

CHAPTER ONE

INTRODUCTION

1.1 Background

Geography is one of the subjects offered in the Zambian National Educational Curriculum at primary, basic, high school and tertiary levels. At high school level it is classified as one of the social sciences. It is a subject with a diverse syllabus. In fact, when it comes to diversity, no other subject at high school level has a combination of social science and natural science aspects the way geography does. For reasons covered later in this document, Education for Sustainable Development (ESD) is a new concept that should be applied to all subjects in the Zambian National Educational Curriculum-each subject teacher, for example, must have a way of including ESD in the delivery of their subjects.

The unique characteristics of geography make it a potential vehicle for incorporating ESD. According to Stir (2003), the ESD Strengths Model for re-orienting the educational curriculum suggests that every discipline and every teacher can contribute to sustainability education. This is confirmed in the words of the UNESCO ESD document when it states that *“The main goal of ESD is to integrate the values inherent to Sustainable Development in all aspects of teaching...through all forms of education...”* (UNESCO, 2009:1). However, the reality on the ground is that most subject teachers may not know how to integrate

ESD into their subjects, hence the need for this study specifically in relation to Geography.

This study attempted to determine the relevance of ESD to the geography syllabus of the year 2010 in Zambian high schools, with specific reference to the high schools in Lusaka City of Lusaka Province. ESD is a vision of education that seeks to empower people to assume responsibility for creating a sustainable future. The UNESCO World Conference on ESD held in Bonn, Germany in 2009 emphasized that ESD offers an opportunity for creative and critical approaches, long term thinking, innovation and empowerment for dealing with uncertainty, and solving complex problems (www.esd-world-conference-2009.org). The conference recognized ESD as an approach through which we could learn how to improve links between formal, non-formal and informal education as we seek to re-orient the educational system to lay stress on lifelong learning.

Tilbury and Wortman (2004) stress the concept of building partnerships, participation and involvement of various stakeholders in the process of education. It is clear that understanding of, and visions for, sustainability will be different for each of us and that we need to work together to negotiate the process of achieving sustainability. Each sector, whether it be government, educational institutions, media or youths has a different vision of Sustainable Development (SD) and the contribution that can be made to attain it. These various interests need to be amalgamated in order to develop partnerships that people (all members of local communities) can learn and benefit from.

It is clear that there is no single route to SD. It is a multi-sector effort involving multiple stakeholders-including pupils at secondary level. If ESD is to involve multiple stakeholders and to be initiated locally then the culture and customs of the local people cannot be ignored. In essence, the culture and customs of the locals should be appreciated for ESD to stand any chance of succeeding.

ESD is a new concept that high schools in the third world are grappling with. In fact, in Zambia it is yet to be incorporated into the high school system. Therefore, this study saw a need to identify and assess possible linkages between geography and ESD. These linkages, if present, could be used to implement recommendations of the following authorities:

- UNESCO World Conference on ESD 31st March to 2nd April 2009 in Bonn-Germany.
- The UNESCO Educating for a Sustainable Future Draft Document (1997).
- United Nations Conference on Environment and Development (UNCED) also called the Earth Summit of 1992.
- The World Commission on Environment and Development (WCED) of 1987.
- The World Summit on Sustainable Development (WSSD) of 2002.
- The SADC Regional Environmental Education Programme (REEP) funded Zambian National Workshop on UN Decade on ESD (held on the 6th February, 2006 in Lusaka).

In recognition of the importance of ESD, The United Nations General Assembly declared the years from 2005 to 2014 the United Nations Decade of ESD (UN DESD). The objectives of the DESD are as follows:

- Facilitate networking linkages, exchange and interaction among stakeholders in ESD.
- Foster increased quality of teaching and learning in ESD.
- Help countries make progress towards attaining the Millennium Development Goals (MDGs) through ESD efforts.
- Provide countries with new opportunities to incorporate ESD into education reform efforts.

As of the year 2010, 5 years after the inception of the UN DESD in 2005, very few of the above goals had been met. In fact, the implementation of ESD at high school level was yet to begin in Zambia.

1.2 Statement of the Problem

In view of ESD being a new approach to education that was being introduced in most countries around the world, including Zambia, there was clearly a need to find out how best ESD could be integrated into the geography syllabus of Zambian high schools. There was a gap of knowledge when it came to ESD in the Zambian educational system at high school level. Zambian school subjects still operated the way they had always been, without integrating ESD into their operations. Such a

situation constituted a problem because Zambia found itself lagging behind other countries in implementing dictates of the UNDES and other ESD authorities noted below. It is only through evaluation of school subjects (in this case geography) in the Zambian national curriculum that we would start telling how the syllabus could be remodeled to suit the recommendations of ESD as partly reflected in the following authorities:

- UNESCO World Conference on ESD 31st March to 2nd April 2009 in Bonn-Germany.
- The UNESCO Educating for a Sustainable Future Draft Document (1997).
- United Nations Conference on Environment and Development (UNCED) also called the Earth Summit of 1992.
- The World Commission on Environment and Development (WCED) of 1987.
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- The SADC Regional Environmental Education Programme (REEP) funded Zambian National Workshop on UN Decade on ESD (held on the 6th February, 2006 in Lusaka).

This research, therefore, focused on geography as the variable to be assessed in order to ascertain linkages that could make it compatible with ESD.

1.3 Purpose of the Study

The purpose of this study was to determine whether or not ESD was relevant to the Zambian high school geography syllabus of the year 2010. The study entailed an

assessment of geography as a subject in the high schools of Lusaka City to establish whether or not components of its syllabus were compatible with ESD and whether the geography syllabus could serve as one vehicle for the integration of ESD into the Zambian high school curriculum.

1.4 Specific Research Objectives

In order to address the above stated purpose of the study, specific objectives of the study were formulated as follows:

- a) To determine the possible contribution of ESD to the geography syllabus in the Zambian High School Curriculum.
- b) To ascertain the attitude of high school pupils' towards geography as a vehicle for ESD.
- c) To determine what improvements could be made to the geography syllabus vis-à-vis the need of pupils to be empowered to thrive in their immediate local environment as a core requirement of ESD.

1.5 General Research Question

What is the relevance of and potential contribution of ESD to Zambian high school geography?

1.6 Specific Research Questions

The following research questions guided the study:

- a) What is the contribution that ESD can make to geography at high school level?
- a) What are the attitudes of high school pupils towards geography?
- b) How can the current geography syllabus be changed so that it integrates ESD to empower pupils with skills relevant to their local environment?

1.7 Significance of the Study

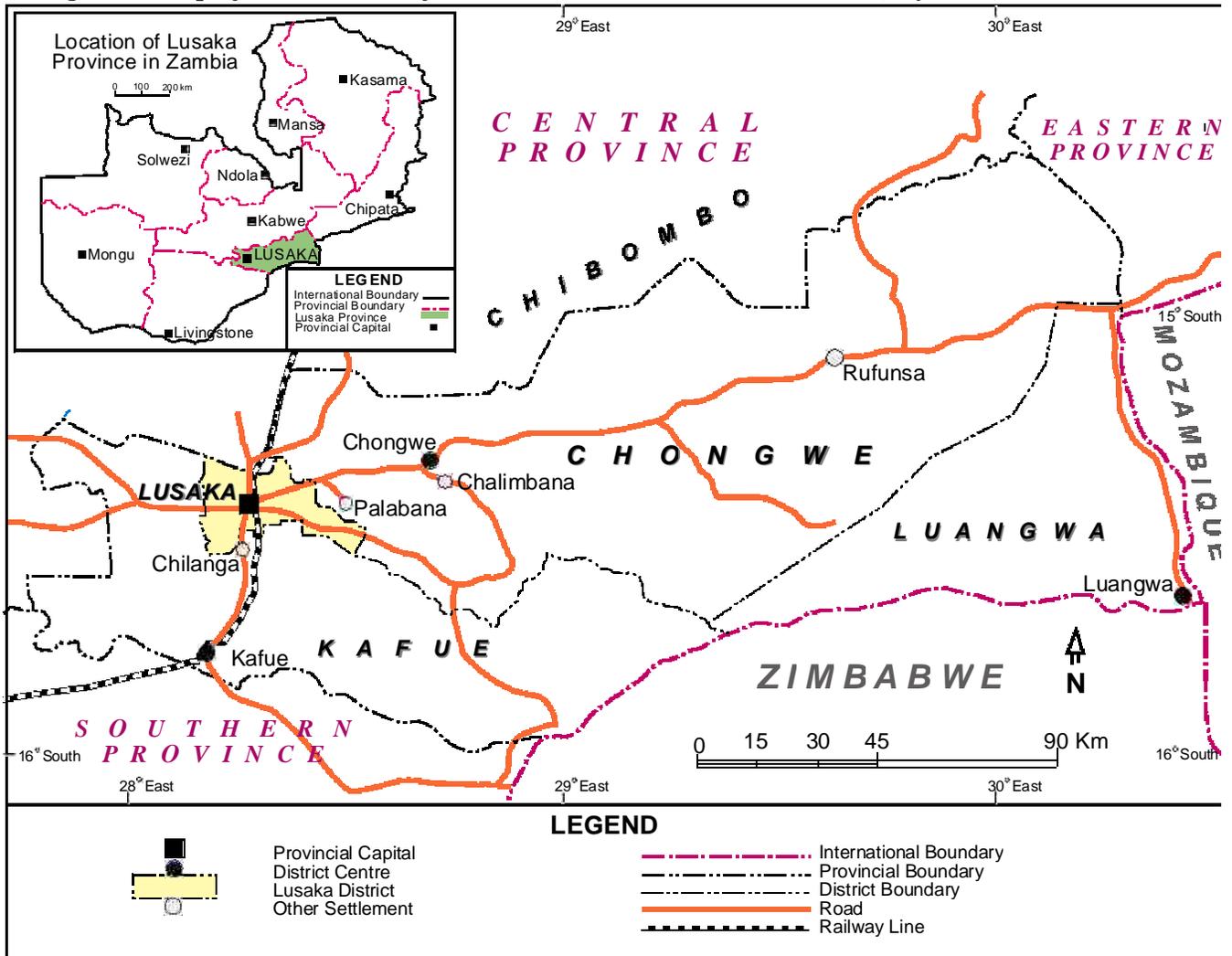
Since ESD is a new concept yet to be implemented at high school level in Zambia, it is hoped that this study offers educationists and bureaucrats -especially those at higher institutions of learning such as the University of Zambia, the Ministry of Education and Curriculum Development Centre valuable information on whether the geography syllabus in its current status is a viable vehicle for the implementation of ESD. ESD offers learners an opportunity to be empowered with knowledge that is more meaningful to their lives and local environment. It has the potential to enable learners to deal with daily emerging challenges related to personal health and climate change. The world is moving towards implementing ESD at every educational level, hence this study will assist all stakeholders (especially the bureaucrats, curriculum development specialists and educationists) to see whether or not geography is an ideal vehicle for introducing ESD into the Zambian high school system. The role of ESD in assisting Zambia as a nation to attain the Millennium Development Goals (MDGs) cannot be over-emphasized.

1.8 Description of the Study Area

Lusaka is the capital city of Zambia and according to the 2010 Lusaka City Council database information available, the city had a population of 1,800,000 people- the last population census put the population of the entire Lusaka District at 1,084,703 (CSO, 2000). It is the administrative capital of our country and houses all the major instruments of government. It has 20 high schools and about 19,761 high school pupils (excluding A.P.U pupils).

Lusaka City was picked as the study area because of its administrative relevance. It is the headquarters of most of the institutions in-charge of administration and policy formulation (such as Curriculum Development Centre and Ministry of Education) which were covered by this study.

Figure 1. Map of the Location of Lusaka District in Lusaka Province (in yellow)



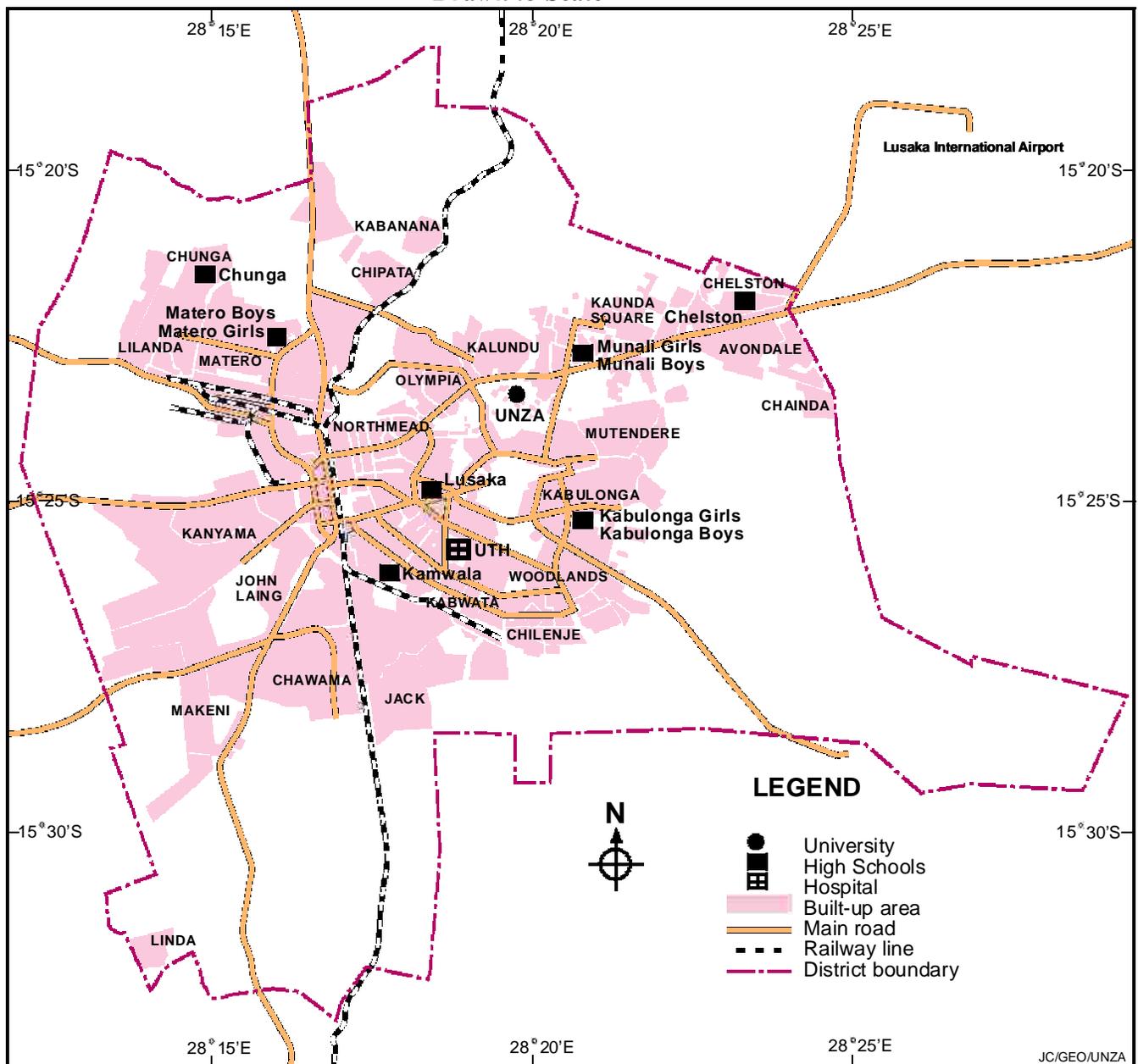
Source: UNZA, Geography Department (2011)

Having looked at a general description of the study area, the following section addresses Lusaka City in detail showing the specific location of the high schools covered by the research.

1.9 Specific Location of Study Area

Lusaka City is located between longitudes $28^{\circ} 13'$ and $28^{\circ} 25'$ East and latitudes $15^{\circ} 20'$ and $15^{\circ} 28'$ South. Lusaka City is located within Lusaka District which is located between longitudes $28^{\circ} 13'$ and $28^{\circ} 29'$ East and latitudes $15^{\circ} 20'$ and $15^{\circ} 28'$ South. There are 20 high schools in Lusaka District and all the 20 schools are located within the boundaries of Lusaka City which is also referred to as Lusaka Urban.

**Figure 2. Map of Lusaka City Showing the Schools Sampled for Study-Not
Drawn to Scale**



Source: UNZA, Geography Department (2011)

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of ESD

To fully understand what ESD means one must have an understanding of what '*Sustainable Development*' (SD) is. According to the Our Common Future Report (1987) and the World Commission on Environment and Development Document (1987: Chapter 2), SD is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts:

- The concept of '*needs*', in particular the essential needs of the world's poor, to which overriding priority should be given.
- The idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet needs.

Education which is meant to bring about SD would be the type of education which is designed to meet the demands for SD. It was realized that to have the best possible chance of making SD a reality there was a deliberate need to look at the vehicle to be used to disseminate information- the vehicle called education.

According to the UNESCO ESD Information Brief (1997), ESD is a vision of education that seeks to balance human economic well-being with cultural traditions and respect for the earth's natural resources. ESD applies trans-disciplinary educational methods and approaches to develop an ethic for lifelong learning: it

fosters respect for human needs that are compatible with sustainable use of natural resources and the needs of the planet; and nurtures a sense of global solidarity.

According to the UNESCO Director General's address to the permanent delegation following the World Summit for Sustainable Development (WSSD) in 2002, ESD is a dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating and enjoying a sustainable future (UNESCO, 1997).

ESD seeks to protect our planet and its future by finding a critical balance in the way that natural resources are utilized. It seeks to strike a balance between current exploitation and empathy for our predecessors. This is in order to make sure that the deeds of the current generation do not put the lives of future generations in jeopardy. ESD hence acknowledges that the well being of the world cannot be left in the hands of just a few individuals. It suggests that everyone must have a hand in protecting the whole world. Though implementing ESD has proven to be quite a formidable challenge because of its abstract nature, the good intentions at its core remain genuine. ESD also genuinely intends to involve everyone- regardless of age or social classification in society. I would like to assert that if ESD were to be defined in a single sentence that represents its essence, it would be that; ESD is education of the people, by the people, for the people and nature. It is education that is made by the people, implemented by the people and right through the process of its conceptualization to implementation the core beneficiaries are and should remain all the people of the world. ESD hence represents something greater

than a philosophy or ideology-it represents the most viable and practical means of saving and sustaining our planet and humankind.

2.2 Genesis of ESD

To fully appreciate the birth or beginning of ESD one has to grasp the background of Environmental Education (EE). Sandell *et al.* (2005: 9) state that:

Traditionally, environmental education was based on the belief that certain sets of values, knowledge-perspectives and attitudes are better able to contribute to environmental friendly action and the solving of environmental problems than others. These principles should, therefore, be prioritized in environmental education. Accordingly, it was the task of environmental educators to formulate certain standards of environmental education and to develop both content and methods that modify the behaviour of students in accordance with those values and perspectives. In the contemporary debate, however, most authors emphasize the social and cultural context-dependent character of the issues concerning environmental and developmental problems. This perspective has given rise to several approaches on environmental education that are less openly normative than the traditional methods.

As can be noted in the excerpt above, one of the new approaches which emphasizes social and cultural aspects of people's environment is ESD. EE and ESD are linked and sometimes the line between the two can be quite faint. However, it is worth noting that EE is the base on which ESD was established as people sought to improve upon the weaknesses of EE.

EE started in earnest about 38 years ago with the United Nations Conference on the Human Environment held in Stockholm in 1972. It recommended that EE be recognized and promoted in all countries. Chapter 82 of the UNESCO Educating for Sustainable Future Document (1997) states that *“It is clear, that the roots of ESD are firmly planted in environmental education”*. Chapter 83 of the same document further explains that in the early 1970s the emerging EE movement was given a powerful boost by the United Nations Conference on the Human Environment in Stockholm in 1972. The United Nations Conference on Human Environment set the tone for EE and led to the launch by UNESCO and the UN Environmental Programme (UNEP) of the International Environmental Education Programme (IIEP). Although the IIEP lasted up to 1995 its influence had far reaching effects on the educational initiatives and innovations from 1975 and beyond 1995- in fact, EE is alive and well today.

In 1994 UNESCO launched an international initiative called Education for a Sustainable Future. It was an interdisciplinary and inter-agency co-operation referred to as the Environment and Population Education and Information for Human Development (EPD) Project. The UNESCO (1997: 4) states that *“EPD is the main mechanism through which UNESCO responds to the recommendations of all the United Nations conferences concerning education, information and public awareness related to sustainable development.”* The years 1994 to 1995 were the key transition years for the realization of the ESD approach from EE. Weaknesses were observed in EE that necessitated the innovation of the approach called ESD. In essence ESD did not replace EE but was an approach innovated from EE. EE

must hence be viewed as the foundation of ESD. An analogy here can be made with the progression of the field of physics. Modern theoretical physics, which mushroomed in the early 20th century, championed by Albert Einstein and Niels Bohr among many of their fellow contemporaries, can be argued to be superior to classical physics. Classical physics is the forerunner of theoretical physics and was prominent in the 18th and 19th centuries. It was largely championed by Sir Isaac Newton. Though modern theoretical physics may be viewed by many as a replacement of classical physics this cannot be further from the truth. The truth lies in the fact that modern theoretical physics is intertwined with classical physics; theoretical physics is an innovation built on the foundation of classical physics. Without classical physics, theoretical physics would most likely be nonexistent or would have taken a longer time to reach the astonishing heights it has reached. Classical physics offered the foundation for theoretical physics to flourish. The foundation of classical physics is still crucial in helping young students or novices of physics to understand and master the fundamentals of modern theoretical physics.

This is the case with the relationship between EE and ESD; EE is the forerunner of ESD and provided the panoramic view which made it possible for people to improve upon it and come up with an innovation called ESD. One cannot understand ESD without a thorough knowledge of EE and how it started. It is vital that this connection between EE and ESD is clearly grasped.

Sandell *et al.* (2005) also suggest that ESD evolved from EE because over time people saw weaknesses that needed improving upon. Sandell *et al.* (2005:9) emphasize that:

This perspective has given rise to several approaches in environmental education that are less openly normative than the traditional methods. A point of departure for these approaches is that there are many conflicting voices about environmental questions in democratic societies and that nobody is in a neutral position to decide upon what actions will be most beneficial for our environment in the future. It has therefore been stressed that environmental education should be characterized by pluralism. An important standpoint among these approaches is that re-establishing the essential role of education will support the freedom to form one's own opinion and enhancing students' competence in participating in democratic debate.

It can be seen that EE was thought to have a top-down approach which had little respect for the diverse views of the people at the lower end of the academic hierarchical structure. It appeared to concentrate more on technocrats and their imposition of new ideas on the uninformed citizenry or lay people. It was a question of the word of knowledgeable experts standing up against the word of lay-people. This was a major weakness of EE- a lack of pluralism and a democratic approach. To remedy this dilemma, ESD seeks to empower the local citizenry by acknowledging that local people too have relevant knowledge. In fact, the local people know more about their surroundings than people from outside their area, hence the need for their opinions to count if any new approaches for sustainable

development are to work effectively. The social and cultural context and the uniqueness of each community has to be respected and taken into consideration prior to any decisions or new innovations being applied. In support of this assertion Sandell *et al.* (2005: 10) state that:

Many authors and researchers have brought attention to the potential of ESD in this change towards a more pluralistic approach. As they see it, ESD creates the opportunity to make a new start and reorient and vitalize environmental education. It is made clear here that there can never be a fixed connection between sustainability and development, hence the concept of ESD must be formed in relation to the local cultural, geographical, social and historical circumstances in which the education is to be put into practice. From this point of view ESD broadens the scope of EE as it connects ecological, economic and social development and thus creates a balance between sustainable human development and environmental protection. The authors maintain that ESD can be regarded as a tool in the achievement of sustainability through democratic practice.

ESD is not without its fair share of critics. In fact, Sandell *et al.* (2005:10) emphasize as follows:

...but the concept of ESD is not uncontroversial. To some debaters ESD actually opposes pluralism in EE. It is pointed out that the policy documents that form the basis of ESD focus exclusively on the well-being of humans and ignore the intrinsic values of nature. In addition, and especially when associated with an economic market philosophy, the concept of 'development' implies a constant economic and technological

growth in line with 'more is always better'. Some commentators claim, that in the rhetoric of ESD, education is regarded as a tool for sustainable development, which makes education instrumental in striving for something external to itself and prescribing a preferred end. Thus, ESD is seen as top-down concept, promoting a specific ideology created by politicians and experts in power, at the cost of the emancipated qualities and the critical dimensions of education.

As can be seen from the excerpt above, the same weaknesses associated with EE seem to be slapped on ESD by some experts. However, I assert that it is the abstract nature of ESD that makes such negative rhetoric seem valid. Any concept that is abstract and difficult to implement on the ground will appear to be a top-down approach. The abstract nature of ESD just like its forerunner will always make it an easy target of unfair criticism.

2.3 Relevance of ESD to Society and Local Communities

According to the UNESCO (1997), Education must not be equated with schooling or formal education alone. It includes non-formal and informal modes of instruction and learning as well, including traditional learning acquired in the home and community. By defining education broadly, one also widens the community of educators.

The question that arises here is; who are the key educators in the field of ESD? The answer is simple-everyone, but more especially those directly related to the localized area. Everyone is a potential educator regardless of their station in life or

economic status. It is not the task of only a few people in the world to take up the role of being educators. While it is true that a few people may have specialized knowledge on technical issues, it is the local people that have relevant knowledge about their surrounding environments or local communities. Whether they, the locals, are aware of it or not, local knowledge makes each and every member of any local community a potential educator.

According to the UNESCO (1997), the motto of the environmental education movement has been: *'think globally, act locally'*. Over a period of more than two decades, it developed a highly active pedagogy based on this premise. In the early grades, in particular, the emphasis was upon learning the local environment through field studies and classroom experiments. By starting in the primary grades, before the process of compartmentalization that marks secondary and particularly higher education sets in, students were encouraged to examine environmental issues from different angles and perspectives. It is, however, for everyone to act locally and not just those that are in the process of acquiring or have acquired knowledge through formal education. It is only if everyone thinks globally; which is to say only if everyone is aware of the positive or negative consequences of their actions on the whole world, that each and every act performed locally by everyone will through cooperative action contribute to a change that will have a global impact and will see us move ahead in our endeavour to see the world become a better place vis-à-vis SD.

2.4 Why Make High School Pupils a Target of ESD

Scott and Gough (2003:147) explain that *“by learning about our lives we equip ourselves to choose most advantageously as the future unfolds.”* This statement highlights the essence of education in relation to SD. Investing in education must be seen as an inevitable initiative because investing in the education of young ones and the youth is like taking an insurance cover for the well being of the whole world. It is the best way to guarantee the well being of the whole world in the future.

Since the relevance of ESD to society and various local communities has been looked at in the previous subheading, it is imperative that special attention be given to children and youths that are inevitably members of the same society and local communities. According to the UNESCO (1997), it is widely agreed that education is the most effective means that society possesses for confronting the challenges of the future. Indeed, education will shape the world of tomorrow. Progress increasingly depends upon the products of educated minds: upon research, invention, innovation and adaptation.

We all know from experience that people who have been in school and have enlightened minds are like keys that can open the door to research, invention, innovation and adaptation. The educated hold fast to what they consider to be scientific truths but at the same time have an open mind to new ideas and knowledge that challenges the status quo. This mentality of the educated is indispensable for the future of ESD. It should be noted that the relevance of formal

education in no way belittles or degrades the significance of traditional knowledge or knowledge acquired through non-formal or informal means. On the contrary, formal education has the innovative ability to take advantage of traditional knowledge and make it even more relevant to our world. Though people in a traditional set-up, including indigenous people, may appreciate nature and their environment and have existed side by side with it for many generations, it is only the formal structures of education that have the technology and support of research skills that can clearly explain and unlock the intricate ecological balance and relationship between mankind and nature. This knowledge once uncovered can only add value to the lives of those who dwell in the indigenous or traditional realm and to the general body of knowledge.

The second significance of formal education lies in the fact that there is already a global movement with a set goal of ending illiteracy through encouraging children to go to school and acquire formal education—at the very least basic education. UNESCO (1997:24) states that:

Inherent in the concept of sustainability is the vision of a more equitable world. This can only be achieved by providing the disadvantaged with the means to advance themselves and their families. And of these means, the most essential is education, particularly basic education. Over 100 million children between the ages of 6 and 11 never attend school and tens of millions more enter school only to drop out within a few months or years. Moreover, there are over 800 million illiterate adults, most of whom have never been enrolled in school.

As long as traditional knowledge is not cast out through the window the acquisition of formal education, even if it is only basic education, is a plus to humanity and ESD. Lack of education and ignorance has very few advantages to offer if at all there are any. To try and combat the high levels of illiteracy the World Conference on Education for All in Jomtien in 1990 came up with recommendations which included: environmental literacy; ensuring environmental education and training in all sectors of society; increasing access to environmental education and training; and promoting environmental and developmental concepts in all education programmes.

In 2000, the World Education Forum (Dakar) confirmed the World Declaration on Education for All, and this was also incorporated into the MDGs and the WSSD Implementation Plan. The Dakar Framework for Action states that *“Education is....the key to sustainable development and peace and stability with and among countries, and thus an indispensable means for effective participation in the societies and economies of the twenty-first century”* (UNESCO, 2002b:15).

Rakotomalala (2003:1) further notes that:

Combined with sound macro-economic policies, education is fundamental for the construction of globally competitive economies and democratic societies. Education is key to creating, applying and spreading new ideas and technologies which in turn are critical for sustained growth; it augments cognitive and other skills, which in turn increase labour productivity. The expansion of educational opportunity is a win-win strategy that in most societies is far easier

to implement than the redistribution of other assets such as land and capital.

Education is also viewed as the best means for equalizing the economic disparities that exist between the rich and the poor. Education is a more reasonable and realistic solution than expecting the rich to willingly redistribute the wealth they believe they have worked hard for. Though the redistribution of wealth may appear like a just way of attaining economic equalization among the various economic classes of society, it is not viable. It must not be forgotten that poverty is one of the key barriers to ESD and SD. The more economically stable people become the lesser the pressure of unsustainable practices on the environment. Education is the key to reducing poverty. The type of education that plays the most critical role in lifting the poor from poverty especially in the third world is formal education.

The World Summit for Sustainable Development Implementation Plan (UN 2002a) recognizes that education is critical for promoting SD. The document calls, among other things, for governments to:

- Integrate SD into education systems at all levels to promote education as a key agent of change.
- Incorporate ESD into global plans for providing ‘Education for All’ (as outlined in the Dakar Framework for Action). MDGs; Millennium Development Goal number 2 aspires to achieve universal primary education: Ensure that all boys and girls complete a full course of primary schooling.

Since there is a world concern and aspiration towards promoting universal and basic education it means formal education will with time gain strength. It will take prominence over non-formal education and informal education as more and more of the human population is skewed towards formal education.

The future of SD lies in the ability of the current generation to invest in educating their young and changing their mentality. If the minds of young people in nursery, primary, basic and high schools can be bombarded with type of education which changes the way they think and view the world vis-à-vis SD then the battle to save the world through sustainable living will receive a definite boost.

2.5 Main Aim of Geography in Zambian High Schools

Her Majesty's Inspectors of Schools (1980), define a curriculum as follows:

The Curriculum: All the opportunities for learning provided by the school. It includes the formal programme of lessons in the timetables; the so-called 'extra-curricular' and 'out-of-school' activities deliberately promoted or supported by the school; and the climate of relationships, attitudes, styles of behaviour and the general quality of life established in the school community as a whole. (As quoted in Bailey and Fox, 1999: 11)

It is vital that the meaning of the term *curriculum* is understood before we look at the specific syllabus of geography in the Zambian context. The curriculum is meant to groom the pupils into individuals who will meet the needs and aspirations of the country as a whole. It includes classroom activities and out of the classroom activities.

The geography syllabus is a component of the wider curriculum and in the Zambian high school context; the geography syllabus has a number of aims it seeks to attain.

They are outlined as follows;

- i) Basic geographical character of the pupil's local environment.
- ii) Systematic geography of the *home* area as a part of a more general study of the wider region of which the *home* area forms a part.
- iii) Major issues of geographical nature arising from people's relationships with their environment.
- iv) Provision of opportunities for every person to acquire values, attitudes, commitment and skills needed to protect and improve the environment.
- v) Creation of new patterns of behaviour of individuals, groups and society as a whole towards the environment. (Source: Geography High School Syllabus Grade 10-12: 2000).

An analysis of the above aims, suggests that high school geography syllabus is in line with the core aims of ESD, but the situation on the ground reveals otherwise. Officially, ESD has not been incorporated into the educational curriculum and is still an unknown quantity at high school level. For example, when aims i and ii, above, refer to *local* and *home* they are actually referring to issues at national level. However, the national issues affecting the country in Kasama are not exactly local issues to a child in Chadiza District of the Eastern province of Zambia. The geography syllabus should be further localized in order for it to become more relevant to the pupils and the requirements of ESD. Only Section G of the syllabus; the section that covers field projects of the geography high school syllabus appears

to be locally relevant to the pupils' personal environment-the environment in which the pupils are in direct contact.

The CDC Teacher Curriculum Manual (2001: 26) states that:

*The teachers should implement the local curriculum in heir work.
They should integrate the local curriculum into the national core curriculum, and in the school-based continuous assessment.*

This implemented local curriculum is supposed to be developed by the teachers themselves with regard to the local environment in which their schools are located.

2.6 Unique Relationship between Geography as a Subject and ESD

The unique relationship between geography and ESD lies in the diversity and scope of geography. One just has to look at the geography syllabus to have a clear picture of this.

SECTION A-Basic Techniques and Skills in Map Reading

SECTION B-Elements of Physical Geography

SECTION C-Elements of Human Geography

SECTION D- Zambia

SECTION E- The Sub-Region (Southern Africa)

SECTION G- Field Project (Source of Data: Geography Syllabus 10-12: 2000)

The sections mentioned above give a clear picture of the scope and depth of geography. Very few subjects have the opportunity to offer he psychomotor skills of map reading, the practical local experience of field projects and the human and

physical aspects found in human and physical geography all in one syllabus. It is this diversity that makes geography perfect as a vehicle for ESD. Geography possesses the aspects of a natural science in physical geography and a social science in human geography. This means geography cover the environment unlike any other subject. Bailey and Fox (1999) argue that studies in environmental geography pull physical and human themes together and remind us, once again, that the well-being, even the survival, of the human race depends up our maintaining the health of the paper-thin life layer on the earth's surface within which we live: the atmosphere, oceans, soils, plants, animals and oth living creatures which comprise the biosphere. No other subject covers such a wide scope of issues related to our planet.

UNESCO (2006) explains that there is a general pessimistic view on the abstract nature of ESD. ESD remains an enigma to many governments and schools. Governments, ministries of education, school districts, and educators have expressed a willingness to adopt ESD programs; however no universal successful working models currently exist. Without models to adopt or adapt, governments and schools must create a process to define what education for sustainability is with respect to the local context.

While ESD is abstract in nature, I have to disagree with any suggestion that it cannot be implemented. ESD can be implemented if the right means of doing so are discovered. I suggest that one of those means is geography as a subject in high school. Geography is currently one of the few subjects that offer pupils the

opportunity to investigate the problems in their local community and provide solutions for them through field reports. However, it must be emphasized that the field project is largely underutilized. A more productive mechanism needs to be found. Bailey and Fox (1996:18) sum up the essence of geography perfectly when they state that:

The central message of geography is complementary: it is that all human beings are dependent upon one another because all share a globally inter-connected environment. What people do in one place may therefore affect people even in faraway places.

From this excerpt one can clearly see that no other subject in the Zambian national curriculum is as well connected or relevant to mankind's social interactions, the environment and SD as geography.

2.7 Case Studies of the Implementation of ESD Globally at High School Level

This section presents a few examples of schools, from around the world, where ESD has been implemented.

a) 30 Secondary Schools and the Republic Avloni Teachers Training Institute, Tashkent, Uzbekistan.

Having received the UNESCO (Decade on ESD) DESD multimedia teacher education resource material: Teaching and Learning for a Sustainable Future (<http://www.unesco.org/education/tlsf/index.htm>), Uzbekistan was keen to examine how best to integrate the concept of SD into their school curricula. ASPnet

Schools (UNESCO Associated Schools Project Network in ESD) all over Uzbekistan were invited to take part in this pioneering effort.

Based on the DESD UNESCO (2006) resource material, the Uzbekistan National University elaborated an innovative DESD learning manual for the teachers and educators. It provided both a theoretical framework and a practical approach advocating participative methodology such as role play, brainstorming and project work among others. A series of training seminars were then held for ASPnet teachers, teacher trainers, policy makers, university lecturers and media specialists. Students took part in events organized by the non-governmental organization “*Environment and a Healthy Life Style*” and organized peer-to-peer training for friends. Any obstacles encountered were overcome through a team effort i.e. by teachers, policy makers, community members, students and partners. The project was conducted from April 2007 to December 2008 but it was expected to continue with more training seminars and contests on ESD.

The project led to the production of an innovative DESD learning manual and integration of ESD in the curriculum of some schools and the Republic Avloni Teachers Training Institute. Both the teachers and the pupils gained valuable knowledge and developed new attitudes in support of SD, respect for nature and limited natural resources, the halting of climate change and the need for peace and equality. The new manual benefited a wide range of users, not only teachers and educators but also policy-makers, researchers and the media. This project was fully recognized and supported by the Ministry of Education of Uzbekistan.

b) College Michel Chasles Public Secondary School, Epernon, France.

According to UNESCO Associated Schools Project Network (2009), the project had the objective of ensuring a holistic approach to integrating ESD in school curricula and enabling students to become the main actors in the learning process. The project started in January 2004. It was on-going and student led. Due to the regular meetings of the “*eco-delegate*” the students provided a platform for decision-making and project implementation. In March 2007 the College signed a School AGENDA 21 aiming to integrate the principles, values and concrete practices of SD throughout the curriculum and into the learning process. Each year students proposed a wide range of activities and events dealing with sustainability including the setting up of some 18 exhibitions on all sorts of topics, from saving energy to dealing with the special needs of young people and from keeping the school clean and tidy to global warming. Two major conferences-debates were held each year and a number of clubs and workshops were available to students during their free time. As of 2009, the project had involved 1000 students aged between 9 and 16 as well as teachers.

The adoption of a school version of Agenda 21 was instrumental in bringing about positive change. With concrete indicators for observing changes in behavior, the following were observed; a decrease in energy consumption; fifty-three per cent less water used; thirty-seven per cent less electricity; seven per cent less gas; four tonnes of paper recycled each year; less litter around the school and efforts to reduce photocopies.

Educational nature zones such as a pond, garden, weather station were set up and cared for by the students. A tool kit was produced for the eco-delegates in collaboration with regional educational authorities and distributed to all 50 public and private schools. Some 14 student clubs and 5 thematic weeks each year of special concrete activities related to key aspects of ESD.

Although it was difficult to measure or quantify behavioural change it was clear that the facts and figures at this school spoke for themselves and the school had since gained national recognition for its commitment to environmental issues. A large part of the success was as a result of the involvement and initiation of most of the activities by the students themselves.

c) Al-Mutanabbi School Public Secondary in Ibra-Al-Yahmadi, Oman.

According to UNESCO Associated Schools Project Network (2009), a project was carried out at the Al-Mutanabbi School, by Salim Hamood Abdullah, whose objectives were to increase awareness and appreciation of the Omani environment among students and society and their commitment to protect it and developing students' photographic skills and an aesthetic approach to the environment.

This project relied on aesthetics, beauty and creativity. In early 2008, students were invited to take part in a photography contest to capture some of the most beautiful features of their environment. Students were provided with guidance on the art of photography as well as information on the wide use of photography including scientific research. Students were invited to take pictures of the beautiful landscapes

of Oman and often with the help of their families they went to the seaside, the country side and into the desert.

The pupils acquired new skills in photography and discovered new places and sites and unique beauty in the country. The pupils had their interest heightened and willingness to protect the Omani environment.

2.8 Case Studies of the Implementation of ESD in Africa at High School Level

According to UNESCO Associated Schools Project Network (2009), a number of projects have been undertaken in Africa to try and implement ESD at the secondary school level. The following are examples of such projects:

a) Lycee de Zamengoe Public Secondary School in Yaounde, Cameroun.

The UNESCO Associated Schools Project Network (2009) document explains that the objective of the project was to enhance the scientific and technical capacity of young people to contribute to the conservation of biodiversity and good health in urban areas of the city of Yaounde. Students were prepared for the projects and understood well what was expected of them and were committed to achieving results. For their research, young people visited humid zones in the city. They collected data on the water drainage and purification issues, analyzed them in a laboratory, discussed the results and wrote reports on their findings.

The overall assessment of the project was done during a conference held the week of 11th February 2009 (National Youth Week). However, it is already recognized

that it has had a major impact on the participating students. They grasped the issues at stake and assumed leadership qualities for contributing to a sustainable future, and they developed a much greater sense of responsibility for caring for their immediate environment, and improving living and health conditions.

b) Athlone High School in Cape Town, South Africa.

The UNESCO Associated Schools Project Network (2009) explains that at Athlone High School the project objective was to care and share with those who are less fortunate. The project sought to sensitize students to the needs of others and encouraged them to lend support to others. Visits were made to three places in the community: an orphanage (the Christine Revell Home), a camp of squatters and a home for the elderly. In each place students demonstrated empathy and solidarity.

In an age of technological distractions the project gave students an opportunity to learn more about some of the hard conditions in their community and to address environmental issues. Young people not only met children, adults and elderly who were less fortunate than themselves but showed interest in them and the situations, and offered them some comfort. The experience gained was shared with the larger school body during assemblies.

c) Makerere College Public Secondary in Kampala, Uganda.

According to UNESCO Associated Schools Project Network (2009) the objectives of the project were to enable youngsters to remain healthy and acquire social responsibility, to empower students with knowledge, moral values and life skills

required to meet effectively the challenges facing them and to entice learners to focus on career development and maintain aspirations.

In an effort to shape attitudes and behaviour conducive to a sustainable future, “*gender desks*” were set up whereby students and resource persons helped other students at various levels: lower, middle and upper school, through chat forums where students could express openly issues on their mind, and sought advice and guidance. Topics included alcoholism, drug abuse, premarital sex, and the increased number of HIV and AIDS cases. Teachers supported the “*gender desks*” by relying on some new, innovative and creative teaching methods and skills and a wide range of creative activities were conducted including participative discussions, drama, music, poetry, essays, song writing and dance. Environmental clubs were set up and students took part in planting grass in the school compound as a measure to prevent soil erosion and in creating recreational areas to enhance the school’s environment. The project involved all 1600 students (aged between 12 and 18), as well as the teachers and support staff. The project brought about positive peer influence, the ability to identify good values, the adoption of preventive behaviour and higher motivation, increased awareness about diseases, alcohol and drug addiction and the disastrous effects on one’s health. (Source for all case studies: UNESCO (2009) Associated Schools Project Network: Second Collection of Good Practices in ESD).

Two things that came out clearly in the cases for ESD implementation were:

- i) The best way to guarantee continuity is if the programme or project is incorporated into the curriculum and actively involves the pupils in the planning and implementation process.
- ii) The case studies that involved pupils and incorporated the programmes or projects into the curriculum clearly showed more impressive results.

The cases of the thirty schools in Tankent, Uzbekistan and College Michel Chasles Public Secondary School, Epernon, France stood out as excellent examples of how ESD can be implemented through high school curricula.

2.9 Case Studies on Implementation of ESD in Zambia at High School Level

No case studies had been attempted in Zambia on the implementation of ESD at high school level as of the time this study was done. However, a national workshop was held on 6th February, 2006 in Kabulonga, Lusaka- Zambia, to come up with guidelines on how Zambia was going to participate in the UN Decade of ESD. According to Lupele (ed.) (2006), the workshop came up with the following challenges which the implementation of ESD in Zambia was facing in a number of sectors.

- ESD as a concept had not been explicitly included in many policies that influence the practice of most institutions.
- Many institutions work in isolation and there was little or no partnership/collaboration with others in the similar sector.

- Whilst some policies that could foster SD did exist, the implementation process was often weak. In some cases, there was no strategy for implementation.
- As much as laws like the EPPCA, ZAWA, Forestry and Fisheries Acts aimed to promote community participation, public participation in decision making processes was still very weak.
- There had been inadequate research done in ESD. It was, however, hoped that with the introduction of post graduate studies in EE at master's degree level at the University of Zambia, more research into SD or SD would be initiated.
- Weak utilisation of knowledge from research to influence the direction of SD.
- Failure to tap into cultural values (indigenous knowledge) to address SD. There was generally a lack of entrepreneurship and investments in indigenous knowledge research and practice.
- There was a gap between knowledge and practice.
- Lack of capacity building and training in ESD. As a result there was inadequate human resource to lead into the implementation of ESD programmes.
- Thus there was little awareness about environmental issues and SD.
- There was generally weak advocacy and vision building.

- Inadequate learning and teaching materials in ESD due to poor funding and lack of infrastructure.
- Inadequate debate on ESD. Information dissemination lacked coordination and concerted efforts.
- Lack of political will, or political interference where environmental compliance was enforced.

It can be noted that these challenges, though coming from a diverse range of institutions or government departments in Zambia, had implications on the possibility of ESD being implemented at high school level. Great strides had been made to implement ESD at university level, that is, at the University of Zambia, where programmes in Environmental Education at undergraduate and Master's degree level offered the students an in-depth look and opportunity to be oriented to the essence of ESD. However, little has been done by the MoE and CDC to help the implementation of ESD get to the Zambian high school level.

The following factors were noted by Lupele (ed.) (2006) as the key challenges for engaging in ESD practice. It seems these same challenges have made it impossible for implementation to take off at high school level.

- Funding was the biggest problem.
- There seemed to be the feeling that there was too much work to be done in ESD.
- Difficulties in involving local people in development issues.
- Often local needs conflicted with those of the donors.

- The gap between the theory and practice of ESD was still wide.
- Political will to support ESD activities was lacking.

Having recognised the limitations of the ESD implementation at school level the workshop came up with the following recommendations to help implement ESD at school level.

- Development and implementation of school environmental policy.
- Involving learners in the development and use of learning support materials.
- Localization of curriculum.
- Learner-centred approaches.
- Field trips and experiential learning.
- Critical learning through debates and group work.

The Zambia National Workshop was held on the 6th February, 2006; but four years down the line, as of the time of this study in the year 2010, little had been done to show a genuine commitment by the government through its key institutions (MoE and CDC) to roll out ESD in high schools. The most effective way of doing this would be through modifying the national high school curriculum. And geography as a subject is an option deserving serious consideration.

2.10 Summary of the Literature Review

The reviewed literature revealed that the international community (global and African) had taken a lead in implementing ESD at high school level. The implementation was based on the established relevance of ESD in making people appreciate their local environments and become effective members of their local communities. The literature revealed various cases of ESD being implemented among youths and how it had been effective in equipping them with skills and attitudes that have changed their lifestyles and turned them into proactive agents for the environment and sustainable living.

Literature reviewed vis-à-vis the Zambian situation revealed that ESD was not yet implemented at high school level. While the Zambian National Educational Curriculum and geography syllabus reflected a clear need to make education and specifically geography more relevant to the lives of pupils this had not been translated into action in schools and remained an endeavour on paper only. The literature revealed a clear gap between Zambia and the international community in the implementation of ESD at high school level. It also revealed a lack of ability, on the part of the MoE and CDC to translate what was written down as policy into action on the ground.

CHAPTER THREE

METHODOLOGY

3.1 Study Design

The research design used was the descriptive survey method which is also called the normative survey. Sidhu (2008) defines a descriptive survey as a method of educational research which attempts to analyze, interpret, and report the present status of a social institution, group or area. It deals with a cross-section of the present, of duration, sufficient for examination. It seeks to answer the question, “*What are the real facts with regard to existing conditions*”. This research design is quantitative but also has qualitative aspects. This research design was used because of the large pupil population and because a survey is the best method to use when the intention is to look at the current status of an institution or program. Leedy and Ormrod (2001) explain that the approach that looks most closely at phenomena of the present moment is the descriptive survey. They further explain that a survey is vital because its findings can be generalised. Sidhu (2008) offers the following characteristics of a normative or descriptive survey:

- It is essentially cross-sectional.
- It gathers data from a relatively large number of cases.
- It is concerned not with the characteristics of individuals but with generalised statistics of the whole population or a representative sample.
- May be qualitative or quantitative.

All the characteristics mentioned above were synonymous with this study. The study covered ten out of the twenty high schools and the findings were generalised to cover all the high schools in Lusaka City.

3.2 Study Population

Below are the details and strata of the population under study.

Table 1. Details of the Study Population and Strata

S/N	Target Population		Sample Schools	Sample size	
	School Name	Pupil Population		Pupils	Heads of Section
1	Arakan High School	1325	Chelston High School (mixed sex)	40	1
2	Chelston High School	1321	Kamwala High School(mixed sex)	40	1
3	Chilenje High School	283	Chunga High School(mixed sex)	40	1
4	Chinika High School	2087	Lusaka High School(mixed sex)	40	1
5	Chunga High School	826	Matero Girls High School	40	1
6	David Kaunda High School	900	Kabulonga Girls High School	40	1
7	Highland High School	599	Munali Girls High School	40	1
8	Kabulonga Boys	827	Kabulonga Boys High School	40	1
9	Kabulonga Girls	1060	Matero Boys Secondary	40	1
10	Kamulanga High School	950	Munali Boys High School	40	1
11	Kamwala High	1239			
12	Libala High	1373			

13	Lusaka High	1091			
14	Matero Boys	261			
15	Matero Girls	965			
16	Munali Girls	1338			
17	Munali Boys	1313			
18	Olympia High	1420			
19	Roma Girls	261			
20	St. Mary's	322			
	Grand Total	19,761		400	10

(Source: ED-Assist, Ministry of Education, 2010)

The universal population targeted was a population of 19,761 pupils from grades ten to twelve at high school level in Lusaka City. The sample size was four hundred and eleven which was the summation of four hundred grade twelve geography pupils, ten geography section heads and one CDC geography specialist.

3.3 Sampling Methods

The following sampling procedures were used in this study.

3.3.1 Cluster Sampling Method and Lottery Sampling Method

The cluster sampling method was used because the population of pupils to be covered by the study was large- the total number of high school pupils in Lusaka City at the time of the study was 19,761 (excluding Academic Production Unit pupils). The second reason why the cluster sampling method was used was to

ensure that there was no gender bias in the selection of the research sample. Hence, the twenty high schools in Lusaka City were clustered into three clusters. Cluster one was for the girls' high schools-Kabulonga, Matero, Munali, Roma and St. Mary's. Cluster two was for the boys' high schools-Matero, Munali and Kabulonga. Cluster three comprised all the remaining mixed-sex high schools-Arakan, Chelston, Chilenje, Chinika, Chunga, David Kaunda, Kamulanga, Libala, Lusaka and Olympia. Because the maximum number of boys' high schools from cluster three was three, three more schools were picked through the lottery method from cluster one. This brought the number of schools selected for the study to six. Four more schools were selected from cluster three using the lottery method to bring the total number of schools sampled for the study to ten.

Table 2: Schools Selected Using the Cluster Sampling Method for Study

Serial No.	Selected Schools
1	Lusaka High School (mixed sex)
2	Chelston High School (mixed sex)
3	Chunga High School (mixed sex)
4	Kamwala High School (mixed sex)
5	Matero Girls High School
6	Kabulonga Girls High School
7	Munali Girls High School
8	Kabulonga Boys High School
9	Matero Boys Secondary School
10	Munali Boys High School

(Source:ED-Assist Ministry of Education (2010)

3.3.2 Purposive Sampling Method and Lottery Sampling Method

From each of the ten selected schools the grade twelve pupils were selected purposively as the focus of the study. From each selected school of the single sex schools, forty grade twelve pupils taking geography were picked through the random sampling lottery method in order to make sure that each of the pupils that take geography at high school level in the targeted schools had an equal opportunity to be selected. In the mixed sex schools girls and boys were clustered in two groups, according to their sex, from which twenty pupils of each sex were picked using the random sampling lottery method to come up with a total of forty. The total pupil sample size from all the ten schools was four hundred. In the lottery method the names of the pupils or units were written on slips of paper and were put into a box. Then the slips of paper were mixed thoroughly and a number of slips equal to the number of pupils to make the sample were picked from the box. The names on the papers picked randomly from the box constituted the sample. This was the method used to pick the sample of pupils to answer questionnaires and be part of the focus group discussions.

One geography head of section was purposively picked from each school. This brought the total of geography section heads to ten. The geography subject specialist from CDC was also purposively picked. These resource persons were purposely picked because they were the only ones that held their respective titles or positions of seniority. The sample size of four hundred pupils was arrived at as a requirement of the descriptive survey method. Leedy and Ormrod (2001:221) state

that “*beyond a certain point (at approximately $N= 5000$), the population size is almost irrelevant, and a sample size of 400 will be adequate.*”

When one considers the total number of high school pupils in Lusaka City to be 19,761 the minimum sample size that sufficed was four hundred pupils.

3.4 Methods of Secondary Data Collection

The secondary data was collected by reading various published sources such as books, articles, reports and various sources from the internet that had the information related to the current research topic. These various sources of data were read and a critical literature review was offered vis-à-vis the research topic. The essence of this was to connect existing knowledge and theory to the purpose of the research and hence reveal a gap of knowledge.

3.5 Methods of Primary Data Collection

The primary data collection instruments used were questionnaires and focus group discussions. Questionnaires and discussions are procedures associated with the descriptive or normative survey (Sidhu: 2008).

Prior to visiting any particular school permission was sought from the Permanent Secretary for the Ministry of Education to visit any high school within Lusaka District that was to be the source of respondents for the research (refer to Appendix 5 for Introductory Letter). Upon arrival at all the schools that were visited, permission was sort from the headmasters or deputy headmasters to see the heads

of department for social sciences. The heads of department then gave the researcher permission to have an audience with the section heads for geography and grade twelve pupils taking geography. Prior to seeing the CDC specialist for geography, permission was sought from the Director for the CDC.

3.5.1 Questionnaires

The questionnaires were prepared for the pupils, and geography heads of section at the visited high schools and the geography subject specialist at CDC. Refer to Appendix 1, 2 and 3 respectively. The questionnaires comprised questions that were both closed and open ended in form. Closed ended questions were meant to collect objective and to the point responses, while the open ended questions were intended to offer the respondents greater depth in responding. The questionnaires were given out to the selected pupils who filled them in. The researcher was present to offer clarifications to the respondents. Where necessary follow up questions were asked after the pupils and geography subject specialist had finished filling their questionnaires.

3.5.2 Focus Group Discussions

The researcher purposively sampled geography pupils as the ideal source of information. A sample of pupils from among all the pupils taking geography was selected using the lottery method which is a random sampling method. Those selected for the discussions were placed in four groups of ten pupils each and the discussions were facilitated by the researcher himself. The focus group discussions offered the pupils a friendly environment in which they could open up and talk

freely. According to Christensen and Johnson (2004:186), focus group discussions are especially useful as a complement to other methods of data collection. Christensen and Johnson further add that focus group discussions are useful for providing in-depth information in a relatively short period of time. Group discussions were vital because the researcher was present to remove any doubts and misunderstanding. The discussions provided an opportunity to the interviewer to probe the respondents further.

Sidhu (2008) suggests that certain methods of data collection are best used with some categories of people. He suggests categories of people with certain unique characteristics such as; young children, persons with limited intelligence or concentration. In this case, ninety per cent of the respondents were 18 years or younger. Teenagers are known to have a problem concentrating over long periods of time. The focus group discussions hence offered an opportunity to the interviewer to direct and guide the wandering and excited teenage minds in the right direction. Refer to Appendix 4 for a sample of focus group discussion schedule.

3.6 Data Processing and Analysis

The raw data collected was processed quantitatively and qualitatively by the researcher through the Statistical Package for the Social Scientists (SPSS) software. This entailed coding, entering, processing, interpreting and finally presenting the data in the form of tables, graphs and charts. The processed data was examined and

analysed in line with the research objectives and questions. The key themes derived from the research questions and objectives were:

- Relevance of ESD to geography.
- Attitudes of Pupils to geography.
- Improvements that could be made to geography to help pupils thrive in their local environments.

3.7 Test of Validity

Questionnaires were distributed to a second set of respondents picked randomly two weeks after the initial round of questionnaires was given out to check if the initial collected data was accurate or off the mark.

3.8 Limitations

The following were the limitations of the study:

- Collection of data was an up-hill battle in some institutions as some administrators were difficult to work with. Some respondents showed apathy towards providing responses.
- Finding documentation on ESD in Africa and particularly in Zambia with respect to the high school situation was quite a challenge.
- The sample size used in this study was the minimum acceptable by the descriptive survey research design. This was so because of delayed research funding.

CHAPTER FOUR

RESEARCH FINDINGS

This chapter presents the findings gathered from the field of study. The presentation of findings is structured according to the research questions on one hand and the sources of the collected data, these being; pupils, geography heads of section-who are also geography teachers and the geography curriculum development specialist on the other hand. The study focussed on capturing the respondents views, experiences and opinions vis-à-vis the objectives and research questions of the study. The following section presents the characteristics of pupil respondents.

4.1 Characteristics of Pupil Respondents

The characteristics of the pupils that were considered were; gender, age and grade. Gender was an important characteristic to consider as the study sought to attain an equal representation of the sexes in the research sample. Since the study focused on pupils at high school level-specifically grade twelve, it was important to consider the age of the pupil respondents in order to find out what their common age range was. The pupils in grade twelve were targeted by the study because they had the most experience amongst pupils taking geography at high school level. The following subsection looks at the gender of the pupil respondents covered by the study.

4.1.1 Percentage Distribution of Respondents' Gender

It was important to consider the gender of the pupils to ensure there was no gender bias in the selection of the sample. Equal numbers of the males and females were sampled by the study as shown in table 3 below.

Table 3: Gender of Pupils in the Research Sample

Sex of Respondents	Frequency	Percentage (%)
Male	200	50
Female	200	50
Total	400	100

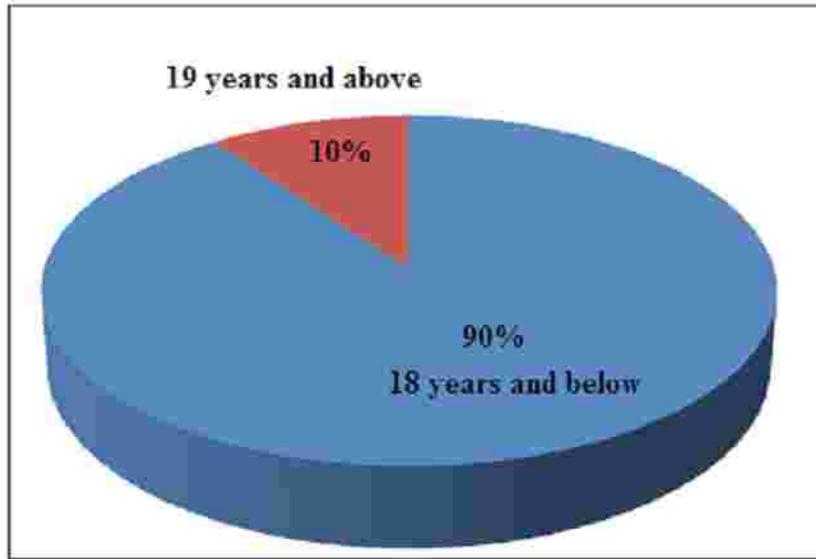
Source: Field Data (2010)

The above table shows the gender percentage distribution of the pupils who comprised the focus sample group for the study. The percentages (fifty per cent) for both sexes of pupils represented 200 males and females respectively. Having looked at the gender of the pupils the next subsection looks the age of geography pupil respondents covered by the study.

4.1.2 Distribution of Pupils' Sample by Age

The age range of the pupils was relevant to the study because it helped the researcher determine the exact age range that characterized the pupils in grade twelve at high school level. The exact age range had to be established in order to aid in determining ways to be used to deal with and approach the pupils. Age has been known to have an influence on the academic maturity of pupils.

Figure 3: Age Group of Respondents from Selected High Schools of Lusaka City



Source: Field Data (2010)

Figure 3 above shows that the majority of the pupils were eighteen years old or younger. This majority represented a percentage of ninety per cent out of the total study sample of 400 pupils. Only ten per cent of the pupil sample population was aged 19 years and above. After looking at the age of the pupils the study next addresses the grade of the geography pupils.

4.1.3 School Grade of Respondents

The geography grade twelve pupils were the focus of the study because they had spent three years in high school and had the most experience in geography amongst the pupils. The entire sample population of pupils came from grade twelve.

4.2 Potential Contribution of ESD to Geography

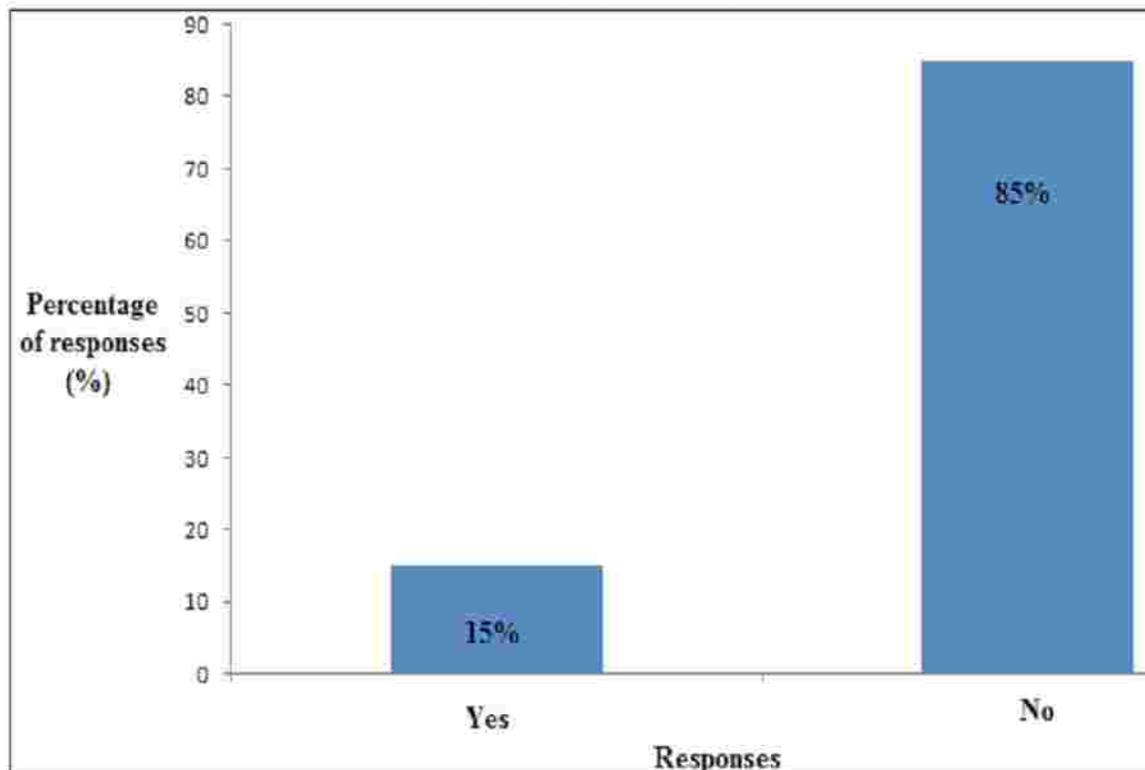
This section presents findings in relationship to the first research objective of this study, which was; the possible contribution of ESD to geography in the Zambian

High School Curriculum. The probable linkages between ESD and geography were the key areas of interest. In the following subsection the study addresses the contribution of geography to the personal needs of pupils.

4.2.1 Relevance of Geography Content to Pupils' Personal Needs

It was vital to find out from the pupils whether or not geography empowered them in their personal capacity by meeting any of their needs. It was important to do so because ESD is an approach of education that seeks to empower the individual with knowledge that enables them to deal with problems in their local environment. The findings are represented in figure 4 below.

Figure 4: Contribution of Geography to Pupils' Personal Needs



Source: Field Data (2010)

Upon being asked about the relevance of geography content to their personal lives, eighty-five per cent of the pupils indicated that it was not of any relevance. This represented a total number of 340 pupils in comparison to fifteen per cent (which was representative of 60 pupils) who were of the opinion that they personally benefited from the information they got from geography in the classroom. Having looked at the findings in relation to the contribution of geography to the pupils' personal needs the study in the next subsection addresses the relationship between geography and the immediate environment of the pupils.

4.2.2 Relationship between Geography and the Pupils' Immediate Environment

Geography is the study of the environment and how people interact with it. It was necessary then to determine whether or not geography a high school level dealt with the local environment in which the pupils live.

Table 4. Status of Geography Syllabus in Relationship to the Local Environment of the Pupils

Response	Frequency	Percentage (%)
Yes	68	17
No	332	83
Total	400	100

Source: Field Data (2010)

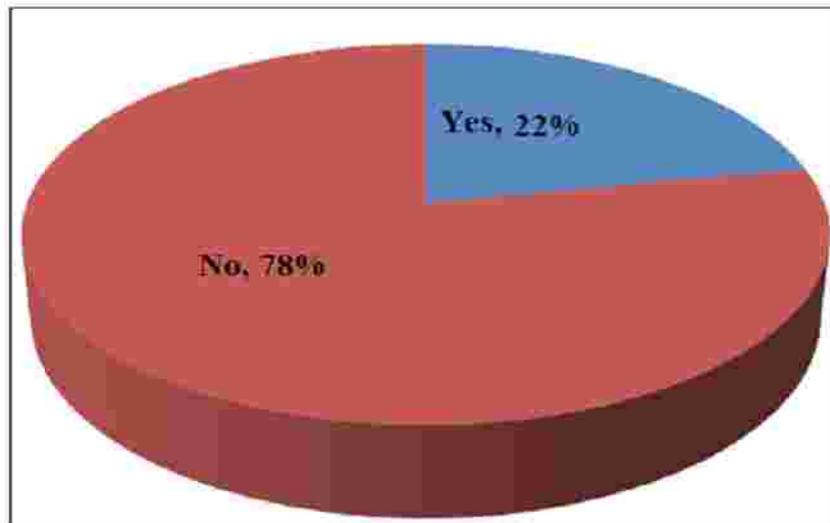
The study revealed that eighty-three per cent of the pupils saw no relationship between geography and their immediate environment. These pupils indicated that geography spent more time dealing with topics and content that did not affect them

directly. This percentage of pupils was representative of a total of 332 pupils. It was also revealed that seventeen per cent of the pupils were of the opinion that geography was related to their local environment. This percentage represented a total number of 68 pupils. Having dealt with the relationship between geography and the local environment of the pupils the next subsection addresses the influence of geography on the pupils' perspective of their tribes and cultures.

4.2.3 Influence of Geography on the Pupils' Perception of their Tribes and Cultures

Pupils were asked to state whether geography taught them anything about their cultures and tribes, and their responses are reflected in figure 5 below. It was important to determine just how much of their own culture pupils felt was being tackled by the content they got from geography in the classroom because respect for culture and indigenous knowledge is a component of ESD.

Figure 5: Influence of Geography on Pupils' Perceptions of their Cultures and Tribes



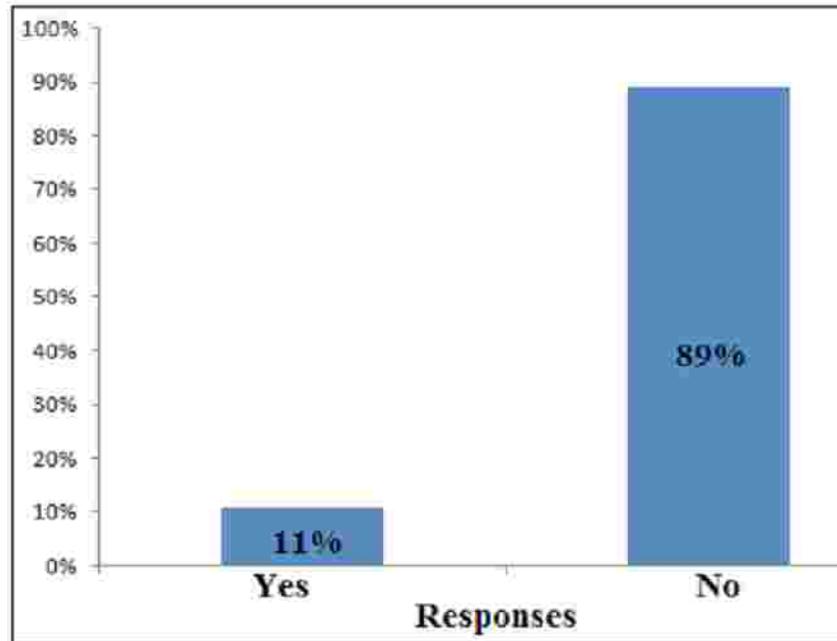
Source: Field Data (2010)

The study revealed that twenty-two per cent of the pupils were of the opinion that geography offered them knowledge related to their tribes and cultures. Seventy-eight per cent of the pupils disagreed and were of the opinion that what they learnt in class was not related to their tribes and cultures. Having looked at the influence of geography on the perception of pupils on their tribes and cultures, the following subsection looks at the opportunity geography offers pupils to learn from their grandparents, parents and guardians.

4.2.4 Opportunity of Geography Pupils to Learn From Grandparents, Parents or Guardians

It was deemed necessary by the researcher to find out whether or not geography provided an opportunity for inter-generational transmission of knowledge from guardians to pupils. Respect for indigenous knowledge and culture is an important aspect of ESD.

Figure 6: Contribution of Geography to Pupils' Opportunities to Learn from their Grandparents, Parents or Guardians



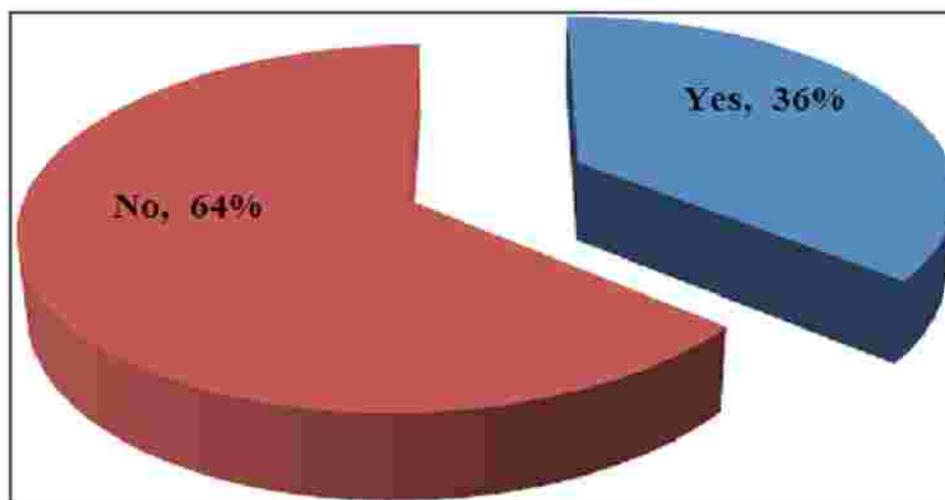
Source: Field Data (2010)

The respondents were asked to mention whether geography offered them an opportunity to learn from their grandparents, parents or guardians. Eleven per cent of the pupils said geography offered them an opportunity to learn from their grandparents, parents or guardians. Eighty-nine per cent of the pupils said they did not have the opportunity to learn from their guardians because the geography content in class did not offer such an opportunity. The eighty-nine per cent and eleven per cent represented 356 and 44 of the sampled pupils respectively. Having presented the findings on the contribution of geography in helping pupils learn from their grandparents, parents and guardians the study next looks at the influence of geography on the personal hygiene and health of the pupils.

4.2.5 Influence of Geography on Personal Hygiene and Health

The study sought to find out whether or not geography offered any information to the pupils, which was relevant to their personal health and hygiene. It was vital to find out whether or not geography had an impact on the pupils at a personal level.

Figure 7: Influence of Geography on Pupils' Personal Hygiene and Health



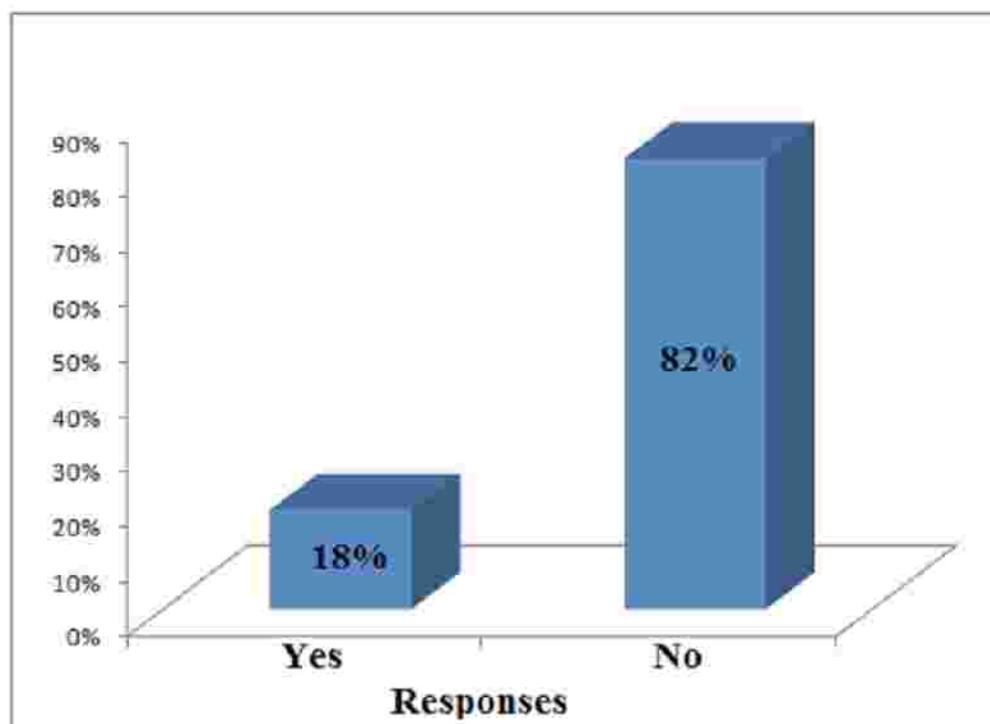
Source: Field Data (2010)

Figure 7 above shows the percentage distribution of the pupils on the issue of whether or not geography offered them an opportunity to improve their personal hygiene and health. Thirty-six per cent of the pupils said they learnt about personal health and hygiene from geography taught in class. Sixty-four per cent of the pupils were of the opinion that the geography syllabus did not provide them with enough content on personal hygiene and health. Having looked at the influence of geography on the health and hygiene of the pupils the following subsection addresses the presence of outdoor activities in geography learning.

4.2.6 Presence of Outdoor Activities in Geography Learning

Because geography is a subject that deals with the environment, it was imperative to find out whether or not what was learnt in class by the pupils involved outdoor activities that allowed them to interact with the environment.

Figure 8: Involvement of Outdoor Activities in the Learning of Geography.



Source: Field Data: (2010)

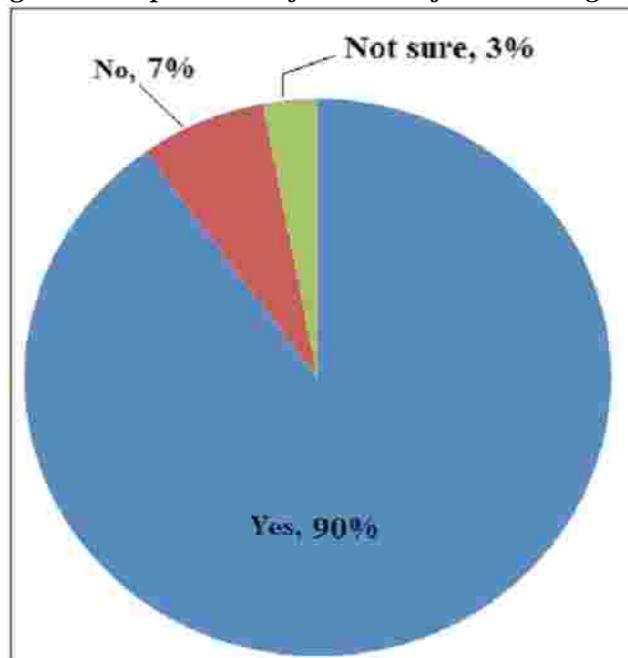
Figure 8 shows that eighteen per cent of the pupils felt they were exposed to outdoor activities whilst learning geography during the three years of high school. This percentage represented a frequency of 72 amongst the sample population. Three hundred and twenty eight pupils responded negatively to the question. This percentage represented eighty-two per cent of the sample population. They

indicated that they were not exposed to any outdoor activities during the three years of high school. Having looked at the involvement of outdoor activities in the learning of geography the next subsection addresses the relevance of geography field projects.

4.2.7 Relevance of Geography Field Projects

The study sought to determine how relevant geography field projects were to the pupils as a component of geography. The findings of the study are shown in the figure below.

Figure 9: Importance of Field Projects to Geography



Source: Field Data (2010)

The study revealed that ninety per cent of the pupils indicated that the geography field projects were an important part of geography. They indicated that the practical aspect of field projects allowed them to interact with the environment

and develop a sense of enquiry. However, seven per cent of the pupils opined that the field projects were not important because they were time consuming and only accounted for a minimal 12 marks in the final examination. Three per cent of the pupils were not sure whether or not the current field projects were vital to geography.

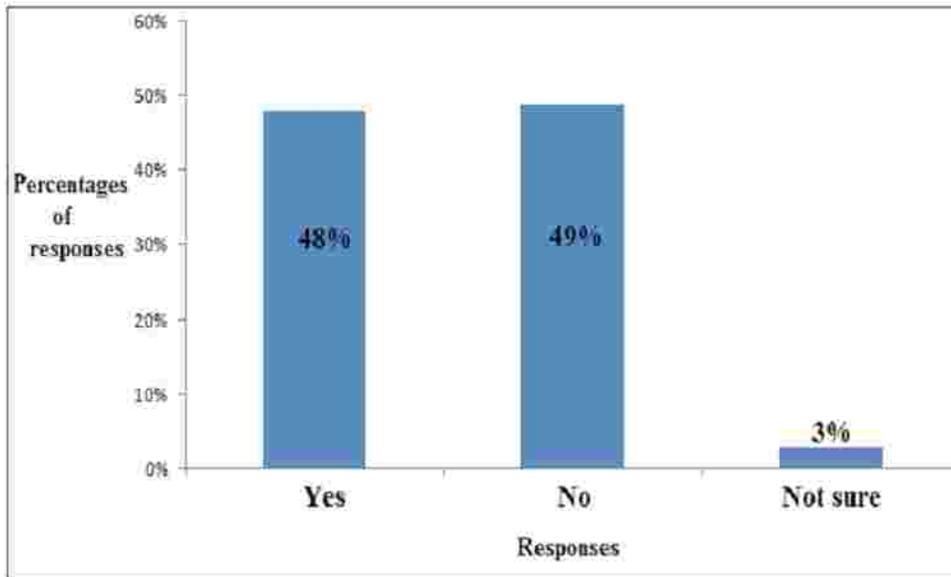
4.3 Pupils' Attitudes towards Geography

This section presents the findings vis-à-vis the second research objective of this study, which was, to ascertain the attitudes of pupils towards geography. The following subsection presents the findings on the relevance of geography to pupils' career prospects.

4.3.1 Relevance of Geography to Pupils' Future Career Prospects

It was vital to find out whether or not pupils found geography to be relevant to their career prospects as this could have had a bearing on the attitude of pupils towards geography.

Figure 10. Contribution of Geography to Pupils' Future Career Prospects



Source: Field Data (2010)

The figure above shows that forty-eight per cent of the pupils indicated that geography as a class subject was vital in their prospective future careers. The study also revealed that forty-nine per cent of the pupils indicated that they did not think geography offered them any career options mostly because they did not know or had not yet decided what they wanted to do after finishing their high school education. Three per cent of the pupils were not sure whether or not geography had anything to do with career prospects. Having looked at the findings in relation to the relevance of geography to pupils' future career prospects the next subsection looks at how the pupils ended up taking geography, that is, whether or not they picked the subject themselves or it was picked for them.

4.3.2 Choice of Geography as a Class Subject

It was vital to find out from the pupils whether their taking geography was as a result of a personal choice or not. Whether or not a pupil picks as a class subject themselves often has a bearing on their attitude towards the subject.

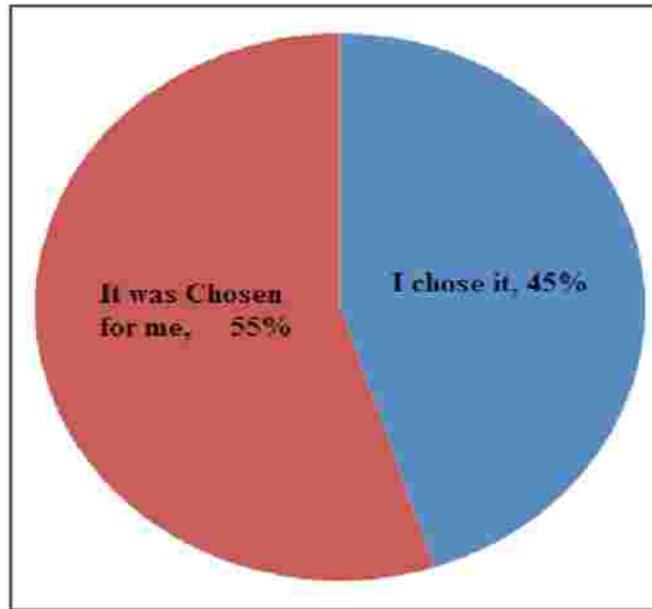
Table 5. Frequency and Percentages Reflecting Choices of Geography as a Classroom Subject

Response	Frequency	Percentage (%)
Own Choice	180	45
Chosen for by teachers	220	55
Total	400	100

Source: Field Data (2010)

Table 5 above shows the distribution of the pupils with respect to whether they chose the subject of geography themselves or it was chosen for them by their geography teachers. As to whether the class subject of geography was a personal choice or not, forty-five per cent of the pupils indicated that it was a personal choice. That is to say they decided whether or not to be in a class that takes geography among other subjects. Fifty-five per cent of the pupils indicated that they did not choose to take geography but found themselves already placed in a class that offered geography as an optional subject. The percentages of forty-five per cent and fifty-five per cent represented frequencies of 180 and 220 pupils respectively. Refer to the figure 11, on the following page, for a clearer comparison of the percentages.

Figure 11: Pupils' modes of Choosing Geography as a Subject



Source: Field Data (2010)

Having looked at the mode of choosing geography as a class subject, the next subsection addresses the perceptions of pupils on sex education in geography.

4.3.3 Perceptions of Pupils on Sex Education in Geography

Finding out the role of geography in influencing the perceptions of pupils on their sexuality through sex education was vital as it could have had a direct influence on their behaviour and attitudes towards sex and diseases such as HIV/AIDS.

Table 6. Influence of Geography on Pupils' Perceptions of Sex Education

Responses	Frequency	Percentage (%)
Yes	164	41
No	236	59
Total	400	100

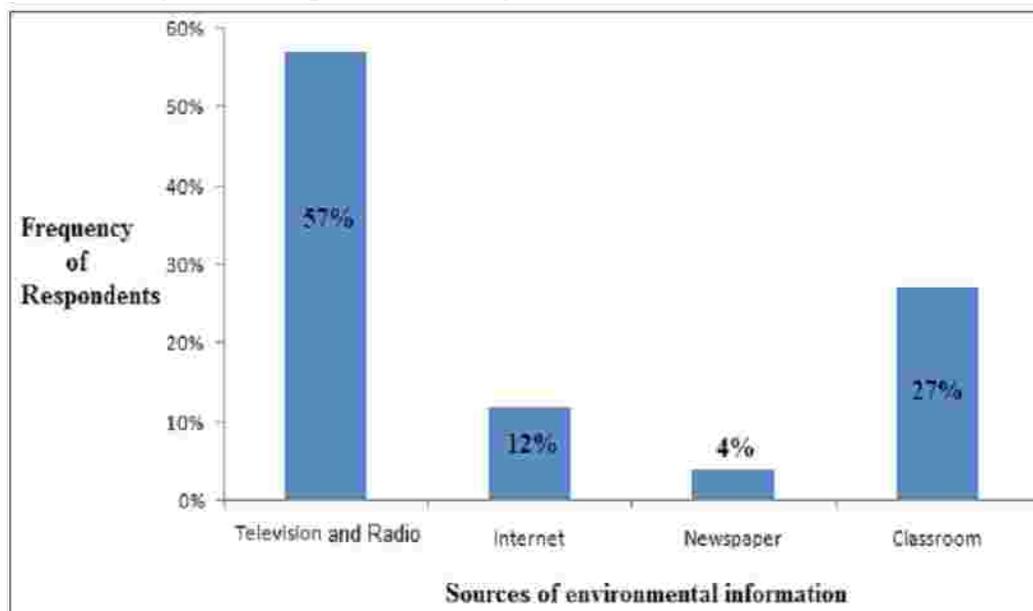
Source: Field Data (2010)

Table 6, on the previous page, shows the results on whether or not geography offered pupils any sex education information. Forty-one per cent of the pupils indicated that the coverage of sexuality under the topic-Population Studies in Zambia. Fifty-five per cent of the pupils indicated that the geography syllabus did not have enough material on sex education. Having looked at the influence of geography on pupils' perceptions of sex education, the following subsection presents the findings on the keys sources of environmental information for high school geography pupils.

4.3.4 Pupils' Key Source of Environmental Information

The research sought to determine what the pupils' main source of information relating to the environment was. It was important to ascertain the role of geography in providing pupils with information on the environment.

Figure 12: Pupils' Sources of Environmental Information



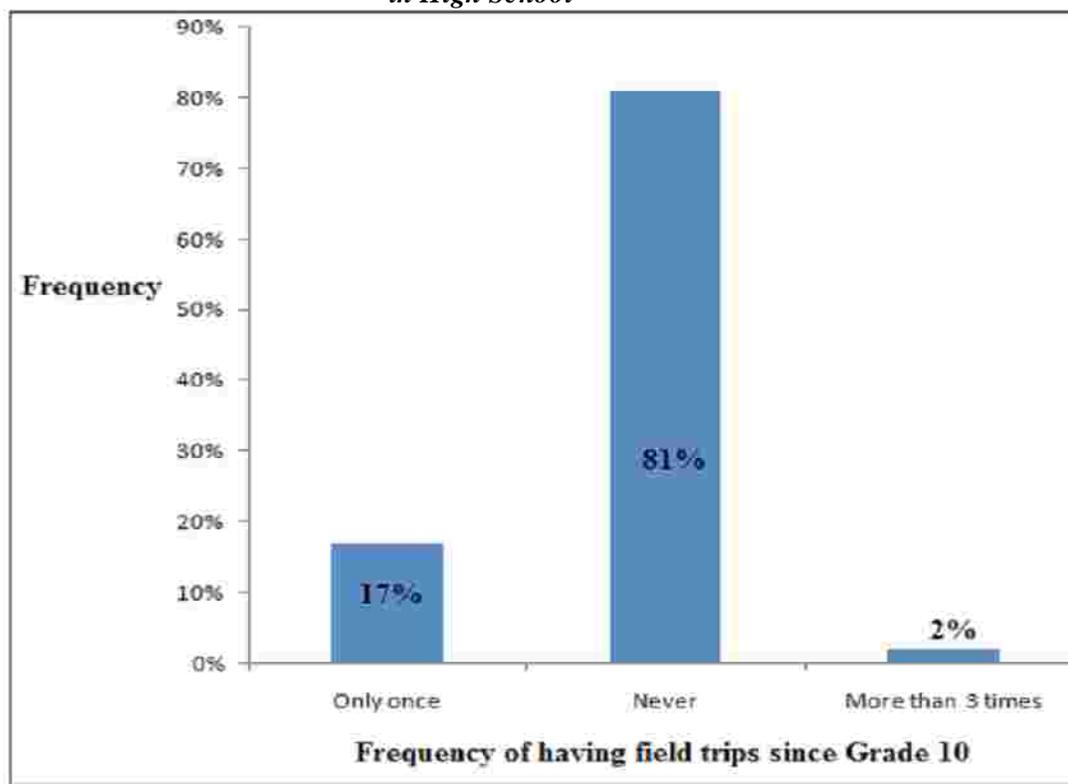
Source: Field Data (2010)

According to figure 12, on the previous page, fifty-seven per cent of the pupil respondents indicated that their main source of information on the environment was television. They were followed by twenty-seven per cent of the pupil respondents who indicated the classroom to be their main source of information on the environment. Twelve per cent of the pupils picked the internet as their main source of information on the environment. Finally, four per cent of the pupils indicated their main source of information on the environment to be newspapers. Having looked at the key sources of information on the environment the next subsection addresses the number of times pupils undertook field trips over the course of their high school experience.

4.3.5 Number of Field Trips that were made in the Three Years of High School.

Field trips are vital as a learning resource in geography. They develop and inculcate a positive attitude in the pupils towards the natural environment. Hence, there was a need to find out how many times the pupils had undertaken field trips during the three-year course duration of their high school experience.

Figure 13: Number of Times Pupils went for a Field Trip in the Three Years of Being in High School



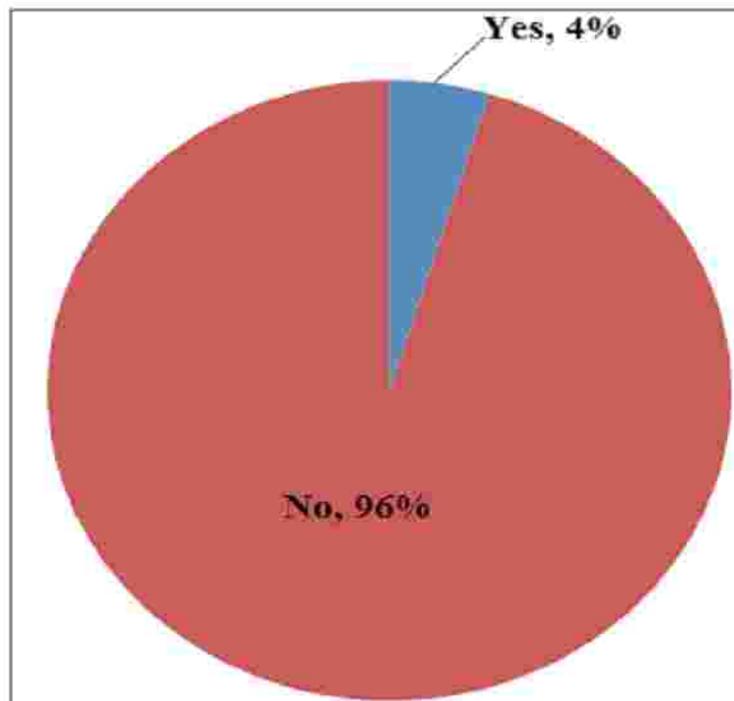
Source: Field Data (2010)

The figure above shows the number of times the pupils went for a field trip during the three years of their high school experience. Eighty-one per cent of the pupils never went on a field trip during the three years of their high school experience. Seventeen per cent of the pupils indicated that they had been on a field trip once. Only two per cent of the sampled pupils went on a field trip more than three times in the course of three years. The following subsection examines the role of the role-play teaching method in the teaching of geography in high schools.

4.3.6 Use of Role-play Teaching Method in the Teaching of Geography

The study sought to determine the extent to which the role-play teaching method was used in the teaching of geography at high school level 1. The responses from the pupils are presented in the figure 14 below.

Figure 14. Use of the Role-play Teaching Method during Geography Lessons



Source: Field Data (2010)

The figure above represents the percentage distribution of pupils with regard to the use of the role-play teaching method by their teachers. Ninety-six per cent of the pupils said their geography teacher had never used the role-play teaching method. Only four per cent indicated that their teacher had used the role-play teaching method to deliver geography content during lessons. Having looked at the role of the role-play teaching method in the teaching of geography, the following section presents the research findings in relation to the third objective of the research,

which was, to determine what improvements could be made to the geography syllabus vis-à-vis need of pupils to be empowered to thrive in their immediate local environment.

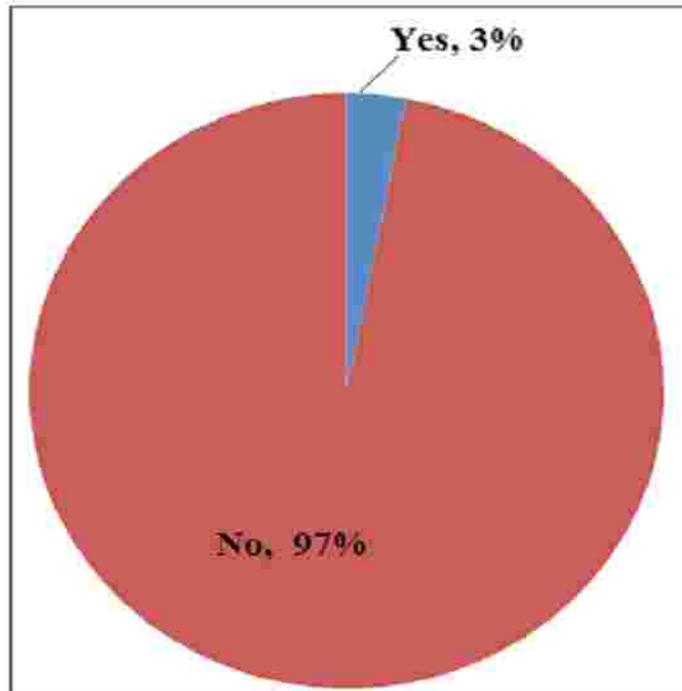
4.4 Areas of Possible Improvement in Geography

The following were the findings of the study with regard to areas of geography that needed improvement.

4.4.1 Coverage of Geography Syllabus before Examinations

It was important for the study to determine whether or not the teachers of geography actually managed to cover all the content found in the geography syllabus. This was vital because it offered the researcher an opportunity to know whether or not the teachers managed to cover the entire geography syllabus in three years. Feedback from the pupils also helped to confirm the validity of responses from geography section heads on the same matter.

Figure 15. Coverage of Geography Syllabus before Examinations



Source: Field Data (2010)

Figure 15 represents the feedback from the pupils on whether or not they had covered the entire syllabus prior to the final grade twelve geography examinations. Ninety-seven per cent of the pupils indicated that they did not cover all the topics in the geography syllabus. This information was given one week prior to the commencement of the 2010 grade twelve final examinations. Only three per cent of the pupils indicated that they had covered all the topics in the geography syllabus. Having looked at the coverage of the geography syllabus in high schools, the next subsection looks at the precise grade in which pupils commenced work on their field projects.

4.4.2 Grade in which Work on Field Projects Commenced

Table 7 below reveals that eighty-four per cent of the pupils started work on their field projects in grade twelve, while sixteen per cent started working on them in grade eleven. The pupils revealed during group discussions that none of them had any field project experience or exercise in class as a way of preparing for the final examination field project. The percentages of eighty-four per cent and sixteen per cent, mentioned above, reflect the frequencies of 336 and 64 pupils respectively.

Table 7. School Grade in which Work on Field Project Begun

Response	Frequency	Percentage (%)
Grade 11	64	16
Grade 12	336	84
Total	400	100

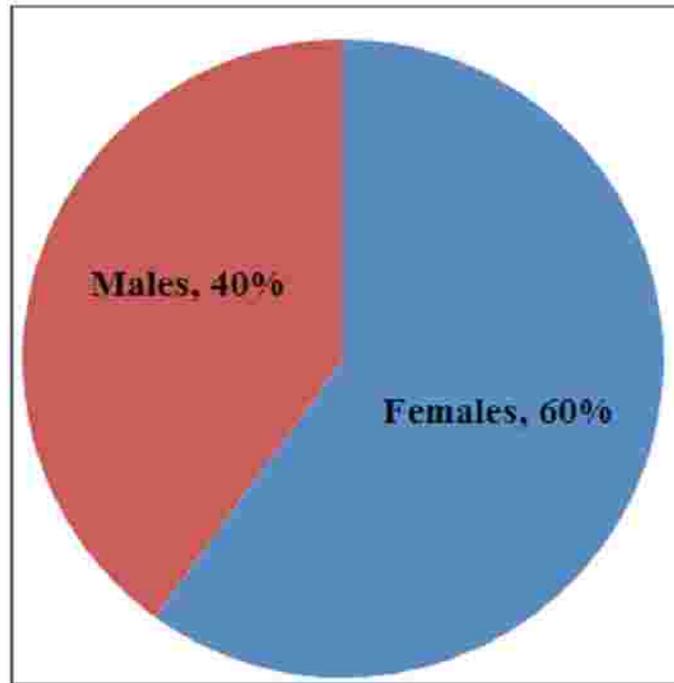
Source: Field Data (2010)

Having looked at the precise grade in which work on field projects begun, the next section addresses findings in relation to the objectives of the study as collected from the geography heads of section.

4.5 Characteristics of the Geography Heads of Section

The only characteristic of the geography heads of section considered was their gender. The collection of any other personal information was avoided in order to maintain the privacy of the heads of section. This helped to make the heads of section more responsive and less defensive.

Figure 16: Section Heads' Distribution by Gender



Source: Field Data (2010)

Figure 16 shows that of the ten heads of section that were part of this study four were male and six were female. This represented a percentage distribution of forty per cent and sixty per cent respectively. The next section presents the findings of the research as collected from the geography heads of section.

4.6 Section Heads' Feedback on Potential Contribution of ESD to Geography

This section presents the study's findings vis-à-vis the first research objective, as gathered from the geography heads of sections, which was; to determine the potential contribution of ESD to geography. This section looks at the probable linkages between geography and ESD.

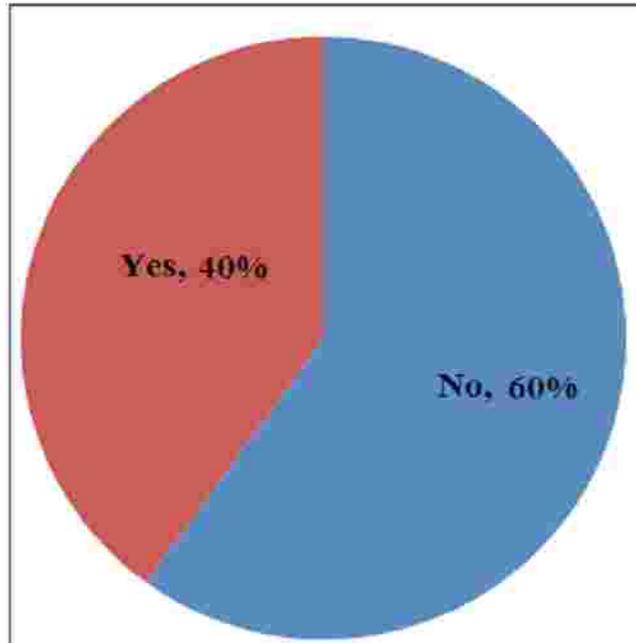
4.6.1 Use of Outdoor Activities in the Teaching of Geography

It was vital to find out from the heads of section whether or not they used outdoor activities as part of activities for teaching geography. All the ten heads of section for geography indicated that they used outdoor activities. This represented a hundred per cent affirmative response. Having looked at the use of outdoor activities in the teaching of geography, the next subsection presents the findings on whether or not the teachers had any knowledge of ESD.

4.6.2 Awareness of Education for Sustainable Development amongst Geography Teachers

It was important to find out from the geography heads of section just how familiar they were with the concept or approach of ESD to education. This was important to know because ESD is a modern and vital approach of education for every teacher to know. The findings are presented in figure 17 on the following page.

Figure 17: Section Heads' Awareness of ESD



Source: Field Data (2010)

Figure 17 above shows that forty per cent of the geography heads of section indicated that they were aware of the approach/concept of ESD. Sixty per cent of the geography heads of section said they were not aware of the approach /concept of ESD. The following section addresses the findings of the re earch amongst the heads of section vis-à-vis the second objective of the research, which was, to ascertain the attitudes of pupils towards geography.

4.7 Section Heads' Feedback on Attitudes of Pupils towards Geography

This section presents the data collected from the geography section heads which related to attitudes of pupils towards geography. The following subsection presents the findings of the research with regard to the teaching methods the geography heads of section noticed were most preferred by the pupils.

4.7.1 Teaching Methods Most Preferred By Pupils

It was vital to find out from the section heads which methods the pupils responded to best. This was important to help determine whether or not the teaching methods were pupil-centred or teacher-centred. Table 8 below shows the teaching methods most preferred by pupils.

Table 8. Teaching Methods Most Preferred by Pupils

Response	Frequency	Percentage (%)
Lecture	1	10
Question and Answer	1	10
Lecture & Q&A	6	60
Other	2	20
Total	10	100

Source: Field Data (2010)

The table above shows the diverse responses of the respondents. Ten per cent of the geography heads of section indicated that the pupils responded best to the lecture method of teaching. A further ten per cent said the pupils responded best to the question and answer method. Sixty per cent of the respondents indicated that the pupils responded best to a combination of the lecture method and question and answer method. Twenty per cent of the geography heads of section indicated that the pupils responded best to a combination of three or more teaching methods.

4.7.2 Pupils' Interest in Geography

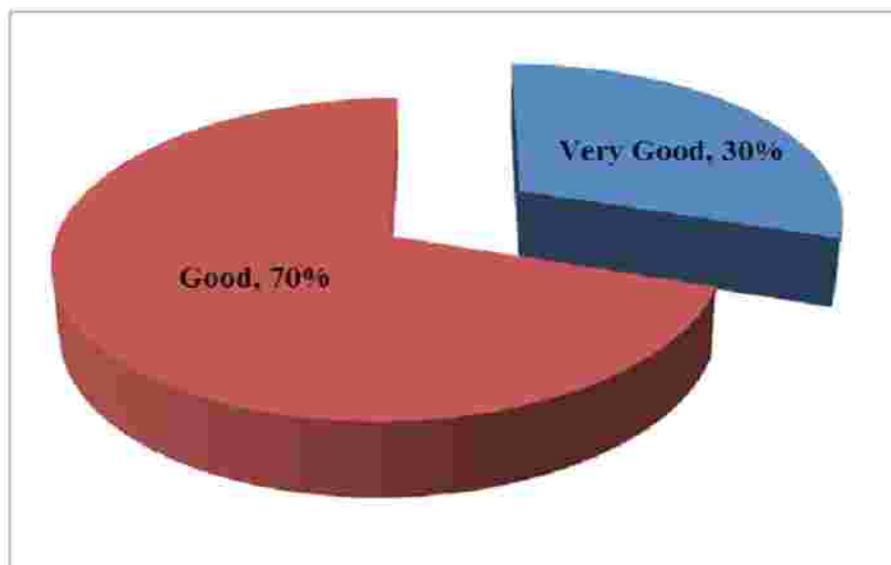
All the respondents indicated that pupils had interest in geography. This represented a hundred per cent affirmative response from the heads of section for geography. The respondents gave the following as justifications for the pupils' interest in geography:

- Pupils' participation in class and their ability to do their homework.
- Pupils' performance in class and curiosity shown by posing a lot of questions in class.
- The fact that some of them chose geography as an option instead of history.
- Because the pupils used their free time to make further enquiries on particular topics.
- The good performance of pupils in the grade twelve geography examinations.

4.7.3 Pupils' Performance in the Grade 12 Geography Final Examinations

One of the best criteria to assess the interest of the pupils in geography was to look at how the pupils performed in examinations.

Figure 18: Performance of Grade 12 Pupils in Geography Final Examinations



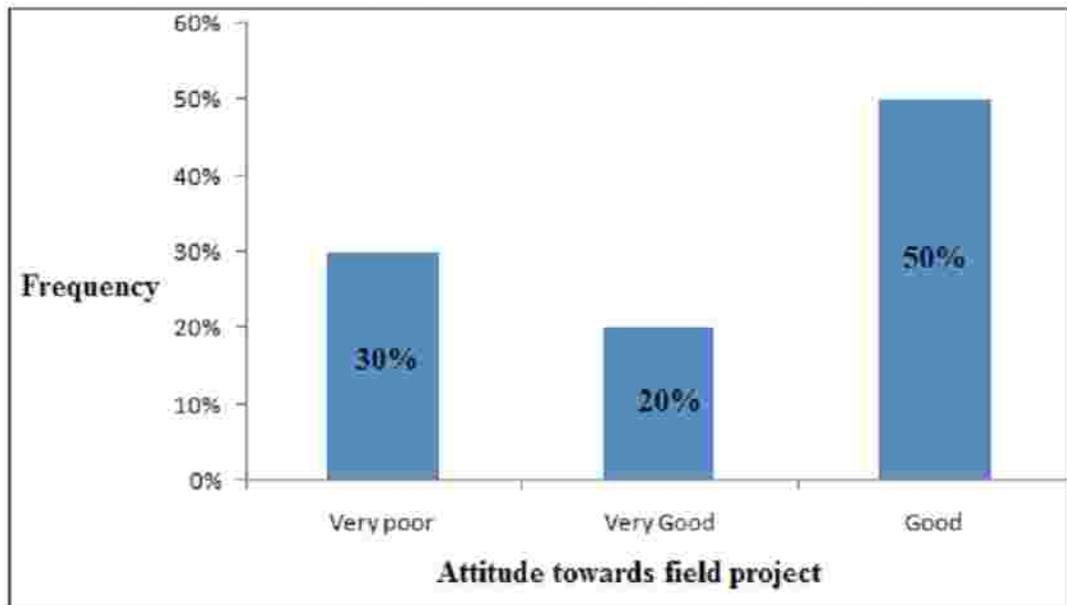
Source: Field Data (2010)

All the heads of section expressed satisfaction with the performance of their pupils in the geography examinations. Figure 18 shows that thirty per cent of the respondents categorized the performance of their pupils as ‘*very good*’. Seventy per cent of the section heads categorized the performance of their pupils as ‘*good*’. None of the respondents selected the other two options available- ‘*poor*’ or ‘*very poor*’ for assessing the performance of their pupils. Having looked at the performance of the pupils in geography the next subsection presents the findings of the research on the attitude of pupils towards geography field projects.

4.7.4 Attitude of Pupils towards Geography Field Projects

There was need to find out from the geography section heads what the attitude of the pupils towards geography field projects was. The findings are presented in the figure 19 on the following page.

Figure 19: Attitude of Pupils towards Geography Field Projects



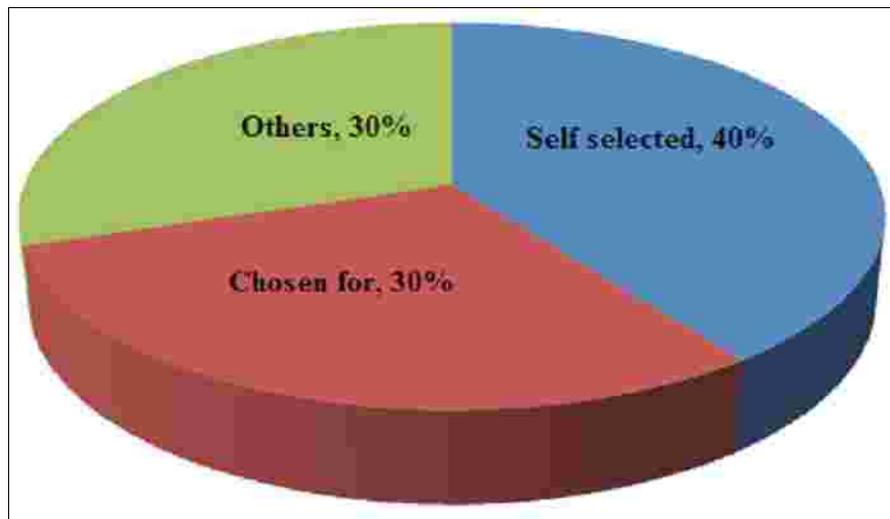
Source: Field Data (2010)

The study revealed that twenty per cent of the heads of section indicated that the attitude of their pupils towards field projects was ‘*very good*’. Fifty per cent of the section heads indicated that the attitude of their pupils was ‘*good*’. Thirty per cent of the respondents indicated that the attitude of their pupils was ‘*very poor*’. Having looked at the attitude of pupils towards field projects the next subsection addresses the pupils’ mode of selection of the field project topics.

4.7.5 Selection of Field Project Topics

It was vital to find out from the heads of section whether or not pupils selected the field projects themselves as this could have had an influence on their attitude towards geography.

Figure 20. Mode of Selection of Topics for Field Projects



Source: Field Data (2010)

The figure above shows that forty per cent of the respondents indicated that the pupils picked the field project topics themselves. While thirty per cent indicated that their teachers picked the topics for them. A further thirty per cent of the geography section heads said they worked in collaboration with the pupils in coming up with the topics. The teachers offered the pupils a wide range of topics from which they could pick the field projects they wanted to do. Having looked at how pupils picked their topics for field projects, the next subsection addresses the general attitude of geography pupils towards geography.

4.7.6 General Attitude of Pupils towards Geography as Subject

It was vital to determine from the geography heads of section, as teachers, what the attitude of pupils towards geography as a subject was.

Table 9. Attitude of Pupils towards Geography as a Subject

Response	Frequency	Percentage (%)
Very Good	0	0
Good	2	20
Fair	3	30
Poor	5	50
Very Poor	0	0
Total	10	100

Source: Field Data (2010)

The table above shows that twenty per cent of the geography heads of section indicated that the pupils' attitude towards geography was 'good'. Thirty per cent of the heads of section indicated that the attitude of pupils towards geography was 'fair', while fifty per cent indicated that the attitude of pupils towards geography was 'poor'. None of the respondents indicated the options 'very good' or 'very poor' in their responses. The following section presents the findings of the research as collected from the geography heads of section on the areas of possible improvement in geography.

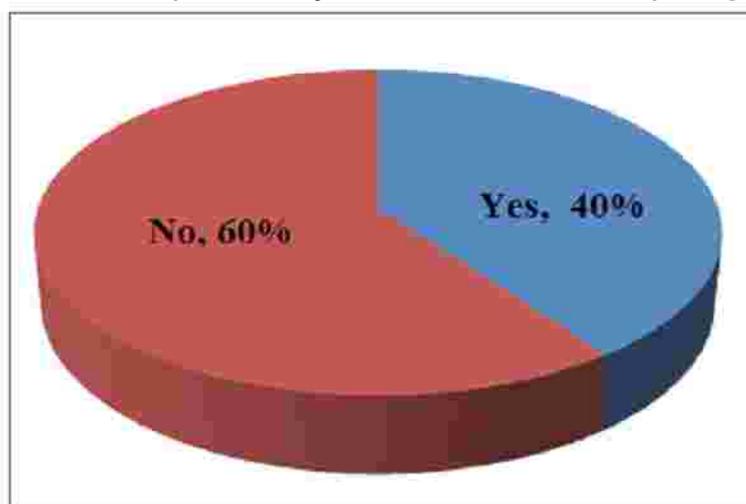
4.8 Section Head's Identified Areas of Potential Improvement in Geography

This section presents the data collected from the heads of section that was related to areas in geography that require improvement. The following subsection looks at the relevance of field projects to the localization of geography.

4.8.1 Relevance of Field Projects to the Localization of Geography

Localization is a critical factor in the incorporation of ESD into geography and making geography more meaningful to pupils. It was therefore important to find out whether or not the field projects played any role in the localization of geography. The findings are found in figure 21 below.

Figure 21: Role of Field Projects in the Localization of Geography



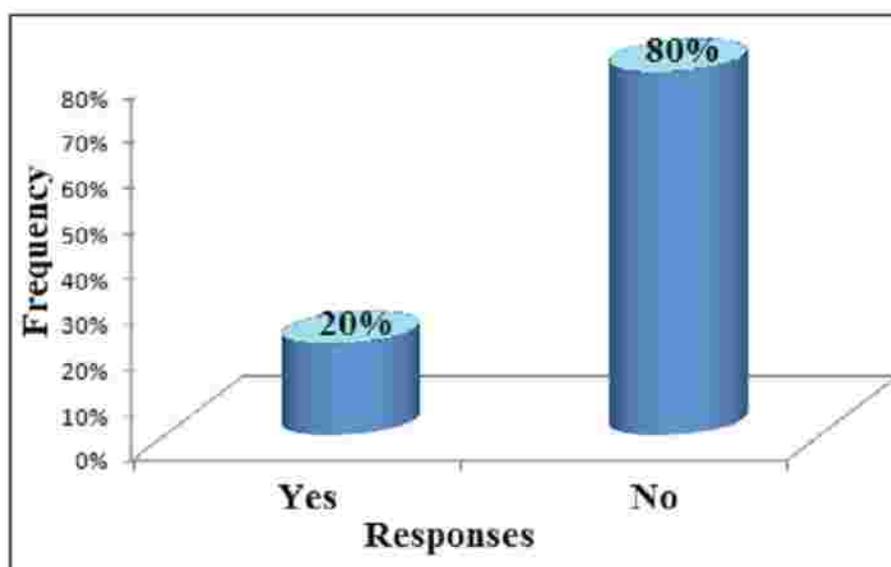
Source: Field Data (2010)

As can be observed from the figure above, sixty per cent of the heads of section indicated that the field projects did not suffice as a means of localizing geography to the local community. Forty per cent of the respondents indicated that the field projects sufficed as a means of localizing geography to the local community. Having looked at the role of field projects in the localizing of geography, the following subsection addresses the efficiency of geography teachers in covering the geography syllabus.

4.8.2 Coverage of Geography Syllabus

It was vital to find out from the teachers whether or they managed to cover the content of the entire geography syllabus in the stipulated three years of high school learning. This was a vital aspect to look at because it helped to ascertain the quantity of content in the geography syllabus.

Figure 22. Coverage of Geography Syllabus in High School



Source: Field Data (2010)

As shown in the figure above, eighty per cent of the heads of section indicated that their sections did not manage to cover the geography syllabus in the stipulated three year period from grades ten to twelve. Only twenty per cent indicated that their sections were able to cover the geography syllabus in the stipulated time frame. Amongst the reasons given for the failure to cover the syllabus were the following:

- The syllabus was too bulky to cover in three years.

- The delayed reporting of pupils in grade ten to school after being selected from grade nine meant the entire term one of grade ten is forfeited as they officially report one month before the term ends.
- Inclusion of irrelevant topics in physical geography such as glaciations and volcanism.
- The commencement of examinations in October, in the third term of grade twelve, meant that only one month in the term is available for serious teaching/learning.

Having looked at the factors affecting the coverage of geography in high schools, the following section addresses the findings of the research as collected from the geography curriculum development specialist at the Curriculum Development Centre.

4.9 Feedback from Geography Curriculum Development Centre Specialist

This section presents the views of the geography CDC specialist. The views are presented in relation to the objectives of the study. The following subsection presents the specialist views vis-à-vis the first research objective, which was; to determine the possible contribution of ESD to Geography in the Zambian High School Curriculum.

4.9.1 Potential Contribution of Education for Sustainable Development to Geography

The Curriculum Development Centre geography specialist opined that the only area of the geography syllabus that offered skills for survival in the society after high

school was the geography field research project. He explained that field projects gave pupils research and reporting skills which were useful when they enrolled into tertiary institutions of learning. He further specified the skills acquired through field projects as investigative, recording, analytical and report writing skills.

He revealed that no specialist from the geography section at the CDC had ever been sent for capacity building in line with ESD. He indicated that CDC management had other members of staff in other sections, such as the physical sciences and physical education sections, attend workshops and training in the field of ESD locally and abroad. For example, the CDC specialist for physical education was selected to be part of a one year training program in ESD, dubbed- '*ESD in Formal Education*', which was scheduled to take place in three different countries. The latest meeting in the training program took place in Umgeni Valley in South Africa between the 22nd of November 2010 and 3rd of December 2010. Whilst capacity building should be encouraged amongst all members of staff, he expressed disappointment at the shunning of geography specialists for similar training. He was of the opinion that the only subject that had both components of a social and natural science necessary to fully cover the various facets of ESD was geography. Hence he indicated that geography was best placed to be the ideal launch pad for ESD at secondary or high school level.

The CDC geography specialist further revealed that the head teachers for Jacaranda Basic School and Chelston High School of Lusaka district had undergone training in ESD. However, no ESD programme had been initiated at either of the schools.

He indicated that there appeared to be a lack of coordination between MoE, CDC and high schools. When people were trained in ESD, there was no follow-up or monitoring to confirm what progress was being made with the implementation of ESD programmes. The following subsection presents the findings as collected from the curriculum development specialist in relation to the second objective of the research, which was; to ascertain the attitude of pupils towards geography.

4.9.2 Attitudes of Pupils towards Geography

The curriculum development specialist indicated that the types of teaching methods used by the teachers in the classroom were critical in determining the attitudes and interest of the pupils towards geography as subject. He emphasized that the teaching methods should be learner-centred. He said that the more the pupils interact with the environment the better their attitude towards geography would become. Having looked at the attitude of pupils towards geography, the following subsection addresses the findings of the research in relation to the third objective of the study. The third objective was to determine what improvements could be made in geography vis-à-vis the need for pupils to be empowered to thrive in their immediate local environment.

4.9.3 Areas of Potential Improvement in Geography

The geography curriculum development specialist emphasized that greater emphasis should be placed on the conservation and preservation of the environment at both national and international levels. He suggested that topics should find a way

of incorporating content that brought out the issues that concern conservation and preservation of the environment.

He also stressed the need for the field projects to be more practical and relevant to the local communities in which they were carried out. Having looked at areas of potential improvement in geography, the last subsection of this chapter presents the findings of the research as collected from the curriculum development specialist vis-à-vis coverage of the geography syllabus over the stipulated three year period of high school learning.

4.9.4 Coverage of the Geography Syllabus in the Three Years of High School

The CDC geography specialist indicated that it was possible to cover the syllabus of geography in the stipulated three-year high school time frame.

CHAPTER FIVE

DISCUSSION OF FINDINGS

This chapter presents interpretations of the analysed data. This discussion is based on the objectives of the study, these being; the possible contribution of ESD to geography in the Zambian High School Curriculum, the attitudes of pupils towards geography and the improvements that can be made to the geography syllabus in relation to the need for pupils to be empowered in their local environments.

5.1 Areas of Geography to which ESD can make a Contribution

Below is the discussion of the findings in relation to the possible contribution of ESD to geography. The essence of this section is to determine the possible linkages between ESD and geography.

5.1.1 The Eclectic Nature of Geography as a Classroom Subject

Geography is the only subject in the Zambian High School Curriculum that is best suited to contribute to ESD because it possesses the characteristics of both a social and natural science. Bailey and Fox (1999) separate the components of geography into human geography, physical geography and environmental geography. These three areas encompass the social/cultural, ecological, economic and political systems. Bailey and Fox further explain that geographers are concerned with the mechanisms and interacting processes of the world's natural systems, and also with the means by which human beings adopt or adapt the natural world to suit their own

purposes. No subject is better equipped to deal with the physical and aesthetic aspects of the environment and the values and cultural aspects of the human condition than geography.

Some of the geography heads of section who were interviewed for the study indicated that there was a need to make geography a compulsory subject for all pupils in high school. They said this was justified because of the inevitability and need for all people to be empowered with knowledge about their environment and sustainable practices. The geography heads of section suggested that no one should be left out of this kind of empowerment. According to the heads of section, geography was already compulsory at junior secondary level, hence it would be easy to make it compulsory at high school level. They emphasized the point that geography was the only subject that had the diversity necessary to deal comprehensively with issues related to sustainability. Indeed, geography is the only subject that places equal weight behind issues that deal with people and the physical environment. Geography even goes a step further to look at how people interact and impact the physical environment and vice versa.

5.1.2 Potential Value of Field Projects to ESD

The geography field projects which are currently part of the geography syllabus came out as a vital tool for not only localisation of the syllabus, but also for helping the pupils connect the theoretical aspects of their classroom work to the reality of their daily lives. However, it was clear that the field projects required refining in

order to make them more relevant to the pupils. Some of the geography heads of section opined that the field projects in their current state were too examination oriented instead of being knowledge and skills oriented. The pupils also expressed the need for the field projects to be carried out in a stress free classroom environment in order for them to get to grips with them, instead of dealing with them under the pressure of being a pre-requisite for the grade twelve final examinations.

5.1.3 Geography as a Vehicle for Localisation

There is a key emphasis in ESD of the role to be played by the individual and the individual's local surroundings. The pupils and heads of sections appeared to agree on the need to localise the geography content. However, this study found that geography only had a minor role to play in bringing the pupils closer to their environment because its syllabus was too crowded with topics that dealt with aspects that were foreign. The heads of section added that though certain aspects were local, they remained very shallow and out of touch with the realities that pupils go through. The heads of section, for example, mentioned that in spite of agriculture and tourism in Zambia being very good topics, they did not bring out the full aspects of the Zambian fabric. The heads of section emphasized that the topics dealt with Zambian issues on a very superficial level. In the words of the geography section head for Matero Girls' High School "*Geography is infested with too many foreign concepts*". This quotation reflects the feeling of most of the heads of sections that were part of the study. The geography head of section further

suggested that the problem stemmed from the fact that for a long time before independence and after independence the key architects of the educational system remained the whites-the colonialists.

The changes that were part of the new geography syllabus in the year 2001 attempted to remodel the colonial perspective into our own local perspective. However, this remodelling seems to have failed to stamp out the original white colonial mentality from the syllabus. The influence of the educational system we inherited from the missionary and colonial past should not be down played nor underestimated. Chipungu (1992: 110) supports this argument and states that:

African educational policy in Zambia was devised withi the framework of an evolving colonial policy based on the orts made by the Phelps-Stokes Commission and expressed in policy statements drawn up by the Colonial Office Advisory Committee on Education formed in 1923. These provided for government assistance to missionary societies offering primary education relevant to the practical needs of rural Africans, which were assumed o be equivalent to those of blacks in the southern states of the United States of America.

The influence of our missionary and colonial past can neither be ignored nor taken out of the big picture as we seek to understand why the high school geography syllabus emphasized foreign aspects more than local indigenous aspects.

A look at one of the key books used in high school “*Certificate Physical and Human Geography*” by Goh Cheng Leong revealed a wide range of topics that when closely examined were detached from the local Zambian situation. Most of the heads of section emphasized the need for the syllabus to meet the needs of the local people.

In the words of one of the heads of section, “*the syllabus should be localised to meet the needs of the local community first before attempting to meet the needs of anybody else*”. This observation was in line with the recommendations the UNDESD on culture. In December 2002 the United Nations General Assembly adopted resolution 57/254 through which it put in place the United Nations Decade for Education for Sustainable Development-UNDESD (2005-2014). For the Decade for ESD one of the key areas of activity for UNESCO was culture. It stresses that culture is concerned with the identities and values that shape the way people live, their responsiveness to educational programs, and the degree to which they feel involved in preserving for the future. UNESCO encourages an approach to SD in which people are addressed with a discourse linked to their immediate concerns (www.unesco.ca/en/interdisciplinary/ESD/default.aspx). Clearly, the geography syllabus covered by this study in the year 2010 bore more of a colonial face and mentality than an indigenous one. There was need to give the geography syllabus a face that was reflective of the reality on the ground in our society.

5.1.4 Personal Hygiene/Health and Sex Education

The study revealed that thirty-six per cent of the pupils indicated that they felt geography offered them information on their personal hygiene and health. However, sixty-four per cent of the pupils responded in the negative. Upon probing those that answered in the affirmative further, they mentioned that they received this information from topics such as '*Pollution*'. However, some of the heads of section indicated that whilst the topic of '*Pollution*' offered some information on hygiene and health, it did not go far enough in dealing with issues of health and hygiene on a personal level. They said this was so especially if one looked at the way HIV/AIDS was handled in the syllabus under the topic '*Population*'. It was not dealt with in-depth. This observation from the heads of section tallied with the views of the pupils of whom fifty-nine per cent felt that their perception of sex or sexuality had not been influenced in any way by what they learnt in geography.

When one considers the gravity of HIV/AIDS as a social problem only in Southern Africa but in Zambia, it seems odd that this issue was dealt with only at a shallow level in the classroom. The geography syllabus missed an opportunity to empower pupils with knowledge and values that could have given them a whole new perspective on how to best appreciate the gravity the social implications of their sexuality and actions in relation to HIV/AIDS.

CDC (2001:36) states that "*The teacher should strive to educate children to grow with a balanced view about sexuality and promote appropriate moral conduct in*

agreement with the beliefs and norms of society.” The irony of this excerpt from the Teacher’s Curriculum Manual prepared by CDC was that the geography syllabus which was also prepared by CDC had no topic that reflected the endeavour expressed in the excerpt. It was almost as if CDC was saying one thing on one hand but doing the exact opposite on the other. It was this evidence of double standards on the part of CDC that put pupils at a disadvantage. The geography syllabus appeared to ignore the recommendations of the Ministry of Education (1996) “*Educating Our Future*” which states that:

Schools must be concerned for the health of their pupils, not only because good health is basic to good learning, but because pupils are significant transmitters of health messages to the community. Moreover, knowledge, practices and attitudes conducive to good health, which are learned at school, are of inestimable benefit to pupils in their post-school adult life. Schools, therefore, must promote both health and health education in so far as they relate to individuals, communities and the environment.

That the geography syllabus, at the time of this study in the year 2010, did not reflect the aspirations of the ‘*Educating Our Future*’ document should raise concern. There was a discrepancy in the way the aspirations of the nation vis-à-vis health education were dealt with in the geography syllabus.

The high percentage of pupils (sixty-four per cent) who indicated that geography did not offer them any content on hygiene and health conformed to the findings of

the Needs Assessment Report on the Review of Zambia's School Geography Curriculum. According to Namafe (2001) zero per cent of the pupils, in senior secondary school that were part of the review, thought that good diet and health as covered in geography contributed towards their ability to find good employment, improved their understanding of other subjects or improved their own thinking. These findings of the Needs Assessment Report on the Review of Zambia's School Geography Curriculum were submitted to the CDC in the year 2001; however, the situation as observed by this study in the year 2010, was basically still the same. This study found that the geography syllabus did not offer any information of benefit to high school pupils when it came to personal hygiene and health, a good diet or sexuality. Mwaipaya (1980:58) emphasizes the significance of moral education as follows:

It is generally accepted that when moral norms are flouted by members of a society, the social units cannot function properly. Similarly, an educational system that pays little attention to the study of moral subjects, but instead concentrates upon the mastery of technical or purely academic subjects cannot succeed in developing the inner potentials of individuals, nor can it adequately equip them for demands of daily living. In other words, an educational system that ignores the study of cultural roots of a people and the source of their moral norms, but instead stresses the study of scientific and technical subjects, is at best a superficial system, capable of producing only manlike robots, but never man-centred individuals.

Mwaipaya in the previous excerpt stresses the essence of accentuating the social and the moral aspects of our identity as a people through formal education and particularly classroom learning. This type of learning is even more important for pupils in high school as they are at a very sensitive stage of development. It is at this stage of development that they acquire values and norms that will be an important part of their lives as they become responsible adults. Geography, as a social and natural science, has leverage in comparison to other subjects in tying the social and moral aspects of living to technical and academic issues.

5.1.5 Outdoor Activities and the Teaching of Geography

It should be noted here that field projects were not part of classroom work as they were covered as part of the grade twelve final examinations. This study discovered that eighty-four per cent of the pupils felt that there were not enough outdoor activities associated with the teaching of geography. When one considers that the teaching methods to which the pupils responded best, as given by sixty per cent of the section heads, were the lecture method and question and answer method, the high percentage (eighty-four per cent) representing a negative response amongst the pupils seemed to have been justified. If the teaching methods that dominated the teachers' methodology as they prepared their lesson plans were the lecture and question and answer methods, then the chance of any other method being picked as a method pupils responded to best was taken out of the picture. In reality, this study revealed that the lecture method and question and answer method were the methods that the teachers found more convenient to use in delivering their lesson plans in

order to cover as much of the syllabus as possible. This was an aspect of geography which the study discovered needed rectification to make it more meaningful as a vehicle for ESD.

It is a known fact the pupils learn better when more of their senses are involved through the use of pupil-centred teaching methods that allow pupils to be outdoors or play an active role in the process of learning. Outdoor activities offer pupils the opportunity to interact and commune with their surroundings. The absence of outdoor activities in the teaching of geography was further compounded by the following revelation by the pupils concerning field trips. Eighty-one per cent of the pupils indicated that they had never been on a field trip. Seventeen per cent of the pupils had a field trip once in the three years of high school and a meagre two per cent said they had been on at least three field trips in the three years of their high school experience. These findings were indicative of how little outdoor activities were actually present in geography teaching at high school level.

The Oxford Dictionary of Current English (2001) defines geography as the study of the physical features of the earth and of human activity as it relates with these. Hence, we can see that geography by definition is a subject that deals with the physical environment and how human activities interact with that environment. Therefore, it was unfortunate that so little time was dedicated to the outdoors in the teaching of geography. In justifying the absence of outdoor activities, the heads of section indicated that the geography syllabus was too bulky to allow for excursions

out of the classroom. Eighty per cent of the section heads indicated that they did not manage to cover the entire syllabus in the stipulated time frame of three years.

One teacher (head of section) was quoted as saying *“the teacher who ventures out of the classroom and uses pupil-centred methods will be popular at first with the pupils, but sooner than later that teacher will pay the ultimate price of having his or her pupils sitting for the final examination in geography with very little of the content in the syllabus covered!”* This remark was again synonymous with the observation that the biggest challenge for most of the teachers in geography was to cover the syllabus in the stipulated three years of high school. The bulky nature of the syllabus also seemed to explain why ninety-six per cent of the pupils never, in the three years of high school education, had a teacher of geography use the role-play method in teaching geography. Only four per cent of the 400 pupils claimed to have been exposed to the role-play teaching method.

That ninety-six per cent of the pupils had never been exposed the role-play teaching method seemed to confirm the lack of a diverse and rich approach to the way geography content was delivered to pupils during lessons in class. Bailey and Fox (1999) state that *“geography with its fieldwork, maps and IT-based practicals, role play exercises as well as traditional verbal and written components, is ideally placed to foster equal opportunities in terms of teaching variety.”* The role play method is one of the best methods when it comes to developing empathy in the pupils as it puts them in the shoes of the stakeholders connected to various environmental issues. It is one of the best tools to help the pupils gain a deeper

understanding of what is really happening on the ground as they take up roles related to various social and environmental scenarios in the community. Sandell *et al.* (2005:176) further explain and justify the role-play method as follows:

This educational approach functions in two ways; firstly, preparing students to take part in a democratic society in the future and secondly, that the school benefits from allowing environmental and developmental issues to be discussed in a democratic arena. From this perspective it is important that lessons include panel debates or role-playing activities which reflect real conflicts in society as well as students being permitted to participate in the environmental aspects of the organisation of the school.

The CDC (2001:46) also indicates that:

One of the principle aims of Environmental Education is the formation of positive attitudes. Role-play and debate are considered effective in fostering attitude formation and change. ...through direct involvement, learners gain a greater understanding of the roles and relationships and in turn will be able to solve problems in any given situation where there is massive deforestation and the community is trying to come up with a programme to solve a problem.

Sandell *et al.* (2005) and the CDC Teacher Curriculum Manual underscore the significance of the role-play teaching method. However, in the scenario captured by this study in the year 2010, the pupils hardly seemed to be beneficiaries of this important tool for learning.

In line with the use of pupil-centred teaching methods, Graves (1982) explains that the implementation of real problem-solving teaching strategies requires that the teacher takes the role of a coordinator or collaborator rather than that of director or authoritative answer-giver. Graves suggests that teachers prepare themselves by considering the following:

- Be alert to the real problems confronting their students and introduce problem-solving in a meaningful way.
- Act as coordinators and collaborators. Indirectly assist the students as they investigate different aspects of the problem.
- Permit the students to become involved in the problem and in carrying out in-depth investigations, by asking questions which stimulate thoughtfulness.
- Make any necessary arrangements for fieldwork, interviews or community resources and for collecting data.

Pupils cannot be expected to develop a mind of inquiry, investigation and have a problem-solving mentality if teachers do not use teaching methods that offer them the opportunity to do so. Therefore, there should be a deliberate effort on the part of geography teachers to expose their pupils to teaching methods that offer them the platform to take an active role in the process of learning and interacting with the environment.

5.2 Attitude of Pupils towards Geography

This section discusses the findings in relation to the attitude of the pupils towards geography.

5.2.1 Redefining the term “*Localisation*”

One of the key issues that this research uncovered was that there seemed to be a misconception with regard to the way the word “*localisation*” was used. The Oxford Advanced Learner’s Dictionary (2006:867) defines the word ‘*localise*’ as follows; “*to limit something or its effects to a particular area.*” Eighty-three per cent of the pupils indicated that geography had little to do with their local environments. This contradicted the aspirations of the geography syllabus which at the time of this study in the year 2010, was last revised in the year 2000 to make it more local. There was a contradiction in the way the word “*local*” was viewed by the geography syllabus and the way it has been defined above. For example, while ‘*Tourism in Zambia*’ may appear to be a local topic at first glance, it is in earnest not really a local topic but a national one. It is not local because tourism in Livingstone is as foreign or detached a topic to the pupils in the Gwembe Valley of Southern Province and Kawambwa District of Luapula Province as the topic on Glaciations in Europe. The true definition of the term local should be given with reference to an issue that is connected to the immediate environment in which the pupils live. It is this localisation, at grass-roots level, that was missing in the geography syllabus.

The Zambianisation of the syllabus by including topics that are related to the country, in the year 2000, did not necessarily localize the syllabus. Localisation of a syllabus in relation to ESD should entail bringing it to the level of an individual. The pupil should be able to claim personal ownership of the syllabus because they see a reflection of their surroundings in it. According to Bailey and Fox (1999) motivation to learn is likely to relate to the degree to which pupils perceive its relevance in connection to themselves, and can relate their learning to real situations in their own lives. This confirms the need to localize the geography syllabus. Unless geography begins to deal with real situations that pupils experience in their local communities, its impact on the local community will be compromised.

The CDC (2001:16) states that;

The teacher must demonstrate respect for the knowledge and skills of the local society. All learners come to school equipped with numerous skills acquired outside, and the process of learning informally continues on a daily basis.

The CDC Teacher's Curriculum Manual further adds that one of the many ways of interaction that can take place, is for the teacher to show respect and interest in local skills and find ways of integrating them into the localised curriculum. Again, it must be noted that the manual articulates itself very well on the need for teachers to localise their work, but the CDC failed to reflect this same passion for

localisation in the content of the geography syllabus. The reality on the ground was that no teacher was willing to venture away from the prescription of the syllabus because the syllabus was clearly tailored to prepare the pupils for grade 12 examinations.

It can hence be deduced from the findings of the study that any teacher of geography who attempted to deal with the local aspects did so at the expense of covering the syllabus. The geography syllabus was heavily loaded with so many topics and the teachers' priority was to make the pupils pass even if it was at the expense of the local curriculum development at school level.

It seems the only way the local curriculum can be taken seriously is if the national curriculum makes it compulsory for local aspects to be included with specific guidelines on how this can be done. The introduction of local geography field projects in the geography syllabus did not suffice as a means of localizing the syllabus-more needed to be done. As long as the geography teacher's key goal is to guarantee good examination results, a true localization of the syllabus will not be possible.

5.2.2 Pupils' Interest and Attitude towards Geography

A hundred per cent of the heads of section indicated the pupils had interest in geography. The reasons given for this interest were:

- Pupils' participation in class work and their ability to do their homework.
- Pupils' curiosity by posing a lot of questions in class.

- The fact that some of the pupils chose geography as an option instead of history.
- Because the pupils used their free time to make further enquiries on particular topics.
- The good performance in the grade twelve geography examinations and in classroom exercises.

This was a key observation because in order for the subject of geography to be a vehicle for ESD it needs a clientele base, and that base is made up of the pupils who are the supposed beneficiaries of geography. The objective criterion to use in measuring the interest of the pupils appeared to be their performance in the final grade twelve examinations. All the heads of sections rated the performance of their pupils as 'good' or 'very good' which was represented by the percentages of seventy and thirty respectively. Ironically, fifty per cent of the heads of section indicated that the attitude of pupils towards geography was 'poor'. Thirty per cent indicated that it was 'fair' and only twenty per cent indicated it to be 'good'. When asked to clarify the contradiction between interest and attitude the heads of section that provided the 'fair' and 'poor' as responses indicated that there was a big difference between interest and attitude. One of them went a step further and stated that '*the difference between interest and attitude is akin o that between liking and loving*'. They suggested that just as loving had a deeper meaning than liking, an attitude carried a deeper meaning than an interest.

The Oxford Advanced Learner's Dictionary (2006:778) defines 'interest' as: "*the quality that something has when it attracts somebody's attention or makes them want to know more about it.*" It further defines an attitude as the way one behaves towards somebody or something that shows how one thinks or feels. The New Encyclopaedia Britannica (2005:687) defines an attitude as "*a predisposition to classify objects and events and react to them with a degree of evaluative consistency.*" It further explains that attitudes logically are hypothetical constructs they are manifested in conscious experience, verbal reports, gross behaviour and physiological symptoms. Attitudes held by others are not directly observable; they must be inferred from behaviour. In comparing an attitude to an interest the New Encyclopaedia Britannica explains that the difference that of specificity and depth. It explains that attitudes are viewed to be more specific and can be viewed as beliefs that impel action. The Macmillan Family Encyclopaedia (1980:315) supports this assertion and suggests that "*Among the most important variables in attitude change are the following: personality characteristics; the credibility of the source of different opinions or of information dissonant with the held attitudes...*". Hence if we were to put interests and attitudes on a hierarchical scale, attitudes would be on the end that shows a progressively greater degree to inspire action or a particular type of behaviour.

This study discovered that the interest levels among pupils for geography were high but their attitudes towards it were poor. As can be noted in the previous paragraph interest is a shallow variable to use in measuring the effectiveness of a subject,

because it is based on an individual's curiosity or attraction to something or an object. While an attitude, on the other hand, is tied to an action or deed which is the evidence of a particular pattern of thought or belief. Hence, it can be deduced that while geography was able to stimulate interest, it was not yet able to stimulate or inculcate actions or deeds in the pupils that reflected a particular positive pattern of thinking in relation to the environment. Localising the geography syllabus and incorporating ESD would help to equip geography with the methodology and values which would enable it to inculcate positive and sustainable behaviour.

5.2.3 Inter-generational Learning and Culture Transmission

One of the factors that came out as a vital component missing in improving the attitude of pupils was the aspect of the pupils not having an opportunity to learn from their own grandparents and parents or guardians. Eighty-nine per cent of the pupils indicated that geography did not offer them an opportunity to learn from their grandparents, parents or guardians. This is a component that is closely related to the culture of the pupils. One of the key ways through which cultural knowledge is transmitted is through the interaction between children and the older generation of their families.

Seventy-eight per cent of the pupils felt that they did not learn anything in geography that was of cultural benefit. Twenty-two per cent of the pupils were of the view that what they learnt had some cultural benefit. Further questioning during the focus group discussions revealed that the portion of pupils that said they learnt

something about their culture from geography were actually referring to the aspects they learnt on traditional agriculture among the Lozi of Western Province, Bemba of Northern Province and the Luvale, Lunda and Kaonde of North-Western Province. This clearly cannot qualify to be an in-depth coverage of the cultural heritage of pupils, especially when one considers the diverse ethnic and cultural mosaic of the seventy-three tribes of our country, Zambia. In support of this observation Bailey and Fox (1999: 29) state that:

Geography as a subject area, with people as its focus, has unrivalled potential for breaking down prejudices, questioning stereotypes and broadening cultural understanding. The wide range of geographical studies, from global to local level, should give the subject a head start in terms of educational opportunities.

The above text emphasizes the unique role geography can play as a bridge builder between cultures and its role as an agent for social change. However, it must be said that before any individual endeavours to understand another culture, they must understand and come to terms with their own culture first. Any individual who does not value or have a full appreciation of their culture can never have the capacity to understand let alone appreciate a different or foreign culture. We cannot begin to talk about sustainability of any sort, if we have no capacity to preserve nor sustain the cultural values and interests of the diverse ethnic groups in our country, Zambia. If the basic ethnic and cultural identities of the pupils as individuals are

neither up-held nor reinforced then how can the same pupils appreciate and identify with concepts that are exotic?

According to www.ceeindia.org/esf/wk18.asp, ESD is not a separate subject, like gender issues it is a cross-cutting theme which has to be integrated into as many subjects as possible. Because of this, there should not be a separate or specific subject on values education for SD. This places a heavy responsibility on teachers and facilitators in all forms of education and at all levels to incorporate values and cultural education into whatever they teach. The cultural aspect should become a strong component in teacher education programmes.

5.2.4 Attitude of Pupils vis-à-vis Career/Academic Prospects

Forty-eight per cent of the pupils indicated that geography as a class subject was vital to their prospective future career. They identified it as a social science that could help them get into the School of Humanities or School of Education at the University of Zambia, if their final examination results were good enough. Some of the pupils that mentioned that geography was important to their prospective future careers gave the following as possible career options: geology, geography teaching, becoming a pilot and a military career. This study also revealed that forty-nine per cent of the pupils indicated that geography did not offer them any future career prospects. Three per cent of the pupils were not sure whether or not geography had anything to do with career prospects.

According to Namafe (2001) in the Needs Assessment Report on the Review of Zambia's School Geography Curriculum, only 0.72 per cent, 5.92 per cent and 0.8 per cent of the pupils indicated that human environmental issues in geography contributed to their prospects of getting good employment, improved their thinking and understanding of other subjects respectively. With only 0.72 per cent answering in the affirmative, the Needs Assessment Report revealed that the majority of pupils saw no connection between human environmental issues in geography and their pursuit of any particular career or getting good employment. This research's findings agreed with the findings of the Needs Assessment Report. At the time of this study in 2010, it was discovered that forty-nine per cent of the pupils had a negative perception towards geography when it came to its role in helping them find employment or a career after school. This study was carried out nine years from the time the Needs Assessment Report on the Review of Zambia's School Geography Curriculum was submitted to the CDC in the year 2001.

There appeared to be little content on human environmental issues in the geography syllabus that the pupils could actually relate to. The more the pupils identify with human environmental issues in geography in connection to themselves and particular careers, the better their attitudes would be towards geography. One of the heads of section indicated that the attitude of pupils towards field projects in geography also seemed to change once the pupils were made to realise how important the experience they got would be when they had a chance to do research in college or university later on in their lives.

The pupils who picked geography, of their own accord, as one of their subjects in class, accounted for forty-five per cent of the pupils' sample population. Fifty-five per cent indicated that it was picked for them by their teachers. Some of the heads of section suggested that pupils who picked their own topics appeared to have a better attitude than those who were placed into a class to take geography by their teachers. The geography heads of section further explained that it was one way in which the pupils can find a personal connection to geography, hence giving the subject greater relevance to their lives. Bailey and Fox (1999) explain that geography teachers should have little difficulty convincing their students of the versatility of the subject (geography). Bailey and Fox further stress that not only does geography have direct and indirect links with numerous vocational and other courses, it also provides a sound and relevant base of knowledge and skills which are relevant to a considerable range of job opportunities.

Showing pupils the connection between geography and the potential opportunities of study and career advancement would greatly change the attitude of pupils towards geography. Effective career guidance should be available in high schools and the versatility of geography as a subject and tool to connect students to various careers and study areas at tertiary level must be emphasized.

5.3 Areas in Geography that need Improvement

The following section discusses the areas of the geography that require urgent innovation or modification.

5.3.1 Coverage of the Geography Syllabus

This study revealed that ninety-seven per cent of the pupils indicated that they did not cover the entire syllabus in the three years of high school. Only three per cent of the pupils indicated that they managed to cover the entire syllabus in three years. Eighty per cent of the section heads indicated that it was impossible to cover the entire syllabus in three years. Further probing of the twenty per cent of the heads of section that actually indicated they were able to finish the syllabus revealed that they, in fact, did not cover the entire syllabus but had from experience come up with a strategy for covering topics that they assessed would give their pupils an advantage in the sections that offer options on questions to be tackled in the geography examinations. So, in reality, what they were able to cover completely were the schemes of work which comprised topics selectively picked based on the geography sections' experience of how geography questions came in the grade twelve final geography examinations.

One head of section mentioned that heads of department and section heads met as the Geography Subject Association to agree on the relevant topics they considered to be examinable in order to help teachers cover the syllabus quicker or strategically. However, it is worth noting that, not every geography teacher in Zambia is a beneficiary of the recommendations of the Geography Subject Association.

A close look at the Certificate Physical and Human Geography textbook by Goh Cheng Leong revealed that all the topics from chapter six to twelve and fifteen to twenty-five were not covered in class in an endeavour to tackle the topics that were viewed to be more relevant. The topics in Leong (2001) which were skipped among others include:

- Landforms of Glaciation
- Arid or Desert Landforms
- Limestone and Chalk Landforms
- Lakes
- Coastal landforms
- Islands and Coral Reefs
- The Oceans
- The Temperate Continental (Steppe) Climate
- The Arctic or Polar Climate

A close analysis of the content of the topics above revealed how remotely connected they were to the pupils' local environments. Ironically, one of the books recommended for topics on Zambia and the sub-region: A High School Geography Textbook of Zambia and the Sub-region 10-12 Pupils' Book by Ntalasha *et al.* (2004) was identified by the section heads to be very shallow and inappropriate as it covered the local issues in a very superficial manner. There was clearly an indication that the geography syllabus was over-loaded with content which the

teachers found to be irrelevant. The pupils particularly, expressed frustration at the inability of their teachers to cover the entire geography syllabus.

The observation made by the CDC geography specialist that it was possible to cover the geography syllabus in the stipulated three years of high school contradicted the information collected from the pupils and geography heads of section. One possible explanation for this contradiction is that the CDC was not in touch with the reality on the ground vis-à-vis the coverage of the geography syllabus in high schools. This contradiction brought to the fore the need for CDC to constantly monitor and assess how the geography syllabus was implemented and used by teachers and how pupils responded to it.

5.3.2 Commencement of Classes in Grade 10

The heads of section indicated that there was need to find a way of letting pupils selected to grade ten from grade nine to commence classes sooner than was the case. At the time of this study in the year 2010, the pupils reported when there was about a month before the end of the first term. This meant that before the pupils settled down, the term drew to a close. In reality, the whole of term one in grade ten hardly involved any learning. Proper learning only began in term two of grade ten. This was one of the problems which compounded the fact that geography was the bulkiest subject at high school level.

5.3.3 Commencement of Examinations in Term Three of Grade 12

One of the heads of section expressed an opinion which reflected a genuine problem contributing to the inability of a lot of teachers to cover the entire geography syllabus. He explained that learning in term three of grade twelve only took place for one month and two weeks –in September and the first two weeks of October. By mid-October examinations commenced. When the first term of grade ten and the last term of grade twelve were taken into consideration, the geography teacher only had seven terms out of a possible nine terms in which to cover the geography syllabus. This dilemma contributed to the inability of most teachers to cover the geography syllabus within the stipulated three years of high school.

5.3.4 Knowledge of ESD amongst High School Teachers

Sandell *et al.* (2005) suggests that ESD is an approach to EE which gives students the opportunity to acquire knowledge and skills so that they can actively and critically evaluate different perspectives of environmental and developmental issues. In this way students develop the ability to engage in democratic d concerning how best to create a sustainable society and a sustainable world. Sandell and colleagues further added that the teaching content should include the relationship between local and global problems as well as between the past, present and future. The focus clearly is on SD and the related topics of economics, society and ecology. It is worth noting here that the only subject in the Zambian high school curriculum that has aspects of economics, society and ecology is geography. Hence, the teachers of geography should take the lead and be first to be given

the opportunity for capacity building in ESD. We currently live in a world where the need for SD is more real than ever before and the only way to bring values and principles of SD to the classroom is by incorporating ESD into geography. The capacity building of geography teachers with ESD is a fundamental part of accomplishing the aspirations of sustainable living.

This study revealed that only forty per cent of the geography section heads had an idea about ESD. However, further probing of the heads of section who said they were aware of ESD revealed that they were actually referring to knowledge on SD and not ESD itself. Sixty per cent of the geography heads of section indicated that they were not aware of ESD. The revelation by the Curriculum Development Centre (CDC) geography specialist that no one from his section had undergone any training in ESD was a sad one. ESD as a new approach to education that was being embraced the world over needed to be a phenomenon that was taken seriously at a high educational level like curriculum development. If the architects of the high school curriculum were themselves cynical of ESD capacity building, what hope was left for the educational fraternity in the lower tiers of the educational system?

5.3.5 Field Projects

Field projects, when used correctly, are one of the best ways of learning available to pupils. They allow pupils to interact with the environment and get to discover local issues that they can investigate and offer solutions to. Whilst acknowledging the importance of field projects, sixty per cent of the heads of section indicated that

field projects in their current form had a minimal impact on the localization of the geography syllabus. Forty per cent of the heads of section indicated that field projects in their current form had an important role to play in localising the geography syllabus.

The following flaws were noted from the heads of section who offered a negative response. Firstly, the field projects were too examination-oriented instead of being skill-oriented; field projects were conducted as a requirement for the geography examinations. Not much attention was given to whether or not the pupils were being empowered with relevant skills that would last them a life time. Eighty-four per cent of the pupils started to work on their field projects in grade twelve and only sixteen per cent did so in grade eleven. The motivation behind the commencement of work on the field projects was not the acquisition of knowledge or skills but the pressure of approaching geography examinations to which the field project accounts for 12 marks out of the total marks. Another factor that clearly indicated that the field projects were pro-examination was the observation that eighty-one per cent of the pupils had no experience of conducting a field project prior to the official field projects they conducted as part of the grade twelve final examinations.

Secondly, it was also observed by the geography section heads that only forty per cent of the pupils picked their own field project topics themselves, while thirty per cent of the pupils were given their field project topics by their geography class

teachers. The remaining thirty per cent chose their topics in collaboration with their geography teachers. Upon being asked why they picked topics for the pupils, some section heads indicated that they were hesitant to allow pupils to pick their own topics because there was a lot of cheating involved in the process. They said that most pupils simply recycled the topics that other pupils had done in previous years. It should be noted, however, that the idea of picking topics for pupils though well intended, seemed to betray the essence of true research. The interest and passion of a researcher is compromised when they are not the originators of the research problem. It is vital to promote a true spirit of academia and research by encouraging pupils to discover problems in their local environment on their own and encourage them to seek solutions to those identified problems. The spirit of scientific enquiry and curiosity cannot be delegated to a second party.

Thirdly, the 12 marks allocated to field projects were meagre when one considered the amount of work and expenses that were associated with field projects. This was a major source of frustration for most pupils.

5.3.6 Incorporation of ESD into Geography at High School Level

According to www.ceeindia.org/esf/wk18.asp, the ESD values and perspectives workshop supervised by the UNESCO from the 18th to 20th of January 2005 in Ahmedabad concluded that promotion of values in non-formal settings is more difficult-be it in a home, social setup or community. Values which are not

supported by the society cannot be taught in a school setting. Therefore, community involvement in ESD is essential both in content determination and presentation.

The incorporation of ESD at high school level must be taken with the urgency it deserves. However, any such incorporation has to first take into account the needs and aspirations the local communities. This research revealed that sixty per cent of geography section heads did not have a clear picture of what ESD was. In addition to this, the Curriculum Development Centre geography specialist bemoaned the lack of capacity in ESD vis-à-vis the geography section at the Curriculum Development Centre. He explained that in his opinion it is the subject of geography that stood the best chance of bringing ESD closer to the pupils and eventually to the local community. Sandell *et al.* (2005) suggests that ESD is not characterised by any specific teaching methods. The methods are determined, among other things, by the experiences and backgrounds of the students taking part in the lessons. Sandell and colleagues further suggests two guiding principles in the choice of the teaching methods.

Firstly, the chosen method must be related to the actual aim of education-contributing towards the students' development in their role as members of a democratic society who are capable of critical evaluation. Secondly, that the teaching method is approached with the understanding that the process of learning takes place in the encounter between the student and the teaching material.

The previously mentioned principles are representative of the aspirations of ESD. Capacity building in ESD, hence, is an inevitable requirement in geography at high school level.

5.3.7 Key Source of Data about the Environment

This study revealed that fifty-seven per cent of the pupils got their information on the local environment from television and radio, while twenty-seven per cent said they got it from the classroom. A further twelve per cent indicated that they got most of their data on the environment from the internet and only four per cent of the pupils indicated newspapers as their key source of data on the local environment. These findings are indicative of the need for geography to do more in providing relevant information to pupils about the local environment through class work.

5.4 The Significance of Targeting the Youth in High School

It is vital to understand why the pupils were the focus of this study. The Macmillan Family Encyclopaedia (1980:315) states that *“Attitudes, like beliefs arise early in life and tend to persist or be influential throughout life and perhaps over generations...”*. If ESD is to stand a chance of being successful, it must target the young generation of youths when they are still at a critical stage of development. Ninety per cent of the pupils that were part of this study were eighteen years or younger. This is the right age group to focus on for the inculcating of positive attitudes and perspectives in relation to the environment and sustainable living.

The United Nations Conference on Environment and Development states that:

Education is critical for promoting sustainable development and improving the capacity of people to address environmental and development issues...It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effecting public participation in decision making (UNCED, 1992, chap.36:2).

People regardless of their background are stakeholders and potential recipients of education- whether it is formal, non-formal or informal. However, I would like to suggest that targeting the younger generation with ESD through geography in the classroom is a unique opportunity that exists, but one that in Zambia has not been taken advantage of. The Ministry of Education (1996:38) acknowledges the importance of targeting the youth with relevant knowledge as follows:

The school is a leading agency in helping young people to form socially acceptable habits and to adopt a set of personally held values, although in this area more than in any other its activities must be complemented by the home, the community and the wider society. This is all more important at this level as pupils are at a critical stage of personal development when they shape for themselves their own personal philosophy of life, interiorizing and adopting a set of values and attitudes by which will direct their lives.

When one considers that ninety per cent of the pupils were eighteen years or younger, it is clear that they represent the next generation that will take over as the ruling and working class in the nation. It is vital, therefore, that all stakeholders do

all that can be done to make sure that this generation is groomed with the appropriate information, values, skills and behaviour that will lead our country closer to being a society that embraces and appreciates sustainability and sustainable living.

5.5 Reflections on the Extent to which Research Questions have been addressed in this Study

This section reflects on the extent to which the research questions posed by this study have been addressed in this document. The following were the research questions:

- a) What is the contribution that ESD can make to geography at high school level?
- c) What are the attitudes of high school pupils towards geography?
- d) How can the current geography syllabus be changed so that it integrates ESD to empower pupils with skills relevant to their local environment?

5.5.1 Extent to which the Study addressed the First Research Question

The findings of the study in relation to the first research question are reflected under section 5.1 and subsections 5.1.1, 5.1.2, 5.1.3 and 5.1.4. The study found that ESD could make a contribution to geography by taking advantage of its diverse nature-its social science and natural science attributes. It found that field projects could play a great role in incorporating aspects of ESD if they are made less examination oriented and more knowledge and skills oriented. The study also established that

ESD could make a contribution to geography if the geography content was further localised and the excess foreign content was minimised. It further established that localisation should include personal hygiene and health, sex education and the strengthening of outdoor activities.

5.5.2 Extent to which the Study addressed the Second Research Question

The findings of this study in relation to the second research question are reflected in section 5.2 and subsections 5.2.1, 5.2.2, 5.2.3 and 5.2.4. The study found that the lack of intensive localisation of the geography syllabus contributed to negative attitudes that pupils had towards geography. All the geography heads of section (100 per cent) indicated that pupils had interest in geography. This contradicted the findings on the attitudes of pupils towards geography. Fifty per cent of the heads section indicated that the pupils' attitude towards geography was largely '*poor*'. The remaining thirty and twenty per cent of the heads of section indicated that the pupils' attitudes were '*fair*' and '*good*' respectively. This study, hence, established an academic difference between pupils' attitudes and pupils' interests. It further established that the absence of inter-generational learning and cultural transmission was a possible explanation for the poor attitudes towards geography amongst most of the pupils. The study also found the lack of emphasis the connection between geography and career/study prospects after high school to be a contributing factor to the poor attitudes pupils had towards the subject.

5.5.3 Extent to which the Study addressed the Third Research Question

The findings of the study in relation to the third research question are reflected in section 5.3 and subsections 5.3.1, 5.3.2, 5.3.3, 5.3.4 5.3.5, 5.3.6 and 5.3.7. The study established that the areas of geography that needed improvement were: the bulky nature of the geography syllabus; commencement of classes in grade ten; commencement of examinations in term three of grade twelve; ESD capacity building amongst geography teachers; re-orientation of field projects to make them less examination centred and more knowledge and skill based and re-orientation of geography examinations to incorporate aspects of ESD. Having reflected the extent to which the research questions were tackled by the study the following chapter presents the conclusion and recommendations of the study.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study brought out various concerns and observations vis-à-vis the relevance of ESD to high school geography. The conclusion and recommendations present these concerns and observations with respect to the study's research objectives.

In relation to the first objective, this study found that there was a need to re-define the meaning of the term "*localisation*". The study revealed that the term '*localisation*' was used in the geography syllabus to refer to topics dealt with Zambia in a general sense. The appropriate term to use to refer to this general approach is '*Zambianisation*'. The term '*localisation*' should refer to making a topic more relevant to the individual and helping the individual address the problems they face in their local communities. There should be a difference between *Zambianising* the geography syllabus and *localising* it.

At the time of this study, in the year 2010, the geography syllabus dealt with *Zambian* issues and topics but did not comprehensively localise them. Localisation of the geography syllabus could offer an opportunity for ESD to be linked and contribute to geography. Therefore, it is concluded that the geography syllabus was not localised comprehensively. It is further concluded that field projects offer an area where ESD could make a contribution in connection to the significance of

local knowledge and research. However, the flaws of field projects need to be rectified in order for ESD to make a meaningful contribution.

In relation to the dominance of foreign topics the study established that the geography syllabus was largely foreign and still influenced by inclinations and perspectives which had been part of the education system since pre-independence colonial times.

The study revealed that the geography syllabus did not adequately contribute to empowering pupils with knowledge that could help them with their daily needs both in the short and long term. Most of the pupils who answered in the affirmative referred to the content under the topic '*Pollution*' and disease outbreaks under the topic '*Population*' as the material that offered them knowledge under personal hygiene and health. However, an examination of the two topics mentioned revealed that the issues of personal health in both topics were not dealt with in-depth. HIV/AIDS and sex education were also clearly not dealt with comprehensively under the '*Population*' topic. There was clearly no personal focus of hygiene and health information. The key reason behind the syllabus' detachment from the pupils was determined to be its lack of a comprehensive connection to the pupils' local environment. From this, it can be concluded that the role and importance of geography environmental knowledge in empowering and grooming the pupils into a generation that values and appreciates its local environment was inadequate. It can also be concluded that the geography syllabus did not adequately provide

pupils with content relevant to their personal needs. This was an area of the geography syllabus to which ESD could make a significant contribution.

The study revealed that the geography syllabus did not encourage inter-generational learning or transmission of information. The topics that dealt with the cultural aspects of the Bemba of Northern Province, Lozi of Western Province and the main tribes of North-Western Province only dealt with agricultural activities. Therefore, it can be concluded that the geography did not offer pupils an opportunity to comprehensively learn more about their tribes and cultures from older members of their families or communities. Inter-generational transmission of information is an aspect that is championed by ESD and should be emphasized to ensure that the various cultures of our country are preserved.

In relation to the second objective, this study found that the key methods used to deliver geography content in the classroom were the lecture method and question and answer method. A variety of teaching methods and strategies are required so that all learners have equal opportunities to learn and take action based on the new knowledge these teaching methods help them acquire. The key cause of the dominance of teacher-centred methods of teaching was found to be the bulky nature of the geography syllabus. Geography is an environment-based subject hence the absence of pupil-centred teaching methods and outdoor activities was a disservice for pupils. The obsession by the teaching fraternity with preparing pupils for examinations at the expense of bringing them closer to the environment to inculcate

positive attitudes and behaviour was a disparity that needed rectification. From this, it is concluded that most of the teaching methods used for teaching were teacher-centred and, therefore, inadequate under new perspectives on training. This may have been one of the key reasons behind negative pupil attitudes towards geography.

It was established by this study that pupils only got field project exposure for the first time when they worked on their field projects in fulfilment of the grade twelve geography examination requirements. The commencement of work on the field projects in grade twelve by a majority (eighty-four per cent) of pupils did not help in the situation. Hence, it can be concluded that field projects were rarely carried out and when carried out were undertaken for examination purposes. This could have impacted the attitude of geography pupils negatively.

The study revealed that the geography syllabus did not help pupils develop a connection to future careers or study areas. The ability of pupils to connect what they learn in class to life after school is a critical source of motivation which was not present in the geography syllabus at the time of this study. Therefore, it can be concluded that the absence of a clear connection for most pupils between geography and a future career or study area may have impacted their attitude towards geography negatively.

In relation to the third objective this study established that the coverage of the geography syllabus was a critical issue that came out of the study. The geography syllabus was discovered to be too bulky to be covered in three years. In fact, the time frame for coverage reduced to seven terms out of a possible nine terms. This was as a result of the first term of grade ten hardly involving any learning because of the late reporting of pupils due to the late release of grade nine results. The third term of grade twelve also involved little learning because of the commencement of examinations in mid-October. Therefore, it can be concluded that the bulky nature of the geography syllabus was an area that required improvement.

The absence of capacity building of teachers in ESD was another issue that came out of this study. The Curriculum Development Centre specialist bemoaned the lack of capacity building for geography teacher and professionals at the CDC and at high school level. He indicated that geography, in his opinion, was best placed for the incorporation of ESD in the Zambian high school curriculum. This revelation was vital as ESD also has a role to play in helping the nation attain the goals of the Education for All policy and the MDGs. Although ESD is and should be a cross-cutting issue, the reality on the ground is that most subjects, such as mathematics, woodwork, home economics among others, do not have the facets in their structure to enable the smooth incorporation of ESD. Therefore, it can be concluded that capacity building among geography teachers was an area that required improvement to aid the pupils thrive in their local environments.

This study established that the Zambian geography syllabus was too examination oriented. This also seemed to explain the high interest levels for geography among pupils. However, the examination-orientation of the syllabus at the expense of being skill and value oriented also seemed to explain why the attitude of fifty per cent of the pupils towards geography was negative. Good performance in examinations is not the ideal measure of the acquisition of knowledge and personal empowerment. It is true learning and personal empowerment that have the capacity to cultivate positive attitudes in pupils. Interest, though present amongst pupils, was shallow and inspired feelings without inspiring a change in mind-set. Attitudes, on the other hand, are value-based and inspire a change in the mind-set which results in action.

Localising the geography syllabus could help develop attitudes that would result in behavioural change that the pupils, society and the environment in general could benefit from. Therefore, it can be concluded that though the levels of interest among pupils in geography were found to be high, the attitude of pupils towards it was largely negative. The absence of thorough localisation, a personal pupil connection to geography and the extreme orientation of the syllabus towards examinations came out as possible contributing factors to this attitude problem.

In summary, the study found that ESD could make a contribution to geography in the areas of field projects, personal hygiene and health, sex education, inter-

generational transmission of knowledge, use of indigenous knowledge and localisation of the geography syllabus.

The attitude of pupils towards geography was found to be mostly negative and the following came out as possible reasons for that: prominence of foreign items in geography topics at the expense of local issues and cultural knowledge; orientation of the geography syllabus towards examinations instead of skill and knowledge empowerment of pupils; excessive use of teacher-centred methods at the expense of pupil-centred methods and the bulky nature of the geography syllabus which made it impossible to cover in three years. In relation to the dominance of foreign topics this study established that the geography syllabus was still influenced by western inclinations and perspectives which have been part of the education system since pre-independence colonial times and the early post independence era. The study also revealed a difference between an attitude and an interest. Whilst interest in geography was high amongst pupils, their attitude towards it was largely negative. This negative attitude seemed to be partly a consequence of the lack of connection between geography and pupils' future career and study prospects.

The geography syllabus was found to require the following modifications to help it empower the pupils in their local environments: re-orientation of the geography syllabus to make its core purpose the empowerment of pupils with relevant knowledge and skills and not just the passing examinations; to have teachers trained in ESD so that its incorporation into the syllabus is easier and meaningful;

to find a way of adjusting the commencement period for classes in the first term of grade 10, to re-orient the way field projects are handled and make the less examination oriented and to make the geography syllabus leaner and easier to cover.

6.2 Recommendations

This subsection presents recommendations and suggestions on how ESD can be made more relevant to Zambian high school geography and geography made more relevant to the pupils and the local communities.

1. All the stakeholders in the Zambian educational system (most notably the MoE and CDC) should endeavour to make the geography syllabus more relevant to the end users –the pupils, by empowering them with skills and knowledge that help them deal with local problems and allow them to interact fully with their local environment. The geography syllabus should seek to offer pupils positive attitudes backed by sustainable behaviour, and not just a passing interest in geography. This is in view of the finding that eighty-three per cent of the pupils saw little connection between geography and their local environment.
2. ESD should be incorporated into the Zambian high school curriculum through geography. This entails geography becoming a compulsory subject at high school level. Adequate capacity building vis-à-vis ESD must be undertaken among the geography teachers. The incorporation of ESD into the high school curriculum is

long overdue. ESD has a critical role to play in helping Zambia as a nation attain the goals of Education for All policy and the MDGs. These recommendations arise from the findings that sixty per cent of the geography heads of section indicated a lack of ESD awareness and felt field projects did not as a means of localising the syllabus.

3. The geography syllabus should be made leaner and less examination oriented to allow teachers to cover it within the prescribed time-frame and also allow them to have ample time to use pupil-centred methods of teaching such as the role-play method and field trips. The syllabus needs to incorporate aspects that enable pupils to interact with their guardians (grandparents, parents and elders) to enable them to tap into the informal/indigenous knowledge bank that is vital in keeping pupils abreast with their cultural heritage. The role that inter-generational transmission of knowledge plays in grooming a well rounded individual should not be ignored. This recommendation addresses the research findings that eighty-nine per cent of the pupils indicated that they did not have an opportunity to learn about their culture from their grandparents, parents or guardians. Furthermore, ninety-six percent of the pupils were never exposed to the role-play teaching method.

4. The work on geography field projects should commence earlier instead of being left until grade twelve. Pupils should be exposed to field projects as part of classroom exercises and not handle them for the first time as a requirement in fulfilment of

grade twelve examinations. This recommendation addresses the finding that eighty-four per cent of the pupils commenced work on their field projects in grade twelve.

5. Aspects of personal hygiene and sexual education should be added to the syllabus so that pupils are empowered to face the daily challenges of the world we live in. These include; Cholera and HIV/AIDS. A major problem such as the HIV and AIDS pandemic that is devastating our local communities should be dealt with comprehensively in the classroom by the geography syllabus. This recommendation is based on the finding that sixty-four per cent of the pupils felt geography did not influence their personal hygiene and a further fifty-nine per cent felt it had no impact on their sexuality through sex education.

6. An effort should be made to connect geography to the future careers and study prospects of the pupils. This also necessitates the need for career masters in high schools to play a greater role in aiding pupils connect various subjects they take to prospective study areas and careers. This recommendation arises from the finding that forty-nine per cent of the pupils could not connect geography to a potential career nor study field, while three per cent of the pupils were not at all sure about the potential of geography to offer career or study prospects after high school.

6.3 Future Research

In line with the findings of this research the following areas are recommended for further research:

1. The study on how the entire geography syllabus can be overhauled to incorporate ESD and made compulsory for all high school learners.
2. Future research could look at how ESD can be incorporated at basic school level, primary school level and the nursery or kindergarten level. The earlier the values of ESD, localisation of geography and environmental content begin in the life of a child the better for that child and the future of the nation.

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APPENDIX 1

QUESTIONNAIRE FOR THE PUPILS TO ESTABLISH THE RELEVANC OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD) TO GEOGRAPHY IN HIGH SCHOOLS.

Serial Number.....

Date of Interview.....

INTRODUCTION

Dear Respondent,

I am a postgraduate student at the University of Zambia in the School of Education. I am carrying out a research to establish the relevance of education for Sustainable Development to geography as a high school subject.

You are required to answer the questions that follow.

Please, answer the question to the best of your knowledge and kindly be assured that all your answers will be treated with **absolute confidentiality**.

Where options are given, put a tick (v) to indicate your choice. For the open-ended questions, answers should be written in the spaces provided and where the space is not adequate, an extra sheet of paper can be used.

I thank you in advance for your co-operation and diligence.

SECTION A: BACKGROUND INFORMATION

1. What is your sex? a) Male [] b) Female []
2. What is your age? []
3. What is your Grade? Grade.....

SECTION B: AREAS OF THE GEOGRAPHY SYLLABUS TO WHICH ESD CAN MAKE A CONTRIBUTION.

4a. Do you think Geography equips you with information that you can use for your own needs?

Yes []

No []

b. If your answer is 'Yes', please explain your answer?

.....
.....

5a. Does what you learn in geography relate directly to your immediate local environment?

Yes []

No []

b. If your answer is 'Yes', please explain what type of information or content relates to your local environment?

.....
.....

6a. Does what you learn in geography offer you any information about you tribe or culture?

Yes []

No []

b. Please explain your answer

.....
.....

7a. Have you, in the last three years, learnt anything in geography about any other Zambian tribe or culture?

Yes []

No []

b. If your answer is 'Yes', please mention the topic where information about that culture or tribe is found?

8a. Does geography provide you with an opportunity to learn from your grand-parents, parents or guardians?

Yes []

No []

b. If your answer is 'Yes', please explain your answer?

.....
.....

9a. Does what you learn in geography offer you any information on your personal hygiene or health?

Yes []

No []

b. If the answer is 'Yes', please mention the particular topic?

.....

10. Does your learning of geography involve any outdoor activities?

Yes []

No []

11a. Do you think the geography field project that is currently part of your geography syllabus is relevant to your life?

Yes []

No []

b. Please explain your answer.....
.....
.....

SECTION C: PUPILS' ATTITUDES TOWARDS GEOGRAPHY

12. Is your taking geography as one of the class subject any way related to a career ambition you have?

Yes []

No []

13. Did you choose to take it as one of your subjects was it picked for you?

I choose it []

It was picked for me []

14a. Has geography in anyway changed your attitude or perception of the opposite sex?

Yes []

No []

14b. Please explain your answer

.....
.....

15a. Is there any topic in geography that you consider to be difficult?

Yes []

No []

15b. If your answer is 'Yes', please name the topic

.....

16. Which of these are your chief sources of information on the environment?

(Please tick only two of the options provided)

Television and radio []

Friends []

Internet []

Family members []

Newspapers []

Classroom []

17a. How many times since grade 10 have you had a field trip?

Once [] Twice [] More than 3 times [] Never []

17b. If you have been on a field trip before, please explain what your opinion is about this method of learning?

.....
.....

18a. Have you ever had the teaching method of Role-play used in your class by the teacher?

Yes []

No []

4b. If the answer is 'Yes', explain how?

.....
.....

5. How many geography field trips do you organize for geography pupils in a term?

Once [] Twice [] More than 3 times []

6. In which ways is the geography syllabus in its current status relevant to the pupil's local culture?

.....
.....

7a. Have you ever heard of the concept of Education for Sustainable Development?

Yes [] No []

7b. If you have, how important is the concept of Education for Sustainable Development to geography as a subject?.....

.....
.....

SECTION C: ATTITUDES OF PUPILS TOWARDS GEOGRAPHY

8. Which of the geography teaching methods do your pupils respond to best?

.....
.....

9a. Do your pupils have a genuine interest towards geography as a subject?

Yes [] No []

b. Please explain your answer

.....
.....

10. How would you describe the performance of your geography pupils in the final grade twelve examinations in the last two in-takes?

Very Good [] Good [] Fair [] Poor [] Very Poor []

11. What is the attitude of pupils towards the geography field projects?

.....
.....

12. How do pupils pick their topics for the geography field projects?

.....
.....

13. How are the geography field projects helping to inculcate a spirit of enquiry and research among pupils?

.....
.....
.....

14. Does the field project suffice as a means of localizing geography to be more relevant to the pupils and the local community?

.....
.....
.....

15. What is the general attitude of pupils towards geography as a subject?

Very Good [] Good [] Fair [] Poor [] Very Poor []

SECTION D: AREAS OF POTENTIAL IMPROVEMENTS IN GEOGRAPHY

16a. Do you manage to cover the content of the whole geography syllabus in the stipulated 3 years of high school education?

.....
.....

b. If not why?

.....
.....

17. What additions to the geography syllabus would you recommend to make more relevant to the local community?

.....
.....

18. What subtractions from the geography syllabus would you recommend to make it more relevant to the local community?

.....
.....

19. What changes to the geography syllabus would you recommend to equip pupils with survival skills after school?

.....

THANK YOU FOR PARTICIPATION

APPENDIX 3

QUESTIONNAIRE FOR THE GEOGRAPHY SPECIALIST (CURRICULUM DEVELOPMENT CENTRE): TO ESTABLISH THE RELEVANCE OF GEOGRAPHY TO EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD).

Serial Number.....

Date of Interview.....

INTRODUCTION

Dear Respondent,

I am a postgraduate student at the University of Zambia in the School of Education. I am carrying out a research to establish the relevance of education for Sustainable Development to geography as a high school subject.

You are required to answer the questions that follow.

Please, answer the question to the best of your knowledge and kindly be assured that all your answers will be treated with **absolute confidentiality**.

Where options are given, put a tick (v) to indicate your choice. For the open-ended questions, answers should be written in the spaces provided and where the space is not adequate, an extra sheet of paper can be used.

I thank you in advance for your co-operation and diligence.

SECTION A: BACKGROUND INFORMATION

1. School Name or Government Department

.....

2. Sex:

Male []

Female []

SECTION B: AREAS OF THE GEOGRAPHY SYLLABUS TO WHICH ESD CAN MAKE A CONTRIBUTION.

3. How is geography in its current status equipped to give pupils relevant skills to help them make it on their own after school?

.....
.....

4. How is the geography syllabus in its current status relevant to the pupils' local culture?

.....
.....
.....

5. In what ways does the geography syllabus in its current status offer pupils an opportunity to be exposed to their immediate surroundings or environment?

.....
.....

6. Has the Geography Section at Curriculum Development Centre been involved in any capacity building vis-à-vis ESD?

.....
.....

7. As a geography specialist in what ways do you think geography as a subject can be relevant to the implementation of ESD?

.....
.....

SECTION C: ATTITUDES OF PUPILS TOWARDS GEOGRAPHY

8. Which teaching methods do you recommend teachers should use to help capture the interest of pupils in geography?

.....

9. Who, between the teacher and the pupil, is supposed to pick topics for the geography field project?

.....

10a. Are the geography field projects helping to inculcate a spirit of enquiry and research among pupils?

Yes []

No []

b. Please explain your answer

.....
.....

11. Does the field project suffice in making geography more relevant to the local community and the pupils?

Yes []

No []

b. Please explain your answer

.....
.....

SECTION D: AREAS OF POTENTIAL IMPROVEMENTS IN GEOGRAPHY

12. Is three years enough time for the entire content of the geography syllabus to be covered?

Yes []

No []

12a. If your answer is “No”, please explain your answer?.....
.....
.....

13. What additions to the geography syllabus would you recommend to make it relevant to the local community?

.....
.....

14. In what ways do you think geography can be adjusted to facilitate the incorporation of ESD?

.....
.....

THANK YOU

APPENDIX 4

FOCUS GROUP DISCUSSION ACTIVITY SCHEDULE

ACTIVITY 1

The researcher introduced himself and welcomed the pupils. The nature and purpose of the research was explained to the pupils and confidentiality was guaranteed.

ACTIVITY 2

The following questions were asked and follow-up question were asked were necessary. Main points and observations were noted down by the researcher.

SECTION A: AREAS OF THE GEOGRAPHY SYLLABUS TO WHICH ESD CAN MAKE A CONTRIBUTION.

1. Do you think geography equips you with information that you can use or your own needs?
2. How does what you learn in geography relate directly to your immediate local environment?
3. Do you think what you learn in geography influences the way you view people from other tribes?
4. Do you learn anything in geography about your own tribe or culture?
5. Does geography provide you with an opportunity to learn from your grand-parents, parents and guardians?
6. Does what you learn in geography in any way influence your hygiene?
7. Does your learning of geography involve any outdoor activities?
8. Do you think the geography project that is currently part of your geography syllabus is of important to your education/school work?

SECTION B: PUPILS' ATTITUDES TO GEOGRAPHY

9. Is your taking geography as one of your class subjects in any way related to a career ambition you have?
10. Did you choose to take geography as one of your subjects or was it picked for you?

11. Has geography in anyway changed your attitude or perception of the opposite sex?
12. Has geography in anyway changed your perception of oth r cultures or tribes different from your own?
13. Which are your chief sources of information on the environment?
14. How many times since grade 10 have you had a field trip?
15. Have you ever had the teaching method of Role-play used in your class by the teacher?

SECTION C: AREAS OF POSSIBLE IMPROVEMENTS IN THE GEOGRAPHY SYLLABUS.

19. In your opinion, is your coverage of the geography syllabus so far within schedule (will your class be able to cover the entire syllabus before t examinations)?
20. Did you cover all the topics under Physical Geography?
21. Did you cover all the topics under Natural Regions?
22. Are you satisfied with the teaching methods your t her uses to teach in class?
23. Did you pick your geography field project yourself r was it picked for you?
24. In which term and grade did you start working on y r field project?
25. Did you do any other field project as a class exercise prior to the grade 12 field project?

ACTIVITY 3

The discussion was concluded with a vote of thanks to the participants fo their contributions and time. The collected data was compiled soon after the interview as possible- whilst the information was still fresh on the mind of the researcher.

END