along a path presented as desirable and wanting to live in a sustainable world. The future in these texts is the projection of that which does not exist, environmental threats are written as 'truth', and EE as a measure that has to be taken to avoid them. Through the EE curricula, the 'truth' about the complexity of the modern society and environmental issues become embedded in the 'eyes' of the subject, and thus operates as a productive force in creating students as desired environmental subjects (Hacking, 2002; Olsson & Petersson, 2008). Sustainability operates as a 'diagram of power' (Dean 1999), a productive tool that brings students into view as a governable population that can be moulded into desired environmental subjects who are responsible, future-oriented, life-long learners and self-governing subjects (Olsson & Petersson, 2008). Students' lives are made administrable by making them global citizens who understand the complexity of both their world and environmental issues. Such constructions suggest a cosmopolitan individual that:

> shows tolerance of race and gender differences, genuine curiosity towards the willingness to learn from other cultures, responsibility towards excluded groups within and beyond one's society (Hargreaves, 2003, pp. 4-5).

Here, cosmopolitanism is understood as the moral aspect of sustainability: to whom, what, when and where the desired environmental subject is responsible (Hillbur et al., 2016; Rose & Miller, 2010). Sustainability is considered here as a way to foster specific norms that

are morally justified through cosmopolitanism. Cosmopolitanism embodies human agency, participation, and science as an emancipatory project of humanity. The enlightened individual places faith in the application of reason and rationality in directing change for self-improvement and progress of society that respect diversity (Popkewitz, 2008). Cosmopolitanism speaks of a "fundamental devotion to the interests of humanity as a whole" (Robbins, 1998, p. 1) and it espouses a "universalism plus difference" (Appiah, 2001, p. 202), a culture of openness and acceptance, underpinned by values of:

> inclusive egalitarian heterogeneity, of the tolerance of difference and otherness, of equitable (re) distribution of resources and privileges (Dharwadker, 2001, p. 7).

Cosmopolitans have the ability to function productively wherever they are and are connected to the earth and not a particular place on it (Robbins, 1998), and cosmopolitanism is a way of reasoning about the environment and its problems and how sustainability can be achieved for the global citizenry (Kemp & Withofft Nielsen, 2009). The argument is that sustainability requires common global ethics to deal with the interconnected environmental issues facing the world. The Earth Charter Declaration (2000) states:

> We must decide to live with a sense of universal responsibility, identifying ourselves with the whole Earth Community as well as our local communities. We are at once citizens of different nations and of one world in which the local and global are linked. Everyone shares responsibility for the present and future well-being of the human family and the larger living world

The HEd EE curriculum operates as a node in which global articulations of environmental problems and policies converge with local development aspirations and preferred knowledges and values about human-nature interactions. Cosmopolitanism embodies the:

> use of reason as a continual process of problem solving in which the individual is linked to the collective good of society […] promotes universal reason, rationality, and progress as a mode of living [and] regulates the present in the name of the future action (Popkewitz et al., 2006, p. 432).

A cosmopolitan possesses agency and this entails the use of reason and rationality to promote universal values of progress, humanity and environentalism. Environmental cosmopolitanism (Saiz, 2005) is based on the assumption that environmental harm reaches "beyond national boundaries and both backwards and forward in time" creating an

environmental duty that transcends the nation state (Grabrielson, 2008, p. 439). The environmental cosmopolitan elicits a sense of moral duty to fellow citizens around the globe who are suffering as a result of environmental degradation (Trachtenberg, 2010).

The desired environmental subject constructed is an autonomous subject that possesses knowledge and skills to shape the future (Popkewitz, 2008). Environmental cosmopolitans are inculcated with a sense of global environmental responsibility as part of their identity (Saiz, 2005), and actions and attitudes towards the environment are shaped by the identity of global citizens. Students are moulded to be aware of their role as protectors of a globally important ecological habitat. The curriculum thus works to consciously shape the self-perception of environmental subjecthood. However, this construction of the 'desired' environmental subject, especially in post-colonial contexts, is a cultural construction that carries within it colonial and imperial connotations of cultural and economic dominance (Moraes, 2014). As Popkewitz et al. (2006) note, environmental cosmopolitanism "entails principles about who 'we' are, should be, and who is not that 'we'- the anthropological other who stands outside reason and its civilising manner of conduct" (p. 433). The desired environmental subject in Zambia aids the preservation of a coloniality of power and being through the promotion of Western environmental subject:

> we realise that we are under a globalised world […] this requires that our university, especially our curriculum to fit into the system of the global world. That is not the problem. The problem is who should fit in the other's shoes? we are always persuaded to fit international frameworks into our local systems […] we need to have something local and push it up. But what is happening is that something from the top there is being shoved down to us (Conversation 4, Lecturer).

Global articulations of environmental problems demand that the Zambian curriculum fits this articulation. Here, modern HEd is embedded in a process of globalisation, whose purpose is to "remake society through remaking the child" (Popkewitz, 2009), or in this case, the student. The 'desired' environmental subjct is not born, but made, through the HEd curriculum. The emphasis on 'our home' and global articulation of environmental sustainability is tied to Western scientific knowledges and sustainability norms that work to include or exclude local ecological knowledges and indigenous ways of being in the environment. These inclusions and exclusions identify those who need to change, representing the norm of what/whose knowledge is worth informing the global project of environmental sustainability. Consequently, those living and practising embodied knowledges are delineated as not desired (Ideland & Malmberg, 2014; Popkewitz, 2009). Environmental sustainability is

presented to maintain exclusions of those who are 'othered' such as local traditional leaders and their communities, through reproducing a Western norm of what it means to live and be human (Ideland & Malmberg, 2014; Weheliye, 2014; Wynter, 2003). Ways of relating to the environment as articulated by *Ubuntu/Ukama* are excluded from the curriculum. Rather, it promotes a Cartesian way of thinking and being by constructing the traditional leaders and their communities as objects of 'inclusion' into the 'norm'. Thus, although "we are in this together […] we are not the same" (Braidotti 2020) because power differences between the North and the South remain. The silenced 'Other' who is able to think and relate otherwise to the environment is marginalised in the global articulation as not all humans are equal.

7.7.2 Curriculum: Shaping Norms and Expectations

Environmental subjects are "people who care about the environment" (Agrawal, 2005a, p. 162) and environmental subjectivity is a matter of care and a measure of how citizens come to care about the environment through involvement with state regulatory practices that shape their knowledge and beliefs. The EE curriculum is a technology of the self that governs students' perceptions of the environment to norms such as sustainability and cosmopolitanism, thus allowing them to become a desired environmental subject. The curriculum is a space that enables the formation of environmental subjects where practices of the self are not invented by the subject, but rather, "are models that (the subject) finds in his culture and are proposed, suggested, imposed upon him by his culture, his society, and his social group" (Foucault, 1984, p. 291). The subject embraces them and acts with them productively:

> Unlike other programs within the university, we are helping to have a citizenry that is environmentally conscious by teaching them behaviours that can help turn around environmental problems. For example, when our students go out in communities, they help with the challenge of environmet. They have set up associations and social media campaigns that help sensitise and teach the community about environmental issues […] they also help local councils and communities in activities like proper waste management (Conversation 2, Lecturer).

Lecturers also make a significant distinction between knowledge and practices among Zambians and among EE students. They portray practices of EE students as more environmentally oriented, motivated and rarely engaged by the larger student or Zambian population. A population that does not practice environmental lifestyles is portrayed as lacking key environmental knowledge and lifestyle:

We know that many people do not take seriously issues of waste management like we or our students do. We have tried to engage them, but they have never participated or seen the importance of doing so. For example, We have the 'Keep Zambia Clean' campaign which we have institutionalised in our University in the sense that it sits in the sustainability agenda of the university. However, it is is not well received by other schools and departments […] For example, every Friday is 'Keep the University Clean' day. Every member of the University starting with the Vice Chancellor is supposed to participate in the cleaning. However, you will only find lecturers and and students from our program. The rest of the university shuns the event (Coversation 1, Lecturer).

The distinction between EE lecturers and students and other populations' participation in the *'Keep Zambia Clean'* campaign , and other waste management and recycling activities, is a performative expression of environmental values and norms. Descriptions of the EE curriculum as a distinct type of educational practice orients the curriculum to cultivate specific types of subjectivities that reinforce the norm that those who 'partake' in the activity subscribe to environmental values and participate in environmental activities, and thus positions those who do not as outsiders. For instance, lecturers explained that EE students were actively involved in environmental activities such as recycling and tree planting and adhering to norms of the *Keep Zambia Clean Campaign* as an environmental way of life. Lecturers portrayed the EE curriculum as a space where students learn to lead sustainable lifestyles due to environmental values and activities. Here the binaries of nature/pollution, sustainable/unsustainable and healthy/unhealthy align and reinforce a culturally specific imaginary of a desired education that fosters sustainability norms. Its character and its students' care for the environment sets it apart from other programs and curricula in HEd. The normative view of EE is that it is a type of education that prioritises the environment, and it creates people who are involved in sustainable activities:

There are a lot of politics in the university. It is difficult to convince lecturers say in mining, engineering and agriculture to join us in talking about the environment. Right now we have an issue of Lower Zambezi where they want to start mining. It is a game park. Are students in these Schools taught about the impacts of such activities on biodiversity? […] As a University, we need to have a common understanding and teach about the environment irrespective of program or school (Conversation 2, Lecturer).

This normative view of EE operationalises the curriculum as a space that shapes individuals for a sustainable future. Its self-congratulatory appelation naturalises the idea that EE curricula are good for everyone and elide their exclusionary dynamics. The curriculum, as argued below, functions as a cultural tool that perpetuates exclusions through descriptions

of desired environmental subjects that marginalise other forms of environmental subjecthood, namely those practiced by local traditional leaders and their communities. Leturers adamantly stated that students from other programs did not participate in the '*Keep Zambia Clean'* campaign around campuses, an activity central to proper waste management choices and consequently sustainability. The HEd EE curriclum is thus central in discursively constructing the norms of environmental knowledge, values and activities. It validates and reinforces the knowledgeable, responsible and action-oriented environmental subject who is actively involved in caring for the environment. Simply studying EE curriculum constructs and justifies processes of belonging to desired environmental subjectivity. The curriculum performatively reinforces an environmental subjectivity based on Western knowledges and norms through the assumption that those outside EE do not adequately participate in ways that foster sustainability.

Technologies of the government in higher education EE curriculum

In the colonial period, the desired environmental subject was constructed through punitive measures such as harsh environmental policies, fines and restricted access to protected areas as discussed in Chapter 6. The entire population was a target of sovereign environmentality. What was constructed for the environment and its future were subjects aware of different punitive measures. Currently, environmental subjectivity is formed using non-coercive mechanisms. The HEd EE curriculum is another mechanism used to control the conduct of individuals towards the use of natural resources. It "inscribes rules and standards by which we 'reason' about the world and our 'self' as a productive member of the world" (Popkewitz, 1997, p. 132). To 'reason' about global and complex issues of environmental sustainability and set standards for who an ideal subject of the environment ought to be, the curriculum prescribes values, skills and competences as technologies of government able to "mobilize subjects in ways that promote a self-reliance that differs from those of the previous era" (Edwards, 2002, p. 354).

Technologies of government, however well intentioned, are modes of constituting, regulating, and governing the very subjects whose problems governments seek to address (Cruikshank, 1999). As technologies of government, values, skills and competences operate as established controls for identifying what is acceptable and not acceptable in human conduct towards the environment. Prescribed skills and competences in HEd EE curriculum permit the screening of every student, and target them through a logic of exclusion that determines the difference between what is normal and abnormal, and desired and undesired. They control who

is accepted as an environmental subject and who is perceived as deviant and thus dangerous to the environment:

> When our students graduate, we expect them to have acquired skills like problem solving, critical thinking and values like responsbility, (Conversation 2, Lecturer).

The desired subject of the environment is thus produced through values, skills, and competences that are reiterated as acts of discourses (Butler, 1993). Through skills and competences, what a 'desired' environmental subject is, and ought to be, acquires a naturalised effect (Miron & Inda, 2000). The naturalisation, as discussed below, grounds the environmental subject in history as an an essential and unchangeable difference (Miron & Inda, 2000). Prescribed skills and competences culturally construct environmental subjectivity and present it as a natural reality, and power operates through prescribed skills and comepetences that construct culturally oriented environmental subjects that are accepted as universal. The curriculum is a site "wherein hierarchical discourses about social subjects are delineated and fixed" (Sundberg, 2008, p. 579). Since power is central to the construction and governance of nature, it is crucial that prescribed skills and competences in the curriclum are positioned as a cultural politics of difference in its operations. This is because the construction of environmental subjectivity is imbricated with natural resource management and conceptualisations of nature (Elmhirst, 2011; Mollet & Faria, 2013; Nightingale, 2011; Sundberg, 2004, 2008).

The governmental technologies of values, skills and competences emphasised in Zambia's HEd EE curriculum are important for achieving the status of desired environmental subjecthood and what is 'good' or 'desirable' (Fogde, 2008). Through the values, skills, and competences prescribed in HEd EE curriculum, the student is constructed to "conduct its own conduct" (Fejes, 2005).

Science, mathematics, technology, and entrepreneurship

Science operates as the sacred knowledge of modernity (Reid & McKenzie, 2019). As discussed earlier, the discourses of EE are characterised by scientific and mathematical objectivity, and the faith in technological development and sustainable consumption. The ZECF states that the aim of curriculum at all levels of education is to: "promote entrepreneurship and economic participation […] with the aim of increasing the efficiency of the national economy" in a sustainable manner, to "develop a Zambian society with people that are versatile, creative, employable, entrepreneurial and productive", to "promote rational use

of resources" and "acquire a culture of entrepreneurship and promote self-reliance" (MESTVEE, 2013, p. 7). The ZECF further states that curriculum at all levels in Zambia should provide students with the knowledge of mathematics, science, technology, and entrepreneurship to facilitate an understanding of the complexity of the modern world. The curriculum must produce a learner who is "technically competent, scientifically, technologically and financially literate" (MESTVEE, 2013, p. 9), a learner who "appreciates the relationship between mathematical and scientific thought, action, and technology on the one hand and sustenance of the quality of life on the other" (MESTVEE, 2013, p. 8) and "applies entrepreneurial skills, positive attitudes and values to accomplish greater achievements in life" (MESTVEE, 2013, p. 9).

In the HEd EE curriculum, mathematics, science, and technology are emphasised through numbers and illustrations. Numbers and illustrations play a critical role in shaping the individual. For instance, in '*Introduction to Environmental Education*' the student is introduced to risks and hazards and how the students can calculate risks and hazards such as green house gasses. Figures and illustrations that show changes in temperatures and rainfall are also used. In '*Environmental Management*' the student is introduced to cost-benefit analysis of development activities through stated skills like "informed decision making" and "accountability for information and decisions taken". These figures and mathematical calculations work to simultaneously shape how the student thinks about climate change or environmental degradation as well as constructing a self-calculating human being (Miller, 2004). They are used to appeal to the emotions of students by making them feel guilty and inducing them to change their habits. In teaching and learning modules, figures also provide students with tools for making judgements that are seeemingly detached from feeling, passion and non-reason (Ideland & Malmberg, 2015, p. 181). Science, mathematics, technology, and entrepreneurship are thus mobilised in a way that an individual can meet "civic obligations to moderate the burden of risk which he or she imposes on society" (Gordon, 1991).

In HEd EE, environmental issues are scientised and technocraticised in the curriculum so that the 'desired' environmental subject is one that is committed to science and reason (Popkewitz, 2009b). Human reason and rationality through science, mathematics and technology is considered as crucial to human progress (Popkewitz, 2009b) and responding to environmental problems. Scientific knowledge is crucial to identifying environmental problems as well as devising solutions to global and local environmental problems (Backstrand, 2004). Without this knowledge, one risks being categorised as 'not normal' (Foucault, 1983). The HEd EE curriculum operates as a modality to the norm. Through scientific reason and

rationality, reality is radically divided into two realms of abyssality wherein knowledge that exists on one side of the abyss is rendered local, experiential, and embodied while on the other it is produced as non-existent (De Sousa Santos, 2007). The university curriculum thus assumes as 'Other' (Ideland & Malmberg, 2014) any individual who needs to be fostered into this technoscientific way of knowing-subjectivity, the *cogito ergo sum* based on Western notions of what it means to be human and, therefore, what it means to be an environmental subject.

Problem-solving and critical thinking skills

In light of the complex and uncertain nature of environmental challenges, the ability and will to solve problems emerges as the governing mechanism that the HEd EE curriculum uses to control the conduct of students. The ZECF states that the vision of curriculum at all levels of education is "to have holistic learners who are […] leaders and agents of change in the transformation of society" and who possess "critical, analytic […] creative thinking and problem solving" as key competences (MESTVEE, 2013, p. x). The *Introduction to EE* teaching and learning module aims to equip students with knowledge and skills that will enable them to "identify and define different local and global environmental problems and generate alternative solutions" (UNZA, n.d, p. 3). The 1996 National Policy on Education further states:

> a critically important function of HEIs is the provision of education to students at this level. This teaching function requires that besides imparting bodies of knowledge in the various branches of learning, the third level institutions develop creative, communicative, and *problem-solving skills* and capacities of their students (MOE, 1996, p. 91 emphasis added).

Higher education EE graduates should have the ability to critically evaluate a range of environmental information and incorporate them into their decision making in a transparent and justifiable manner. Students are required to have well-developed critical thinking and problem-solving skills to navigate through 'wicked problems'. Critical thinking is the ability to think rationally and reasonably (Mulnix, 2012) about what to believe and do about complex environmental issues, many of which are fraught with values, emotions, and vested interests. Applying critical thinking and achieving critical depth are mantras in HEd. Critical thinking and problem-solving skills are perceived as key competences that students need to develop if they are to become 'desired' subjects of the environment. The ZECF adds that critical thinking skills are crucial to improving "the capacity of learners to comprehend, participate in and

become better at resolving the contentious clash of ecological, social and economic interests in our environment" (MESTVEE, 2013, p. 22). In the same vein, a lecturer explains:

> When we are teaching them, we are looking at them as people who will offer solutions to environmental concerns and challenges. Our programme is, therefore, made in such a way that our students are equipped with knowledge and skills that will help them solve environmental problems in the country and globally. We have so many environmental problems, and these problems require people to solve them. (Conversation 2, Lecturer).

Critical thinking and problem-solving skills are understood as necessary to meeting the global and rapidly changing nature of environmental problems. With such skills and competences, students are regarded as agents able to situate themselves in any 'complex reality'. Problem-solving plays a crucial role in the construction of a cosmopolitan subject and 'salvation', indeed behavioural principles governed by problem solving appear almost as moral principles and are a means of capturing and governing a student's soul (Popkewitz, 2008). However, problem solving knowledge "divides 'citizens' into those who either can or cannot solve problems, to produce "more productive and 'less productive categories of people" (Bacchi, 2020 p. 92). Problem-solving, therefore, creates politically inactive, divided and self-regulating citizens (Bacchi, 2020).

Active participation and responsibility

In both the 1996 National Policy on Education and the 2019 National Policy on Higher Education, the idea of 'responsibility 'is given a quite different meaning,

> the education of a young person in today's world would not be complete if it did   not include preparation for living responsibly within civil society […] those who leave school, should have […]   awareness of their responsibilities to themselves, to others, and to society in general (MOE, 1996, p. 56).

Responsibility is linked to the notion of something that transcends the self to include other humans and the nonhumans. The young person who leaves university is constructed as a subject of responsibility, while simultaneously constructing a discursive figure of irresponsibility, that is, the one who does not receive university education or who receives university education but fails to think and act in what is considered responsible behaviour. It is in HEd's construction of 'desirable' subjects that the principle of responsibilisation is made operational (Ideland, 2016). The 1996 National Policy on Education further states that:

[…] higher education institutions […] and students who comprise them, have the *grave responsibility* of being ever responsive to the changing needs and circumstances of society. (MOE, 1996, p. 92 emphasis added).

The student is constructed as a solution to society's environmental problems and transformed from teachability to accountability (Ideland, 2016; Brembeck et al., 2004; Hultqvist & Dahlberg, 2001). As an environmental agent and a 'desired' future citizen, the student is constructed as capable of caring for the environment now and in the future.

In both the 1996 National Policy on Education and the ZECF, there is a much stronger focus on the individual as a part of the wider global society and responsible for the well-being of future generations. The curriculum envisages to produce a learner who "participates in the preservation of the ecosystem […] for future generations" (MOE, 1996, p. 5; MESTVEE, 2013, p. 9). In the same vein, a lecturer stated that:

> We need the young to be environmentally literate and conscious. Afterall the future is theirs and they also have a huge task of creating and maintaining an environment that will be conducive for their children (Conversation 2, Lecturer).

The student is constructed as a global citizen with the ability not only to solve problems within their environment but also in distant lands. Further, they are constructed as responsible not only for themselves, but also for future generations. This 'desired' individual can be understood through Popkewitz's (2009b) notion of cosmopolitanism whereby desired citizens are "freely acting agents bounded by universal, global values that in turn bind a shared polity" (p. 252). Such a 'desired' subject uses human reason and rationality to change the world for the better (Ideland, 2016; Popkewitz, 2009b). This 'desired' subject limits normality by constructing categories of non-environmentally literate individuals as abnormal, and thus non-desirable. Embedded in the gesture of environmental literacy is the exclusion of the 'Other', the student considered as threatening to the environment.

Responsibility, as a technology of government is further articulated in relation to freedom by specifying a particular kind of a responsible subject governed by freedom. The ZECF states that the aim of the curriculum is to "produce a learner who is free to express own ideas" (MESTVEE, 2013, p. 8) and is "actively involved" (MESTVEE, 2013, p. ix) in the affairs of the country's environmental issues. This responsibility of the individual is further fostered by an explicit focus on the active participation of the students, especially through freedom of choice as a means of developing an ability to take responsibility for not only caring

for the environment, but also sensitising masses about this need. Freedom of choice is explained thus:

> We expect our students to go out in the communities to sensitise people as well as to help with the challenges of the environment […] Our expectation is that when someone does this programme, they should behave differently from those who have not taken it […] through this programme, we are helping to have a citizenry that is environmentally conscious by teaching them behaviours that can turn around these environmental problems […] Not long ago, two students came here and were telling me that during the holidays, they want to go back to their home so that they can go to a radio station and talk to the people about the environment. So, you see, that in itself is the result of our programme which turns students into responsible citizens […] from first year, they begin to think about the environment and how they can talk to people and how they can help people to start thinking about living in clean environments and maybe talking about environmental degradation in general (Conversation 2, Lecturer)

Expecting students to sensitise communities about environmental issues is indicative of power, knowledge, and control being devolved from formal authorities such as lecturers and policy makers to private actors and students. Students are constructed as vehicles of action in which if they do not act or contribute to the process, there is risk of failure (Rose, 1999). The student is constructed as having autonomy, knowledge, and choice. The construction of this 'desired' environmental subject contributes to a cultural protocol of what to know and how to act to meet the standards required to make a good environmental subject. Higher education EE curriculum works to culturally shape certain kinds of desirable and/or undesirable subjects. The desirable subject is one who is enrolled in a HEd EE programme and chooses to sensitise surrounding communities to help with environmental problems. These students are thus constructed as fit to be entrusted with the future of the environment. At the same time, the statement implicitly constructs a student who does not go through this programme, or who goes through the programme but fails to take the responsibility for sensitising the communities, as undesirable and risky.

Lifelong learning

> Our program emphasises that EE is a continuous lifelong process (Conversation 3, Lecturer)

Emphasis on lifelong learning is another mechanism that HEd EE curriculum uses to to construct the desired environmental subject. The ZECF indicates that its vision is "to have holistic learners who are life-long learners" (MESTVEE, 2013, p. ix). Lifelong learning, defined as the continuous acquisition of values, knowledge, understandings, and skills that one

will need throughout their lifetime (Tau & Modesto, 2017), is presented as a strategy in which the state is both an enabler and regulator in fostering the desired self-regulated citizen. The discourse of lifelong learning is inscribed in Zambia's HEd EE curriculum as a 'truth' and a competence towards achieving sustainability. The 'desired' environmental subject is inscribed in the notion of an unpredictable future. The future is constructed by HEd EE curriculum as a means of constructing specific and 'future-oriented' subjects, and to order and govern a set of heterogeneous elements, men, things, institutions and discourses to achieve useful ends. Higher education EE curricula thus have an important role in the current shaping of future-oriented individuals who are active in the governing of themselves and the environnment. The knowledge produced by the subject becomes the means for their participation as responsible agents in the governing of the environment.

The 1996 national policy on education asserts that,

> Education is a productive investment […] this investment must be continually renewed. Individuals must learn continuously throughout their lives, acquiring new knowledges, skills, and technologies. The establishment of a liberal market […] accentuates dependence on knowledge and skills of the people and their ongoing access to education. Investment in education, therefore, is of crucial concern in […] the modern world. The government reaffirms the important role education plays in human resource development as the basis of all other development. It will act, therefore, as a watchdog for enhancing the contribution of education and training to economic development and social cohesion. (MOE, 1996, p. 2).

The emphasis on lifelong education in relation to environmental problems and EE is explained by a HEd policy maker:

> We expect our students in higher education to engage in lifelong learning. As you know, environmental problems keep changing and more keep coming. We don't know how the future will be but if they keep studying these problems, they will be in a position to mitigate, adapt or even solve them (Conversation 9, policy maker).

The complexity and competitiveness of the modern world, the risks of environmental challenges and the uncertainty of the future play a crucial role in constructing the 'desired' environmental subject as a lifelong learner. Students are constructed as being in continuous need of learning how to manage their lives and the wellbeing of the environment through becoming knowledgeable and productive while at the same time being environmentally friendly. The environment and learning are interlinked. If one is to care for the environment, one needs to be a lifelong learner. Thus, in the name of learning, an individual is constantly

shaped and regulated. From the Foucauldian perspective, therefore, lifelong learning is a technology of government in which a student is constructed as one who desires learning. Lifelong learning, thus represents a model of governing individuals in relation to the collective and it constitutes a distinctively neoliberal environmentality (Nicoll & Fejes, 2008). A 'desired' environmental subject is thus constructed as being in possession of lifelong learning skills in which students deal with the uncertainty of the world and environmental problems through continous self-improvement (Kryger, 2004). Taken from this perspective, students are constructed as unfinished cosmopolitans, "a mode of life in which there is a never-ending process of making choices, innovation and collaboration" (Popkewitz, 2008, p. 115), which empowers the student to cope with the globalised world and the responsibilities required to solve environmental problems for the betterment of society.

7.8   CONCLUSION

This chapter discussed how HEd EE curriculum is entangled in Zambia's modern environmental governance to support the erasure of local traditional leaders' voices and ecological knowledges and practices from the curriculum-making process in preference to national and international epistemic communities. HEd EE in Zambia is an epistemic site of hegemonised power. It is a site of power struggle over whose voices matter, and what counts as valid and valued environmental knowledge. The EE curriculum is embedded in how the human is conceptualised (Desai & Sanya, 2016) and what it means to be human (Weheliye, 2014; Wynter, 2001). The chapter has illustrated and argued that the normalised notion of the human is premised on the figure of a European, white, heteronormative 'Man' (Snaza & Tarc, 2019; Wynter, 2003); a figure that "overrepresents itself as it were the human itself, and that of securing the wellbeing, and therefore the full cognitive and behavioural autonomy of the human species (Wynter, 2003, p. 260). This figure of 'Man' "verifies, justifies and pronounces some existences as superior, desirable and human and relegates others to the status of not-quite-humans, and not humans" (Weheliye, 2014, p. 4). It shapes the curriculum by informing whose bodies and voices and what knowledge is considered valuable and dictating what environmental subjectivity to strive for.

The chapter discussed how local traditional leaders and their ecological practices are depicted as belonging to the other side of the abyssal line where there is no knowledge (De Sousa Santos, 2007) and are rejected in the curriculum making process. Shaped by "Western colonial understandings of indigenous people and the environment" (Mullins et al., 2016) which position land as a space to be conquered, occupied, and visited, but not inhabited" (p.

51). The rejection of local traditional leaders and their knowledges, and practices creates a deep conflict between education and culture and works to isolate Zambian students from their everyday reality and cultural milieu. Operating through the discursive continuities of Western scientific environmental knowledge, the HEd EE curriculum is a "eugenic agora perpetrated by a Western Eurocentric power matrix that takes no prisoners" (Paraskeva, 2016, p. ix). The power matrix is based on an asymmetrical distribution of power between the Global North and the Global South where northern countries and IOs have power to frame not only environmental legal instruments, as discussed in chapter 6, but also environmental knowledge in a curriculum that works to regulate human interactions with the nonhuman world. The HEd EE curriculum is an epistemicide that thrives on symbolic violence as it imposes Western scientific ways of knowing about the environment: "It is a road to hell, a road always paved with good intentions" (Thiong'o', 2009, p. 12), but fails to live up to them.

Overall, this chapter discussed how the HEd EE curriculum produces epistemicides and upholds an abyssal epistemology (De Sousa Santos, 1996, 2001, 2007) in failing to recognise (a) local traditional leaders as custodians of local ecological knowledges, (b) different ways of knowing-subjectivity, (c) the relevance of such knowing- subjectivity within Zambia's social, environmental, cultural and political educational contexts, and (d) how the failure of the curriculum to include the different ways of knowing creates epistemological iniquity, imbalance and conflict within educational and societal structures (Fataar & Subreenduth, 2015). HEd EE curriculum reproduces and extends Western colonial structures by enabling an erasure of local ecological knowledges and bodies.

The chapter also examined the productive effects of epistemicides and exclusions. As a site of production, the chapter argues that the HEd EE curriculum enacts power as institutional knowledge by discursively circulating specific environmental rationalities that split environmental subjectivity into acceptable and abnormal. The chapter argues that the curriculum is about rules and standards of conduct to produce self-governing environmental actors who are simultaneously responsible for social progress, environmental protection, and personal fulfilment. It argues that that power in contemporary society works not through coercion, but through softer and more persuasive techniques of environmental governance.

Vested with moral responsibility for the environment, the subject is an effect of Western articulations of sustainability. The chapter argues that environmental sustainability provides a relatively unified articulation of difference through colonial entanglements that work to marginalise indigenous ways of doing and being in the environment. The mobility of colonial discourses into the present have allowed the coloniality of knowledge and being to

become integral. The curriculum thus promotes Western ways of knowing-subjectivity as a socially acceptable subjectivity that students are invited to engage in.

The HEd EE curriculum in Zambia thus circulates as a reactive force of *currere* (Wallin, 2010), a form of coloniality that constructs 'desired' environmental subjects through epithets such as 'lifelong learner', 'responsible citizen' 'cosmopolitan' and 'problem-solver. The desired environmental subject emerges as disciplinary technology that is constructed through a curriculum that is derived from, normalises, and preserves an environmental cosmopolitan who is an individualised, accumulation-oriented Western subjectivity, based on free market capitalism and global citizenship. This environmental cosmopolitan is constructed through a discourse of Western environmental sustainability promoted in HEd EE curriculum. In short, the HEd EE curriculum in Zambia homogenises environmental subjectivity. Local traditional leaders and their communities are 'Othered'.

Chapter 8: Conclusion: Decolonising the Curriculum

8.1 INTRODUCTION

It matters which stories tell stories, which concepts think concepts. Mathematically, visually, and narratively, it matters which figures figure figures, which systems systematize systems (Haraway, 2016).

Getting to this concluding chapter fills me with gratitude, and not because the end is finally near. Rather, it is because of the generous and valuable contributions of local traditional leaders, lecturers, policy makers, and NGO representatives shared with me during the study. Although I have learned much, in many ways I feel like I have only scratched the surface of the possibilities that lie in decolonising the curriculum. In this conclusion, I will summarise the research findings of the study, make recommendations for how exclusions in the curriculum might be addressed and highlight the implications of the study and directions for further research.

8.2 WHERE ARE WE NOW?

This project is guided by an overarching question and four sub-questions:

Central question:

1. What does the higher education environmental education curriculum *do* and *might do*?

Sub-questions:

    i.   What informed//influenced the development of higher education environmental education in Zambia?

    ii.   What does the higher education environmental education curriculum in Zambia include and exclude?

    iii.   What is the effect of inclusions and exclusions in the environmental education curriculum in Zambia?

In asking these questions I seek to advance EE in Zambia's higher education and to facilitate the inclusion of knowledges appropriate and responsive to local and national environmental challenges. To achieve this, I investigate the use of Western knowledges and the subjectivities aspired to in Zambia's HEd EE.

To accomplish these objectives, Chapter 2 presented a comprehensive review of existing literature on EE and curricula. The review explored three major areas of EE: (a) terminological debates (b) the HEd EE curriculum and (c) the need for a paradigmatic shift.

The theoretical orientation of this study takes the present as radically prescribed by colonial logics. Thus Chapter 3 mobilised and discussed the *Southern environmentality dispositif.* The *Southern environmentality dispositif* brought together the concepts and theories of curriculum, decolonial and post structural theories, as well as the concepts of power, knowledge, subjectivity, *currere,* and *Ubuntu/ Ukama* and their relevance to the study, curriculum studies and EE more broadly.

Chapter 4 explains that methodologically, this project is a decolonial genealogy. A decolonial genealogy connects de Sousa Santos' (2014) epistemologies of the South to Foucault's (1984) history of the present. Both Foucauldian genealogy and decolonial perspectives are concerned with the possibilities of 'emergence', and each is interested in the way that Western rationality seeks to represent what counts as knowledge and subjectivity and how these representations legitimise power relations. This chapter also detailed participant selection and specific methods employed to answer the research questions. It introduced the methods selected to collect data comprising policy and curriculum documents, conversations with local traditional leaders, lecturers, policy maker and NGO representatives. The chapter then detailed the framework used to analyse the data.

8.2.1 Key Findings

Table 17 below presents a summary of the research findings in relation to the research questions.

Table 17: Key of key findings

No	Research Question	Conceptual Framework	Findings
1.	What informs /influences the development of higher education EE curriculum in Zambia?	Global governmentality/environmentality (Foucault, 1991; Agrawal, 2005a, 2005b) Coloniality of power and knowledge (Castro-Gomez; Maldonado- Torres, Mignolo, 2011) Absences (De Sousa Santos, 2006, 2007; 2014) Epistemicides (De Sousa Santos, 2006, 2007; 2014)	• The development of the curriculum is influenced by Zambia's colonial history, particularly, colonial wildlife and forestry policies. • The curriculum is also influenced and informed by international environmental policies, events, and declarations. • Locally, the curriculum is informed by environmental policies such as the National Conservation Strategy (1985), the National Environmental Action Plan (1994), National Policy on Education (1996) National Policy on Environment (2007/2008); Environmental Management Act (2011), National Policy on Climate Change (2016), Zambia Education Curriculum Framework (2013), National Policy on Higher Education (2019). • Environmental and sustainability discourses such promote of neoliberal environmentality.
2.	What does higher education EE curriculum in Zambia include and/or exclude?	Absences (De Sousa Santos, 2004, 2006, 2007, 2014) Coloniality of knowledge	• Higher education EE curriculum making processes exclude local traditional leaders, their practices, knowledges, and the communities who live the effects of environmental degradation. • The HEd EE canon excludes Southern scholars and their works by prioritising Northern scholars. • Local ecological knowledges are absent in the curriculum.
3.	What are the effects of inclusions and	Coloniality of being	• The curriculum mobilises and promotes an environmental cosmopolitan based on Northern ideas of being and doing in

No	Research Question	Conceptual Framework	Findings
	exclusions in higher education EE curriculum?	(Maldonado-Torres, 2007; Mignolo, 2011; Wynter, 2001, 2003) Cosmopolitanism (Popkewitz, 2008) environmentality (Agrawal, 2009; Luke, 1995,1996,1999) Governmentality (Foucault, 1991)	the environment. It colonises the desired subject of the environment. • The curriculum excludes environmental becoming based on *Ubuntu Ukama* which are perceived as belonging to a realm of reality beyond what is accepted.
4.	How can the exclusions be addressed?	Decoloniality (Sundberg, 2016) Sociology of emergences (De Sousa Santos, 2006, 2007, 2014) Diatopic hermeneutics *Ubuntu/Ukama* (Le Grange *Currere* (Wallin, 2010)	• The metaphor of 'movement' signifies the importance of self-reflexivity, learning from, and walking with. • There is a plurality of voice and the co-presence of knowledges • Ecological subjectivity is informed by *Ubuntu/Ukama* and *currere*.

Tensions in 'problem' representations

To answer the central question of *what the curriculum does*, I analysed conversation transcripts of local traditional leaders, policy makers, lecturers, and NGO representatives and key environmental policy and curriculum documents as described in Chapter 4. The analysis demonstrated tensions in 'problem' representations between local traditional leaders, some policy makers, lecturers, NGO representatives and environmental policy and curriculum documents. It revealed that while local traditional leaders represented the 'population's conduct' towards the environment as driven by (a) a shift in power structures, (b) denial of entanglements, and (c) a need for survival in a neoliberal economy, environmental policy and curriculum documents, some lecturers, policy makers and NGO representatives simply represented the 'problem' as driven by a lack of knowledge about the environment. The Zambian population was problematised as not having an 'environmental consciousness'. This problem representation in policy and curriculum documents is premised on the notion of difference which equate to 'backwardness' and environmental destruction. Local socio-ecological practices are rendered untrustworthy and invisible resulting in the death of alternative knowledges ontologies and 'onto-epistemicides' (De Sousa Santos, 2014). The problem consituates a lack to be filled and a problem to be fixed thereby (re) producing the binaries of: natural/problematic, Self/Other, sufficient/insufficient, normal/backward and sufficient/insufficient.

What informs / influences the development of higher education environmental education curriculum in Zambia?

The first sub-research question, drew on the decolonial genealogical technique (Foucault, 1979; De Sousa Santos, 2006, 2007) discussed in chapter 4 to identify discourses and institutions that shape(d) modern environmental governance in Zambia in which the identified 'problem' representation and proposed solutions sit. The focus of the analysis was the power relations in the emergence of modern environmental governance and how power dynamics influenced and informed the development of HEd EE. The analysis revealed that Zambia's modern environmental governance and problem representations are entangled in colonial logics and international environmental and sustainability discourses. These entanglements and discourses not only inform local environmental policies but also the emergence of HEd EE. The analysis showed that HEd EE is influenced by colonial discourses and international declarations that define what EE is and should be. Local sustainability efforts

and discourses are rendered invisible or noncredible in relation to dominant global/universal logics (Akinci et al., 2020; De Sousa Santos, 2014).

What does higher education environmental education curriculum in Zambia includes and/or excludes

The second sub-research question used a decolonial history of the present, and decolonial concepts of power and knowledge to identify bodies and forms of knowledge that are silenced, marginalised, or subjugated in both environmental policy and curriculum and curriculum and policy making processes. The analysis revealed that the curriculum is a violent space; a space "of turmoil" (Slattery & Daigle, 1994) that again excludes local traditional leaders from adding their voices and knowing-subjectivity to environmental issues. As a violent space, HEd EE curriculum legitimates, effectuates, and reproduces asymmetrical power relations between the Cartesian thinking self, in this case, policy makers and lecturers, and 'others' who are traditional leaders. Following De Sousa Santos (2007, 2014), I argued that local traditional leaders as the Other of the curriculum making process are forbidden from having their bodies, knowledges and practices included in the curriculum as they belong to the realm of what is not accepted as a standard for inclusion. Higher education EE curriculum making defines and sustains asymmetrical power relations that ensure that the visions of those in power are legitimated as the visions for a sustainable society.

The absence of Southern environmental scholars in the curriculum is produced by rendering them local, inferior or noncredible alternatives to Northern environmental scholars. Such absences are governed by 'abyssal thinking' (De Sousa Santos, 2007). Central to abyssal thinking are two great divides; 'this side of the line' and 'the other side of the line' (De Sousa Santos, 2007) which separates 'us' from 'them', moderns and primitives and promotes and sustains an epistemic divide between the South and North (De Sousa Santos, 2007, 2014).

The curriculum is, therefore, epistemicide since scientific knowledge is the only criteria for environmental truth. The absence of local ecological and spiritual knowledges in the curriculum is a form of sanctioned 'epistemic ignorance" that re-inscribes colonial essentialisms by enabling exclusions of local ecological knowledges. These absences coupled with very particular ways of summoning ecological knowledges are power laden.

What are the effects of inclusions and exclusions in higher education environmental education curriculum?

This third sub-research question used the *Southern environmentality dispositif* concepts of governmentality/environmentality and coloniality of being to examine how the 'ideal'

subject of the environment is created in and through EE curriculum. Again, the HEd EE curriculum enacts a violence which accompanies the constitution of subjectivity. The curriculum works as a technology of socio-environmental regulation by setting standards for who an ideal environmental subject ought to be. The ideal subject as mobilised by the curriculum is a modern self:

> the self-contained individual, dualistically opposed to other selves and the material worlds, a centre of reason, calculation, planning, and agency; and measured against such against such a yardstick dreamers and madmen are defective selves (Pickering, 2010, p.74).

The notion of the desired environmental subject as espoused in the curriculum is, thus, a cultural construct (Ideland, 2019) entrenched in epistemological legacies of colonialism that preserve a Western bourgeois genre of 'Man' (McKittrick, 2015; Scott, 2000; Weheliye, 2014; Wynter, 2003). This desired environmental subject as shaped by the HEd EE curriculum is an environmental cosmopolitan (Popkewitz, 2008). The analysis revealed that truth, power and freedom belong to the environmental cosmopolitan: the Western environmental cosmopolitan represents 'Himself' as if he were the only kind of environmental subject there is; and simultaneously sees Himself as the epitome of environmental subjectivity, hence his overrepresentation of himself. However, not everyone believes in environmental cosmopolitansm or behaves as if it is the only way of being in the environment. The environmental cosmopolitan assumes anthropocentrism not only as a right, but also as the right way to be in the environment. No burden of explanation is placed on the environmental cosmopolitan to explain his value in relation to his Others namely those relegated to object-status. Even when the Environmental cosmpolitan attempts to regard the other with respect, the notion of the Other as object intrudes. This environmental subject is thus a norm for how to be in the environment, and as I have argued, embraces ambivalent and contradictory dimensions. It divides the 'normal', that is, those who have mastered the prescribed skills and competences, and the 'abnormal', those without the skills and competences. The abnormal are perceived as dangerous to the environment as they are constructed as less productive in terms of taking responsibility and action towards the caring of the environment. Such an idea, I argued, poses questions of who is included in the idea of the desired subject of the environment, who is left out, who is recognised as the desired subject of the environment and who is rendered invisible. The HEd EE curriculum thus works as a hierarchising mechanism that disciplines populations into environmental subjects and non-environmental subjects

The study also showed that the processes of subjectification responsible for the emergence of the environmental cosmopolitan are heterogeneous, involving a number of devices that include historical processes, the proliferation of institutional spaces, and the repetition of performances. The environmental cosmopolitan as a desired environmental subject, is an emergent effect of these devices, and to perform an alternative paradigm of subjectivity one has to transform the "technology built in our history" (Foucault, 1993). In this way, the HEd EE curriculum derives from, naturalises, and preserves the western conception of what it means to be an environmental subject.

8.2.2 Thesis implications and Opportunities for Further Research Higher Education

Environmental education curriculum is a pharmakon

This thesis has been concerned with problematising the colonising and governing effects of HEd EE curriculum in Zambia. The study characterises HEd EE curriculum as a '*pharmakon*' (Spivak, 1992), that is, both a humanising and a dehumanising force, in other words, it is both a medicine and a poison (Snaza & Tarc, 2019). As a *pharmakon,* the HEd EE curriculum may operate to liberate Zambians from the 'colonial hold' or constrain indigenous Zambians' interactions and being in the environment. So far, the study has established that Zambia's HEd EE curriculum comprises "particular historically formed knowledge that inscribes rules and standards by which we 'reason' about our 'self' as a productive member" (Popkewitz, 1997, p. 132) and "not just a revered text, not a set of facts" (Snaza & Tarc, 2019, p. 1). The study has rather demonstrated that the HEd EE curriculum and its knowledge production processes are defined by what it is and what it is to be human (Weheliye, 2014; Wynter, 2001, 2003). In its current form, curriculum knowledge production functions as a reactive force of *currere,* a dehumanising force that manifests asymmetrical power relations where what counts as knowledge, as truth, as justice and as living together on the planet is exercised by any group that holds power. The Zambian government though its institutions, in this case line Ministries involved in environmental policy making and higher educational institutions engaged in value systems normalise certain conceptions of the environment and what it is to be and/or to be like human. In doing so they legitimise the current colonial capitalist politico-epistemological order (Lye, 1997). The curriculum is structured to instruct students to obey neoliberal rules concerning how to be in and through the environment. The curriculum thus represents a microcosm of larger processes and situations by which human vision and intellect about environmental sustainability are ordered and organised: "curriculum, as the study, design and enactment of world knowledge, regulates, organises and sets the course of

something called human beings" (Snaza & Tarc, 2019, p.1). Popkewitz (1991) agrees that the State exploits the curriculum as a "converting ordinance (regulation or disctum)".

The study demonstrates that HEd EE in its current form is a colonising tool that functions as an 'abyss' (De Sousa Santos, 2007, 2014). It hegemonises Western scientific knowledge as "truer", rational, and more reliable than local ecological knowledges, and the Western environmental cosmopolitanism as the best way of interacting with the biotic community. It also demonstrates that despite possessing a wealth of knowledge that has sustained them for a longer period of time, local traditional leaders, their communities, and ways of knowing and relating to the communities have been relegated to the "realm of incomprehensible beliefs and behaviours that are in no way considered knowledge, whether, true or false" (De Sousa Santos, 2014, p.120). Local traditional leaders' practices, forms of thinking, knowing, and feeling about the environment as discussed in chapter 5 have been "rendered incommensurable and incomprehensible for meeting neither the scientific methods of truth nor their acknowledged contester in the realm of philosophy" (De Sousa Santos, 2014, p.120).

The study argues escalating environmental problems in Zambia illustrate the urgency to rethink the modern-colonial *asili* with a more humane and sustainable one (Mokuku, 2021). Rethinking the HEd curriculum is a required necessity if it is to "capture the immense variety of […] practices and to valorise their maximum transformative potential" (De Sousa Santos, 2014, p.42). The university curriculum, thus, requires conditions that demand an "epistemological reconstruction" (De Sousa Santos, 2014, p.42) that break Western epistemologies while "amplifying the intensity of this sound" and "by exploring the different epistemological dimensions of the claims being made" (De Sousa Santos, 2014, p. 237).

Continued environmental degradation in Zambia has exposed the futility of Western environmental cosmopolitanism. There is thus need for a different form of environmental subjectivity. Central to decolonising the curriculum is the rethinking of the subject (Le Grange, 2016) which involves rewriting what humanness is (McKittrick, 2015). Such an act has potential to enable the production of 'self-knowing subjects' (Wynter, 1992) who emerge "from the below of those who are the majority of the planet" (Mendieta, 2009, p. 243). The self-knowing subject is embedded in practices and experiences that are often marginalised; practices that allow a subject to enact a decentred and symmetrical ontology of self. To cultivate this subject requires the curriculum to invoke *Ubuntu/Ukama* and the reactive force of *currere*. *Ubuntu/Ukama* and *currere* are useful in reimagining context, difference, and cosmopolitan perspectives (Hlatswayo & Shawa, 2020) as they question the hegemonic Cartesian duality

advanced by Descartes' *cogito ergo sum (I think therefore I am)*, and replace it with a *Ubuntu/Ukama* perspective of *I am because we are* (Le Grange, 2016). Through *Ubuntu/Ukama* and *currere*, a shift in focus of subjectivity occurs from individual subjectivity to ecological subjectivity: "the arrogant 'I' of Descartes' *cogito"* becomes "an embodied, extended and enacted 'i'" (Le Grange, 2016a, p. 31); the ecological or hybridly human-environmental subject. Le Grange (2019) explains that in *Ubuntu-currere:*

> the subject is always in becoming and the becoming of a pedagogical life is relational-the subject becomes in relation to other human and more-than-human world. The notion in-becoming ensures that the human cannot be defined nor have fixity and, therefore, *ubuntu-currere* is anti-humanist (p.221).

To perform an alternative version of selfhood based on *Ubuntu/Ukama* and *currere* a diatopic hermeneutic subjectification allows for the exploration of formations that promote non-dual and symmetrical huma/sub/human/nonhuman associations (Carvalho, 2014). *Ubuntu/Ukama* and *currere* challenge a Cartesian *ego-logy and* Western principle of knowledge (I think) and subjectivity (I am). The formation of the hybrid human-environmental subject from below is premised on an ecology of knowledges perspective. As alluded to earlier, this perspective is: "premised upon the epistemological diversity of the world, the recognition of a plurality of knowledges beyond scientific knowledge which implies renouncing any general epistemology" (De Sousa Santos, 2007, p.67). Knowledge about the environment, and what it means to be an environmental subject is intimated by local ecological ways of knowing-subjectivity, where ethics involve a commitment to the entire cosmos (Le Grange, 2012a, 2012b, 2016a, 2016b, 2019, and there is no difference between subjectivity (being) and knowing. The hybrid human-environmental subject neither overrepresents itself (Wynter, 2003) nor does it hold ontological privilege, but is placed on an immanent plane with other humans and all other beings living or not. Subjectivity premised on *Ubuntu/Ukama* and *currere* affirms the importance of what it means to be human (Weheliye, 2014; Wynter, 2003), and what it means to care for other human beings and the more than human. *Ubuntu/Ukama* and *currere* thus insists on humanising those from whom humanity has been stripped away by the logics of coloniality. Humanism, however, in *Ubuntu/Ukama* and *currere* as discussed in chapter 3 is more expansive, and not simply reduced to 'Western man",

Contribution

Zambia's HEd EE curriculum is filled with power imbalances, making it an epistemicide and a dehumanising force, little attention has been paid to decolonising efforts in

education. Documenting the troubling landscape of the HEd EE curriculum is, thus, an important contribution of this thesis. The research illuminates the complexity and historical contingency of knowledge-power in the HEd curriculum and its effects on local communities involved in environmental and resource management. Considering the EE curriculum in the context of modern environmental governance raises questions about the role of science and knowledge and the ways in which this co-produce and re-produce the interests of the West. The study contributes to a growing field of African decolonial scholarship and pluriversality that seeks to redefine the absolute necessity to expand epistemological and ontological approaches within discourses of higher education, EE, and environmental governance. By analysing environmental policies and the HEd curriculum, the study brings forward otherwise often-occluded environmental imaginaries.

The thesis also contributes to the politics of knowledge co-existence in post-colonial environmental governance by bringing often silenced voices, ecological knowledges, and knowing-subjectivities to the decolonisation of the curriculum and discourses of sustainability and environmental governance. The thesis further contributes to efforts to acknowledge the plurality of sustainability discourses as an aid to the wider task of decolonising environmental knowledge production and subjectivity in the interest of the empowerment of indigenous peoples. The study sought to question the problem of Western thought that constrains discourses of local ecological knowledges and that structure the curriculum and environmental governance. The promotion of knowledge co-presences within the curriculum promotes a *Southern environmentality* which works against neoliberal forms of subjectivity propelled by neoliberal governmentality, and which disregard the Zambian context. Neoliberal forms of subjectivity tend to be posited as a priori and impede the active force of *currere* and calls for newness and the creation of things unforeseen; experimentation and the expansion of difference and movement. *Ubuntu-currere* has the potential to free us from the claws of neoliberal capitalism and the subjectivity that comes with it, by allowing us to complicate often taken for granted ideas in EE curriculum and HEd in general Le Grange (2020).

Another contribution of this study is the use of a decolonial genealogy in HEd EE. The study showed that between 1888 when Zambia became colonised and the present, there have a shift in environmental governance from crude power of the colonial state to softer power in EE policy discourses. The study brought to the fore continuities and discontinuity of the rationalities of government in environmental governance from the (pre)colonial years to post-colonial neoliberal years. Whereas environmental governance in colonial times was coercive

by using punitive measures, the (post)colonial era has witnessed a combination of coercive and non-coercive measures. Through these shifts, the study notes a new configuration of power, knowledge, and subjectivity in the historical present. That brings to the fore power/knowledge relations associated with colonial and global discourses that influence environmental and policy processes. The decolonial genealogy reveals that the modern environmental subject in the historical present of Zambia is deeply connected to ongoing shifts in environmental governance. The study thus contributes by bringing to the fore issues of whose truth, whose power and whose subjectivity holds the sway in modern environmental governance and curricula.

Limitation and direction for further research

The question of 'decolonising the curriculum' is an important aspect of fostering HEd towards sustainability. At the close of this study, I have come to understand the research questions in greater depth, and thus, see ways in which this study is subject to limitations and also where it prompts new questions to explore in future research. A limitation of this study is that it focused on the first step of decolonisation which simply recognises ongoing power imbalances in how modern environmental governance and HEd EE are understood, produced, and used. This thesis revealed the 'dark side' of modern environmental governance and the HEd EE curriculum and how it is built on marginalising local power structures and erasing local ecological knowledges. Future studies can take this further by looking into how power structures in HEd EE curriculum making can be rethought to include local traditional leaders, and how absences and/or exclusions of Southern authors and local ecological knowledges can be addressed in the curriculum. In other words, future research should focus on actively committing to decoloniality by identifying ways of undoing power and epistemic imbalances within HEd EE and seek ways to include local traditional leaders and local ecological knowledges into HEd EE curriculum.

The study also focused on local traditional leaders, policy makers, NGO representatives and policy and curriculum documents. However, the insights and understanding of the need for including indigenous knowledges into the HEd EE curriculum by students would ensure greater contribution towards sustainability. An opportunity for further research concerns the views of students as recipients of curriculum knowledge on the implications and lack of indigenous knowledges in the curriculum. Further examination of perspectives of students about decolonisation would generate a deeper understanding of how multiple stakeholders constitute the 'problem' of human conduct and how their problematisations compare with one another.

Comparing students views and those of lecturers and policy makers and policy and curriculum documents would provide insights on problem representations, epistemicides and decolonisation efforts. Moreover, bringing practitioners and students' views into policy and curriculum research is important if curriculum and policy research are to play a genuine role in curriculum making processes and decolonisation efforts. However, while recognising the difficulties experienced by policymakers and lecturers operating within the performance of neoliberal-oriented education systems would require careful consideration of how to make student engagement in curriculum making meaningful and worthwhile.

8.2.3   Concluding Remarks

I leave from this project with a larger appreciation for the necessity of decolonising the HEd EE curriculum in the context of sustainability. I have taken lessons from the conversations I had with local traditional leaders, policy makers, lecturers, and NGO representatives that Zambia as a post-colonial country, having emerged from the violence of colonialism, finds itself once again subject to colonial reason which is as violent and dispossessive as it was in its previous articulation. The difference now is that technologies of power used in control of populations are not manifest in direct rule, but rather work through complex forms of environmental governance. The HEd EE curriculum as discussed above is one such technology of power that perpetuates violence. The question of what a curriculum is has been a topic of debate for decades and it continues today. However, in this study, I am not simply interested in what a curriculum is. Rather, I am interested in *what it does and might do.* Far from being innocent, the HEd EE curriculum is imbued in asymmetrical power relations that humanise one group while dehumanising the other. I have argued that the HEd EE curriculum an abyssal thinking that has power to select what counts as valid knowledge and what does not and what counts as environmental subjectivity and does not. Engaging in this thought experiment thus represents my struggles as a lecturer to engage in self-reflexivity concerning my entanglements in asymmetrical power relations in curriculum making and teaching. It involves questioning power and knowledge and becoming accountable for my epistemological ontological habits and advocating curriculum change that fosters sustainability. It is my way of dealing with epistemic and ontological hierarchies within the curriculum and to consider what this does to the knowledges and rationalities that have been marginalised or erased by the colonial power matrix. With this thesis, I seek to contribute to academic scholarship generally, but mainly to produce knowledge that enables lecturers to 'humanise' Othered subjects: namely the local traditional leaders that academia has long excluded

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APPENDIX 1: ETHICS APPROVAL

THE UNIVERSITY of ADELAIDE

Our reference 33585

18 April 2019

Associate Professor Julie Matthews
School of Education

Dear Associate Professor Matthews

ETHICS APPROVAL No:	H-2019-059
PROJECT TITLE:	Decolonising the cirriculum: Fostering sustainability in Higher Education in Zambia

The ethics application for the above project has been reviewed by the Low Risk Human Research Ethics Review Group (Faculty of Arts and Faculty of the Professions) and is deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research 2007 (Updated 2018)* involving no more than low risk for research participants.

You are authorised to commence your research on: 18/04/2019
The ethics expiry date for this project is: 30/04/2022

NAMED INVESTIGATORS:

Chief Investigator:	Associate Professor Julie Matthews
Student - Postgraduate Doctorate by Research (PhD):	Mutinta Sifelani Musindo

CONDITIONS OF APPROVAL: The application submitted on the 18th of April, 2019 has been accepted.

Ethics approval is granted for three years and is subject to satisfactory annual reporting. The form titled Annual Report on Project Status is to be used when reporting annual progress and project completion and can be downloaded at http://www.adelaide.edu.au/research-services/oreci/human/reporting/. Prior to expiry, ethics approval may be extended for a further period.

Participants in the study are to be given a copy of the information sheet and the signed consent form to retain. It is also a condition of approval that you immediately report anything which might warrant review of ethical approval including:

- serious or unexpected adverse effects on participants,
- previously unforeseen events which might affect continued ethical acceptability of the project,
- proposed changes to the protocol or project investigators; and
- the project is discontinued before the expected date of completion.

Yours sincerely,

Dr Jungho Suh
Convenor

Dr Anna Olijnyk
Convenor

The University of Adelaide

Invitation email for recruitment

My name is Mutinta Sifelani Musindo and I am a PhD student from the School of Education at the University of Adelaide in South Australia.

My research study "Decolonising the Curriculum: Fostering Sustainability in Higher Education in Zambia" concerns promoting environmental and sustainability education in higher education in Zambia through the inclusion of local knowledges that are appropriate and responsive to both local and national environmental and sustainability challenges. Please find attached the participant information sheet that gives more information about this research project.

I am looking for participants who are custodians of local knowledges/ are actively involved in promoting these knowledges/ are involved in environmental policy making and/or teach environmental education in your ministry/organisation/ institution and/ or department to take part in an audio recorded interview that will last between 45 minutes and one hour. Should any need arise, these participants will be invited to take part in a focus group discussion that will last an hour. The interviews will involve them discussing and sharing their thoughts regarding the importance, potential, challenges, and ways of including local knowledges in the curriculum of environmental and sustainability education will be conducted at their most convenient time and location (which will be public and quiet).

My study is supervised by Associate Professor Julie Matthews (Principal Supervisor) and Dr Robert Matthews (Co- Supervisor). Associate Professor Julie Matthews can be contacted on julie.matthews@adelaide.edu.au while Dr Robert Matthews can be contacted on robert.matthews@adelaide.edu.au. The use of email to recruit participants for this study has been approved by the HREC and I would be very grateful if you would link me to participants whose information is invaluable to this research.

Participation in this study is completely voluntary and participants may choose to be in the study or not. If they decide to participate in the study, they may withdraw at any stage (before

thesis submission in June 2021) or choose not to answer any questions. There will not be any repercussion if they decide to withdraw from the study or choose not to answer certain questions. Prior to being a participant, they will be asked to complete a consent form.

For those who will decide to participate, the researcher will make efforts to remove any personal information which might identify them as individuals. Their privacy will be protected at all stages.

Complete anonymity, however, cannot be guaranteed. Utmost precautionary measures, however, will be put in place to ensure that no personally identifying details are revealed.

For those who would like to participate or have any questions about the study, they may contact Ms. Mutinta Sifelani Musindo at through email at mutinta.musindo@adelaide.edu.au.

Thank you very much.

Sincerely,

Mutinta Sifelani Musindo

APPENDIX 3: PARTICIPANT INFORMATION SHEET

PARTICIPANT INFORMATION SHEET

PROJECT TITLE: Decolonising the curriculum: Fostering sustainability in Higher Education in Zambia

PRINCIPAL INVESTIGATOR: Associate Professor Julie Matthews

STUDENT RESEARCHER: Ms. Mutinta Sifelani Musindo

STUDENT'S DEGREE: PhD

Dear Participant,

You are invited to participate in the research project described below.

What is the project about?

This research project aims to advance environmental and sustainability education (ESE) in Zambian universities. The study seeks to facilitate the inclusion of knowledges appropriate and responsive to local and national environmental and sustainability challenges in Zambia. It will adopt a decolonial methodology to undertake a critical analysis of curriculum knowledge, pedagogical practices and epistemological foundation of the current ESE in Zambian higher education.

Who is undertaking the project?

This project is being conducted by Ms. Mutinta Sifelani Musindo; a PhD candidate of the University of Adelaide, South Australia. This research will form the basis for the degree of Doctor of Philosophy at the University of Adelaide under the supervision of Associate Professor Julie Matthews (Principal Supervisor) and Dr. Robert Matthews (Co-supervisor).

Why am I being invited to participate?

You are being invited to participate in this research as you are any of the following:

- a lecturer of environmental and sustainability education in a public university
- a curriculum developer
- a local (traditional) leader
- a representative of a Non- Governmental Organization that is involved in environmental and sustainability issues.

What am I being invited to do?

You are being invited to:

- Participate in a single audio-recorder interview that will last a maximum of one hour.
- Provide, discuss, and/or share your thoughts, information regarding the importance, potential, challenges, and ways for including local knowledges in the curriculum of environmental and sustainability education in higher education

How much time will my involvement in the project take?

The interview will take between 45 minutes and one hour. If need be, you may be required to participate in a follow-up interview or focus group discussion. The time and venue of the interview will be agreed upon by both the researcher and participant. The venue agreed upon should be in a public, quiet and safe place.

Are there any risks associated with participating in this project?

There are no foreseeable risks other than those associated with the regular interview process. However, should you feel discomforts, inconveniences and restrictions, both immediate and later, you will be able to stop the interview at any time, take a break from the interview or withdraw from the study.

An anticipated risk is that total anonymity cannot be guaranteed as the sample size is sample. However, care will be taken to ensure that no personally identifying details are revealed in order to reduce the risk of identification.

What are the potential benefits of the research project?

As a participant, you will have no direct benefit. However, educational community and the environmental and sustainability education department in particular may benefit as the research may generate both a theoretical and practical understanding able to advance the inclusion of relevant local knowledges into the environmental and sustainability education curriculum.

Can I withdraw from the project?

Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time. However, you can only withdraw from the study before the submission of the thesis.

What will happen to my information?

The identity of the participants will be treated in the strictest confidentiality during the research process. As a participant, you will be given a pseudonym to protect your identity. All identifying content in the data will be removed or changed (where applicable) to protect identity. Further, all your information will be stored in the strictest confidentiality on the University of Adelaide database during the entire research time. The data you give will only be used for academic purpose only and the result will be reported in the PhD thesis, journal articles and conference proceedings.

Your information will only be used as described in this participant information sheet and it will only be disclosed according to the consent provided, except as required by law.

Who do I contact if I have questions about the project?

Name, Title	Telephone Number	Email Address
Associate Professor Julie Matthews	+61883131561	Julie.matthews@adelaide.edu.au
Dr Robert Matthews	+6183130488	robert.matthews@adelaide.edu.au
Ms. Mutinta Sifelani Musindo	+61422564996	Mutinta.musindo@adelaide.edu.au

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2018-059). This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (2007). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. If you wish to speak with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:

Phone: +61 8 8313 6028

Email: hrec@adelaide.edu.au

Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If I want to participate, what do I do?

If you would like to participate in this research, please contact the researcher. The researcher will provide you with the consent form to be signed and returned to the researcher. You will be given a copy of the consent form for this information and for your personal documentation.

Yours sincerely,
Associate Professor Julie Matthews- **Principal Supervisor**
Dr Robert Matthews- **Co-Supervisor**
Ms. Mutinta Sifelani Musindo- **Researcher**

**THE UNIVERSITY
of ADELAIDE**

Human Research Ethics Committee (HREC)

CONSENT FORM

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Decolonising the curriculum: Fostering sustainability in Higher Education in Zambia
Ethics Approval Number:	H-2019-059

2. I have had the project, so far as it affects me, and the potential risks and burdens fully explained to my satisfaction by the research worker. I have had the opportunity to ask any questions I may have about the project and my participation. My consent is given freely.

3. Although I understand the purpose of the research project, it has also been explained that my involvement may not be of any benefit to me.

4. I agree to participate in the activities outlined in the participant information sheet.

5. I agree to be audio recorded. ☐ Yes ☐ No

6. I understand that I am free to withdraw from the project at any time before June 2021.

7. I have been informed that the information gained in the project will be accessed publicly as a PhD dissertation, conference paper and /or article.

8. I have been informed that in the published materials I will not be identified and my personal results will not be divulged.

9. I agree to my information being used for future research purposes as follows:
   - Research undertaken by these same researcher(s) Yes ☐ No ☐
   - Related research undertaken by any researcher(s) Yes ☐ No ☐

Version 1 Date: 01/01/2019

10. I understand my information will only be disclosed according to the consent provided, except where disclosure is required by law.

11. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: _____ Signature:_____ Date:_____

Researcher/Witness to complete:

I have described the nature of the research to _____

(print name of participant)

and in my opinion she/he understood the explanation.

Signature: _____ Position:_____ Date:_____

Indigenous diagnoses of climatic changes

Scientific Name	Local Name	Behaviour of Species	Announced Forecast
Bird Species			
Corvus	Mwankole/ Bemba Lukumba/ Tonga Crow/English	Eggs in nest	Rains will not start until eggs hatch
Insect Species			
Lampyridae	Tumonyimonyi/ Lozi Fireflies/English	Abundant presence	Availability of water Excellent rainfall
Gonimbrasia belina	Mopane worms/ English Vinkubala/Nyanja Ifishimu/Bemba	Abundant presence	Onset of rains More rains
	Nakampelele	Presence	Onset of rains
Tree Species			
Acacia galpini	Acacia/ English	Abundant flowers	Good rains
Adansonai digitata	Baobab/ English Mubuyu/ Tonga	Abundant fruit	Less to no rainfall
Trichilia emetica	Musikili/ Tonga	Abundant fruit	Low rainfall to drought
Ficus Sycomourous	Mukuyu/Tonga Fig tree/English		
Afzelia Quanzesis	Mupaap/Bemba, Kaonde Mwande/ Lunda, Lozi	First to bloom No leaves Green leaves	Onset of the rains Rains won't come Rains are coming, prepare the fields
Uapaca kirkiana	Masuku/ Bemba, Tonga Lozi/ Muhaka Kabofa/ Lunda Wild Loquat/ English	Abundant fruit	Good rains
Parinari	Mupundu/ Bemba	Abundant Fruits	Poor rains Drought
Agaricus Bisporous	Bowa/bemba, Nyanja, Tonga	Abundance	Good rainfall distribution
	Musekese/ Tonga	Abundance	Less rainfall to drought
Wind			
	Whirl wind/English Tukundukundu/Lozi	Frequent occurrence Major whirlwinds	Good rainfall

APPENDIX 6: FIVE FACES OF INDIGENOUS KNOWLEDGE

The five faces of Indigenous Knowledge
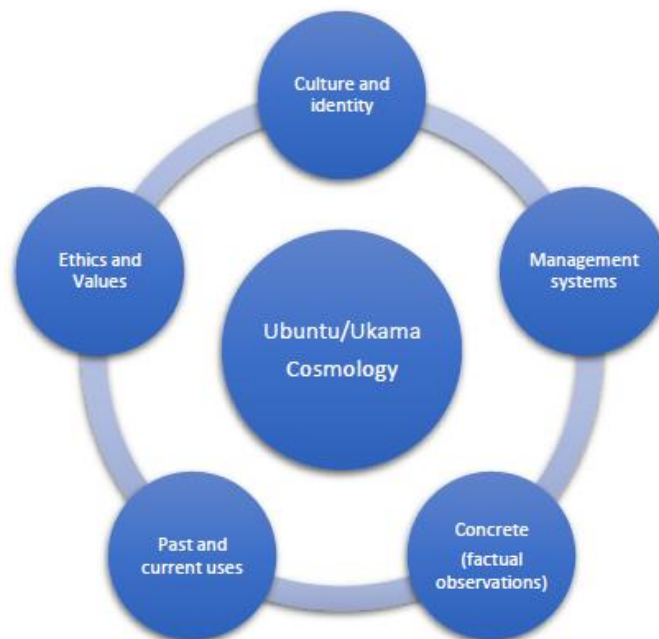
APPENDIX 7: ENVIRONMENTAL EDUCATION PROGRAM RATIONAL

1. PROGRAMME AIMS AND OBJECTIVES

2.1 Introduction

The environmental education movement around the world has evolved over many years. In the more recent past, various international conferences have espoused the need for sustaining responsible and professional awareness about the environment. The most popular of these include the 1977 Tbilisi Conference and the 1992 Rio de Janeiro Conference. Agenda item 21 of the Rio Conference provides a major action programme setting out what nations should do to achieve sustainable development in the 21st century and how to deal with environmental problems such as climate change, deforestation, desertification, drought, toxic wastes, and so on. Recently, the World Summit which met in Johannesburg in the year 2002 also highlighted the need for environmental education among the global nations.

Though progress in introducing environmental education in the formal and non formal education system has been slow in Zambia, several actions have been taken towards realizing the dream. The National Conservation Strategy was adopted in 1985 and the Ministry of Environment, Natural Resources and Tourism and the Environmental Council of Zambia (now the Zambia Environmental Management Agency) were established. Furthermore, ahead of most sub-regional countries in Southern Africa, the University of Zambia has introduced a course in Environmental Education at Masters and doctoral Levels, which are fast becoming popular to applicants while a diploma programme is yet to be devised for the Teacher Education Colleges in Zambia.

2.2 Rationale

Zambia faces various environmental problems, which are a source of concern both locally and internationally. These problems include, for instance, deforestation, land and water degradation, unsustainable use of human and natural resources as well as heaps of garbage and loss of biodiversity. The chief response to these problems is education: education to reach child and adult actors about the need to operate in the environment sustainably. Unfortunately, educational skills for such a response are not widely available in Zambia today. It is for this reason that various organisations in the country had advocated for Environmental Education and for relevant human resource to be developed for the field and hence, this programme.

The National Environmental Action Plan (NEAP) in 1994 recommended "incorporating environmental education into existing school curriculum and technical and University teacher training programmes." The National Environmental Education Workshop for Zambia in 1999 also expressed the need for a local postgraduate degree in Environmental Education. Following these recommendations, the Master of Education degree programme in Environmental Education was started at UNZA in the year 2002. More recently, at various meetings held in Lusaka by concerned stakeholders, the possibility of a diploma programme in Environmental Education for Teacher Training Colleges was debated, agreed upon and now there is every indication that this programme may soon take-off. With the development of the Masters degree programme at UNZA and the certainty of a Diploma course in environmental education at Colleges of Education, the absence of a first degree programme created a glaring vacuum. This programme is intended to fill that gap.

The need for the programme is vast. Many institutions today are required to have environmental education officers or Environmental Education Coordinators and, currently in Zambia, many such officers lack a first degree in the field. This includes all institutions of learning from schools, colleges to universities.

2.3 Aims of the Programme

The Bachelor of Education (Environmental Education) degree programme seeks to provide educational knowledge, skills and values to educational personnel serving or intending to join institutions which deal with child and adult learners in the environment. These include teachers of high schools and other education officers operating in institutions with an environmental bias

2.4 Objectives of the Programme

This programme will achieve this by:
> a)coordinating various interdisciplinary skills, knowledge and methods from various disciplines in the University needed for effective environmental education
>
> b)facilitating research and application of knowledge to the educational solution of practical environmental problems.
>
> c)equipping students with the knowledge of the use of variety of teaching-learning methods and resources relevant to a given environmental situation.

APPENDIX 8: ZAMBIAN CLIMATIC CHANGES OVERTIME

Libanda et al (2019)