

CHAPTER ONE: INTRODUCTION

1.0 Background

Although human beings develop in different ways, one general aim of the desired result of this development is that it must be positive and productive both for the individual and for others. Over the years, human beings have sought ways of achieving an all-round development to better understand themselves, their immediate environment and the world around them. Education is and remains one of the essential media for development at individual, communal, national and worldwide levels. This is clearly due to the fact that education develops critical thinking and opens one to economic, political, social and cultural dimensions of life. It also ensures that one will be more pragmatic and less impulsive in facing situations that require analysis and application to life experiences than would be the case without such education.

Environmental issues today affect everyone on the planet and they have in the long run raised many ethical issues that sometimes go unnoticed and unattended. Failure to notice or attend to ethical issues in the environment constitutes a problem in that this global problem affects different countries at different levels. However, some of the environmental challenges remain the same for many countries and, in addressing these environmental issues, world fora have been held in various parts of the world to address and provide insights to political leaders on different environmental problems. Globally, the summits and conferences held in different parts of the world were designed to address different environmental issues unfolding across the globe. The Stockholm Conference in 1972 opened the way for other subsequent summits and conferences on the environment leading to the

International Union for the Conservation of Nature (IUCN) in 1991. A follow up on the Stockholm Conference held in Rio de Janeiro in Brazil in 1992 called the United Nations Conference on Environment and Development (UNCED) marked the 20th anniversary of the Stockholm Conference. Other notable developments include the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, the Kyoto Protocol in 1997, the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 which was the 10th anniversary of the Rio Conference, and the much criticized Copenhagen Conference in Denmark which clearly failed to live up to expectations. Following the Cancun Conference in Mexico, South America in 2010, the latest conference was held in Durban, South Africa, in 2011. Many nations were present at these conferences and summits and were represented by the heads of states or their representatives and, depending on what was on the agenda, many nations agreed to the conclusions by signing to them although target dates were usually not set.

In Zambia, the environmental situation can be viewed at two levels, namely, the international level and the national or local level. It is important to note that, like many other countries, Zambia has continued to be party to the many global conferences and summits on the environment and it has committed itself to agreements and treaties that are considered beneficial to the country and to the African continent as a whole. While it is clear that different nations are experiencing the effects of climate change at different levels, what is common to all these countries is that the challenge is global and is increasingly manifesting its effects on planet earth. Without appropriate steps to mitigate these effects, the world will continuously have to brace itself for much worse challenges. In 2004, Klaus Topfer, the

United Nations Environment Programme (UNEP) Executive Director echoed this caution when he noted that we are living in a period in which the various social partners are re-evaluating their contribution to sustainable development. He emphasized that all affected parties need to be drawn into a common policy of safeguarding our communities and our environment from the risks which modern society inevitably presents. Hence, a consultative, preventive approach can be the only rational basis for building a sustainable future. As environmental global systems are a series of dynamic and interconnected processes changing and interacting over time, no country is an island when it comes to issues concerning the environment. People in any given country are enabled to appreciate such issues through an education system that avails adequate information which will enhance people's understanding of their interconnectedness with the natural environment.

Education in Zambia takes place on two levels, the formal and the non-formal. Formal education is a system of formal teaching and learning as conducted through schools and other institutions. The Ministry of Education (MoE) has control over most of the learning institutions in the country. As such the Ministry, through the Curriculum Development Centre (CDC), devises different curricula and syllabi for all teaching. It thus ensures that environmental education is disseminated in formally structured subject areas. In the formal education provided by the Ministry, there is an effort to have the area of environmental education brought to the attention of learners, although only in a very limited way. From the contents of the various subject syllabi, environmental education has stood out only in mainline subjects like geography, biology and probably environmental science at junior secondary level, clearly giving limited information to pupils. In addition to this, the

education material in these syllabi, as in other subjects, is purely academic and aimed only at improving the intellectual capacity of pupils. It is however, unclear, whether and to what extent an explicit ethical dimension is present, if at all.

In the non-formal sector of education the Ministry of Tourism, Environment and Natural Resources, through the Environmental Council of Zambia, now the Zambia Environmental Management Agency, (ZEMA) has a large role to play in educating citizens on the environment. Through various channels like the media, the newspapers and magazines, ZEMA champions awareness about the environment and tries to highlight why citizens should realize the importance of the environment. This kind of information dissemination has achieved a huge success in informing a majority of the Zambian citizenry with regard to issues pertaining to the environment, especially those who are not in formal schools and institutions. These informal ways of disseminating information help in getting people to understand the environmental challenges facing humankind in the 21st century, both at a global and a national level. As the informal and non formal sectors share similar characteristics, the study has referred to the informal sector through the non formal sector.

1.1 Statement of the problem

Lack of personal interest in issues concerning the environment, even amongst the elite and the learned population, has caused considerable concern over the years. The exclusive economic approach of perceiving the environment as no more than a reservoir of natural wealth aimed at merely improving the welfare of human beings only highlights the dire need for personal responsibility in respecting the value of the environment.

Issues concerning how human beings should act towards the environment are of prime importance because such actions do not necessarily result from knowledge alone. The fact that there is environmental education does not automatically ensure right behaviour.

The society has continued to witness problems that are as a result of environmental degradation despite the onset of environmental education. Careless disposal of litter and waste, ruthless cutting down of trees for economic reasons, unsustainable methods of hunting and fishing reflect a dire situation. This does not just reflect lack of knowledge about the consequences of such actions but it is largely an issue of attitude brought about by lack of the ethical dimension. As there is currently little explicit ethical awareness among citizens in Zambia about environmental issues, there is a need for an ethical dimension to be built into the current environmental education system.

1.2 Operational definition of terms

Environmental education: this refers to the formal and non-formal processes and institutions by which knowledge about the natural environment is conveyed to pupils and adults.

An environmental ethical component: this refers to environmental ethical theories (i.e. Gaia, Deep Ecology and the Land Ethic) which help to inculcate and heighten an awareness of moral values with specific reference to the natural environment.

Explicit: this refers to the fact that even though an ethical component may be implicit in environmental studies, it is not adequately emphasized in a systematic way in order for it to be fully appreciated.

1.3 Aim of the study

The primary aim of the study was to highlight the need for an explicit environmental ethical component in the environmental education system of Zambia. By assessing the need for an explicit ethical component in environmental education in Zambia, this study endeavoured to highlight the importance of the ethical dimension in developing an ethical consciousness that would hopefully translate into a sound human relationship with the natural environment. The researcher entered into this study on the assumption that environmental education in the country had not been adequately promoted and that the lack of an explicit ethical component limited the effectiveness of such a programme.

1.4 Research objectives

The research objectives were as follows:

1. To discuss the current state of environmental education both formal and non-formal in Zambia.
2. To establish whether or not and to what extent there was any explicit environmental ethical component built into the education system in Zambia.
3. To investigate the extent to which the formal and non-formal education sectors in Zambia were promoting environmental ethics.
4. To assess the relevance of environmental ethical theories to environmental education in Zambia.
5. To make recommendations on how the ethical dimension could be more explicitly included in the Zambian education system.

1.5 Research questions

1. What is the current state of environmental education, both formal and non-formal in Zambia?
2. Is there any explicit environmental ethical component built into the education system in Zambia?
3. To what extent are the formal and non-formal educational sectors in Zambia promoting environmental ethics?
4. How relevant are environmental ethical theories to environmental education in Zambia?
5. What recommendations can be made on how the ethical dimension can be more explicitly included in the Zambian education system?

1.6 Methodology

The methodology of this research is a mixture of quantitative and qualitative approaches coupled with an ethical component. In the formal sector, primary data was obtained by the use of in-depth interviews, a semi-structured questionnaire, a structured questionnaire, and non-participant observation. Secondary data was collected from relevant books, newspapers, articles, documents from different libraries, including the University of Zambia library, and the internet.

1.7 Theoretical framework

In this study, the ethical theoretical framework adopted by the researcher will involve value theory and the related theory of respect for the natural environment which underlie the environmental ethical perspectives of Gaia, Deep Ecology and the Land Ethic.

1.8 Ethical issues

In conducting interviews and the collection of data, the researcher assured participants that the information was purely for academic purposes and that confidentiality would be maintained. Voluntary consent was obtained from participants. Permission was also obtained from the gatekeepers where necessary.

1.9 Significance of the study

Without a moral thrust, formal and non-formal education alone regarding environmental issues in Zambia may have little practical effect in motivating individuals to protect the environment. Therefore, if environmental education is to be translated into action and be relevant to citizens today and to those of future generations, there will be need to provide a framework of education in both formal and non-formal approaches when handling issues regarding the environment that will have a built-in component of ethical awareness.

By highlighting the need to cultivate an awareness of values, Zambian pupils and citizens will be motivated to consider the precarious plight of the environment from an ethical perspective. It is hoped that the study will cause government to intensify environmental awareness programmes aimed at making citizens more aware of the need to exercise greater personal responsibility towards the environment. This will make easier work by the local councils and more so non-governmental organizations like WWF will benefit by receiving a positive feedback on their environmental programmes.

1.10 Delimitations

This study did not cover all formal educational institutions that reflect environmental education in their academic programmes but restricted itself to selected institutions in Lusaka, Kabwe, Kitwe and Solwezi. As such, the information gathered was generalized to reflect that of the whole country. Furthermore, only government run schools, and not private schools were being considered.

1.11 Limitations

The study did not cover all the provinces due to inadequate financial resources and time. In the process of data collection, government bureaucracies presented unnecessary delays in accessing the relevant officers who were frequently out of the office or difficult to meet. The busy schedules of the students in colleges also caused delays in holding meetings and, in some institutions, such as at Nkrumah College of Education, the absence of a number of lecturers caused the researcher to have to reschedule some appointments.

1.12 Summary

This chapter has provided a brief historical background to international summits and conferences on the environment, and with specific reference to education in Zambia. Formal and non-formal education sectors were distinguished. The statement of the problem, the aim of the study, research objectives and questions, the theoretical framework, ethical issues, significance of the study delimitations and limitation were then given.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

In this chapter, relevant literature to environmental education and environmental ethics will be reviewed to assist in understanding the study. The chapter will make reference to the global world view in addition to the regional and the national scenarios with regard to environmental education and how this area of knowledge is being perceived to enable it to be relevant to the environmental challenges that countries world over are experiencing. The discipline of environmental ethics can be traced to the 18th and 19th centuries when the area of ethics was still understood in the context of human beings. With the ever increasing environmental degradation and the danger of extinction of large numbers of different species, environmental ethicists have long begun voicing out their concern regarding the plight of the environment and calling for the need for it to be accorded moral standing. Thus the role and place of environmental ethics in a study such as this is anchored on the need for an extension of moral consideration in the way human beings treat the natural environment. While by classical accounts, ethics is people relating to people in justice and love, others hold that beyond inter human concerns, values are at stake when humans relate to animals, plants, species and ecosystems. According to their vision, humans ought to find nature sometimes morally considerable in itself and this turns ethics in new directions. Environmental ethics starts with human concerns for a quality environment and some think this shapes the ethic from start to finish.

2.1 The Global Context

Worldwide environmental issues have dominated the scene for many years which have caused industrialized countries to make huge legislative recommendations on how the environment can best be protected and managed. However, more important is the realization by many countries of the need to involve everyone in this effort to promote environmental awareness and to lay out action oriented programmes aimed at enhancing the legitimacy of this cause. This is being done through various methods of awareness, the obvious one being through the education system which accounts for formally structured programmes of learning. Another one includes non-formal education where ordinary people are made aware of environmental issues through various methods which include newspapers and the other media of communication.

India, for instance, is one country that has advanced the cause of environmental education at grassroots level of education in order to help learners to grow up appreciating the environment from the earliest stage in life. This is effectively executed from a classroom through the commitment of the leaders in promoting environmental education at this stage (Panneerselvam and Ramakrishnan, 2005). This commitment was shown during the inauguration of the second International Conference on Environmental Education in New Delhi on 4th March 1986, when Mr. R. Venkataraman, the former president of India, recommended the introduction of environmental education at the primary school level in order to instil a true love for nature in children and to develop an awareness and appreciation of renewable natural resources, land use patterns and soil conservation in students.

Apart from India, other countries world over have also realized the importance of a transformative environmental education. Given the many international conferences held, it is evident that the world is facing a common cause on issues relating to the environment. Thus, many nations have ensured that there is enough attention given to environmental matters which have even gone beyond information dissemination to citizens. This explains why various governments are asking citizens to exhibit moral *character* that goes beyond the ability of knowing about the environment towards attaching huge importance to the environment. Pergamon (2002: 9) notes that “the absence of an environmental ethic in the Euro American conquest-of-Nature mindset has resulted in a civilization that consumes the Earth and other species with little concern”. This mindset is very destructive and anthropocentric because it does not just ignore the value of the biotic community but also exploits nature for the sake of development. In other words, it is centred only on human interests. Global pollution and mass destruction of species are generally not recognized as evils by modern Euro American-based cultures.

In Peru, South America, the curriculum developers developed a document called, *‘Environmental Ethics and Sustainability Learning Spaces: Curriculum, Guidelines, Pedagogical practices, Reading and Suggested Ideas’*, in which the curriculum is organized into environmental ethics and sustainable learning spaces. This programme is intended to aid Peru’s public primary education teachers to teach both the theory and practice of environment sustainability and ethics to the first cycle students.

Different countries are engaging in programmes that promote an ethical approach to teaching and learning about the environment. According to a report on education for sustainable development, educators in South Africa have made this approach more practical by using the Earth Charter which provides a framework for ethics and emphasizes values required for achieving sustainable development and a sound and relevant environmental education (SADC, ESD Report 4, 2006).

In researches carried out in Peyton and Hungerford in the UK aimed at determining the attitudes of teachers and pupils towards the environment, it was noted that middle level students who were allowed to develop and apply the knowledge and skills reflected in the environmental appreciation courses, initiated and participated in responsible environmental behaviours to a greater degree than students who had experienced awareness oriented instruction only (UNESCO, 1994: 7). Thus, inasmuch as environmental education will deliver knowledge on a given issue, it may still lack the ethical dimension to motivate students regarding issues that pertain to responsible care for the environment. This is because the willingness to participate in environmental friendly behaviour requires more than just information about facts.

2.2 The Zambian Environmental Education Framework

In Zambia, dissemination of information about the environment has a pattern that starts with the government and other non-governmental organisations and trickles down to the ordinary citizen through both the formal and the non-formal education sector. While informal education has not been directly dealt with, the non-formal education in this study has

included elements that highlight the situation in the informal education sector. Provision of this information in the country has many stakeholders which include the learning institutions, the media and the legislative bodies. Figure 1 below gives a conceptual framework of the environmental education picture used by the researcher in this study.

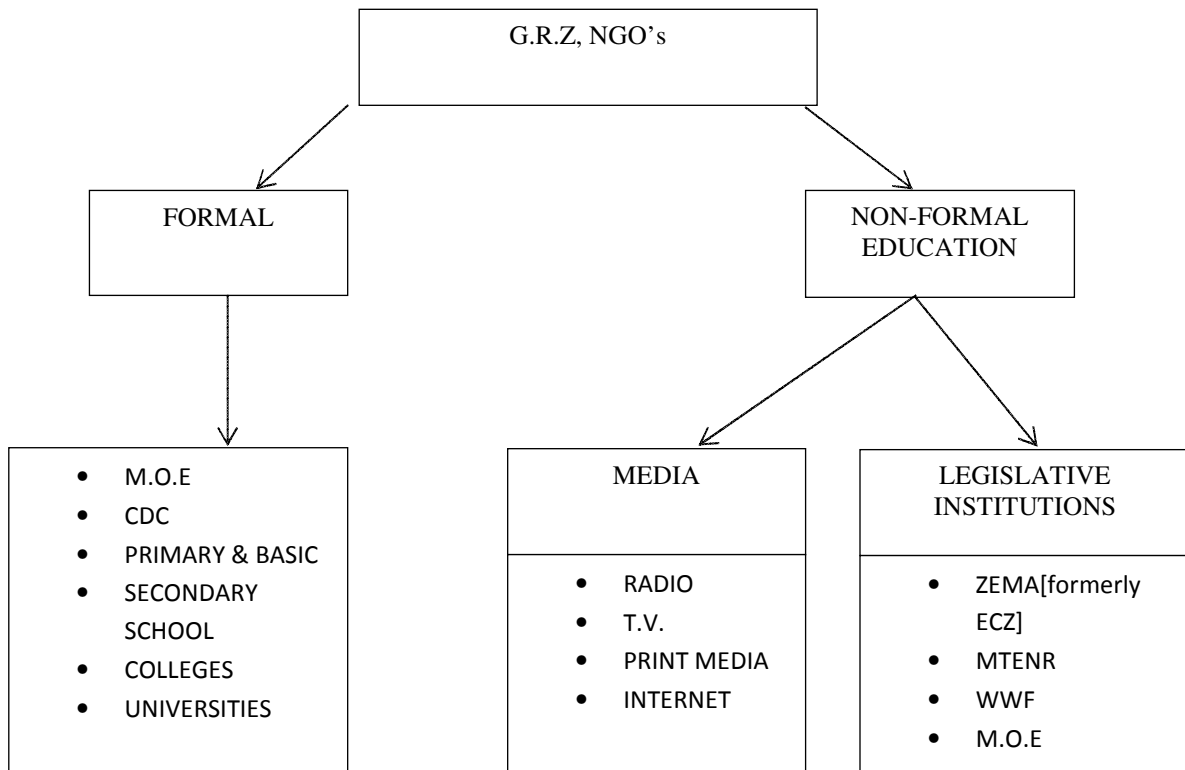


Figure 1. Conceptual framework of environmental education in Zambia.

Source: (Field Data, 2012.)

The environmental framework in Zambia is a product of many years of skepticism with regard to environmental issues which once were not ever thought to present challenges to a country like ours, let alone to the world at large. The origins of concern for the environment in Zambia, and for the outstanding wealth of its natural resources set in a rich and cultural

setting, go back to the early indigenous systems when there was little or no concrete threat to the depletion of various natural resources. Currently, however, there are over thirty-three (33) sets of legislation affecting the environment, much of which is inadequate. Although Zambia has a dualistic legal framework (customary and constitutional framework) and is a signatory to more than twenty-one international conventions on the environment, it is only recent that the need for an institutional arrangement or policy mandate for collaboration over these issues of national importance has been realized.

Among the many international and regional conferences that have influenced the environmental outlook of the country, and at which Zambia has been represented, are The Rio Conference in Brazil in 1992 and the Johannesburg Summit in South Africa, in 2002. Recently the country also provided representation at other summits and conferences including the Durban conference in South Africa in 2011.

As a result of the environmental policies put forward and agreed upon at these international conferences, individual countries draw up their national or local policies. At national level, government policies in Zambia are based on two main documents which are the National Conservation Strategy (NCS) of 1985 which was a follow up to the World Conservation Strategy (WCS) of 1980 and which was prepared by the International Union for the Conservation of Nature (IUCN). In 1990 the Environmental Protection and Pollution Control Act number 12 (amended in 1999) was approved as the principal law relating to environmental issues in Zambia (MTENR, 2005: ii). This was supplemented by the National

Environmental Action Plan of 1994 which would help to carry through the implementation of environmental conservation and development.

With the approval of the Environmental Protection and Pollution Control Act (EPPCA) of 1990, which is the principal Act on environment management in Zambia, the Environmental Council of Zambia was established in 1994 whose aim was to provide the legislative base for environmental issues. These documents have continuously been reviewed locally and, based on them; new complimentary documents have been drawn up, for example, the National Policy on the Environment of 2005 and the recent Environmental Management Bill of 2010. These have attempted to provide a wider framework on government policies regarding the environment.

In order to reflect compliance with international agreements and striving to achieve various development goals, the government realized that “using the Millennium Development Goals as a guideline, the National Policy on Environment covers the socio-economic and environmental issues as follows: Introduction of effective environmental education and communication nationwide” (MTENR, 2006: 6). Admittedly these policy documents are designed to embrace a wider scope of issues pertaining to the environment and they reflect the extent to which the government is exhibiting its commitment in laying down the required legal statutes to protect the environment.

But when it comes to dealing with individual compliance to these legislation guidelines, the government is limited in determining effective observation of these laws. This clearly calls

for personal commitment regarding the duties a person needs to exhibit towards the environment. That is why government needs to assist those students going through the environmental education system by designing the curriculum in such a way that it can explicitly reflect an ethical component to help reinforce the commitment that citizens need to have.

This concern was well sounded by the late Mr Kafumukache, the then Hon. Minister of Environment, Tourism and Natural Resources when he noted that “the greatest challenge will be for all citizens to willingly embrace the National Policy on Environment and work together to its successful implementation for the benefit of present and future generations” (MTENR, 2005: iii-iv). Responding to this challenge may require not only knowledge about the natural environment but the ethical motivation to act responsibly. However, this seems to be lacking in the current education system in both the formal and non-formal sectors.

The main aim of these documents was to allow basic human needs to be met without victimizing the environment. In other words, they encouraged sustainable environmental usage. However, recent technologies are not entirely good for third world countries including Zambia and, in addition to this, local policies that exclude the underprivileged in the nation have led to degradation of the environment. In conforming to the many conferences the country has attended, the government through the National Policy on Environment (2007) has embarked on development policies aimed at exhibiting its commitment to some of the resolutions at these meetings. This has been done through various policies and other initiatives which have received government backing and funding

through MTENR and the Environmental Council of Zambia (now, ZEMA). Following its establishment, the Council was mandated to oversee the welfare of the environment and to attend to issues pertaining to the environment in line with the laid down policies.

The national environmental framework had been operating in conformity with the Fifth National Development Plan (FNDP), 2006-2010. In the foreword to the State of Environment Outlook Report (2008), the Minister of Tourism, Environment and Natural Resources observed that:

The FNDP is an important vehicle towards the realization of vision 2030 in which government has articulated long term development objectives and identified a number of development goals. Improved environmental management at the local level will enhance the participation of those whose livelihoods are dependent upon the sustainable management of renewable natural resource (2008: ii).

The importance of this document lies in guiding all stakeholders and government departments to put in place work programmes that will reflect compliance with the planned for objectives, especially with regard to the natural environment.

2.3 Environmental Education in Zambia

Education is a system of formal teaching and learning conducted through schools and other learning institutions. It can also be understood as the imparting and acquiring of knowledge through teaching and learning especially at a school or similar institution. The word 'education' may have many individual definitions, but it originates from a Latin word "educō" which means 'to draw out'. The underlying purpose of education, then, is to enable the student to be actively involved in the learning process by drawing out the students' personal reflection on the matter in question. This means eliciting from the student a

reaction given on both the cognitive and moral dimensions. Hence, memory work is not the goal of education.

Education can be considered at two levels and divided between formal and non-formal education. Formal education is that kind of learning which takes place in structured institutions like schools, colleges and universities. A formally structured curriculum is designed and tailored to introduce the learner to the details of the pursued area of study for the main purpose of empowering the learner, and largely preparing him/her for the world of work. In Zambia, the format and context of education is provided by the government through the Ministry of Education, with the private sector and non-governmental organizations acting as stakeholders and partners in the provision of this service.

Non-formal education on the other hand refers to that kind of knowledge that is acquired through experience from general literature from the relevant government departments, non-governmental organizations, the civil society and the communications media. With reference to environmental issues especially, there have been remarkable improvements. “Evidence that points to an increase in environmental awareness includes increase in articles on environmental issues in the print media; number of programmes aired on radio and television; inclusion of environmental issues in curricula in training courses for journalists ” (ECZ, 2000: 156). For instance, the print media have attempted to involve the general public in issues concerning the environment through articles and public statements on environmental issues. The general public is thus encouraged to participate and learn about the subject, although this participation might be limited to the highly educated and socially well established. While the majority of the elements under the informal sector of education

have been reflected under the non formal sector it is worth to note that this kind of education can be described as the exchange of information through word of mouth and information got from public sensitization programmes.

Government has emphasized the need to include various dimensions in the education of citizens on the environment. It recommended the development of “a national plan for carrying out public awareness by increasing the scope of the existing environmental education and public awareness programme through non-formal, informal and formal environmental education programmes” (MTENR, 2005: 32). However, the existing framework of education is largely intellectually based and does little to appeal to moral responsibilities. It is this exclusively knowledge based mindset that may not encourage people to apply their moral awareness towards a very vulnerable environment.

Education in general provides a framework in which an individual develops in different areas of life. There are two dimensions involved in education. The first and the most common type of educational development is the dimension that develops the capacity for knowledge and reasoning in the learner. Here there is a focus on developing the level of intelligence which translates into enabling a human being to understand aspects about a wide range of things. But besides this level, there is also another dimension of what education can be hoped to be “drawn out” of a human being, namely, the element of moral or ethical awareness with regard to many issues that the learner covers, including issues relating to the environment in the country. A combination of these two dimensions is critically important in the field of environmental education, as indeed in other fields as well.

Education should not limit the learner to developing the intelligence level only but should bring about a development of moral awareness that can help to form a responsible character. That is why the aim of basic education, as enshrined in the National Policy on Education MoE (1996: 29) is stated as follows: “The overarching aim of school education, therefore, is to promote the full and well rounded development of the physical, intellectual, social, affective, *moral and spiritual qualities* of all pupils so that each can develop into a complete person, for his or her own personal fulfilment and the good of society” (my italics). It is unclear however, to what extent the school curriculum succeeds in developing the ethical dimension.

For a long time, environmental education has always awakened in human beings the knowledge that the environment they have is basically a reservoir of natural wealth that will improve the quality of life of human beings. Unfortunately these mindsets present in the various dimensions of education in Zambia. Whether formal or non-formal, education is the fountain of knowledge. It plays a critical role in almost every aspect of life, including the wellbeing of the nation. An educated nation is a developing country.

The education given to citizens in a particular country determines the way citizens understand issues that affect them. It enables them to understand and be in tune with government policies in a better way than when there is absence of education. Kelbessa (2005:17) states: “African indigenous traditions, like those of North American first peoples, contain ethical messages that are passed from generation to generation to ensure respect for

other living creatures”. However, these traditions may not be adequately passed on today as the present approach to teaching environmental ethics seems to be largely dependent on individual teachers who might be personally interested in issues to do with the environment.

Environmental education may not be adequately transformative if we don't give it a solid ethical foundation. The Tbilisi Declaration indicates that environmental education should encourage those ethical values which will further the development of conduct compatible with the preservation and improvement of the environment (UNESCO, 1978). Unfortunately, the economic mindset of people which has dominated the approach to the environment fails to express a proper appreciation and respect towards the environment itself. Wilson (1992: 6) has thus noted the need for ethics:

No intellectual vice is more crippling than defiantly self-indulgent anthropocentrism. The principal task for humanity is to apply biological constraints on decision making, and apply cultural evolution to biological evolution to create a 'biology of ethics'. The result will be a more deeply understood and enduring code of moral values.

Intellectual knowledge alone about the environment acquired through a formal education system in the current school syllabi seems to provide little ethical foundation for morally aware individuals and the informal sector fares no better.

The importance of the ethical dimension cannot be ignored. The Global Tomorrow Coalition (1989:15) notes that “environmental education measures both variables that include items which either state or strongly imply a willingness to engage in a certain type of environmentally responsible behaviour”. The ethical dimension seems to be the weaker variable in the Zambian educational system since it does not seem to be strongly reflected, let alone assessed. It is just integrated into selected subjects as merely an area of reference.

According to the International Union for the Conservation of Nature (IUCN), environmental education has been defined as “*the process of recognizing 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 surrounding*” (Panneerselvam and Ramakrishnan, 2005: 6)(my italics). Attaining this understanding will require that more attention be given to the area of environmental ethics in order to nurture these values in the learners. Intellectual knowledge alone about the environment is not adequate to achieve this target.

In Zambia, the formal environmental education framework can be identified with a limited number of institutions including the highest learning institution in the country. Established in 1966 to address issues of higher learning programmes, the University of Zambia Great East Road Campus stood out as an institution that was required to embrace multiple disciplines of study areas to meet the demands of the developing nation and to keep abreast with the continental and global pace of educational development. However it was only in 2006 that the first group of students was enabled to pursue environmental education at postgraduate level in the Department of Languages and Social Sciences in the School of Education. A year later, the undergraduate environmental education programme was set in motion with the current students due to graduate this year in 2012. This programme has now included a mandatory course in environmental ethics, a course that has been offered for many years in the Department of Philosophy and Applied Ethics and is also offered on the postgraduate level in that department.

Despite the incorporation of an environmental ethics course into the undergraduate environmental education programme, there is nevertheless little evidence that this knowledge will be systematically taught in schools by these students who graduate to become teachers. It is clearly evident that environmental education continues to be limited in many institutions. Namafe (2008) notes that regrettably, some institutions have previously failed to designate environmental and sustainability education programmes as flagship programmes with all that such a designation implies.

The Ministry of Education exercises control over higher institutions through the universities for which it has statutory responsibility “At the institutional level, the Ministry of Education is responsible for training colleges that meet its needs for qualified school teachers” (MoE, 1996: 97). The Ministry’s expectations of the students trained in these institutions reflect the expectations of government from these individuals. Hence it states:

The activities of higher level institutions and the recipients of higher education advance and preserve a society’s intellectual, scientific, cultural and artistic endeavours. This conservation and furtherance of a society’s accomplishments entail that higher education institutions pursue a vigorous and sustained critical evaluation of the society’s past and present achievements and on the basis of such evaluation, chart the possible directions for future developments (ibid.: 91).

This highlights the critical role that education plays in influencing how given areas of concern are addressed. The document continues: “Third level institutions also have the responsibility of creating new knowledge and developing new insights through research. The creation and subsequent dissemination of new knowledge is important for individual, technological and economic development” (ibid.). However, the University and a few other institutions may not be able to produce enough graduates who will be willing to go into

schools to teach this designated area. In addition, even when these institutions are offering courses in environmental education, it remains unclear to what extent explicit environmental ethics is being addressed, if at all.

In the area of environmental education and public awareness, the government hopes “to increase public and political awareness and understanding of the need for environmental protection, sustainable natural resource utilization, conservation and management as essential parties in development” (ibid.: 23). These objectives were to be achieved in accordance with given principles and based on the understanding that, first and foremost, environmental protection requires political and public support and understanding of its importance and relevance to daily life. Through the Curriculum Development Centre, the Ministry of Education has lined up environmental education to be taught on a multi-disciplinary basis and to be integrated into the ongoing curricula at all levels and on a continuous basis. Hence, environmental education and awareness have continued to be promoted through formal and non-formal education channels by all government institutions, NGOs and the private sector. Nationwide, environmental information, education and communication programmes have been initiated to enhance public understanding and awareness. They are targeting all those in public and private sectors whose activities affect the environment in one way or another.

Strategically, this policy developed programmes aimed at intensifying awareness of the scarcity and vulnerability of the natural resources of the country. These programmes include an environmental component in the adult literacy materials in order to facilitate public

awareness and community participation in natural resource management and mandatory environmental education in all formal and non-formal education institutions. Finally, the policy aimed at ensuring that local communities and chiefs have free access to information on environmental management (MTENR, 2005: 9).

However, questions continue to linger on with regard to the need for an ethical component as such, and with regard to the extent to which this dimension has been adequately addressed within both the formal and non-formal education systems in Zambia. In 2000, one hundred and eighty-nine countries including Zambia signed the Millennium Declaration which set eight Millennium Development Goals and eighteen targets for international development efforts. In particular, goal number seven calls on signatory countries to work towards environmental sustainability. Despite this, it has been noted that persistent socio-economic development challenges have made these goals seem almost unattainable by the target year of 2015.

All these challenges and, above all, the maintenance or restoration of ecological systems, are all dependent on appropriate and effective social, legislative, economic and educational processes, all of which need transformation (SADC, ESD Report 1, 2006:36). Even though the WWF (1999: vii) defines environmental education as “the process of recognizing values, to develop skills and attitudes necessary to understand and appreciate the interrelationship between humans, their culture and biophysical surrounding”, it is unfortunate that there still seems to be little or no justification of the need for an explicit ethical dimension within the education system that attempt to develop these values, skills and attitudes. While it is

possible to develop skills and increase intellectual knowledge using principles and factual information, it is arguable that attitudes and values may only be effectively developed through an explicit ethical framework.

To facilitate this explicit ethical framework, education is a fundamental prerequisite for the realization of the MDGs. This is so because it is difficult for this to be achieved with a citizenry that does not understand the various principles, practices and terminologies required for achieving ecological sustainability. Such education, however, will need to be transformative in order to motivate people towards practical action.

There is need, then, to briefly discuss a variety of environmental ethical theories in order to highlight the contribution that knowledge of such theories can have towards increasing the motivation required for moving towards concrete action in relation to the natural environment. Gaia theory focuses on the need to appreciate the value of the earth as our home, our life-support system; Deep ecology focuses on the need to appreciate the intrinsic value of every life form; the Land Ethic focuses on the need to appreciate the value of the ecosystem in which every life form finds its habitat; Social ecology focuses on the need to recognise the manner in which human-made social structures impact negatively on the environment; and Ecofeminism emphasises how the male-dominating mentality has resulted in the degradation of the environment.

2.4 Relevance to the education system

The above framework of environmental ethics is intended to produce a deeper understanding of the position of human beings in the natural world. In an attempt to embrace the ethical

dimension and help citizens to have a better understanding of the environment, the Indian government, for instance, through the Ministry of Human Resource Development has taken an initiative in this regard and it is presently working out a framework for environmental appreciation courses (UNESCO, 2010). Like many other character traits the ethical awakening in an individual towards the environment may best be nurtured and developed when persons are in their earliest years because, when they grow up, these moral habits become part of their being. The best place where individuals develop most virtuous habits is when they are in school since they spend most of their time in these institutions. Panneerselvam and Ramakrishnan (2005: 4) note that “in Kenya, in order to encourage children to nurture and appreciate the environment, a programme for planting a tree for every child on birthdays has been adopted”.

The Zambian National Policy on the Environment (2007) is very elaborate in the laid out objectives and what they are intended to deliver to the rest of the country. However, it is evident that these well intended plans and objectives have not yielded the intended results with regard to implementation. The field of environmental ethics does not seem to be accorded adequate attention. And yet, with the emerging threats of environmental degradation, there certainly is a need to allow citizens, and students in particular, to be in the lead when it comes to environmental preservation. This is so because as Naess (1989: 247) points out, while moral exhortations, punishment of eco-criminals, economic sanctions and other negative tools have their place, education towards greater and wider identification with the natural environment is a sign of greater human maturity.

Speaking on the first broad goals of the national Environment Education Act in the USA, Environmental Protection Agency (EPA) administrator, William Reilly, called for a broad environmental literacy in which every citizen is fluent in the principles of ecology and has a working knowledge of the basic grammar and underlying syntax of environmental wisdom. Environmental literacy, according to Reilly, can help create a “stewardship, an ethic and a sense of duty to care for and manage wisely our natural endowment and our productive resource for the long haul. As it is in the twenty first century, it will not be enough for a few specialists to know what is going on when we wander about in ignorance” (as quoted in Cunningham and Cunningham, 2004:11).

In contributing to the International Conference on Environmental Ethics Education held in 2007 in New Delhi, India, the Secretary of the United Nations, Mr. Ban Ki-Moon explained that “the one thing we do not have is time, and so, in order for today’s students to be part of the solution when they graduate, they’ll need to learn new things in school now” (as quoted in Henk 2010:34). Thus it would be prudent to say that one of the new things students need to learn is how to become ethically responsible individuals who will have an inbuilt character that will value the environment because of the value it has in itself and not solely because of legal, economic repercussions or otherwise.

On a more radical note, Kirkman (in Gottlieb, 1997:194) observes that “ there is something wrong with the way we think about the environment and our relationship to it, and the task of the philosopher is to root out that something and replace it with something new”. That “something new” must surely include a heightened ethical consciousness.

Due to global environmental problems like global warming and climate change that affect all humankind and other living organisms, we now live and teach in a world heading for the collapse of human civilization and the possible mass extinction of species, including humans. Hence, the importance of having people who act first out of their own personal responsibility and moral obligation cannot be over emphasised.

2.5 Summary

The literature review has highlighted the need for environmental education in view of global climate change and for an environmental ethics component in the educational system. In Zambia, although perhaps implicit, the ethical dimension needs to be more explicitly reflected in the formal school curriculum and in non-formal education. The particular focus of this research, then, is upon the extent to which there is, or is not any explicit focus on environmental ethics in the Zambian educational systems and, if not, to assess the need for such an explicit focus.

CHAPTER THREE: ETHICAL THEORETICAL FRAMEWORK

3.0 Introduction

The belief that scientific knowledge can be purely objective, especially in the social sciences, has long been discarded. There is no such thing as value-free science. In other words, all research is to a greater or less extent, value-laden. Traditionally accepted objectivist assumptions have been challenged as all knowledge involves the subjective values of the person acquiring the knowledge, and this is particularly true in qualitative research. Consequently, it is important that the researcher acknowledges whatever theoretical perspective or paradigm may be influencing the gathering of the data as well as the interpretation of the findings. As Creswell (2003:131) says:

Qualitative researchers increasingly use a *theoretical lens or perspective* to guide their study...(Theories) provide a lens (even a theory) to guide the researchers as to what issues are important to examine and the people that need to be studied. They also indicate how the researcher positions himself or herself in the qualitative study and how the final written accounts need to be written.

In this study, the ethical theoretical framework adopted by the researcher will involve value theory and the related theory of respect for the natural environment which underlie the environmental ethical perspectives of Gaia, Deep Ecology and the Land Ethic. However, it should be noted that whereas these theories and their accompanying principles are expressed in traditional ethics in the form of the value of human life and respect for persons, traditional ethical approaches are not equipped to deal with the natural environment in their current form. Hence, they are applied to the natural environment in an extended form in terms of the value of all living forms and the respect due to them by humans. Keller (2010: 20) states:

Given the quality of the work environmental philosophers have produced in just a few decades – in both creatively extending standard moral paradigms to nonhuman nature and

also in developing new paradigms altogether – it is clear that environmental ethics has earned a rightful place in the pantheon of philosophical sub-disciplines.

Holbrook (2009:58) writes in a similar vein: “The main thrust of recent work in environmental ethics theory has been extending to non-humans rights and interests traditionally reserved for humans.” While it may be true that the natural environment is not entitled to “rights” in the manner in which humans claim such rights, nevertheless, the natural environment can be seen to warrant “moral consideration” from humans (Goodpaster, 1978).

3.1 Value of, and respect for the natural environment

Ethics is rooted in an appreciation of values. Humans are able to recognize the intrinsic value or worth of objects in the natural environment. Rolston (1999: 153) writes:

In practice, the ultimate challenge of environmental ethics is the conservation of life on earth. In principle, the ultimate challenge is a value theory profound enough to support that ethic. We need an account of how nature carries value, and an ethics that appropriately respects those values.

[Holmes Rolston III, 1999. “Challenges in Environmental Ethics.” In M.E. Zimmerman (ed.) *Environmental Philosophy*, Englewood Cliffs, New Jersey: Prentice Hall.]

It can also be said that they are an extended form of the fundamental ethical principle of non-maleficence (‘do no harm’). Benson (2000:18) writes:

The harm principle itself entails a denial of independent moral status to non-human beings. If only harm to human beings need limit a human agent’s freedom to do as he or she pleases, then only human beings matter in themselves, and other things matter only insofar as harming them is in some way harming human beings.

Benson proceeds to identify what he calls “the value principle” which he says spells out the implication of the harm principle. If the fundamental ethical principle of non-maleficence expresses the negative dimension of ethics, the value principle can be seen to express the positive dimension of beneficence as extended to the natural environment. In a similar vein, Rolston (1988: 24) writes:

If this were an inquiry into human ethics, terms such as rights, justice, beneficence and maleficence, social contracts, promises, benefits and costs, utility, altruism, and egoism would be regularly used. These also play a part in environmental ethics, but the fundamental term that will most help to orient us is value. It will be out of value that we will derive duty.

Taylor (1986: 71) places great importance on the notion of “the attitude of respect for nature” which, as the title of his book states, refers to a theory of environmental ethics and which is undergirded by value. He writes:

To have the attitude of respect for nature is to regard the wild plants and animals of the Earth’s natural ecosystems as possessing inherent worth. That such creatures have inherent worth may be considered the fundamental value presupposition of the attitude of respect.
(Note: Taylor uses the term “inherent” as synonymous with the term “intrinsic”)

In understanding value, there is need to make a distinction between the various kinds of value, namely: intrinsic, inherent and instrumental value. Intrinsic value is used to refer to the value or worth of something “in itself,” that is, as an end in itself. This value is there irrespective of its use as a means to something else. Intrinsic value is that value which is discovered in something for what it is. With reference to the natural environment, intrinsic value refers to the value or worth of natural objects, biotic and abiotic, such as animals, plants, trees, species and ecosystems.

Inherent value is the value that humans attribute to objects such as a rainbow or a waterfall on account of their beauty and unique characteristics that are appreciated. Inherent value is often identified with aesthetic value. Although it is commonly used interchangeably with intrinsic value, they are not the same. Inherent value, in fact, is rooted in intrinsic value. As Rolston (1988:155) says, “value requires a holder, not a beholder”. The natural world was valuable for millions of years prior to the emergence of humans in the course of natural evolution. Inherent value is the value that is attributed to an object on account of its perceived, recognized or discovered worth.

Instrumental value is also referred to as “extrinsic” value as opposed to “intrinsic” value. This kind of value (use value or utility value) refers to the value that something has as a means of achieving something else. In this study, instrumental value refers to the manner in which the natural environment is of use to living things, and human beings in particular, in terms of providing life support. The instrumental value of an object, then, lies not in the object itself but in the uses to which that object can be put. The instrumental value of nature refers to the manner in which the natural environment is of benefit to life forms. In the case of humans, this is referred to as anthropocentrism, an attitude which is considered to be largely responsible for the destruction of the natural environment for monetary gain. Environmental value theory extends the understanding of value beyond instrumental value to a consideration of intrinsic and inherent values.

3.2 Environmental Ethical Perspectives

3.2.1 Gaia Theory

Gaia Theory was begun by James Lovelock (1979). Gaia is the name of the ancient Greek goddess of the earth. Lovelock's key emphasis is that the earth is *like* a self-regulating living organism and should not be thought of as something purely mechanical. Like an organism, the earth demonstrates a capacity to maintain itself, to repair injuries, to make necessary adjustments and to strive for fulfilment. It is self-renewing, adjusting to changing conditions through feedback loops in order to maintain relative stability, especially of the atmosphere and temperature. Lovelock's point is that the earth is "more like" an organism on account of the extraordinary manner in which all of the parts are interconnected and interrelated to one another, and work together for the good of the whole Earth. When we pollute or degrade the earth, it is we humans who suffer. The Earth will "kick back" automatically, as it were, when under attack. Lovelock's concern is not that the earth will be destroyed by us because it will renew itself with time; it is rather that we have the power to destroy ourselves. Gaia Theory, then, helps us to keep the Earth in proper perspective. It has emerged from billions of years of natural history and continues to be dependent on the sun, the moon, and the other planets with which it moves around the sun. Whether we realize it or not, we humans are totally dependent on the earth for the air we breathe, for the water our bodies require and for the food we consume. The earth is our life-support system and we need to recognize and respect the value that it has in-itself. The earth was in existence for millions of years before we humans made our appearance.

3.2.2 Deep Ecology

Deep Ecology was originated by a Norwegian philosopher Arne Naess (1973). His vision is bio-centric (attributing intrinsic value to all life forms) and egalitarian (attributing equal value to all life forms in accordance with their unique natures). On account of this, Deep Ecology suggests that rights (i.e., the right to life and to flourish) are not only the possession of human moral agents but also of beings which can be affected by moral agents. Although we, as humans, are naturally inclined to focus on self-interest, self-concern, and self-love, once we begin to identify ourselves with the wider whole of the Earth, an expansion in our awareness of self occurs and our well-being becomes identified with the wellbeing of nature as a whole. Such a mentality would result in an increased human maturity in protecting the richness and diversity of life for its own sake. Therefore, instead of thinking of humans alone as ends-in-themselves, we should think of all living beings as ends-in-themselves possessed of unique drives and purposefulness. Humans are thus encouraged to move from an 'ego-centric' approach to an 'eco-centric' one. By this, he means identifying oneself more with the whole of the natural world which he calls 'Self-realization' (with a capital 'S'). Indeed, the fullness of human maturity is to be found in recognizing our identity with the whole universe. Deep Ecology is geared towards political action through a platform where eight principles are identified for the protection and care of the natural environment. These ethical principles have been formulated as a programme for action. Human welfare, therefore, must take account of the intrinsic and inherent values of biodiversity and the importance of preserving all forms of life.

3.2.3 The Land Ethic

The Land Ethic was formulated by the wildlife biologist and conservationist Aldo Leopold (1948). He coined the following environmental ethical principle: “A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise” (ibid.: 224). He clarified his understanding of ‘the land ethic’ as follows: “The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively: the land” (ibid.: 225). Oceans could also have been included. In explaining his approach, Leopold speaks of the “biotic community” in which all life forms cooperate for the good of the whole.

He also uses the image of a ‘biotic pyramid’ in which lower life forms contribute to the wellbeing of higher life forms (Wenz, 2001). This is often referred to as the “food chain”. Thus, just as the lower life forms in the soil contribute to higher life forms in plants, so the energy of plants contributes to the life of animals who consume plants, and we humans in turn consume plant and animals foods which contribute to our health and growth. Hence, although we humans are on the highest level of the pyramid, we are still members of the one ecosystem. Each and every member of the biotic community is entitled to moral consideration and has moral worth. In this sense, the Land Ethic is egalitarian although this does not mean that each member is entitled to the same respect. Each entity should be given equal respect in accordance with what it is. Consequently, as members of the one ecosystemic community, we humans as intelligent and moral beings are morally obliged to be responsible in the way we behave towards the ecosystem. Our duty of respect towards

our ecosystemic community requires a greater awareness on our part of the intrinsic and inherent values related to the natural environment.

3.3 Summary

This chapter has briefly explained the ethical theories/principles that will be applied in an extended form towards making an assessment of the findings of this study. Intrinsic and inherent values in particular which undergird the environmental ethical theories of Gaia, Deep Ecology and the Land Ethic will be considered as central dimensions in generating greater respect for the natural environment.

CHAPTER FOUR: METHODOLOGY

4.0 Introduction

The methodology of this research is a mixture of quantitative and qualitative approaches coupled with an ethical component. In the formal sector, primary data was obtained by the use of in-depth interviews, semi-structured questionnaires (see appendices 1-9), a structured questionnaire, and non-participant observation. Secondary data was collected from relevant books, newspapers, articles, documents from different libraries, including the University of Zambia library, and the internet. An ethical assessment was made using value theory and respect for the natural environment.

4.1 Sampling techniques

The purposive sampling procedure was used to select respondents for this study. This was used in order to involve relevant officials who have a direct responsibility on issues to do with the environment in the country. Random sampling was also used to help in getting the views from pupils in selected schools about the environment.

4.2 Sample size

The sample size in this study was comprised of one hundred pupils from selected basic and high schools, sixteen teachers from these schools and two officials from each of the following institutions: ZEMA, MTENR, the *Times of Zambia*, Evelyn Hone College, MoE and ZNBC. Four personnel were interviewed from CDC. Two lecturers and four student teachers were sampled from the University of Zambia, Nkrumah College of Education, Solwezi CoE and Kitwe CoE. The total number of those interviewed was 60. The number

of pupils who filled in the questionnaire was 100. The breakdown is given in the table 1 below.

Table 1: Breakdown of Sample size

Institution	Interviewees/Participants	Numbers
Secondary Schools	Pupils	100
Basic/Secondary Schools	Teachers/HoDs	16
Nkrumah Teachers CoE	Lecturers and Student teachers	6
Kitwe Teachers CoE	Lecturers and Student teachers	6
Solwezi Teachers CoE	Lecturers and Student teachers	6
Evelyn Hone College	Lecturers and Student teachers	6
University of Zambia	Lecturers and Student teachers	6
MoE	Senior Education Standards Officers	2
CDC	Curriculum Developers/ Subject specialists	4
ZEMA	Officials	2
MTENR	Officials	2
ZNBC	Staff	2
<i>Times of Zambia</i>	Staff	2
Total : 160		

4.3 Target Population

The target population in this research comprised (a) learning institutions i.e., basic schools, high schools, teacher training colleges and the University of Zambia, (b) public and private media houses; and (c) concerned government departments and ministries connected to the wellbeing of the environment in the country.

4.4 Research Sites

Figure 2 below shows the research sites that have been involved in this study.

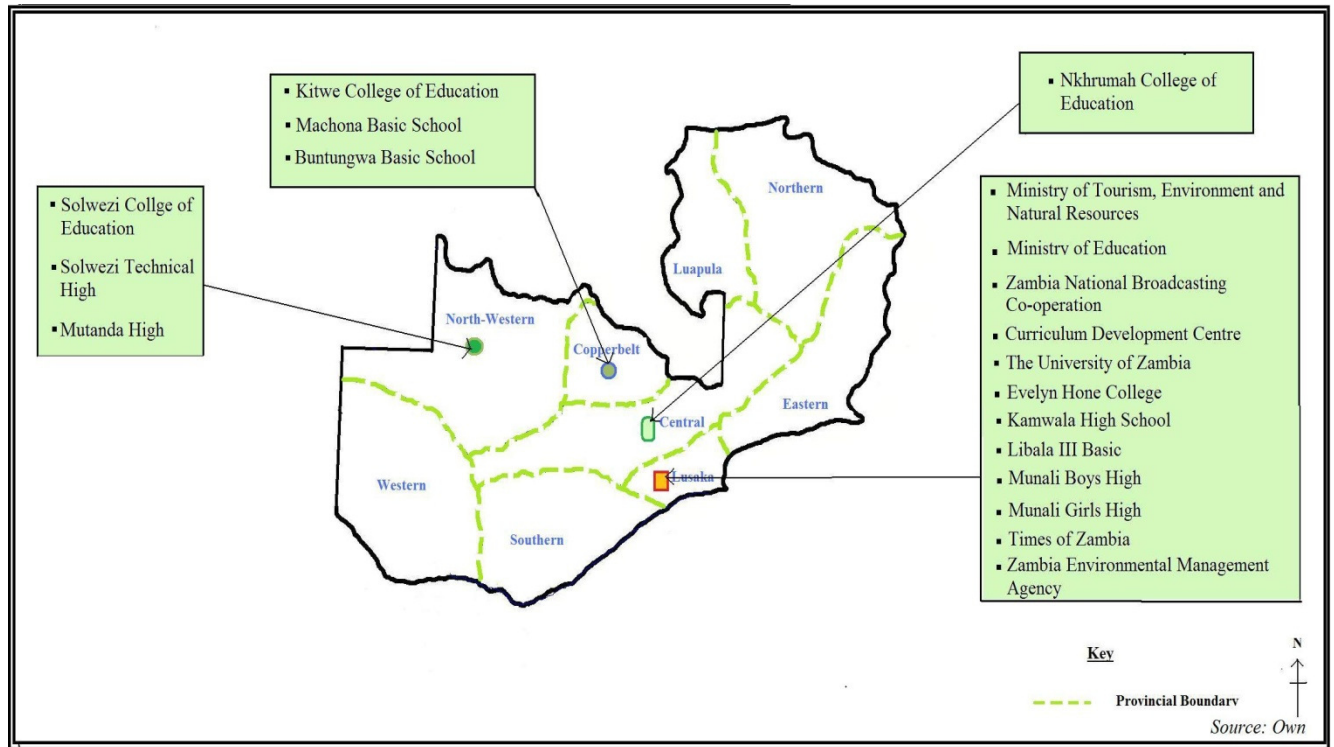


Figure 2: Map showing research sites.
Source: (Field Data, 2011)

4.5 Breakdown of qualitative study methods

4.5.1 The formal sector of education

These included teachers from basic and secondary schools, lecturers and student teachers from teacher training colleges, lecturers and students at the University of Zambia in the Department of Language and Social Sciences in the School of Education. Others included were subject specialists, curriculum developers from the Curriculum Development Centre (CDC) and officials from Ministry of Education (MoE).

4.5.2 The non-formal sector of education

These included Media personnel from ZNBC, Evelyn Hone College, the Department of Mass Communication at the University of Zambia and the *Times of Zambia*.

4.5.3 Semi-structured questionnaire

The researcher conducted a semi-structured questionnaire to teachers in selected schools (see appendix 1 and cf. Table 1).

4.5.4 Structured questionnaire

In addition, a questionnaire was administered to a total number of 100 pupils drawn from the following schools: Solwezi Basic, Mutanda High, Solwezi Technical High School in Solwezi, Buntungwa Basic and Machona Basic in Kitwe, Libala III Basic, Lusaka Girls Basic, Kamwala High, Munali Boys, and Munali Girls schools in Lusaka. Tables 2 and 3 below give a breakdown of the pupils to whom the questionnaire was administered.

Table 2: Respondents in Basic schools.

Name of School	No. of Pupils
Libala III Basic	10
Solwezi Basic	10
Buntungwa Basic	10
Machona Basic	10
Lusaka Girls Basic	10
Total	50

Table 3: Respondents in High schools

Name of School	No. of Pupils
Kamwala High	10
Munali Boys High	10
Solwezi Technical High	10
Munali Girls High	10
Mutanda High	10
Total	50

In the basic schools, five pupils were randomly selected from grade eight, and five others from grade nine. In the high schools four pupils were randomly selected from grade ten and four from grade eleven. Two further pupils were selected from grade twelve to make ten pupils from each school. The total number of pupils was 100.

4.5.5 Non-participant observation

The researcher attended a number of lessons in Geography, Environmental Science, Biology and Religious Education where environmental education is expected to be mentioned by the teacher. He also interacted with ordinary people on the streets of the selected towns to analyse their conduct towards the environment. He further conducted non-participant observation in the schools sampled and on ordinary citizens in research areas.

4.6 Procedures followed and problems encountered

In order for the researcher to get in touch with the potential interviewees, a letter to the gatekeepers was procured from the University of Zambia to seek for permission in accessing the individuals to be interviewed. The researcher introduced himself and stated the purpose of the visit to the gatekeepers. Through the various administrations of the targeted institutions, the researcher was helped to contact the officers who were relevant to the study. The

prospective interviewees were requested to take part in the study with authorization by the administration. After the interview, the researcher sought the guidance of the Radio 4 manager at ZNBC to provide information on the reporters that were suitable to participate in the study as they had some information on the topic. In other institutions where relevant officers were absent, an appointment was made and this was followed up later.

For media houses, the MTENR and the MoE, the researcher had to make more than two appointments in order to meet the officers in question. This was due to the mobility of the officers and official bureaucratic tendencies which delayed the whole process of the interview exercise. A number of officials initially expressed hesitation to freely air their views until the researcher reassured them that their views were to be used for purely academic purposes. Most of the interviews were held in the officers' places of work apart from one officer who suggested giving an interview at an eating place outside his office. The students and teachers were interviewed in different places including school departmental offices and in the school staff rooms. The researcher also interviewed participants in a suitable open location.

Secondary data was collected from relevant books, newspapers, articles, documents from different libraries, including the University of Zambia library, and the internet. An ethical assessment was made using value theory and the theory/principle of respect for the natural environment.

4.7 Summary

This chapter has outlined the methodology used in the study, a view of the research sites and a breakdown of the interviews carried out.

CHAPTER FIVE: FINDINGS, DISCUSSION AND ANALYSIS

5.0 Introduction

The main aim of this study was to highlight the need for an explicit environmental ethical dimension in the education system in Zambia. This chapter therefore presents the findings as gathered in the field. The first three objectives of the study were (i) to critically discuss the current state of environmental education in the country both formal and non-formal, (ii) to establish whether or not and to what extent there is any explicit environmental ethical component built into the education system of Zambia, and (iii) to investigate the extent to which the formal and non-formal education system is promoting environmental ethics. This chapter will present the findings as gathered from the participants and it will also provide a discussion and analysis of the data.

5.1 The current state of formal and non-formal environmental education

5.1.1 The Formal Education Sector

(a) *Primary/Basic Schools:* With regard to primary and basic schools, the study revealed various opinions on the state of environmental education in the country. A teacher at Lusaka Girls Basic, noted that the current state of environmental education has no clear-cut pattern but said pupils were aware about issues of the environment through the various subjects that have topics related to the environment. She went on to cite subject areas like CDS (Creative and Technology Studies) and SDS (Social Development Studies), as some which have issues on the environment highlighted in given topics. Mrs. Likamba from Libala III Basic School in Lusaka explained that it was difficult to explain the state of environmental education in the country as it was not given as a subject area that can be taught to pupils in schools such

as hers. They asserted that many pupils in their schools knew something about the environment, but that rating that knowledge was difficult since it varied depending on the interests of different pupils and what they already knew about the environment. A teacher of Geography in Solwezi explained that some pupils who were privileged to come from homes where there was T.V. and radio came to know about issues related to the environment from these sources.

However, even though the above subject areas may contain themes on the environment, as there is only one person who teaches all these subjects, there is little chance that the teacher will deal with all the issues in that particular subject area successfully. According to his observation, some of the pupils in these schools are from poor or medium income backgrounds. This seems to limit their exposure to media of communication like television. This means that if this information is available, only a limited number of pupils are in a position to have a good understanding of issues regarding the environment. Even for those exposed, few would pay attention to programmes on T.V. or radio that would discuss the environment but rather tune in to other programmes of their choice.

(b) *Secondary Schools:* A teacher of Geography at Solwezi Technical High School explained that pupils in the secondary educational system today are generally aware about the issues relating to the environment and are able to show knowledge in these areas. Another teacher of Religious Education observed that environmental issues about this country are well known to pupils because of the media. Furthermore, she said that teachers including her nowadays are well informed about environmental issues. However, two

teachers from Kamwala High School and Munali High School respectively said that there was no adequate environmental education given as distinct from general information which was also limited in scope.

5.1.1.1 Breakdown of responses to structured questionnaire

With regard to the hundred randomly selected pupils that were asked to fill in a questionnaire relating to the natural environment (N.E.), various views were noted as follows (cf. Appendix 10).

Table 4: Hearing about the N.E.

NO. OF PUPILS	RESPONSES	PERCENTAGE
Q.2 <i>Have you ever heard about environmental education (EE)?</i>		
40	No	40%
60	Yes	60%
TOTAL: 100		TOTAL: 100%

On how many had ever heard about environmental education, sixty pupils accounting for 60 percent indicated that they had heard about environmental education while forty pupils making up 40 percent said that they had never heard of environmental education.

Table 5: Source of knowledge about the N.E.

NO.OF PUPILS	RESPONSES	PERCENTAGE
Q.3 <i>Where did you get knowledge on EE from?</i>		
10	Magazines	10%
10	T.V	10%
10	Radio	10%
30	Teachers(through Geography, Environmental Science, Biology and R.E)	30%
TOTAL: 60		TOTAL: 60%

With regard to where the 60 percent of pupils got the knowledge on environmental education from, ten explained that they had heard about it from reading magazines representing 10 percent, ten said that they had heard about it from T.V., while ten representing 10 percent indicated that they had heard about it from the radio, and thirty accounting for 30 percent noted that they had heard about issues relating to the environment from their teachers through subjects like Geography, Environmental Science, R.E, and Biology.

Table 6: Whether taught the importance of the N.E.

NO. OF PUPILS	RESPONSES	PERCENTAGE
<i>Q. 4 Are you taught the importance of the natural environment?</i>		
50	Yes	50%
50	No	50%
TOTAL: 100		TOTAL: 100%

On whether or not they were taught the importance of the natural environment, fifty pupils representing 50 percent admitted that they were taught the importance of environmental education while the other fifty making up the other 50 percent indicated that they were not taught on the importance of the natural environment.

Table 7: Perceptions of the importance of the N.E.

NO. OF PUPILS	RESPONSES	PERCENTAGE
Q.5 Why do you think the natural environment is important?		
10	It is important in itself	10%
90	It provides human beings with natural resources.	90%
TOTAL: 100		TOTAL: 100%

In answer to why the pupils thought that the natural environment was important, ninety pupils accounting for 90 percent explained that the natural environment was very important because it provided human beings with natural resources like fruits, meat and minerals, while only ten indicated that the natural environment was important in itself representing 10 percent.

Table 8: Information of the N.E. in taught subjects.

NO. OF PUPILS	RESPONSES	PERCENTAGE
Q.6 Do subjects like Geography, R.E., Environmental Science and Biology give adequate information on the importance of the environment?		
60	No adequate information on the environment.	60%
40	Adequate information on the environment.	40%
TOTAL: 100		TOTAL: 100%

On whether subjects like Geography, R.E, Environmental Science and Biology gave adequate information on the importance on the natural environment, sixty pupils accounting for 60 percent noted that there was no adequate information given about issues on the environment through subjects like Geography, Environmental Science, Biology and R.E,

while forty pupils representing 40 percent acknowledged that there was adequate information on the environment through such subjects. This totalled to 100 percent.

Table 9: How to increase concern for the N.E.

NO. OF PUPILS	RESPONSES	PERCENTAGE
<i>Q.7 How can respect and care for the natural environment be more emphasised?</i>		
20	Need for more teachers to be trained in E. Ethics.	20%
20	Need for more materials on Environmental Ethics to be made available.	20%
60	Need for more training of teachers as well as greater availability of materials on E. Ethics.	60%
TOTAL: 100		TOTAL: 100%

On how respect and care for the natural environment could be more emphasized, twenty pupils representing 20 percent explained that there was need for teachers to be trained in environmental ethics, while other twenty pupils accounting for 20 percent said that there was need for more materials on environmental ethics to be made more available. Sixty pupils accounting for 60 percent observed that there was need for both more trained teachers as well as more materials on environmental ethics.

Table 10: Whether the N.E. should be introduced as a subject.

NO. OF PUPILS	RESPONSES	PERCENTAGE
<i>Q.8 Do you think environmental education should be introduced as a subject?</i>		
90	Yes	90%
10	No	10%

On the pupils opinion as to whether or not environmental education should be introduced as a subject in the school curriculum, ninety pupils making up 90 percent recommended that it should be introduced. Ten pupils on the other hand noted that there was no need for environmental education to be introduced representing 10 percent.

From the responses to the questionnaire, it is evident that pupils' perceptions about the state of environmental education in the country are varied. Although the researcher observed that some teachers had expressed some awareness about environmental issues, it appears from the above responses that knowledge about environmental issues is rather haphazard and that there is no overall systematic treatment on environmental issues given to pupils.

(c) *Tertiary Education:* A lecturer in the Department of Languages and Social Sciences at the University of Zambia, observed that while there is limited education in Zambia about the environment, the country had witnessed massive development in terms of educational programmes as shown by the introduction of environmental education courses at learning institutions such as UNZA. He noted that there has been a gradual appreciation of issues to do with the environment among the student population in recent years.

One lecturer and pioneer of the environmental education programme at the University of Zambia explained that it is unfortunate that environmental education is only being appreciated at a time when the world and Zambia itself is experiencing many environmental challenges. He noted that the introduction of this programme at the institution will send an important message on the importance that is being attached to environmental education in the country.

A lecturer and Head of the Social Sciences department at Nkrumah College of Education observed that the current state of environmental education in the country is only superficially present as most citizens and students alike are largely ignorant about the environment. He further explained that most people would only make reference to the environment when talking about natural resources which attract foreign income.

One Lecturer and Librarian at Kitwe College of Education stated that most of the teachers who graduate from the various teaching colleges, including his, have very limited knowledge in issues of environmental education. He further indicated that there was need for a continuation of the training programme that was being given by the Ministry of Education in partnership with the WWF. Teachers who were invited from around the country in selected towns over a period of time were given a two weeks intensive programme on environmental education which could have opened up avenues for these teachers to learn more about the environment.

The Head of Department in Media Studies at Evelyn Hone College of Applied Arts and Commerce explained that there was need to distinguish between environmental reporting and environmental education. According to him, the fact that there was a course at the institution that was dealing with environmental reporting did not automatically mean that there was adequate environmental education going on. He stated that the field of environmental education had not been appreciated by many people in Zambia, firstly due to their limited knowledge about this field and secondly, because some of them went through an education system that never had an adequate focus on environmental education.

However, he noted that environmental education is slowly gaining momentum to seek a place in the Zambian educational system.

What could be collectively deduced from the observations from the different interviewees is that although environmental education was a phenomenon which was not new to many people, it was not just adequately treated.

(d) *The Ministry of Education:* The MoE was empowered to facilitate and manage the provision of education in the country. Based on the National Policy on Education (GRZ, 1996), the overarching aim of education is to produce a learner whose personality is well formed to include moral development. A Senior Education Standards officer at the MoE headquarters in Lusaka noted that there was a limited provision for environmental education in the school education system, and even less for an ethical focus. Hence, although value development is mentioned in the education policy document, the situation on the ground with regard to issues regarding the environment was very different.

5.1.2 The Non-Formal Education Sector

Besides formal education which is a key factor in shaping the nature of environmental education in the country, non-formal education plays an important role in partnering with formal education in the provision of information on the state of the environment.

(a) *The Media:* The study revealed that while the objective of many media houses in the country was to educate and inform people on many issues that affect human development, it may not be doing this adequately in certain important areas. A broadcaster at the Zambia National Broadcasting Corporation (ZNBC) explained that peoples' understanding of a field

like environmental education depends on the existence of a media house which can accord adequate time to transmit such messages. An editor of *The Times* explained that while generally there had been improvements in the field of environmental education in the country through numerous relevant articles, yet the challenge remained as to how to make it interesting to readers. Many in the print media preferred to include stories that appeal to people such as politics, entertainment and sport news as opposed to a subject dealing with the environment. This was also noted by the Manager for Radio 4.

(b) *Legislative Bodies/ Policy Framework:* Legislative bodies help in facilitating the legislation framework that is used to monitor and provide environmental education and to regulate matters that hinge on the environmental status of the country. Mr. Museshyo a chief librarian at ZEMA (formerly the Environmental Council of Zambia), explained that the government attaches huge importance to issues of the environment. He stated that through their agency, the country has witnessed the rapid development of policy documents that have been prepared to provide policy makers and ordinary citizens with an understanding of their environment and how valuable it is. He noted that the country has come a long way in making improvements on the old documents.

Among the many documents that the agency has produced and spearheaded in terms of promoting environmental awareness are newsletters such as Enviro-line, numerous brochures on various environmental themes such as pollution, climate change, waste management and deforestation. In conjunction with WWF Zambia, the agency produces *The Environmentalist*, a magazine which had in the past been helpful in disseminating

information to the formal and non-formal sectors of education. The agency partnered with other departments in doing this work.

To correspond with this assertion, ordinary citizens interviewed indicated that there has been an increase in the awareness of issues relating to the environment as distinct from the past when there was little concern. However, most interviewees expressed indifference as it mattered little to them what happened to the natural environment as they did not benefit from its resources. They noted that information about the environment often became available only when there was an environmental disaster like water pollution in the Kafue river, or soil poisoning around the mines in the Copper belt, or environmental disasters happening outside the country.

The MTENR also plays a critical role in the policy framework of the country. The principal environmental management officer at the Ministry indicated that the country has made great advances in environmental education today. He noted that besides the popular National Policy on the Environment, there has been legislation to this effect. He cited the recent 2011 Environmental Management Act which, among many other things, highlights the need for stewardship by citizens towards management of the environment. He further cited the Bio-Safety Bill which aims at protecting the environment from pollution and other poisonous materials that may harm the natural environment.

He added that the Ministry carries out a yearly awareness programme where training of trainers is done to allow for a continuation of the sensitization programme in the various provinces. However, he also noted that the effectiveness of this programme was being

hampered by a number of factors. One was that, despite the adequate laws that are in place, there is always the problem of implementation which is blocked by the lack of adequate funding as the current budget has only allocated about 0.1% to environmental protection activities which according to him is not enough. This was also noted by the Principal Resources Officer at MTENR. Hence, while some citizens were willing to adopt the sustainable approach to caring for the environment, economic factors compelled them to do otherwise.

5.1.3 Section conclusion

With regard to the current state of formal and non-formal environmental education in Zambia, despite the work being done through the environmental education programme at the University of Zambia, ZEMA and MTENR, the responses to interviews and the questionnaire carried out among pupils indicated a general perception that awareness of environmental issues is not reaching the public at large in an adequate manner nor are teachers and pupils enabled to focus on environmental issues in a systematic manner.

5.2 The extent of explicit environmental ethics in environmental education

5.2.1 The Formal Education Sector

(a) *Primary/Basic Schools:* With regard to the extent to which there is an explicit ethical component in environmental education, the research revealed that this component is not explicitly present. A head teacher in Solwezi noted that the subjects offered in the school from grades 1 to 9 do not reflect an explicit ethical component in relation to environmental education. In fact, even subjects like SDS, CTS, Environmental Science and Geography that

have a section on the environment rely largely on the interest of the teacher handling the subject to discuss any issues relating to ethical awareness.

Despite her little knowledge about environmental ethics, Mrs. Mulevu, a teacher at Lusaka Girls Basic School, explained that the uncaring behaviour of most pupils towards the environment could be attributed to their early social influences and upbringing which becomes part of them as they grow up. Citing compounds like Chibolya, John Laing, Kanyama and Chawama, children from such environment are likely to have a negative attitude towards the environment because that is what they are used to observing from elderly people around them. A teacher at Machona basic school in Kitwe noted that there could be many reasons for the absence of this ethical component in environmental education in its explicit form. The clearest reason, she believes, is the burden placed on the teacher to teach all subjects which prevents him/her from introducing material not on the syllabus.

(b) *Secondary Schools:* Teachers from Solwezi Technical High School, Munali Boys High School and Kamwala High School all pointed out that social science subjects like religious education and geography and natural science subjects like biology and environmental science have very little explicit focus ethical approach towards the area of environmental education. Mr. Kandinda a teacher of chemistry and religious education insisted that an ethical approach in environmental education would not be possible until the content in our curriculum is revisited. He further emphasized the importance of an ethical component not only in environmental education but in all subjects as a way of producing well developed pupils who would be responsible and productive citizens of the country.

A student at Kitwe College of Education wondered as to how an ethical component can be present in secondary school education when the curriculum only provides for limited themes on the environment to be fused into other subjects like Civic education, Geography, CTS, SDS, Environmental Science and Religious Education. This was also noted by other student teachers of Nkrumah CoE and Solwezi CoE respectively. Mr. Kandinda observed that most of the teachers in secondary and basic schools alike did not have an opportunity to be trained in environmental ethics and this position was also confirmed by some student teachers at Solwezi CoE, Nkrumah CoE and teachers at Mutanda High school. This situation largely explains the absence of an ethical component in environment education in particular and in the education system in general. It is thus clear from the responses above that environmental ethics are not given adequate coverage in the curriculum.

(c) *Tertiary Education:* A lecturer from Nkrumah College of Education stated that when it came to the ethical component, there was no clear ethical approach in environmental education and many teacher training schools lacked this approach. Hence the training programmes were limited to the subjects that the teacher was expected to deliver. A second year student, who was pursuing Religious Education and Civic Education at Nkrumah College of Education, explained that it would be strange to talk about environmental education in her subject area, let alone an explicit ethical approach, because the objectives of the subject area do not support this approach.

With regard to higher education, the study revealed that most of the students at the University of Zambia who were pursuing the programme in environmental education had expressed the desire to offer this course to pupils in schools where they would work from

after graduating. Commenting on the relevance of the environmental education programme to the education system, Mr. Chileshe noted that the school was lobbying with the MoE to enable environmental education to become a subject on the curriculum. Students graduating could then consider teaching the subject. However, he noted that even the students who were the first group due to graduate that year may not be able to teach environmental education because it was not yet a recognized subject. More than half of the students interviewed indicated that up until now there had been limited material on the ethical component in the environmental education programme. They observed that the introduction of an environmental ethics course would complement the current ecological content.

According to the author of many publications on the environment including *Environmental Education in Zambia: A Critical Approach to Change and Transformation*, the ethical approach was not present in much of environmental education in Zambia. He further noted that while the importance of this approach was undebatable, an initial step was required to prepare learners so that the knowledge approach and the value approach could be combined. He insisted that it was then the right time to intensify the ethical approach which was clearly absent in the education system.

In teacher training colleges, lecturers from Kitwe College of Education and from Solwezi College of Education agreed that an explicit ethical component was absent in environmental education. Whereas spiritual and moral values were taught, any application of such values to the natural environment depended on the personal initiative of the teacher. A senior lecturer for religious education at Solwezi College of Education also said that the ethical approach

was present in the training course for student teachers but that it largely focused on religious and moral values in human relationships and with God but rarely on environmental issues.

(d) Curriculum Development Centre/ Ministry of Education: The MoE, through the CDC, has a duty to prepare and organize the curriculum to be used in institutions of formal learning. An official from CDC explained that the curriculum had been designed to cover three dimensions, i.e. the knowledge dimension, the skills dimension and the value dimension. He admitted, however, that the value dimension had not been extended enough to make reference to issues related to the environment. A subject specialist in science also said that it was difficult to expect pupils to develop any moral awareness with regard to the environment in subjects like environmental science because it did not have this component. In complementing this, a senior education standards officer at the MoE in Lusaka observed that when it comes to issues to do with moral responsibility for the environment, the curriculum does not provide sufficient points of references and guidelines. Furthermore, she noted that the Ministry was not adequately using the curriculum to promote environmental education.

5.2.2 The Non-Formal Education Sector

(a) The Media: A lecturer at Evelyn Hone College explained that although environmental issues were addressed in a course on specialized reporting, there was very little attention given to ethical issues. He continued that an explicit focus on this dimension would depend on lecturers encouraging students to take up this area of reporting. They should also encourage the corporate world and the media houses to include ethical considerations in their reporting. An editor from the *Times of Zambia* explained that the newspapers and other

forms of media communication focus on giving informational facts that give readers and listeners knowledge about environmental issues with little or no ethical input. An Information officer from ZEMA observed that many people in the country were aware of the need to care for the environment and that their agency would continue with their awareness campaign in order to help develop this ethical approach towards the environment.

5.2.3 Section Conclusion

Linked to the lack of adequate focus on environmental education, the responses revealed that ethical awareness about the environment was similarly lacking. In the formal education sector, the ethical component though not totally absent was not explicit as it was just reflected in subjects and courses which had themes and topics on the environment which were largely intellectual based. The non-formal education sector too had little of an ethical dimension built into its focus on environmental education.

5.3 Extent to which the formal and non-formal educational systems are promoting environmental ethics.

5.3.1 The Formal Education Sector

A Head of Department of the Social Sciences at Kamwala High School observed that the promotion of environmental ethics depends on whether the area is included in the teaching programme. Another head teacher similarly noted that schools can only teach pupils material which is reflected in the curriculum. One of the curriculum developers admitted that the current curriculum did not go deep enough in issues relating to the environment to bring out an ethical dimension. He hoped, however, that the new curriculum under review would have an emphasis on the ethical component. Citing the 1996 Policy document *Educating Our*

Future, a curriculum developer, noted that the document had elaborated on the need of a holistic development of pupils. However, the value dimension had not been expanded enough to highlight moral responsibilities to the environment.

5.3.2 The Non-Formal Education Sector

With regard to the non-formal sector of education, the research revealed that the situation is not any better in promoting environmental ethics than in the formal sector. A human resources officer at Zambia National Broadcasting Corporation observed that journalists in the print media, radio and T.V. are very critical in disseminating information on the environment to the public as very few are given the opportunity to go and train in environmental education. A number of journalists interviewed expressed their concern over selective and biased time allocation to programmes such as sports, entertainment and politics.

Despite being among the few journalists in recent years to be assigned to attend and cover the recent conference on the environment in Durban, South Africa, Mr. Mwanza still bemoaned the failure of his corporation to accord adequate airtime to discuss issues on the environment. A third year student in the department of Mass Communication and a presenter at UNZA radio, observed that students pursuing journalism need to be accorded a chance to explore areas such as environmental reporting and ethics. He noted that only those who are majoring in journalism do a course on environmental reporting in their second year and it does not contain an ethics component. With regard to journalistic ethics, the manager for radio 4 at ZNBC explained that journalists and other media personnel played an

important role in helping to educate the public on issues relating to the environment it was unfortunate that they were not trained specifically with regard to environmental ethics.

In an attempt to keep the public informed on issues related to the environment, both ZEMA and MTENR have for a long time been producing literature on legislation and on the current environmental outlook of the country. However, it is sad to note that despite all the materials that they have produced, there was little or no reference to environmental ethics. A principal environmental management officer at the MTENR observed that there was a considerable gap between the legislative arm of government and the ordinary citizens. He said that this was especially true of the rural areas where people did not have the opportunity to easily access documents on the environment. Furthermore, most of these documents such as the Environmental Impact Assessment reports were usually loaded with technical jargon which made it difficult for the ordinary citizen, especially the illiterate and the poor, to understand.

It is praiseworthy that ZEMA works hand in hand with WWF Zambia on environmental awareness by visiting schools and encouraging the formation of environmental friendly clubs. Such partnership aimed at instilling knowledge about the need for care of the natural environment. While this approach was well intended and suitable, there was however, some concern regarding how far and wide these programmes were being promoted. The researcher observed that these activities were concentrated in the metropolitan institutions and centrally located schools while those in the rural areas rarely received any support for such programmes.

A communications officer at ZEMA asserted that the agency had a consultancy programme that carried out a biannual assessment on the environmental situation in all provinces. However, she noted that the agency was not under any obligation in practice to follow up on the extent of complying with environmental regulations. It is clear then that the existence of legal statutes relating to environmental protection does not automatically translate into voluntary compliance by many citizens in the country.

5.3.3 Section Conclusion

The findings above indicated a lack of an explicit environmental ethical component in both the formal and non-formal education sectors. Despite the efforts made through these different institutions, it was evident that there had been little ethical input in terms of environmental ethics.

5.4 Summary

This chapter has discussed the findings with regard to the current state of environmental education in Zambia, whether there is any explicit focus on environmental ethics and the extent to which environmental ethics is being promoted. In the formal education sector, there was evidence of some environmental education being taught in subjects such as geography, environmental science, R.E. and biology in secondary schools. At the tertiary level, there was mention of some environmental education being taught through various courses in teacher training colleges and more especially in the BA programme at the University of Zambia.

Despite this, however, many if not all subject areas and course contents taught in basic schools and secondary schools exhibited a lack of an explicit ethical component. In the non-formal sector also, little had been achieved in highlighting the ethical component. The communications media did not seem to have journalists who reported regularly on the environment and who have any training in environmental ethics.

CHAPTER SIX: ETHICAL ASSESSMENT

6.0 Introduction

The fourth objective of this study was to assess the relevance of explicit environmental ethical theories to environmental education in Zambia. The theoretical framework for making an ethical assessment of the need for an explicit environmental ethical component in environmental education in Zambia was identified as value theory and respect for the natural environment as expressed in Gaia Theory, Deep Ecology and the Land Ethic.. This chapter will now apply the theories/principles of value and respect in making an ethical assessment of the need for a more explicit focus on environmental ethical theories in environmental education. The intention is to highlight the diverse ways in which ethical issues are raised in the context of the natural environment.

6.1 Assessment of the findings

Presenting these various theoretical perspectives in chapter three was not intended to suggest that any one of them, or even all taken together, give a complete response to the need for greater care by humans of the natural environment. Indeed, objections could be raised to each of these approaches. However, they do help in arriving at a fuller understanding of the factors involved in taking an ethical stance with regard to environmental degradation. What runs through all these approaches is the challenge to ‘anthropocentrism’ (i.e., the tendency of humans to treat the environment as they wish in an exploitative manner) and to come to a greater realization that earth is our home as well as our life-support system. Hence, we need to value, respect and care for the natural environment including species and ecosystems in an appropriate way.

Whereas values include three types (intrinsic, inherent and instrumental), what the findings of this study reveal is that there is very little if any awareness of the intrinsic and/or inherent value of the natural environment among teachers and pupils. Hence, the importance of presenting students with these theories so that they may come to have a deeper appreciation of the value of the natural environment and show appropriate respect to it. The only value, in fact, that they are mainly aware of is instrumental value which does little to protect the natural environment for its value in itself. Whereas the Ministry of Education emphasises the need for the development of the character of its citizens, it does not focus on the need to protect the natural environment as such. Although environmental education is beginning to draw attention of the need to protect the natural environment, it does not explicitly emphasise “respect” for the natural environment in the way that environmental ethical theories do in terms of respect for the value of the Earth (Gaia), respect for the value of every species (Deep Ecology) and respect for ecosystems (the Land Ethic). These three environmental theories have been explained in chapter 3 on the theoretical framework.

According to the National Policy on Education (GRZ, 1996), the importance of the moral development of the learner is crucial in promoting responsible human development. However, such human development does not explicitly contain reference to the natural environment. For instance, environmental issues as considered in the curriculum are referred to under science and technology, thereby containing no explicit reference to the ethical dimension.

Currently in Zambia, there is general awareness of environmental issues but there is not an adequate overall programme to ensure that the environmental situation is made known to all stakeholders like students, pupils, ordinary citizens and government departments. The difficulty with regard to discussing the need for an explicit ethical component in environmental education lies in the realization that even the provision of an ordinary environmental education programme in both the formal and non-formal sectors of education is still not effective. The findings of this study have highlighted the need to accelerate the provision of environmental education, for only then can a more specific ethical component comprising various environmental ethical theories be realized.

Green (1933: 5) states that unless they have some training in ethics, men of education who are accustomed to speaking and writing, statesmen, preachers, journalists and businessmen are just as liable to make mistakes as the man in the street. Whereas traditional ethical theories deal with the way people ought to choose one action over another in their relationships with one another, environmental ethical theories have been used and extended here to highlight a dimension about the natural environment which is not explicit in the education system and how people ought to relate to the natural environment.

With regard to the extent to which the ethical component is present in the education system in Zambia, the people interviewed clearly indicated that this component was largely absent in environmental education in institutions of learning and in many awareness programmes that are carried out by providers of such education in the non-formal sector. Ethics do not just deal with knowledge but more specifically with moral behaviour. Environmental ethics focuses on the manner in which people relate to, manage, care for and respect the natural

environment. In any field of human behaviour, it is widely acknowledged that the development of ethical consciousness plays an important role in determining the actions of people. It is this time-tested conviction that acts as the basis for acknowledging the validity of, and justification for value theory. In this particular study, lack of any adequate explicit ethical component in environmental education reflects a failure by the citizens to recognise value in the natural environment.

People tend to protect and care for what they value and what they respect. The wider the range of values that something has, the greater the likelihood that it will be looked after. The environment has for a long time been perceived as a reservoir of wealth to serve the needs and wants of human beings. This perception is focused on the notion that the value of the natural environment is only important when it provides for the needs of human beings. This mentality was noted as expressed by an official from the MTENR and others on the need to preserve the animal species and care for the forests and other natural resources in order to sustain the people and also provide income provided by the tourism industry.

Based on the views of the people interviewed, it is clear that the instrumental value of the environment is the guiding principle of why people consider the environment to be important. This means that the moment something is not beneficial to human beings, it becomes useless. Such an attitude displays not just a failure to appreciate the intrinsic and inherent values of individual life forms but also the essential role that they play with reference to the health and wellbeing of the wider ecosystem.

Environmental ethical theories (i.e., Gaia, Deep Ecology and the Land Ethic) highlight dimensions of value that go beyond utilitarian value and that are geared to motivate human

beings towards greater appreciation of and respect for the natural environment. The lack of an explicit focus on these theories leaves a gap in environmental education which is currently not being adequately filled in the formal and non-formal sectors. Consequently, there is need for a more explicit focus on these theories in environmental education.

6.2 Summary

The findings of this study have revealed that an awareness of intrinsic and inherent values is missing from the environmental education programme in both the formal and non-formal sectors. Hence, there is need for an explicit environmental ethical component in environmental education. The overall findings, then, support and are supported by value theory and respect for the natural environment in promoting the need for a more explicit environmental ethical component in environmental education in Zambia.

CHAPTER SEVEN: SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.0 Overall Summary

The aim of the study has been to assess the need for an explicit environmental ethical component in environmental education in Zambia and the research objectives were (i) to discuss the current state of environmental education, both formal and non-formal in Zambia, (ii) to establish whether and to what extent there is any explicit environmental ethical component built into the education system in Zambia, (iii) to investigate the extent to which the formal and non-formal education systems in Zambia are promoting environmental ethics, and (iv) to assess the relevance of environmental ethical theories to environmental education in Zambia.

Issues regarding the environment have been raised at different levels: global, continental, regional and national. Different countries have established policies regarding issues relating to the environment based on the resolutions passed in the various international environmental summits and conferences. One platform that has been utilized to promote awareness of environmental issues has been through formal and non-formal education.

The study has revealed that, in both sectors, an explicit ethical dimension is lacking. In the formal sector of education, the knowledge based approach of creating awareness about environmental problems has provided little in terms of focusing upon ethical responsibility towards the natural environment. Furthermore, the provision of the course on social, spiritual and moral education in teacher training colleges has had minimal effect on moral values relating to the environment.

It has been noted that environmental education in many learning institutions is largely knowledge and intellectual based and that in itself, it does little to appeal to moral values. In Zambia, an ethical component in the education system is only implicit, if not totally absent. Even though both formal and non-formal educational sectors contain cross cutting themes relating to the environment in the formal sector, subjects offered in primary and basic schools as well as in secondary schools, offer little scope for discussion on environmental issues. Moreover, such discussion remains largely at the level of information and has not been directed towards behaviour change among pupils.

On the tertiary level, the situation is not much different because, although a Bachelor of Arts degree programme in environmental education has been running at the University of Zambia for some years, the first graduates will only be coming out this year (2012). Furthermore, although some of these graduates will have taken a course in environmental ethics, they will not be in a position to teach this area as it is not included in the school curriculum.

In the non-formal education sector, although the communications media and government departments like the ZEMA and the MTENR provide information on the environment to citizens, these two sectors do not go far enough to provide adequate environmental education. Their involvement is largely limited to providing information about the environment through different media ranging from brochures, legislation, and policy documents and an ethical dimension is largely missing.

Furthermore, the promotion of environmental education is being hindered by a number of factors. These include limited training for journalists, limited airtime accorded to programmes on the environment in both the print and electronic media, and erratic

government funding in activities aimed at sensitizing the citizens. Furthermore, the effectiveness of the awareness programme is also lessened by the presence of technical and scientific language that characterize policy and legislative documents in this field. Short term partnership programmes between the MoE and organizations like WWF are hampered by the non-availability of funds. In the end, the lack of education on environmental issues hinders the need for input on environmental ethics.

7.1 Conclusion

The study concludes that environmental ethics is lacking in the sectors of education in Zambia and it highlights the need for an explicit environmental ethical component in environmental education. With regard to an ethical assessment, it concludes on the basis of value theory and respect for the natural environment that the environmental ethical theories of Gaia, Deep Ecology and the Land Ethic which are currently lacking in the educational system need to be explicitly included in environmental education with a view to raising awareness of their relevance towards protecting the natural environment. The provision of such a holistic education will be dependent largely on stakeholders evaluating their contribution to make such a provision of education a reality as it seems to be absent in most educational programmes.

7.2 Recommendations

- ❖ Government should through CDC develop a curriculum that will have an explicit ethical reference so as to allow teachers and learners alike to appreciate this area of knowledge. Subjects such as Religious Education, which have a bias towards moral development,

should be revised to include an explicit dimension on the environment and help in character development.

- ❖ The Ministry of Education should accelerate the establishment of environmental education as a mainline subject since effective promotion of environmental ethics will depend on such a development. This recommendation has arisen from the fact that pupils and students in schools have limited exposure to material on the environment in the other subjects.
- ❖ Government through media houses should train journalists in environmental issues and in environmental ethics. This recommendation arises from the finding that few journalists are being trained in the area of environmental ethics reporting.
- ❖ Subjects such as geography and ecology should combine both scientific and value approaches when dealing with environmental education.
- ❖ Government should continue the Keep Zambia Clean campaign and extend it to the rural areas.
- ❖ The Ministry of Education in partnership with the Zambia Environmental Management Agency should carry out a vigorous and systematic programme for sensitization on environmental ethical awareness in the schools, and there should be extension of ZEMA resource libraries in the provincial capitals around the country to enable many citizens access information on the environment. This recommendation arises from the finding that despite people being educated they fail to exhibit environmental friendly conduct.
- ❖ The public needs to be better informed about environmental issues. This will also involve the incorporation of Non-Governmental Organizations that are responsible for issues on the environment and the media as a whole by the promotion of local

community radio stations. This recommendation arises from the finding that information about the natural environment is full of scientific and loaded with jargons which make people fail to understand.

- ❖ Government, through the formal and non-formal sectors of education should intensify information on the need for citizens to recognize and attach importance to commemorating environmental days in the calendar, e.g., World Forestry Day, World Environmental Day, World Day to Combat Desertification and Drought, World Habitat Day, International Day for the Preservation of the Ozone Layer.
- ❖ An ethically oriented environmental education programme should be extended to teacher training institutions in the country. This recommendation arises from the finding that teachers only deliver to pupils the content and material highlighted in the curriculum

7.3 Suggestions for Future Research

While this research was limited to the selected provinces of Zambia, other studies may focus on the need to expand subjects that deal with issues of the environment so that an explicit ethical dimension may be adequately reflected. As much as this may be required, there is need for a regional curriculum plan that will incorporate environmental ethics in a stronger manner. An assessment of the extent to which the rural population in Zambia is involved in matters concerning the natural environment will also provide a deeper insight on the value of community involvement in environmental management. A research such as this one should strive in future to include policy makers as opposed to teachers as this may help to ensure that the concerns raised are addressed at the source of legislation. In this way, implementers such as teachers and community workers will be simply reinforcing a laid down plan.

REFERENCES

- Attfield, R. (1999) *The Ethics of the Global Environment*, Edinburgh: Edinburgh University Press.
- Bookchin, M. (1990) *The Philosophy of Social Ecology*, Montreal: Black Rose Books.
- Christian, F. (2007) Utilitarianism. Available at: en.wikipedia.org/wiki/utilitarianism-
accessed, 18/11/11.
- Creswell, J.W. (2003) *Research Design*, London: Sage Publications.
- Cunningham. L and M. Cunningham (2004) *Principles of Environmental Science: Inquiry and Application*, London: McGraw Hill.
- Elliot R .(ed.) (1995) *Environmental Ethics*, Oxford: Oxford University Press
- ECZ, (2001) State of Environment in Zambia, Lusaka.
- ECZ, (2000) State of Environment in Zambia, Lusaka.
- Environmental Council of Zambia, (2008) Zambia Environment Outlook Report 3,
Lusaka: Printech Ltd.
- Frankena, W.K. (1973) *Ethics*, New Delhi: Prentice Hall.
- Furrow, D. (2005) *An Ethics of Care*, New York/London: Continuum.
- GRZ, (2007) National Policy on Environment, Lusaka: MTENR.
- GRZ, (2006) Educating Our Future, Lusaka: MoE.

GRZ,(2005) National Policy on Environment, Lusaka: MTNER.

GRZ, (1990) Environmental Protection and Pollution Control Act, Lusaka: Government Printers.

GRZ, (2006) Fifth National Development Plan, Lusaka: Government Printers.

Gotlieb, R.S. (1997) (ed.) *The Ecological Community*, New York: Routledge.

Green P. M. (1933) *The Problem of Right Conduct*, London: Longmans, Green and Co.

Henk, A. (2010) (ed.) *Environmental Ethics and International Policy*, New Delhi: UNESCO.

Holmes, R. (1988) *Environmental Ethics: Duties to and values in the natural world*, Temple University Press.

IUCN, (1980) World Conservation Strategy, IUCN.

IUCN, (1985) The National Conservation Strategy for Zambia, Lusaka: GRZ.

Kelbessa, W. (2005) “The Rehabilitation of Indigenous Environmental Ethics in Africa”, *Diogenes*. 5(3) 17-34.

Keller, D.A (ed.) (2010) *Environmental Ethics: The Big Questions*, Oxford: Wiley-Blackwell.

Knight, R. and S. Bates (eds.) (1995) *A New Century for Natural Resource Management*, Washington: Island Press.

Leopold, A. (1948) *A Sand County Almanac*, New York: Oxford University Press.

Lovelock, J. (1988) *The Ages of Gaia, A Biography of our Living Earth*, New York: Oxford University Press.

Marshal, A. (2009) Religious Studies Teacher Resources Newsletter, January, 27th.

Namafe, C.M. (2008) 'Nature of the Bachelor of Education (Environmental Education) Degree programme at the University of Zambia'. Paper presented on the occasion of orienting selected UNZA Lecturers to the B.A Ed. (Environmental Education) Programme. Lusaka: Commonwealth Africa Youth Centre.

-----, (2004) *Environmental Education in Zambia: A critical Approach to Change and Transformation*. Lusaka: UNZA Press.

Naess, A.(1989) *Economy, Community and Lifestyle*, Cambridge. Cambridge: University Press.

Olen, J. and Barry, V. (2002) *Applying Ethics*, Belmont CA: Wadsworth.

Pergamon, M. J. (2002) Towards an Environmental Ethic. Opening Plenary at Religion, Science and the Environment Symposium: Adriatic Sea.

Panneerselvam A. and M. Ramakrishnan (2005) *Environmental Science Education*, New Delhi: Sterling Publishers Private Ltd.

Plumwood, V. (1995) "Nature, Self and Gender." In R. Elliot (ed.), *Environmental Ethics*, Oxford: Oxford University Press.

Sandler, R. (2010) "Environmental Virtue Ethics." In D.R. Keller (ed.), *Environmental Ethics: The Big Questions*, Oxford: Wiley-Blackwell.

SADC, (2006) ESD Practice in Southern Africa, Report 3. Pp. 23-26.

-----,(2006) History and Context of ESD in Southern Africa, Report 4. Pp. 36-38.

The Global Tomorrow Coalition, (1989) An Environmental Education Approach To The Training of Middle Level Teachers: A Prototype Programme UNESCO.

UNESCO, (1978) Final Report: Intergovernmental Conference on Environmental Education. Tbilisi: UNESCO.

UNEP, (2004) *Africa Environment Outlook*, London: Earth Print Ltd.

UNCED Document, A/CONF.151/26, vol 1, pp 15-26.

Warren, K.J. (1994) *Ecological Feminism*, New York: Routledge.

Wenz, P.S. (2001) *Environmental Ethics Today*, Oxford: Oxford University Press.

William, H.S. (1999) *Contemporary Ethics, Taking Account of Utilitarianism*, Oxford: Blackwell Publishers Inc.

Wilson, E.O. (1992) *The Diversity of Life*, Massachusetts: Harvard University Press.

WWF/ZEEP, (1999) Environmental Education Manual for Teacher Educators. Lusaka: WWF.

Zimmerman, M. E. (ed.) (1993) *Environmental Philosophy*, New Jersey: Prentice Hall.

APPENDIX 1

Semi-Structured questionnaire for Teachers

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

1. What subject do you teach?
Geography () Environmental Science () R.E () Biology () Others ()
2. Have you ever heard of environmental education?
Yes () No ()
3. If Yes to question 2, where did you hear it from?
Newspapers () T.V () College () Other materials ()
4. Is environmental education taught in your school?
Yes () No () Integrated in other subjects ()
5. Do you think students in your school know the importance of the environment?
Yes () No ()
6. If yes to question 10, where do the students get information about the environment?
Teachers () Newspapers () T.V () Other materials ()
7. Have you ever heard of environmental ethics?
Yes () No () Not sure ()
8. If Yes to question 5, where did you hear it from?
Newspapers () T.V() College () From other materials ()
9. Do you think environmental ethics is important as a component in environmental education?
Yes () No () Not sure ()
10. If yes, why and how is it important?
.....
11. If No, why and how is it not important?
.....
12. How would you rate the presence of the ethical component in environmental education in your school?
Low () Medium () High ()

13. If your answer to question 15 is high, what are the reasons for this?

14. If your answer to question 15 is low, what are the reasons for this?

 ..
15. Do you think environmental ethics is adequately taught within environmental education to the students in your school?
 Yes () No () Not sure ()
16. If yes to question 12, in which way is it adequately taught?

 If no to question 12, why do you think it is not adequately taught?

17. Do you think the government is making enough awareness about issues on the environment to the students in schools such as yours?
 Yes () No ()
18. If Yes to question 18, briefly explain how?

19. If No to question 18, what can government through Ministry of Education do to create more awareness to students in schools such as yours?

20. In your opinion, what can the Ministry of Education do to make this ethical component in Environmental Education more relevant to the students?

THANK YOU

APPENDIX 2

Semi-Structured Interview Schedule for Heads of Government Departments- Education

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia*

1. How many subjects in your school provide information on the environment?
2. To what extent do you through the departments in your school stress the importance of the environment?
3. Is Environmental Education taught in your institution?
4. If No, do you think it is necessary to teach environmental education to students at all levels in schools?
5. Do you think your students exhibit characters that are environmentally friendly?
6. Have you ever heard of environmental ethics?
7. If yes, from where?
8. If No do you think human being have a duty to protect the environment?
9. If yes, how can they do this?
10. Where do students in your school get information on the environment from?
11. Do you think environmental ethics is adequately highlighted within environmental education in your school?
12. How can you rate the presence of the ethical component in environmental education in your school? Low, Medium or High?
13. Do you think government is doing enough sensitization to citizens on environmental issues?
14. If yes, briefly explain how?
15. If No to Q 13, how can government through the Ministry of education create more awareness to students in schools such as yours?
16. In your opinion what can the ministry of education do to make this ethical component in environmental education more relevant and explicit to students?

THANK YOU

APPENDIX 3

Semi - Structured Interview Schedule for Media Personnel

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

Profession..... Area of Specialization.....

1. What do you know about environmental education?
2. Is there any specific area in your reporting that addresses issues of environmental education?
3. In your opinion, do you think citizens in Zambia are responsible enough towards the environment?
4. Are there any concrete examples of reference with regards to how the citizens are responding to environmental awareness?
5. Have you ever had some training on environmental ethics?
6. Besides environmental education, do you think there is need for people to have some knowledge about environmental ethics?
7. Within this area of environmental education reporting is there an ethical approach in your reporting?
8. How prominent is this approach?
9. Do you receive any public feedback from the readers of your publications or any other programmes regarding the environment?

THANK YOU

APPENDIX 4

Semi- Structured Interview Schedule for Officials at Curriculum Development Centre
(CDC)

Topic: *An assessment of the need for an explicit environmental ethical component in
environmental education in Zambia.*

Profession.....

Area of Specialization.....

1. Is Environmental education important in the school curriculum?
2. How has the curriculum development centre contributed to the public awareness of environmental issues in Zambia?
3. Through the curriculum how do you enable learners in schools to be responsible towards the environment?
4. How is formal education helping in awareness of the environmental issues?
5. In your specific area of specialization, how do you highlight the importance of environmental education to the students?
6. Is there enough an environmental ethical dimension in the curriculum?
7. In your own opinion, do you think the curriculum is adequately designed to produce a morally environmental responsible citizen?
8. What role does the curriculum development centre play in creating awareness to the Zambian citizens other than students in schools?
9. How do you think the curriculum can be relevant in making students in institutions be ethically aware of their relationship with their environment?
10. Do you think there is need for environmental ethics in environmental education?

THANK YOU.

APPENDIX 5

Semi-Structured Interview Schedule for Officials at Zambia Environmental Management Agency (ZEMA)

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

Profession.....

Area of specialization.....

1. How would you rate the level of education on environmental issues among the Zambian citizens?
2. What role does the council play in creating awareness to the public on issues on the environment?
3. Do you think there is enough information on environmental ethics in environmental education?
4. What means of awareness do you use in reaching out to the public on environmental issues?
5. Does the council have any programmes on the environment which target the public especially in rural areas?
6. Besides giving information on the environment, does the council give information on why citizens need to be responsible over their environment?
7. Are you aware of any materials that are related to environmental ethics and given to the public?
8. In your opinion why is it important for members of the public to individually have a personal attachment to the environment?

THANK YOU

APPENDIX 6

Semi-Structured Interview Schedule for Officials at Ministry of Tourism, Environment and Natural Resources (MTENR)

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

Profession.....

Area of specialization.....

1. What policies has the ministry produced related to awareness on environmental issues?
2. Is there adequate environmental awareness among citizens at present?
3. What role does the ministry play in educating the public about the environment?
4. Do you think the laws are adequate in requiring the members of the public to respect the environment?
5. How does your area of specialization contribute to the education of the members of the public on the environment?
6. What programmes are designed for the poor rural population on the need for them to respect the environment?
7. Do you think the current education system is helping citizens to realize their moral obligation towards the environment?
8. What is the response from the public with regards to the ministry's awareness on environmental issues?
9. Do you work with other ministries and departments in making environmental education accessible to most citizens?

THANK YOU.

APPENDIX 7

Semi-Structured Interview Schedule for Officials at Ministry Of Education (MoE)

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

Profession.....

Area of specialization.....

1. How much information do you think citizens have regarding the environment?
2. Using the current curriculum, how does the Ministry hope to produce students in institutions who are environmental friendly?
3. What educational policies have been developed to address the problems regarding the environment?
4. In your own opinion, do you think the curriculum is adequately designed to produce a morally environmental responsible citizen?
5. In your specific area of specialization, how do you highlight the importance of environmental education to the students?
6. Is there need for an explicit environmental ethical dimension in environmental education in the curriculum?
7. Are there deliberate policies that have been designed to address the issue of the ethical dimension in the curriculum?
8. Does having knowledge about the environment the same as being responsible and respectful to the environment?
9. What is the ministry planning with regards to expanding the various components of environmental education?
10. In general, how is the education system encouraging responsible values in learners with regard to the environment?

THANK YOU

APPENDIX 8

Semi-Structured Interview Schedule for Lecturers of Environmental Education at UNZA

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

Profession.....

Area of specialization.....

1. Is there a need for an environmental ethic in environmental education?
2. What was the reason for the introduction of environmental education in the school of education?
3. How have students responded to the programme?
4. How far has the traditional environmental theoretical framework been covered in the Environmental education courses including the Environmental ethics course?
5. What are some of the aims of availing this ethical component to the student?
6. What are the expectations of those students who are doing a major in Environmental education after graduating?
7. What role would you expect students of Environmental Education to play in society after they graduate?
8. Generally how can the ethical dimension be clearly reflected in Environment Education in the general education system in Zambia?

THANK YOU

APPENDIX 9

Semi-Structured Interview Schedule for Students Teachers and Students of Environmental Education at UNZA

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education in Zambia.*

1. Which year are you?
2. Why did you decide to pursue the Environmental education programme?
3. Do you think the formal and non-formal educational systems are doing enough to promote environmental responsibility in learners and ordinary citizens?
4. What more do you think can be done to promote environmental responsibility in the citizens?
5. Do you have an idea on what environmental ethics is?
6. If yes, how can this area of study assist in creating awareness about the environment?
7. Despite the knowledge people have about Environmental education, why do some people continue to degrade the environment?
8. Is there any ethical component in your training programme that will allow you to teach it in the school you will be deployed to?
9. Does Environmental education contain an adequate area of study that addresses in detail how a human being is connected to the environment in which he lives?
10. How important is the area of environmental ethics to environmental education?

THANK YOU

APPENDIX 10

Structured Questionnaire for Students in Secondary Schools

Topic: *An assessment of the need for an explicit environmental ethical component in environmental education.*

SCHOOL:

Instructions: Indicate your response by ticking in the chosen box at the end of the provided responses.

1. What grade are you doing?

G.8

G.9

G.10

G.11

G.12

2. Have you ever heard of environmental education?

Yes

No

3. If you answered yes, where did you hear it from?

Television

Other Materials

Magazines

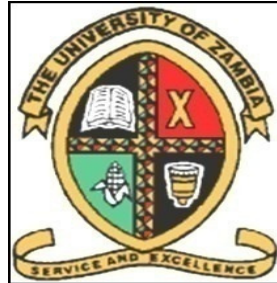
Teachers

4. Are you taught about the importance of the natural environment?
Yes
No
5. Why do you think the natural environment is important?
Because it provides human beings with natural resources
Because it is important in itself
6. Do you think Geography, Environmental Science Biology and R.E give enough information on the importance of the environment?
Yes
No
7. How can information on the need to respect and care for the natural environment be more emphasized?
By training more teachers in this field.
Making materials on the environment more readily available.
Training more teachers as well as making materials on environmental ethics available.
8. Do you think environmental education should be introduced as a subject?
Yes
No

THANK YOU

APPENDIX 11

CONSENT FORM



THE UNIVERSITY OF ZAMBIA
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF PHILOSOPHY AND APPLIED ETHICS

Dear Respondent,

I am a student in the School of Humanities and Social Sciences reading for a Masters Degree in Applied Ethics and I am conducting a research in partial fulfilment of the Degree on the topic '*An assessment of the need for an explicit environmental ethical component in environmental education in Zambia*'. You have been selected to participate in this research. I humbly ask for your sincere cooperation by providing answers to the questions in the structured questionnaire. Your responses will be treated *confidentially* and will be used *purely* for academic purposes.

THANK YOU