

**EVALUATION OF ENVIRONMENTAL EDUCATION ACTIVITIES IN  
SELECTED INSTITUTIONS OF ZAMBIA**

**BY**

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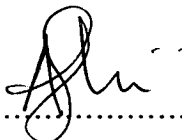
**A dissertation submitted to the University of Zambia in partial fulfillment of the  
requirements of the Master of Education (Environmental Education) degree.**

**THE UNIVERSITY OF ZAMBIA**



## DECLARATION

I, **ADRIAN PHIRI**, declare that the dissertation hereby submitted is my own work and it has not previously been submitted for any degree, diploma or other qualification at the University of Zambia or any other university.

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**CERTIFICATE OF APPROVAL**

This dissertation by Adrian Phiri is approved as a partial fulfilment of the requirements for the award of the Master of Education (Environmental Education) degree of the University of Zambia.

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## **ABSTRACT**

This study was aimed at evaluating Environmental Education (EE) activities offered by selected Zambian institutions. The evaluation was centered on finding out EE activities which were being offered, their impact on learners' environmental awareness and challenges and prospects these institutions were facing. Since most EE institutions offered similar EE activities, the study focused on specific environmental concerns related to the conservation of natural resources, education and curriculum development and environmental protection and legal framework. The institutions included under this study were; the World Wide Fund for Nature (WWF), Wildlife and Environmental Conservation Society of Zambia (WECSZ), Curriculum Development Centre (CDC), Conservation Lower Zambezi (CLZ) and the Environmental Council of Zambia (ECZ).

The study employed both qualitative and quantitative methods in obtaining information. Primary data from environmental institutions involved in EE was collected. Interviews with coordinators and learners of EE were carried out in order to get in depth information. Observations were also carried out to evaluate the impact of EE activities on learners and the environment.

The main finding was that EE institutions in Zambia were doing much in raising environmental awareness among the public. Part of the evidence that pointed to that finding included the increase in articles in the print media, increase in membership to conservation clubs such as Chongololo Clubs and Chongololo Club of the Air (CCOA) Radio

programme. There was also integration of EE in the curriculum and designing of a localized curriculum by CDC, WECSZ and WWF.

The “Make Zambia Clean and Healthy Programme” was launched by the president, Dr. Levy Mwanawasa with a view to reinforcing the practice of keeping the environment clean. Bins have been put in markets and other designated places and offices for the public to throw litter. Marketeers and government officers actively participated in cleaning markets.

The major challenges faced by these institutions included lack of financial resources to fund EE programs. Some institutions such as CLZ had large coverage area to cover, thus making the provision of EE less effective. There was also lack of adequate participation from the learners of EE in designing EE activities. Lack of a national policy on environment was another setback as institutions had no specific guidelines for Zambia’s environmental concerns. Institutions were not evaluating their EE activities hence it was difficult to assess the effectiveness of such activities.

Major recommendations for the study included the need for EE institutions to provide alternative options in the utilization of resources. Most institutions concentrated on the negative aspect of environmental problems than the positive part EE. There was need to involve stakeholders in the design of EE activities.

The future of EE in Zambia was bright. Environmental awareness programmes were being appreciated as shown by increased participation from the public in EE activities.

## **DEDICATION**

To my late daddy Mr.D.R.Phiri, mum and my seven brothers and two sisters for their encouragement and moral support.

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## **LIST OF ABBREVIATIONS**

<b>CBRM</b>	<b>Community Based Resource Management</b>
<b>CC</b>	<b>Chongololo Club / Chipembele Club</b>
<b>CCOA</b>	<b>Chongololo Club of the Air</b>
<b>CDC</b>	<b>Curriculum Development Centre</b>
<b>CLZ</b>	<b>Conservation Lower Zambezi</b>
<b>CRB</b>	<b>Community Resource Board</b>
<b>ECZ</b>	<b>Environmental Council of Zambia</b>
<b>EE</b>	<b>Environmental Education</b>
<b>EIA</b>	<b>Environmental Impact Assessment</b>
<b>ESD</b>	<b>Education for Sustainable Development</b>
<b>EPPCA</b>	<b>Environmental Protection Pollution and Control Act</b>
<b>FNDP</b>	<b>Fifth National Development Plan</b>
<b>LZNP</b>	<b>Lower Zambezi National Park</b>
<b>MDGs</b>	<b>Millenium Development Goals</b>
<b>MTENR</b>	<b>Ministry of Tourism Environment and Natural Resources</b>
<b>NISTCOL</b>	<b>National In-service Training College</b>
<b>SD</b>	<b>Sustainable Development</b>
<b>UNZA</b>	<b>University of Zambia</b>
<b>WECSZ</b>	<b>Wildlife and Environmental Conservation Society of Zambia</b>
<b>WWF-ZEP</b>	<b>Worldwide Fund for Nature –Zambia Education Program</b>
<b>ZAWA</b>	<b>Zambia Wildlife Authority</b>

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## **CHAPTER ONE**

### **BACKGROUND**

#### **1.1 Introduction**

This dissertation evaluated Environmental Education (EE) activities as provided by several environmental institutions of Zambia. According to the Environmental Council of Zambia (ECZ), State of Environment in Zambia 2000 Report, since 1994 to the time of this dissertation in the year 2008, improvements had been made in increasing environmental awareness among different stakeholders. The evidence for these improvements could be seen in the active participation of government institutions, Non Governmental Organisations (NGOs), the general public and the private sector. In order to ensure a clean and healthy environment, the Zambian government had put in place statutory legal instruments and regulations ostensibly to accommodate the requirements and physical impacts of development of infrastructure, protected areas (National parks and Game Management Areas), urbanisation, forestry, agriculture expansion, tourism and industrialisation in a sustainable manner (GRZ, 2005).

Some of the Environmental Legal Instruments put up by the Zambian government included; Action for smoke damage (Prohibition) Act, Cap 327 of 1959 aimed at indemnifying mine operators against claims for air pollution, the Natural Resources Conservation Act, Cap 315 of 1970 which aimed at the conservation of natural resources outside protected areas, Forest Act, Cap 311 of 1998 for the management of national forests and conservation of local forests and trees and the Environmental Protection and Pollution Control (EPPCA) Act, Cap 204 of 1990 focusing on environmental protection

and pollution control. These instruments were enacted to address specific areas of environmental concerns such as; pollution, deforestation and wildlife protection among other environmental concerns.

Throughout the world, it was increasingly recognised that development in all its forms should incorporate means for safeguarding the environment and ensuring sustainable use of natural resources, Ministry of Environment and Natural Resources (MENR, 2005). With the fast growing population, the drive to meet goals set out in Zambia's national development strategies, the Fifth National Development Plan (FNDP), International conventions and the Millennium Development Goals (MDGs) had likewise accelerated. In the year 2008 which was the time of this dissertation, the extent of resource depletion indicated that mounting pressure was being exerted upon the environment, particularly in the key economic sectors of tourism, agriculture and the mining industry, leading to the widespread deterioration of environment.

Until 1992 when the EPPCA came into effect and ECZ was established, the environmental sector had no umbrella legislation or organisation in place to coordinate EE activities and programmes (ECZ, 2000). The absence of a coordinated system was largely a major cause for low levels in development of environmental awareness among the general public and the quality of EE activities being provided in various environmental institutions of Zambia. After the establishment of the ECZ in 1992, environmental institutions became more organised than before. Due to improved coordination by ECZ, levels of environmental awareness among members of the public started to improve.

## **1.2 Environmental Education Activities from a Global Perspective**

In the 1960s, 'Environmentalism' as EE was known, was largely a movement reflecting on the European and American environmental concerns (Elliot, 1994). Environmental action groups had EE activities which often supported and campaigned against environmental issues such as air pollution and concerns regarding population growth in the developing world and the danger that these posed to the environment through increasing demand on global resources. Later, during the 1970s and 1980s, most scientists took a fairly neutral approach of describing environmental concerns and how to respond to these problems, Worldwide Fund for Nature-Zambia Education Project (WWF-ZEP, 2005). These responses were often centered on preservation and conservation of natural areas which had not been developed such as wilderness areas, nature reserves (water, tress, land) and parks.

The world faced environmental crises that were caused by human activities and had reached high proportions. The earth's ozone layer was being destroyed by chlorofluorocarbons (CFC) which were emitted into the atmosphere from excessive burning of fossil fuels resulting in the build up of atmospheric carbon dioxide causing global warming catastrophe (WWF-ZEP, 2000). Climate change had become a global environmental concern for every nation. As a result of climate change, the annual average river run-off and water availability were projected to increase by 10% to 40% at high latitudes and in some wet tropical areas, and decrease by 10% to 30% over some dry regions at mid-latitudes and in the dry tropics, Ministry of Tourism Environment and Natural Resources (MTENR, 2007). Further, drought affected areas were likely to

increase to a large extent, on the other hand, heavy precipitation events were also likely to increase in frequency, leading to increase in flood risk.

The other area of environmental concern was the high rate at which the world population was growing as compared to the limited resources available. Industrial and domestic waste was polluting the air, water and land. Furthermore, tropical forests were diminishing due to high demand for wood fuel, timber for industries and land for settlement and agriculture resulting in unprecedented loss of species and biodiversity. In the quest for development and improved standard of living, widespread damage was caused to the environment through soil erosion, pollution, deforestation and extinction of species. Monbiot (2002) states that, environmentalists had seen the fact that increasing wealth and environmental protection were irreconcilable objectives thrown together to create the concept of sustainable development. The debate about the role of economic growth and globalisation had been an ongoing and an increasingly important challenge for students of EE to critically assess the goals and strategies for achieving sustainable development. The challenge was that, the levels of environmental degradation raised many questions than answers as to who was responsible for finding solutions to solve environmental problems facing the globe.

According to O'Riordan (1981), the role of EE activities should be to emphasize the fact that technology would not solve all environmental problems but that radical ecocentric approaches of self reliant communities using industrial ecology where the waste from one industry became the raw material for another hence no waste would be disposed off into

the environment. Therefore, the concern for a sustainable environment had to be a concern for all. It was important to note that EE should engage a wide range of institutions and sectors. There was need for every nation to take responsibility of the environment as they pursue development and be aware of environmental concerns.

United Nations Education Scientific and Cultural Organisation, UNESCO (1997) argues that we are all aware of the impact of environmental problems, we smell them in the air; taste them in the water; see them in more congested living spaces and blemished landscapes; read about them in the newspapers; and hear about them on radio and television. It was important to note that these environmental problems varied from nation to nation but their consequences extend far beyond national boundaries. This was because resources such as air and water are universal resources owned by no one. Thus, whatever happened to these resources, the impact would be felt by many including distant places. Therefore, every region and nation should emphasize on coordination and networking EE activities in addressing environmental problems because fragmented approaches would never save the environment from further environmental degradation.

### **1.3 The Impact of Environmental Education Activities on the Environment**

The concern to address environmental issues had been top on many agenda when planning for development. Over the years, numerous meetings, conferences as well as organisations emphasized the need for conserving nature and wildlife such as WWF, the International Union of Conservation of Nature (IUCN) and so on. To start with, two concepts had been identified as the major approaches to respond to environmental

problems facing the globe, that is 'Sustainable Development' (SD) and 'Education for Sustainable Development' (ESD). Sustainable development was seen as a global response to environmental crisis. The definition of sustainable development had not been easy to categorically state.

The World Commission on Environment and Development (WCED) defined sustainable development as, the type of development that meets the needs of the present without compromising the ability of the future generation to meet their own needs (WCED, 1987). According to the World Conservation's strategy, the aim of sustainable development was to protect ecological processes, life supporting systems as well as the sustainable utilisation of natural resources. The emphasis of sustainable development in relation to education was to establish links between economic growth and environmental conservation, Ministry of Education (MOE, 2005). Sustainable development was also understood to include three key areas namely; society, environment and economy with culture as an underlying dimension, United Nations Environment Programme (UNEP, 2005). Environmental Education activities included sustainable agriculture to reduce on soil degradation in which farmers practice crop rotation and use of organic manure as opposed to chemical fertilisers. There was need to ensure that the environment was not over stretched by human activities in the utilization of resources. Many of the responses to environmental problems took place in the framework of development. These responses were often conceptualised and implemented within the same modernistic framework which in turn was the root cause of many environmental issues and risks experienced in both the developed and the developing worlds (WWF-ZEP, 2005).

#### **1.4 Environmental Education Activities from the Developing World Perspective.**

As was indicated earlier, environmental problems go beyond boundaries. Therefore, global environmental concerns extend further to regional and local areas, including household levels. In the developing world's perspective, deforestation and desertification were some of the common environmental concerns. In terms of climate change, human activities were among the major causes. For instance, population increase had led to the high rate of deforestation resulting from land clearing for agricultural purposes, settlement development, logging for timber, indiscriminate fires and need for energy for domestic uses. It was observed that the Sahara desert was expanding southwards at an alarming rate (MTENR, 2007). Similarly, in the Southern African region, many parts were beginning to show desert like conditions due to persistent drought.

Poor waste management poses a threat to environmental condition of the developing world. Therefore, in most of the nations, institutions mandated with the task of environmental management lack the capacity to collect waste, especially solid waste. As a result, much of the waste was left uncollected especially in public places such as markets posing a threat of environmental illnesses such as cholera and dysentery.

Water Pollution was an environmental problem caused by human activities. Industrial development consequently led to the pollution of the limited quantity of water with waste from sewerage, industrial and chemicals from agricultural practices. Rainfall on its way down to the slopes, brought with it water which was polluted either by dissolving the soluble chemicals such as fertilizers from fields along the way or by bringing down the

pollutants already dissolved in water into rivers posing a danger to both human and aquatic life.

It must be noted that these environmental problems are not only a danger to people's livelihoods but also lead to the degradation of the environment. Given the fact that people's livelihoods depend on the environment, environmental problems would always undermine their future prospects for development and the environment.

### **1.5 Environmental Education Activities from the Zambian Perspective.**

A number of global environmental problems had been manifested in Zambia. It was not easy to draw a line between global environmental problems and the local ones. The main environmental concerns in Zambia included; wildlife depletion, air pollution, land degradation, deforestation and water pollution and the recent one being climate change which had shown its effects through too much rainfall resulting in flooding in parts of Zambia. Furthermore, environmental problems were caused by human activities in their pursuit for a sustainable livelihood. According to Non Governmental Organisation Coordinating Committee (NGOCC, 2004), degradation of the environment had led to the scarcity of natural resources in Zambia leading to high levels of poverty. According to the United Nations Fund for Population Activities, (UNFPA, 2004), 73 percent of the population of Zambia lived in abject poverty. Therefore, poverty can be identified as a major contributing factor to environmental degradation in developing nations like Zambia.

### **1.5.1 Deforestation**

Forests around urban areas of Zambia had been cleared due to human activities in which thousands of hectares (ha) were destroyed for farm land, ranching and pastoral farming, and timber and fuels (wood and charcoal). Zambia at present faces daunting challenges of deforestation at the rate of 250,000-300,000 hectares per year, Provincial Forestry Action Plan (PFAP, 1998). The pressure on the forest resource had been very heavy especially near the big towns and along the line of railway. This was due to the fact that wood fuel (firewood/charcoal) remained the main source of energy (supplying to about 90% of urban households) for many households (Department of Energy, 1998). In addition, increased population raises demand for food, thereby expanding cultivation areas which result in deforestation.

### **1.5.2 Waste management**

In the 1990s Zambia was producing more waste than ever before. The rising trends in waste production estimated for Lusaka was 220,000 tonnes/year in 1996 which was expected to reach 530,000 tonnes/year by 2011 if no stringent measures were put in place (ECZ, 2000:103). This rapid increase of waste being generated was due to industrialization and population growth during the last few decades. The municipal authorities lacked financial capacity and manpower to collect and dispose off the waste at designated places. The uncollected waste had become a major concern for the authorities responsible for public health and several outbreaks of Cholera and other diseases. In addition lead to the general deterioration of the environment especially in urban areas which were densely populated settlements. For instance, cholera cases were prevalent in

Lusaka's high density areas such as Chawama, Kanyama, Chaisa and other areas almost every year during the rain seasons.

### **1.5.3 Wildlife Depletion**

Zambia harbours a vast range of animal species with an impressive network of protected areas for wildlife. The country has the second largest proportion of land which is a wildlife protected area in Southern African region covering approximately 225,000 square kilometres (ECZ, 2000). This amounted to about 8% of National Parks and 22% Game Management Areas (GMAs). In spite of the large wildlife estate base, wildlife depletion had been identified as one of the major problems, National Environmental Action Plan (NEAP, 1994). Although the total area designated for National Parks was impressive, close to 50% of the parks were either depleted of wildlife or encroached. For instance, since 1994, Lavushi Manda, Isangano and Kasanka National Parks were the most threatened from poaching and encroachments.

In order to tackle the threat of wildlife depletion, the MTENR developed a policy as well as legislation to co-jointly manage the wildlife resources with the communities known as the Community Based Natural Resource Management (CBNRM). The effects of which had been positive in the South Luangwa, Lochnivar, Lower Zambezi and the Kafue National Parks. However, the challenge was from the consumptive utilisation point of view. ECZ (2000) states that over 50% of the 35 GMAs were being depleted of game. The fact that human settlements and other land uses were permitted in the GMAs predisposes these areas to poaching in the absence of comprehensive management

strategies.

#### **1.5.4 Water and Sanitation**

Water is essential for sustenance of life. It is vital for drinking, sanitation, food production, urban development and other uses. Zambia is endowed with sufficient water resources to meet the present and future demands. The main issue of concern with water quality was the discharge of effluents from processing plants, and fertilizers and chemicals from agricultural production. On the Copperbelt, the discharge of effluent from the mining industry continues to compromise the quality of water for human consumption as well as increased sedimentation of the Kafue river base and a danger to aquatic life. It was reported recently on the discharge of effluent in the Kafue River in Chingola by Konkola Copper Mine (KCM) which posed a great risk to the health of the public. Due to poor sanitation, water borne diseases were almost an annual occurrence in Zambia.

#### **1.5.5 Air Quality**

In general terms, throughout the country the quality of air was good except in areas where some kind of developmental activities were going on such as; quarrying, road repair and rehabilitation that concessionary generate dust in a localized manner. Open air burning though illegal, was practiced almost every year in various locations in Zambia. Much of air quality deterioration was concentrated on the Copperbelt province due to mining operations release sulphur dioxide to the atmosphere. Effects of the emission of such gasses had been observed in Kankoyo Township in Mufulira where growth of vegetation had been inhibited and corrosion of housing units observed (WWF-ZEP, 2005).

Similarly, dust from quarrying at Chilanga Cement in Chilanga and at Ndola Lime in Ndola caused a lot of respiratory illnesses to human. ECZ annually monitor these emissions and set compliance limits. It had become mandatory for every developmental project to do an Environmental Impact Assessment (EIA) to assess the impact the project may have on the environment and the public in general.

### **1.6 Local Response to Environmental Concerns**

As noted earlier, sustainable development was seen as a global response to environmental crisis. The approaches used in responding to environmental problems were similar as for the global concerns. Environmental issues and responses in Southern Africa had gained a particular character as a result of the legacy of colonialism and oppressive policies that affected most countries in the region. For instance, the indigenous Zambians were seen as poachers, while the Europeans as hunters when it came to the killing of wildlife.

International debts, effects of the Structural Adjustment Program (SAP), liberalisation of the economy, increasing in population, poverty and consumerism issues were shaping the way in which people were responding to environmental crisis in the region (WWF-ZEP, 2005). These pose a great challenge for the provision of EE activities in Zambia. The starting point had been that of policy making for sustainable development. In recent times, the processes of policy making had put emphasis on democratization and participation among citizens in decision making towards the management of natural resources. In 1998, the Zambia Wildlife Authority Act No.12 was enacted which among other things, provides for community participation in the management of wildlife

resources through Community Resource Boards (CRBs). The fisheries Act, Cap 200 and the water Act, Cap198 focused on community participation in the sustainable management of these resources. There were several other policies enacted too. However, the National Policy on Environment (NPE) was still in draft form at the time of this dissertation. It was drafted in 2005 and was awaiting approval by the government.

### **1.6.1 Make Zambia Clean and Healthy Programme**

In response to environmental concerns such as waste management, sanitation, hygiene and the necessity for clean and healthy environment, the President of Zambia Dr. Levy Patrick Mwanawasa launched the 'Make Zambia Clean and Healthy Campaign' in 2006. The campaign was aimed at resuscitating the towns and villages by raising awareness on the effects of a clean environment and human health. It called for all citizens to participate in cleaning their environment including body cleanliness. The campaign had been an on going activity and everyone was expected to participate. It shall be taking place three times in a year; that is June, August and December, Ministry of Local Government and Housing (MLGH, 2007).

### **1.7 The Role of Environmental Education in Response to Environmental Concerns.**

As noted earlier, there were many activities put in place for responding to environmental issues. These included, policy making for sustainable development and integration of the communities in natural resource management. Thus EE was identified as an approach which could provide solutions to address environmental concerns. One understanding was that "environmental education was a multifaceted way which deals with conflicts of

interest in people's use of nature , including environmental degradation, exploitation and division of resources with the aim of educating for a well informed and active citizens”(Breiting,1994:7).

In an effort to give environmental educators certainty, UNESCO had drawn up objectives towards environmentally responsible behaviour among social groups and individuals.

These are:-

**Awareness** to acquire an awareness and sensitivity to the total environment and its allied problems.

**Knowledge** to gain a variety of experiences and acquire a basic understanding of the environment and its associated problems.

**Attitude** to acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

**Skills** for identifying and solving environmental problems.

**Participation**, to have an opportunity to be actively involved at all levels in working towards resolution of the environmental problems (WWF-ZEP, 2005:49).

### **1.8 Statement of the Problem**

Laver, et al, (1993) argued that we have had environmental education for over twenty years but environmental crises keep getting worse than before. Further, Van Matre (1990) argued that EE had failed and that it was a mission which had gone astray. He attributed the failure to EE being too concerned with the cognitive approach of creating environmental awareness than educating learners on ways of addressing the root causes

of environmental problems.

Several institutions were involved in offering EE globally and locally. Some institutions targeted the formal sector while others targeted communities in areas of particular environmental concern. For instance, the Wildlife Environment and Conservation Society of Zambia (WECSZ) worked with children in the formal sector, ECZ ensures that there was a pollution free environment in Zambia. In the 1994 State of the Environment Report, the level of environmental awareness in Zambia was described as low. Later, the 1999/2000 report indicated that the level of environmental awareness had improved although in some areas it was still low (ECZ, 2000).

These conclusions were based on interviews and discussions with stakeholders and key players in the area of environmental management. Some of the evidence that pointed out to an increase in environmental awareness included, an increase in articles on environmental issues in the print media, a number of programmes on both radio and television, the inclusion of EE in the curricula for schools and teacher training colleges. Other evidence was in the form of increased number of queries from the general public on environmental issues by telephone or letters and articles in the media. For instance, there was a public outcry on the construction of the Steel Plant in Kafue district during an EIA meeting due to the negative impact it was going to have on the people.

The major challenge facing EE institutions was to change learners' attitude and equip them with knowledge and skills on how to solve environmental problems. There was

need therefore to find out whether EE activities being provided in Zambia were helping to raise environmental awareness among members of the public. Hence, this study was undertaken to evaluate EE activities in selected Environmental Institutions of Zambia.

### **1.9 The Purpose of the Study**

The purpose of this study was firstly to evaluate the effectiveness of EE activities in selected environmental institutions of Zambia, secondly to find out the type of EE activities being provided and their impact on the learners, lastly to identify the challenges and prospects being faced in order to suggest alternative approaches of providing EE where need may arise.

### **1.10 Specific Objectives**

The specific objectives of this study were to :-

1. Identify environmental education activities offered in selected Environmental Institutions of Zambia.
2. Assess the impact of the identified environmental education activities in caring for the environment.
3. Investigate challenges and prospects in providing environmental education in Zambia.
4. Where need be, suggest new approaches of providing EE activities to make EE more effective to the learners than it is currently.

### **1.11 Research Questions**

1. What environmental education activities do selected environmental institutions of

Zambia offer?

2. What impact has the identified environmental education activities offered by such institutions have on the learners and the environment?
3. What are the challenges and prospects for environmental education provision in the selected institutions of Zambia?
4. What new approaches where need be, can be put in place to make EE activities more effective to the learners than it is currently?

### **1.12 Significance of the Study**

The research was expected to contribute to the literature about environmental education activities in Zambia which was scanty at the time of this dissertation was scanty. Much of the literature available was about environmental concerns of foreign countries hence alien to the local environmental situation. The study may also help Zambian institutions involved in EE to constantly be assessing the impact of their EE activities on the general public concerning environmental awareness. In turn, this may even help EE institutions adjust their approaches in offering EE. Finally, the study was expected to identify challenges and prospects facing selected EE institutions in Zambia in providing EE and provide suggestions on how to address these challenges and prospects for the betterment of our Zambian environment.

### **1.13 Limitations of the Study**

The study was limited to financial resources as the researcher was self sponsored. Further, it was not possible for the researcher to conduct personal interviews with all EE

providers as some delegated the duty to junior officers who seemed not competent enough.

#### **1.14 Operational Definitions of Terms**

**Providers:** Institutions that are involved in providing EE activities.

**Learners:** People who facilitate the EE activities and programmes from the providers to the public.

**Environmental activity:** Actions or lessons learnt on how to care about the environment.

**Environmental Concern:** A feeling causing worry or trouble which may need a response about an environmental problem.

**Environmental Issue:** It is a debatable outcome or result from an environmental concern which requires a serious debate to agree or disagree on the course of action to take.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

Environmental Education being in its infancy in Zambia, had limited literature about local EE activities. However, in the recent past, there had been an increase in the number of publications and campaigns on raising environmental awareness in Zambia. At tertiary (University) level some studies had been done in the area of EE. In 2006, Jethrow Chipili wrote a dissertation entitled "*An Evaluation of Environmental Education Methods Implemented Among Refugees at Kala Refugee Camp in Kawambwa district*". The study was undertaken because of the realisation of the need to safeguard the environment of which the refugees solely depended on for their resources. Other studies included Flaviour. S. Chanda's study in 2007 entitled, *Proposed Education Action for UNZA Water Users Arising from an Environmental Audit of the Institution* and Mirriam Moonga in (2007) about the *Status of Environmental Education in Waste Management for the Zambian Hospitality Industry: The Case of Lusaka Urban, Involving Guest Houses. Waste Management in the hospitality Industry*. These were some of the notable research studies in the development of EE in Zambia at postgraduate level. All these students were supervised by Dr. C.M. Namafe who had been the pioneer of postgraduate studies in EE at UNZA.

The researcher reviewed other publications as well about environmental education activities in Zambia and outside the country. This was in line with the study objectives of

finding out EE activities provided in Zambia, their impact, challenges and prospects including approaches used on how EE provision could be made more effective to the learners. Despite all the effort in trying to raise environmental awareness, solutions to end environmental problems keep on affecting mankind and the environment. As was stated earlier, Laver et al, (1993) argued that EE had been in existence for the past twenty years but environmental problems seemed to be getting worse. Some studies were done to ascertain the impact of EE activities on environmental concerns such as deforestation, pollution, wildlife depletion and other areas of environmental concern but the results seemed not to be fully obtained to realise a positive impact on the environment.

In 1992, the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro recognized the pivotal role of EE in sustainable development with a series of recommendation for governments. It recommended that governments should strive to update and prepare strategies aimed at integrating the environment and development as a cross cutting issue into education systems at all levels. Holmberg (1991:6) comments that, "Environmental problems were usually developmental problems in disguise and in turn create economic and developmental burdens." This implies that development if not properly implemented, is a threat to the environment. EE activities should ensure protection of the environment from further degradation and ensure sustainability in the use of resources.

## **2.2 The Response of Environmental Education to Environmental Protection.**

UNESCO (1997) states that the major focus of sustainable development was on the

relationship between social development and economic opportunity on one hand and their requirements on the other hand with the aim to improve quality of life for all especially the poor and the marginalised. Human social economic development activities have a greater impact on the state of the environment. At global level, solutions had been identified to respond to environmental crises. According to WWF (2005), the strategies to resolve and prevent further environmental degradation included CBNRM. This approach had become popular in the Southern African region of late. It was a response to rural poverty aimed at empowering the rural communities to make concerted efforts to manage and exploit their natural resources in a sustainable manner. The concept refers to developmental activities that are selected, planned and implemented by the community through local leadership. The implementation of these activities depended on the participation of people in the community. CBNRM approach involves setting up community structures such as Village Development Committees (VDCs), Village Action Groups (VAGs) and others. The main aim of CBNRM is to help communities realize their potential in looking after the environment and its natural resources.

In Namibia, the United States of America Aid, (USAID) sponsored Living in a Finite Environment (LIFE) project embraced an innovative community-based approach to natural resource conservation that relied heavily on participatory methods. The project was aimed at efforts to address rangeland, forest, wildlife, and water resources management. Help was offered to the communities in the buffer zones of this formulation, and evaluation skills were taught to them. Participatory methods in designing of environmental activities played an important role in the success of EE

projects. For example, past top-down approaches were replaced by the bottom-up in Wildlife Conservation Society in Namibia. This approach had proved to be effective in that it made learners be part of the learning process.

Community-based park participatory methodologies empower communities socially and economically. For instance, from park admission fees, a portion of the amount is channelled for assistance to support community-initiated programs such as building schools and water supply. The Africa Wildlife Foundation conducts formative research, program planning in the buffer zone of Lake Mbuo National Park, the community participates and benefit from their natural resources through revenue-sharing. Further, Cooperation of American Relief Everywhere (CARE) works at Bwindi National Park had supported selected initiatives, and facilitation work at Kibale, Semliki, and Mount Elgon in Kenya involved the community in terms of decision making and as such had resolved the conflict in the management of wildlife.

Eco-tourism was an EE activity which could be taken as a means of alleviating poverty whilst protecting the environment. Related to CBNRM, it is a viable developmental activity in the tourism sector of Africa. This is because it involves community conservation drawn on the potential benefit from tourism and natural resources. An example of eco-tourism was from cultural villages such as Kawaza Village near the South Luangwa National Park (WWF, 2005). The community work benefit from tourism by selling their handcrafts to the tourists. Further, eco-tourism clubs were introduced in schools in the national park area through environmental conservation clubs. The clubs

were involved in educating the young about conservation of nature especially wildlife.

The curriculum plays a significant role in the learning process. According to WWF, 2005, curriculum refers to sum total of learning experiences. Mundia Mwendende in a paper presented to participants in 2004, recognized the role curriculum plays in imparting knowledge to the learners.

An important milestone in introducing EE in schools was the idea by the CDC to localise the curriculum. This activity for instance was being implemented at Sefula Basic School in Western Province of Zambia. The EE activities offered included collecting various traditional artefacts, documents and paraphernalia which were being creatively used in various EE activities. The approach makes the learners realize the importance of their environment and its resources.

### **2.3 Environmental Education Activities from the Developed World's Perspective**

The last three decades (1970-2000) had been very instrumental in developing the concepts of environmental education in the United States. According to Smith (1970), outdoor education (EE in this case) contributed substantially to learning and teaching. Thus extending the school curriculum to encompass the entire outdoor learning environment in the community. Evolving from the outdoor education, the learner experiences the surrounding environment through active involvement of learners in the learning process, EE had been integrated to a certain extent into the curriculum in the educational institutions of the country. Environmental education, according to Roth et.al (1980) emerged as an interdisciplinary process in the 80s. Of special significance were

three intellectual thrusts, namely: nature study; conservation and related resource-use education; and science education. These three dimensions provided a firm foundation for the development of environmental education in the USA. The goals of these fields related directly to the present goals of environmental education that is, to develop an environmentally literate citizenry able to lead a fulfilling life that does not impair the planetary support system for living things (Roth, 1978).

A study in Scotland noted that the failure to recognise the crucial role of teacher education in the process of developing sound environmental action was a primary reason for the limited success of environmental education in that country (Filho and O'Loan, 1996). Yet, many education reformers, especially at university level, contend that "all education is environmental education" (Orr, 1992). Bowers (1997:15) echoes this belief too, but laments that it is "the unique public school teacher who understands this". Many authors have "highlighted the vital role of teacher education by arguing not only that it equips teachers to teach environmental education effectively but also that it acts as a stimulus to the introduction of environmental education into the school curriculum" (Tilbury, 1992:268).

#### **2.4 Environmental Education Activities and the Curriculum in Developing Nations.**

A study in Botswana indicated that the ministry of education had been engaged in the implementation of EE as an infused phenomenon in the formal education curriculum since 1996 (*Southern African Journal of Environmental Education Ethics Vol.20*). EE had been grouped together with HIV/AIDS, population and gender. The main focus of EE was the development of environmental awareness, acquisition of knowledge and

desirable attitudes and behaviour of interacting with the environment. The study further revealed that although the curriculum guidelines were there, teachers were reluctant to actively teach and emphasize EE activities during their lessons.

#### **2.4.1 The Case of Yemen**

In Yemen, a curriculum was devised to encourage students to focus on the environment and sustainable development. According to Cabral (2002), it involved changing agricultural systems because the environment on which the farmers depended on threatened by social, political and economical factors in the context of developmental initiatives. The curriculum activities created a scene for students to learn about traditional farming systems. Students during the learning process were asked to identify and write on cards the problems and issues and show the interrelationships in the form of a system diagram. The idea was to develop a more questioning stance to environmental problem solving. In this study, students were able to identify the causes and effects of the relationship between the environment and developmental factors and clarify the understanding. Social, political, and economical factors were seen as the main causes of environmental problems.

The evaluation of the curriculum review showed that students demonstrated an ability to reflect on the ways in which they learned and the process by which they developed their critical skills. It was further discovered that students could more easily analyse and evaluate other issues from a critical point of view. Hence apply these skills to develop a greater understanding of environmental issues in relation to sustainable development.

#### **2.4.2 The Case of Zambia**

In the Zambian situation, the National Policy on Education (1996) entitled, "*Educating Our Future*" is explicit about the status of EE in the curriculum. It emphasizes on health education and environmental health, which are the social components of the environment. At school level, much of what is taught is knowledge about the environment and how the environment works. This kind of knowledge is found in subjects such as Environmental Science, Social Studies and Geography the approach taken in these subjects however , does not include the aspects of helping the learner to form his/her own opinion about the environment. There was no interaction between human and the environment. In recognition of these, the CDC had taken steps to formally introduce EE in the basic school curriculum. Other players in this aspect included NGOs such as WWF-Zambia, Conservation Lower Zambezi (CLZ) as well as teacher training colleges such as NISTCOL at Chalimbana in Chongwe and Mufulira College of Education Board in Mufulira.

It was a milestone to introduce EE in schools through the process known as localisation of the curriculum. This was aimed at making the content of environmental activities in the curriculum more relevant to the needs of the environment where the learners were. WWF-Zambia worked in collaboration with CDC on localising the curriculum in Mumbwa district. Curriculum plays a major role in the effectiveness of EE on the environment.

However, teacher training in most countries especially the developing world lacked

comprehensive content in EE. Heimlich (1995) argued that it was unlikely that many colleges or universities would offer a specific minor in environmental education, but many already offer environmental science degrees. Despite the latter (Heimlich)'s arguments, one possibility might be to work within Environmental Science programmes to include methods and courses in EE.

## **2.5 The Impact of Environmental Education Activities on the Environment**

Fullan (1991) argues that there were certain skills needed to cope with change because the latter frequently involved conflict and disagreement. Today EE is a concept which had been misunderstood by many. IUCN/UNEP/WWF (1980) looked at EE as a concept which was meant for broadcasting messages about how to use litter bins or drilling learners with information about environmental problems in the hope that the whole society would change their behavior. This approach was similar situation to Zambia's approach, in the *Keep Zambia clean and Healthy programme*. The programme's main emphasis was on the collection of garbage. Bins had been dotted around towns for litter disposal. Despite the cause for the clean environment, there had been little or no effort at all on how to educate people about changing their attitude towards activities which negatively affect the environment. The approach does not take into consideration of the social and economic status of the learners such as poverty and lack of access to information from the media.

The poor depend on natural resources for their livelihood whilst the capacity of the environment to sustain the demand was inadequate. This was a situation which had

resulted in the slow progress of environmental awareness especially among the poor living in marginalised areas which are often affected by environmental disasters such as cholera, floods and others. Environmental institutions were challenged to provide solutions to these environmental problems in order to bring about sustainable development.

Further, although environmental institutions can educate the learners especially the poor and marginalised, the impact of such activities would be compromised if no options were given for their sustainability to support their livelihoods. Therefore, there was need to design EE curricula which would address the need to conserve nature and provide sustainable means of survival for the people. Houston (1998) attributes the poor performance EE in the formal education sector due to its absence of environmental education at both the tertiary level especially the Pre-service Teacher Education. This was considered by many to be a main weakness for professional development in EE in the USA.

A study in Botswana attributed the failure by environmental institutions due to the challenges in the formal education sector. Some of the challenges included the following:-

- Teachers did not have training in EE during their training at college.
- A negative attitude by teachers towards EE activities, as it was not timetabled and examinable. Teachers felt discouraged to teach EE which in the end was not examinable. Ketlhoilwe (2003:79) stated that “EE was looked at as an addition

burden and not a necessity in the curriculum”.

- The existing curriculum was too theoretical to infuse a practical subject such as EE. Once EE was included in the curriculum, more opportunities for fieldwork and projects would be there to supplement the more theoretical classroom activities.

It was from this perspective that EE had continued to be less appreciated in the formal education sector by both learners and providers especially in developing countries like Zambia. This was to make EE activities effective especially in the formal education sector. There was need to train teachers as well as conduct refresher courses for teachers. Ketlhoilwe (2003) observed that the latest position for EE was that it was a loose and neglected subject by both the educators and supervisors Curriculum Development Unit (CDU). The effectiveness of EE had been compromised by lack of support from higher authorities.

## **2.6 Challenges and Prospects of Environmental Education Activities in Response to Environmental Concerns.**

Many of the responses to environmental concerns take place within the framework of development. These responses were often conceptualised and implemented within the same areas which were the root cause of many environmental issues and risks. WWF-ZEP (2005) states that the modernistic framework often influences the conception of development and was becoming obvious that the prevailing model of development was closely linked to economic rationalism. The biggest challenge for EE was on how to balance between economic developments and ensure a sustainable environment amid

increasing levels of poverty and unemployment which impinge on the use of natural resources.

Bowers (1997) suggests that few teachers and professors recognize how modern values and behaviour patterns were connected to the ecological crises, the intellectual and moral double binds of what was being taught in schools and universities and how it lead to environmental degradation. This philosophic view of society suggested that environmental education could be the mechanism by which cultural assumptions mostly taken for granted about human relationship with nature were challenged and that it was possible to take action towards crafting an ecologically sustainable form of living through education (Smith and Williams, 1999).

One of the difficulties in incorporating environmental education into teacher pre-service programme was the lack of clarity or understanding by many of what environmental education is and does. Some of the terms that were most confusing were environmental education and environmental studies (Harde, 1982). A philosophic constraint to environmental education was that for many in society, education's sole purpose was to prepare a future work force which was a historically based interpretation of education's role in society (Smyth in Briceno & Pitt, 1988). Others argued that the type of education that helped industrialise the earth would not necessarily help heal the damages caused by industrialisation (Orr, in Collett and Karakashin, 1996). For those who support environmental education for the purpose of change in society, at classroom level environmental education focuses on scientific analysis and social policy and not cultural change (Smith and Williams, 1999).

Tilbury (1992) suggests that environmental education requires special training and commitment because many prospective teachers need a different focus and outlook in order to teach it rather than solely relying on information obtained on environmental concerns and limited exposure of their own education experiences. It was not possible to expect teachers without the expertise to transmit environmental ideas to students in a manner that would stimulate the students to think holistically, regionally and globally about the environment rather than treating each topic as an isolated, discrete entity (Taylor, 1988). The key to successful environmental education at classroom level and community at large was the teacher or provider, if providers do not have the knowledge, skills, or commitment to “environmentalise their curriculum, it could be unlikely that environmentally literate learners would be produced and hence no significant improvement would be made in ensuring environmental protection” (Wilke, 1985 :1).

### **2.6.1 Prospects of Environmental Education Activities.**

There had been an increase in the number of tools and method designed to implement Integrated Environmental Management Processes (IEMPs) in different settings. Examples include; EIAs, Environmental Audits and Environmental Management Systems (EMS) among others. All these tools aim at ensuring that the environment was well cared for. The most cardinal aspect was that the learners at which EE activities were targeted should be fully involved in the designing of the curriculum. As earlier stated, in the case of Yemen, EE curriculum had proved to be effective in raising environmental awareness among learners.

## **2.7 Suggestions of Approaches in Addressing Environmental Problems.**

As mentioned earlier, sustainable development was identified as an approach in responding to environmental crisis. However, it should involve the participation of all the stakeholders. Today, conservation organisations, governments and ordinary citizens have developed a number of management strategies to conserve bio-diversity, reduce pollution, and harvest resources more sustainably and to resolve environmental issues (WWF-ZEP, 2005). Many of the earlier approaches were and are still technicist in their orientation. They relied much on preservation as opposed to conservation and sustainable use of resources. As a result, conflicts arose about on who was in charge of natural resources between the local communities and the government authority. This makes efforts to save the environment and its resources more difficult. The locals were seen as poachers while those in authority had the right to hunt wild animals.

More recently, environmental management approaches had recognized environmental issues as being social, cultural as well as historical in nature. Hence their resolution was linked to social change and change of lifestyle. Bishop (1995) comments that there were certain skills needed to cope with change and involves conflict and disagreement. Through the process of conflict and disagreement, an individual makes sense of the need to change. EE should make people become aware of the existence of conflicts. These approaches to environmental management should recognise that there was need to integrate technical and social approaches through public participation to resolve and prevent environmental degradation.

### **2.7.1 Integrating Gender Concerns in Formal, Non formal and Informal Settings**

Gender considerations should also be taken into account in school-based interventions in the formal settings. An example of this could be Madagascar's proposed secondary-level environmental education curriculum where EE would not be taught to many girls who stop attending school after the primary level. This was a common scenario in most developing countries (Zambia included) where a high number of females drop out of school as compared to their counterparts the male. It is therefore important to integrate EE activities at all levels of the education sector. After-school programs, such as clubs, are for all intents and purposes closed to girls who have to return home to help their mothers.

Women are often the *de facto* natural resource managers of many households and communities. Environmental educators need to concern themselves with the general bias in school systems against girls, as documented in programmes. In Namibia, literacy program included components on the environment and covers high percentages of women. Training of extension workers should place special emphasis on gender sensitivity. It was important to recruit female extension workers because they understand better environmental problems which affect them. Also in a non formal setting, interpretative sites should include exhibits that depict both women and men as resource users and resource managers, both in current times and historical ones. How men and women were depicted in the popular media also influenced their roles in everyday life. Ironically, the tendency existed to target some environmental strategies to women.

### **2.7.2 Mass Media Approach/ Communication Campaigns**

Evidence from a study of some countries suggest that programs in Africa had not made full use of mass media or other communication techniques in their environmental protection or conservation initiatives effectively. Isolated environmental awareness campaigns had used various mass media channels such as the print and electronic media, but they had aimed at disseminating general messages to a large number of undifferentiated groups. An example of this was the *Make Zambia Clean and Health Campaign* on ZNBC T.V might not reach out to all the people except the elite who have access and time to watch television or listen to the radio. Such national and general appeals rarely motivate people to action, but rather attempt to instil a basic appreciation of environmental issues. People expected communication campaigns to serve the broad purpose of raising environmental awareness. Indeed, national awareness campaigns could lay a useful foundation for future action-oriented programs that could address specific environmental problems.

The experiences from the USA, Yemen, Botswana and Namibia could make EE more effective and relevant in raising environmental awareness among learners if implemented by institutions that wish to improve on the provision of EE. It was important to learn that there was need to adjust environmental policy requirements for EE in teacher training in pre-service and higher education and all institutions to have it in their curricula. Further, there was also need to clarify and examine EE related issues in relation to the designing of the curriculum.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

The methodology used was qualitative. This was because the study was about evaluating EE activities provided. This chapter gives the research design, describes the target population and sample size further, describes data collection instruments used and also explains how data was collected, analysed and interpreted.

#### **3.2 Research Design**

The study used evaluation research design because it was aimed at finding out the perception about EE activities being provided and assess the performance of such activities. There were several EE institutions in Zambia involved in various EE activities. These address environmental concerns using various approaches. The study categorised EE activities according to education curriculum, conservation activities, government regulations about environmental care and highlighted the role of NGOs and government institutions in providing EE.

As Van Rensburg (2000) stated, evaluation research is not about seeing if a project is working or not, but should be viewed as an opportunity to learn and improve the current practices. EE had been in existence for the past twenty years but environmental crises keep getting worse than before, (Laver et al, 1993). Van Matre, (1990) attributed the failure of EE to being too concerned with cognitive aspect and concentrating on

environmental awareness at the expense of taking action to prevent the occurrence of environmental problems.

### **3.3 Target Population**

The target population comprised providers and learners of EE activities from selected institutions of Zambia. The institutions included; ECZ, Curriculum Development Centre (CDC), Conservation Clubs from primary and secondary schools in Lusaka, Mufulira and Chalimbana colleges of Education respectively. NGOs included Worldwide Fund for Nature (WWF), WECSZ and Conservation Lower Zambezi (CLZ).

### **3.4 Sampling Procedure**

The sample was identified using the following guidelines.

#### **3.4.1 Sample Size**

A total number of 32 respondents involved in EE education activities were interviewed. The sample included 4 EE coordinators from WWF, WECSZ, ECZ Public Awareness Unit, CDC and CLZ. Heads of department for geography from 4 High schools of Lusaka district namely; Libala, Munali Boys, Chilenje and Kabulonga Girls. Basic school teachers (Patrons and Matrons) from Lilayi, St Patrick, Lusaka girls and Thorn Park Private School. The tertiary education sector included; 4 lecturers, 2 from National In-Service Teacher's College (NISTCOL) and 2 from Mufulira College of Education (MUCE) and Lastly, the headman from Magurameno village in Chiawa area (in the Lower Zambezi National Park) and representatives from Village Area Groups (VAGs).

### **3.4.2 Characteristics of the Sample**

EE providers were the officers from environmental institutions responsible for the preparation, designing and implementation of the EE activities. Their role included coordinating EE activities with learners from the communities and institutions. Heads of Departments (H.O.Ds) were teachers who supervise subject teachers and ensure that teachers plan and follow the syllabus for effective teaching of subjects which have components of EE. Other EE learners include teachers of Geography, primary school teachers (matrons and patrons) and village leaders and community representatives. Finally, EE lecturers were those who teach Geography, Environmental Science and Social Studies in teacher training colleges because these were the subjects related to EE.

### **3.4.3 Sampling Techniques**

Purposive sampling was used to select EE coordinators from institutions which offered EE. The selection criterion was based on institutions offering specific areas of environmental education. These included, ECZ the institution mandated by law to reinforce the regulations and Acts concerning environmental protection, WWF, involved in providing EE for Teacher Training Colleges and working with CDC in integrating EE in the school curriculum. WECSZ involved in promoting environmental awareness and conservation through conservation clubs (Chongololo and Chipembele).

Simple random sampling technique was used in the selection of both high and basic schools in Lusaka district. The idea was to avail each school an equal probability of being selected. This facilitates for the study results to be generalized to the population and the

application of inferential statistics (Borg and Gall 1989:220). Furthermore, teachers and patrons and matrons were picked purposively targeting those who teach geography and those in charge of environmental clubs respectively. On the other hand, learners were selected purposively to involve those that work with EE institutions.

### **3.5 Data Collection**

The research employed the self administered structured questionnaires and semi-structured questionnaire. For the providers of EE, the self-structured questionnaire was used because they were literate and due to the fact that some information needed consulting reports and records. The major contents of the questionnaire were about information containing EE activities being offered, clientele and their catchment areas and the challenges and prospects of EE in the selected institutions. Semi-structured interviews were used for the learners. This was done with the assistance of the research assistant to ensure that the learners fully understood the questions. Lastly, focused group discussion was conducted with representatives from the VAGs in Chiawa.

#### **3.5.1 Data Collection Procedures**

Data collection lasted two (2) months from January to February 2007. The researcher went to EE institutions to obtain first hand information (primary data) on EE activities and also to libraries for documented literature (secondary data).

##### **3.5.1.1 Primary Data**

The EE coordinators were interviewed using the interview schedules to get detailed

information. In some cases, structured questionnaires were left with them to be collected later. This was to allow them to answer questionnaires at their own time as they were sometimes busy or out of office. Learners such as pupils were interviewed in groups to save on time and ease supervision in case they faced problems in understanding the questions asked. The researcher physically went into the field to see the impact of EE activities provided on the environment such as deforestation in Chongwe and Kafue.

#### **3.5.1.2 Secondary Data**

Secondary data was obtained from literature from the libraries and information centres from the METNR, UNZA and ECZ. The internet was also used for institutions such as WWF, ECZ and CLZ which had websites. Other documentations such as annual reports, brochures, leaflets and posters from EE institutions were also consulted.

#### **3.6 Data Analysis**

Quantitative data collected was analysed using statistical tools. The data was presented in graphs, tables, charts and percentages. Qualitative was data analysed descriptively. Explanations and descriptions were used to analyse qualitative data.

**CHAPTER FOUR**  
**PRESENTATION OF FINDINGS**

**4.1 Introduction**

The Chapter presents the findings on the evaluation of EE activities in selected institutions of Zambia. The institutions were CLZ, WECSZ, ECZ, CDC and WWF. Table.1 shows these institutions, their objectives and strategies/activities they use in providing EE. These findings were obtained from compiling data obtained from the field using questionnaires, observations and reading through various publications from the selected environmental institutions in Zambia. The findings are categorised according to the objectives of the research namely EE activities, impact of such activities, challenges and prospects being faced and finally approaches used by in offering EE.

**Table.1: Selected Institutions involved in the Provision of Environmental Education and Public Awareness.**

<b>INSTITUTION</b>	<b>OBJECTIVES</b>	<b>STRATEGIES/ACTIVITIES</b>
CDC	-Design and monitor Curriculum development.	Development of EE material and approval of syllabus
CLZ	-Promote EE among basic school pupils in the Lower Zambezi National Park	Audio-Visio Mobile Unit van, lessons at Nzou EE centre and field trips.
WWF	-Assist development of Localized Curriculum. -Provide learning Materials in EE.	Posters, Books and environmental projects in Mumbwa district.
WECSZ	-Promote environmental awareness and action.	Through conservation clubs; Chongololo, Chipembele and Chongololo Club of the Air.
ECZ	-Implement the EPPCA and promote public awareness.	Radio and T.V programmes. Newsletters, talks and walks, public library.

**Source: (ECZ, 2001:159)**

## **4.2 Curriculum Development Centre (CDC).**

The Ministry of Education through the CDC contributes to the state of EE in both the formal and non-formal education sectors through the development of curriculum.

### **4.2.1 Environmental Education Activities Offered by CDC.**

The CDC had so far reviewed the syllabus of geography by introducing a field excursion and project as part of the grade 12 final examination assessment in Geography. Candidates were expected to identify an environmental issue of their own choice and write a report of which the score was part of the final Geography examination result. This was a positive contribution to EE as pupils learn to acquire skills to analyse environmental issues in their own local environment through research topics as part of the examination. Furthermore, CDC develops EE materials for schools and teacher training colleges. Currently, CDC and WWF-ZEP were working on integrating EE into the education curriculum for Nakanjoli, Kalunzya, Mapooko, Chunga, Banakaila and Chisenga Basic schools in Mumbwa district (Appendix C). The processes of curriculum development involved the participation of curriculum specialists and teachers of specific subjects. Further, CDC worked with CLZ a non governmental institution in the Lower Zambezi National Park (LZNP) to come up with a localised curriculum (Appendix D) which was approved in 2006.

In curriculum development, CDC considers cross cutting issues as part of the curriculum, the issues include wildlife depletion, deforestation, population growth, climate change, poverty and HIV/AIDS. However, these environmental issues were not fully

implemented at a full scale due to challenges facing the institution to be discussed later.

#### **4.2.2 The Impact of Environmental Education Activities offered by CDC.**

So far, the contribution of CDC to EE was proving to be very successful. There had been good response from both teachers and pupils on the field project (ECZ, 2001). Some of the achievements included the approval of the CLZ localised curriculum in 2006. WWF-ZEP also produced a draft localised curriculum in conjunction with CDC for Banakaila, Chisenga, Mapooko, Nalusanga, Chunga, Kalunzya and Nakanjoli basic schools in Mumbwa district. Further, CDC had approved learning materials for teacher training, that is, the Trainer of Trainers Course in Environmental Education and Environmental Education Module for Colleges of Education.

The localised curriculum had two major purposes; firstly, to act as a guide for the teacher and secondly to reinforce the decentralisation of the policy on education by creating ownership in the immediate communities through their participation in the process of education planning, design, development and implementation of the curriculum. It covers among others things; indigenous knowledge in traditional crafts, cultural topics, customs and beliefs expressed through traditional such as poetry; story telling, drama, role-play, music and dance and other entrepreneurship activities which were relevant to Mumbwa district.

The introduction of field work in the geography high school syllabus had increased environmental awareness among pupils. The syllabus requires that pupils do research on

any environmental topic such as in the area of social, economical, natural and political situation that affects their locality and offer suggestions for solving them. An example of this was a pupil at Munali Boys high school who did a fieldwork project entitled, *Waste Management in Kaunda Square*. The aim of the study was to find out methods being used in disposing off waste from the markets and homes. The pupil highlighted the need to throw garbage in designated places and appealed for the council to collect refuse as uncollected garbage could lead to out breaks of cholera and other diseases.

On the other hand, CLZ had worked with CDC to come up with a localised curriculum, (Appendix D). According to the EE educator at CLZ, the institution worked with the CDC in coming up with a localised curriculum. CLZ used a participatory approach in developing the curriculum. The process involved participants from Chiawa, Chongwe, Luangwa and Rumfusa areas in designing the contents of the syllabus and learning resources. Participants included chiefs, chieftainesses and headmen / women, teachers and members of the communities around the area. This enabled material development process to become more deliberative, interactive and action oriented. In this way, the material developed was more relevant to the learners' immediate local environmental concerns. The concept of participatory approach in material development had exhibited the ideal situation where the participants were developing learning materials in their own languages and local environment.

However, the curriculum did not provide any option for the local people to sustain their livelihood. The headman at Mugurameno complained that CLZ insisted on denying his

people access to wildlife and forest resources without giving them options for their survival.

CDC had taken some measures to make EE more effective through staff training. The institution had sent its staff to attend short courses in EE at Rhodes University in South Africa. Others were doing their studies locally at the University of Zambia at masters' degree level. The aim was to have curriculum specialists who could understand and interpret EE activities and implement them in the curriculum. Further, local training sessions in EE were held in collaboration with WWF to train teachers, lecturers and District Education Standard Officers (DESOs) so that they could effectively monitor the provision of EE in schools in their respective districts.

#### **4.2.3 Challenges and Prospects facing CDC**

The main challenge for CDC was lack of adequate funding to fully monitor, evaluate and implement EE activities in the curricula. The other challenge was that of the negative attitude towards EE from both teachers and pupils. This was attributed to the fact that EE was not a subject on its own but an integration of knowledge and skills about the environment. Due to the fact that EE was not examinable, it did not get the attention it deserved. It was considered as a by the way component in teaching. This was confirmed by lecturers, student teachers, teachers and pupils from schools and colleges interviewed. The other challenge was that no evaluation was being done, hence, it was difficult to tell whether EE activities were being well implemented or not.

According to the Curriculum Specialist at CDC, the prospects of EE are bright in that the institution had plans to train teachers countrywide about the integration of EE in the curriculum. So far plans were underway to integrate EE in the curriculum of teacher training colleges in Zambia. CDC was working in partnership with other EE institutions especially in the area of curriculum design and provision of learning material such as WWF and CLZ. For instance in 2006, CDC approved the localised curriculum for CLZ.

#### **4.2.4 Approaches used in Providing Environmental Education Activities.**

CDC was working on infusing EE in the formal school and college curricular by encouraging the development of localized curricula. The curriculum specialist reported that the aim of localising the curriculum was to provide an opportunity for the integration of local cross cutting issues into the curriculum. Makwaya (2005) argued that the involvement of the community in the design of education curriculum entails decentralisation of decision making process about what is, and how it is to be learnt by the learners. The emphasis was on encouraging the relationship between teacher training colleges and the local community in which it was located. The main reason was to make education more relevant to communities (MOE, 1996 and Francis et al, 1998). A lecturer at Mufulira College of Education said that it was important to have the input of the community in curriculum development as this could make EE more relevant to community needs.

The results on the ground showed that the syllabus in general does really address the need of the local environmental issues. An example was the case where teachers of Geography

at Libala and Kamwala High Schools respectively revealed that the Geography syllabus' component of fieldwork was positively contributing to raising environmental awareness among pupils. However, they complained of having many pupils to supervise for instance over 50 pupils in a class. Pupils have to go into the field to conduct research on any topic of environmental concern in their own local environment. Pupils were also expected to offer recommendations on how to solve such environmental problems. According to the Head of department at Libala high school, this was a positive approach in teaching EE. Teachers attend refresher courses on EE to orient themselves on how to teach EE in the teaching of geography. This was reported by the curriculum specialist at CDC.

In the area of curriculum development, subject curriculum specialists were involved in the designing of the curriculum. The Industrial arts specialist for instance, was involved in the designing of components to be included in the curriculum of subjects such as woodwork, and metal work. The EE activities included the importance of trees to the environment. Other subject specialists were also involved in their respective subjects. These specialists go round the country and colleges to monitor EE activities.

#### **4.3 Conservation Lower Zambezi (CLZ).**

CLZ is a non – profit making organisation established by the stakeholders of the Lower Zambezi Nation Park (LZNP) and the Chiawa GMA. It was officially opened on 30<sup>th</sup> October, 2005 by the First lady Mrs. Maureen Mwanawasa. The organization was committed to the protection of wildlife and habitat of the LZNP and the Chiawa GMA. Its catchment covers an area of 6,400 square kilometers (CLZ Brochure, 2005). It has an

operation camp base managed by the Camp Operation Manager. He works in collaboration with the EE provider who was in charge of the Nzou Environmental Education Centre. The institution had recognised the need to provide EE to the youths who regarded as the future leaders and the members of the communities around the LZNP.

#### **4.3.1 Environmental Education Activities offered by CLZ.**

CLZ established Nzou Environmental Education Centre deep in the LZNP where all EE activities were designed and implemented. The researcher spent three days at this camp to get information. The centre provides EE activities to school pupils in schools surrounding the LZNP and the village communities. The EE coordinator reported that the centre caters for 40 basic schools, which comprises schools in Chongwe, Luangwa, Rumfusa and Chiawa. EE activities were in the field of environmental issues such as deforestation, poaching and forest management. These activities were derived from guidelines from the Nzou Environmental Education Centre's Localised Curriculum as was earlier mentioned (Appendix D). In addition learners were taken on field trips around the game park. In this programme, two pupils chosen from each school come and spend four days at the centre.

**Table 2: EE Approaches used by CLZ and the Number of Learners Involved in 2005-2006.**

<b>APPROACH</b>	<b>No. of LEARNERS</b>	<b>PERCENTAGE (%)</b>
Mobile Outreach	6890	95.2
Class lessons at the Centre	346	4.8
<b>Total</b>	<b>7236</b>	<b>100</b>

**SOURCE: (CLZ Report, 2007)**

Table.2 shows the approaches used in the provision of EE by CLZ at Nzou EE centre since its inception in October, 2005. The mobile Audio Visual Unit (AVU) reached out to a population of 6890 out of 7236 learners representing 95.2 % between 2005 and 2006. The mobile unit van goes out to the communities and schools to educate learners on environmental awareness. The main activities for community members involved sensitising them about conflicts in the utilization of resources concerning deforestation, poaching and wildlife in the GMA. The AVU conducts its lessons using video shows. It was reported that at some shows with the communities, the attendance could reach as much as 300 people.

The Nzou EE Centre conducts lessons at the centre located in the LZNP. Since its inception in October 2005, a total of 346 learners out 7236 learners representing 4.8% had attended lessons at the centre (Table.2 p.48). The learners represented 11 groups of approximately 20 pupils per group from the 40 schools. These had to stay at the centre for 4 days. During lessons at the centre, lessons and field trips are conducted in which learners go for game viewing in the LZNP and conducted boat cruises on the Zambezi River. In addition, 2 groups of headmen and women from Chiawa GMA and the local community also attend lessons at the centre.

**Table.3: Learners Covered by the Mobile Audio-Visual Unit: 2005-2006**

<b>LEARNERS</b>	<b>No. of LEARNERS</b>	<b>PERCENTAGE %</b>
Pupils and Teachers	6040	88
Community	850	12
<b>TOTAL</b>	<b>6890</b>	<b>100</b>

Source: (CLZ Report, 2007)

Table.3 indicates the break down of the outreach programme by the AVU. The EEP reached out to 6040 pupils and teachers representing 88% of learners in the catchment. Further, it reached a population of 850 members of the communities representing 12% of the learners. Community members included chiefs and village headmen/women.

The centre had a well stocked library with EE books and computers for learners to use whilst at the centre. In the resource room, various EE materials were found these included charts, guns which were used by poachers, various kinds of products from wildlife and forestry products. The EE coordinator reported that these were to show learners the value of their resources during lessons.

#### **4.3.2 The Impact of Environmental Education Activities Offered by CLZ**

CLZ's greatest achievement was the development and compilation of a localised curriculum and its own teaching materials which was approved in 2006 by the CDC. The development of a localised curriculum involved collaborative effort and broad-based consultation from several stakeholders within and outside the locality (CLZ, 2006). It was through wide consultations with members of the community, teachers, chiefs and tour operators in Chiawa area (LZNP). The main purpose of a localised curriculum was to enhance the relevance of the curriculum to individual and community needs.

An interview with the community leaders in Mugurameno in Chiawa confirmed that there was active participation in the designing of the curriculum through a workshop which was conducted at the base camp (Nzou EE Centre). According to CLZ (2006) Report, the

local community felt that EE activities being offered by CLZ were relevant to their livelihood. The respondents revealed that they had become more aware of the importance of wildlife and that it should be jealously guarded for them and their future generation.

EE activities by CLZ were having a great impact on the communities and the environment. This was evident from schools around Chongwe which included Chipekete and Rumfunsa basic schools respectively around the LZNP. It was reported by a teacher from Mugurameno basic school in Chiawa that pupils appreciated the use of the mobile audio visual unit. The attitude of the people towards natural resources had also changed for the better. Villagers through the VAGs and CBNRM were participating actively in the conservation activities by working hand in hand with the Forestry Department and ZAWA. Although the programme was inconsistent, pupils interviewed, said they were well informed of the dangers of excessive cutting down of trees as the later affects the rain formation cycle. In addition lead to drought and desertification of the land. The villagers on the contrary complained that CLZ restricted them from using the so called God given resources which include trees and wildlife in times of hunger. The shortage of food was caused by inadequate rainfall being received in the area. This was reported by the villagers in Mugurameno in Chiawa.

#### **4.3.3 Challenges and Prospects Facing CLZ**

Effective provision of EE activities at CLZ was hampered by the vastness of the geographical area catered for. The EE coordinator reported that there was a higher ratio of educators to learners such as 40 Basic schools against one EE educator. This is further

aggravated by lack of transport to go out and pick the pupils from their respective schools. This had resulted in reduced number of visits to the centre by pupils. Lack of adequate funding had negatively affected the operations of the Nzou EE centre. Further, the biggest challenge was to change the attitude of local people towards wildlife and other natural resources (as God's gift for them). This was worsened by high poverty levels and unstable rainfall pattern which in turn forced people to resort to unsustainable utilization of natural resources such as deforestation and poaching. The villagers challenged CLZ to provide alternative sources of income for them. They asked; *if we do not cut the trees to burn charcoal for sale and kill some animals for relish then how are we going to survive, since agriculture seems to be failing due to poor climatic conditions?*

The prospects of EE at Nzou EE Centre looked bright, reported the EE coordinator. Lodge owners around the camp were willing to support the centre financially. Poaching had drastically reduced around the national park as compared to the previous years. The reduction had been attributed to the strong networking and partnership between CLZ and ZAWA in the area of wildlife conservation. The EE coordinator further reported that CLZ had engaged game scouts from ZAWA to conduct patrols in the GMA. Schools reached by the mobile outreach strategy wished to be visited more often than it was the case. The same sentiments were echoed by members of village communities. Further, CLZ had only one environmental educator and plans were underway to recruit another educator. To the advantage of the centre, the base camp manager had returned from Zimbabwe for short course training in wildlife management.

#### **4.3.4 Approaches used in Providing Environmental Education activities**

*The approaches used as mentioned earlier, were classroom lessons where pupils and members of the community were brought to the centre and mobile outreach using AVU to reach out to learners in the surrounding area. These approaches were not effective enough as mentioned earlier because the area of coverage was too wide to be catered for by one EE educator. The EE provider had to alternate between going into the field with the AVU van and conducting lessons at the centre. These reduce the number of contacts between the learners and the provider of EE activities.*

#### **4.4 Worldwide Fund for Nature (WWF)**

This is a world conservation institution whose main aim is to ensure that the use of renewable natural resources was sustainable.

##### **4.4.1 Environmental Education Activities offered by WWF.**

WWF's main EE activities were in the area of conservation of the world's biodiversity. This was being done through public awareness and providing EE to the affected sectors of the community in terms of environmental degradation. In 1989, WWF introduced an education programme called WWF Zambia Education Programme (WWF-ZEP) fostering the provision of EE in the country. According to the annual report, the programme had played a significant role in EE provision. The programme had supported the development of EE in the formal education system of Zambia through curriculum development and education material development. This work was done in collaboration with the CDC.

The objective of WWF-ZEP was to enhance the teaching of EE in schools. The main focus had been on teacher training, community education, development of learning materials and the development of the curriculum. As was learnt from the former EE Coordinator at WWF. He said that the project had been operating for the past 15 years in Zambia and the results of the project had been successful though with some hardships. It involved capacity building for teachers in the area of EE. Seminars mainly with teacher trainers in teacher training colleges were conducted. The EE coordinator reported that the objectives of the programme were to enable participants interpret environmental issues within their work context.

The WWF Report for 2006 stated that the achievements of the WWF in EE activities included, production of posters and brochures in local languages and English in agro-forestry programmes in schools and communities in Mumbwa district. The Environmental Education Manual for Teacher Educators, formally approved by the MOE for use in colleges, had been an integral part of teacher training programmes in Zambia. The EE coordinator reported that WWF-ZEP had made great contribution to the development of environmental education and awareness through the provision of learning materials that had taken into account of the socio-cultural issues.

In June 2006, WWF worked in conjunction with Netherlands and Finish embassy to produce educational books. The books were officially launched by Mrs. Lillian Kapulu, the Permanent Secretary MOE. The books launched included;

1. Environmental Education Teachers, Guide, Grades 1-7

2. Trainer of Trainers in EE Course book
3. HIV/AIDS Peer Educators' Manual
4. The Community Based Natural Resource Management in Zambia.

The topics included aspects of guidelines for teacher trainers and teachers. The books contain information about the role of EE as a tool to help fostering sustainable development through practical activities that would contribute to poverty reduction and effective natural resource management.

#### **4.4.1.1 Teacher Education**

The integration of EE in the local curriculum was in progress at the Mufulira College of Education board. As indicated earlier in corroboration with CDC. A manual entitled '*Environmental Education Manual for Teacher Educators and Training of Trainers Course in EE*' was produced in collaboration with the Mufulira College of Education (MUCE) Board. The manual was the first book in Zambia deliberately developed to supplement efforts of integrating environmental education across the teacher education programmes in the country. The response from Ministry of Education (MOE), Ministry of Tourism Environment and Natural Resources (MTENR) and lecturers from teacher training colleges was overwhelming.

The college offers Pre-Service Teacher Training for the basic school sector. With the help of WWF, Teacher Education Department (TED), UNZA, CDC and basic school teachers, a module in EE had been developed. According to the EE coordinator, the work was done through the Course Developers Network (CDN) under the sponsorship of Southern

Africa Development Community (SADC) and Danish Aid DANIDA. The integration programme had worked for Mufulira College of Education. Student Teachers doing the field based programme were made to do a portfolio during the field experience period. They were given an assignment to identify environmental issues in the schools and then come up with strategies on how they could sort them out. The information was then presented in the Action Research Portfolio at the end of their training. Much had been done at this level in the integration; programmes to sensitize student teachers on preparation of schemes of work and the integration of EE. The main purpose of integration was to provide EE curriculum for student teachers to identify environmental issues at local level. Through integration, theory and practice merge, hence students have a wide scope of knowledge. At the time of the interview, MUCE was the only pre-service college with the integration of EE in the curriculum.

Over the years, WWF had been working in Bangweulu area in the Northern part of Zambia under the Miombo Project. The project involved the training of Community Resource Boards (CRBs) in Kalasamukoso and Chiundaponde areas. The project had in place specific technical committees to focus on wildlife, fisheries and forestry. According to WWF-Zambia Newsletter (2006), this project was well received by communities through active participation in natural resources management. The activities under this project included afforestation programmes in which trees such as the exotic ones were planted by the community in conjunction with the Forestry department.

Staff training at WWF, like in other EE institutions in Zambia had been foreign based. At

the time of the dissertation in 2008, the only institution offering EE was the University of Zambia at post graduate level. Most of the staff at WWF did their training in EE outside Zambia in countries such as Britain, Uppsala University in Sweden and Rhodes University in South Africa. A Field Coordinator, Mr. Sinyama did his training in Environmental Education at Uppsala University in Sweden. WWF- Zambia with its experience in conservation was networking with many EE institutions of Zambia. As mentioned earlier, it worked with CDC in curriculum development as well as in the provision of learning material and teacher training.

#### **4.4.2 The Impact of Environmental Education Activities Offered by WWF.**

EE activities provided by WWF had played a significant role in the provision of EE in the education sector through teacher training and curriculum development. The integration of EE had been helpful in producing teachers who were conversant with environmental issues. WWF launched teaching materials in form of text books to Mufulira teachers college. Through the help of WWF, a localized curriculum had been produced in collaboration with CDC for some basic schools in Mumbwa district (Nakanjoli and Kalundumya basic schools) and CLZ in Chiawa in the LZNP.

The other impact had been in community participation in natural resource management, the Miombo project with participation of the communities had identified fish breeding sites some of which some had been prioritized and mapped to ensure that fish breeding was enhanced. These conservation committees have been formed in Samfya district in Luapula Province. Similar activities were done in wildlife and forest conservation.

#### **4.4.3 Challenges and Prospects being facing WWF**

Lack of adequate funding was one of the major challenges facing WWF-Zambia. As a result only a few projects were undertaken. Limited financial resources have led to the termination of some of the projects such as WWF-ZEP which came to an end in December 2006. The other challenge was the increase in demand for EE projects in addition to the existing ones such as the Miombo Ecological Project in Northern Province.

The other challenge was high poverty levels among the learners who heavily depend on natural resources for their survival. It is always difficult for such people to change their attitude towards exploiting natural resources. For the poor, conservation was seen as denying them access to the source of livelihood. Further, the demand for EE activities was reported to be overwhelming beyond the capacity of WWF. Chiefs in the neighbouring areas of Miombo project felt left out by the project since the coverage was not extensive enough.

The prospects of EE activities at WWF were said to be bright in that it had received support from government and other EE institutions. As indicated there had been too much demand from chiefs in areas where WWF had projects such as Miombo to expand. Unfortunately, WWF' Zambia Education Programme (WWF-ZEP) finally came to an end in December 2006, the project was a success especially in the area of teacher training, localization and integration of EE in the curriculum. WWF now focuses on school children. A new project called '*Children and the Environment in Zambia*'

focusing on EE in Community Management of Natural Recourses was launched in 2006 and was expected to end in 2009. It aimed at increasing environmental awareness among children as they are regarded as the future leaders.

#### **4.4.4 Approaches used in Providing Environmental Education Activities.**

The big achievement was in the area of coming up with the localised curriculum for basic schools as was the case (Nakanjoli and Kalundumya and other basic schools earlier mentioned) in Mumbwa district. It was seen by the MOE that there was need to improve on the relevance of the curriculum to suit the local needs. This work has emanated from the National Policy on Education “Educating our Future” (MOE, 1996). The aim was to use the government resources more efficiently in order to improve access to basic education and fulfil the vision of the aspiration of providing quality basic education to all Zambians. In line with this policy, the following changes in the education system were made:-

1. Decentralisation of the education sector,
2. Development of the curriculum which was relevant and life sustaining to its citizens.
3. Community participation in developing their own localised curriculum.
4. A curriculum contextualised, hands on relevant to the problem solving and realistic to the Zambian culture.

The WWF localised curriculum was made with active participation of the local community, teachers and learners of Mumbwa district. These worked with the curriculum specialists from MOE and CDC as well as cooperating partners WWF-ZEP. The syllabus

addresses aspect of lifelong education that can help a learner or any end user live a sustainable life. It covered activities that give people of different communities their economic, social, political and cultural values. Meanwhile this is what the term environment defines. These activities therefore, were meant to empower learners to use natural resources in a sustainable way after their basic education and outside formal education. It also teaches them survival skills, knowledge and positive attitude suitable to make them acquire analytical and problem solving skills needed for daily living. Further, more, it works with the local communities in the fields of ;

- Rain water harvesting,
- Carrying out research for community problem solving and other projects for the communities.

According to the WWF (2005), EE was a life long process aimed at imparting in the formal and informal education sectors environmental awareness, ecological knowledge, attitudes, values, communication and ethical responsibilities for the rational use of resources in order to achieve sustainable development. WWF Country Coordinator said that the position of WWF was that education should contribute to the achievement of sustainable development and poverty alleviation goals. However, education by itself can not attain these goals, but it was an indispensable catalyst that could lead to improved conservation practices. WWF-ZEP, conducts evaluation of its programmes as an on going process.

#### **4.5 The Wildlife and Environment Conservation Society of Zambia (WECSZ)**

The WECSZ has been the country's oldest NGO dedicated to environmental

conservation. Its operation mainly concentrates on providing EE to school going children (WECSZ brochure, 2006).

#### **4.5.1 Environmental Education Activities Provided by WECSZ.**

The institution works in conjunction with schools through eco-clubs namely the Chongololo and Chipembele Conservation Clubs. Furthermore, it caters for the public in general through the electronic media by broadcasting Chongololo Club of the Air (CCOA) which was a weekly Sunday lunch time programme on Radio 2 at 12:30 hours. In the print media there was a weekly environmental commentary column entitled “*Environmental Notes by Warthog* in the Sunday Times news paper.

WECSZ uses the print and electronic media approach. On one hand, the print media helps the institution to publish magazines and brochures (Chongololo and Chipembele magazines) which were distributed to schools’ conservation clubs freely as learning materials for club members and the environmental column warthog in the *Sunday Times Newspaper* caters for an audience countrywide. On the other hand, the electronic media involves the radio broadcasts every Sunday afternoon known as The Chongololo Club of the Air (CCOA).

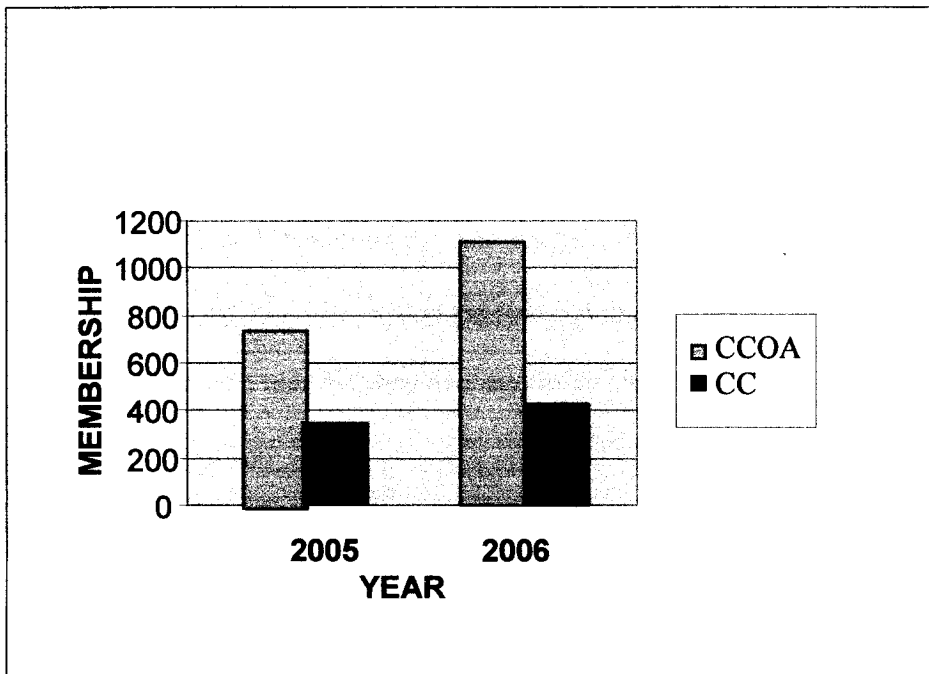
#### **4.5.2 The Impact of Environmental Education Activities Offered by WECSZ.**

There was a difference between schools where conservation clubs were active and those where they were dormant. Schools such as Lusaka Girls, Lilayi, and St Patrick had their surrounding kept clean as compared to those without clubs such as Libala basic and

Chawama. The patrons in such schools revealed that their members and pupils do appreciate a clean and better environment as compared to those without these conservation clubs.

This approach had been effective as could be seen by the increase in membership in conservation clubs in Fig.1.

**Figure.1 Membership to Conservation Clubs for 2005 and 2006**



**SOURCE: (WESZ, 2006)**

Figure.1 shows the increase in membership for Chongololo Club of the Air (CCOA) from 752, (23%) in 2005 to 1106, (28.7%) in 2006. The Chongololo and Chipembele (CC) clubs showed a small increase from 333 (12.6%) to 425 (16.2%). For one to become a member of the CCOA, they have to answer the question, *why is it important to conserve*

*nature?* The same question was being asked in the seven local languages aired on ZNBC's radio one. The CCOA programme had been running since its inception 25 years ago and was said to be one of Africa's longest running EE and awareness radio programme (WECSZ Brochure, 2006). According to the WECSZ Report, since its inception, CCOA had over 80,000 members with countless thousands of additional adults and children not registered. The programme explored 18 habitats during the 2005/2006 broadcast cycle. The aim of the programme was to allow the youth to learn and become aware of nature and the environment. For a school to be registered, an application form had to be filled. The applicant was requested to list projects to be carried out. The matron for Chongololo club at Lusaka Girls Basic School reported that the school had planned for which included tree planting, anti-littering campaigns through drama, field trips to zoos and nation parks. She further pointed out that the performance of the club was not as expected. The club membership was said to be about 45 members.

At Rhodes Park School which is a private school, EE programmes were well organised than in most government schools. The clubs day was time-tabled. The club meets every Thursday of the week. The Chongololo club at this school had its membership of about 95 pupils. The club patron stated that there was good cooperation with the school administration. The club was sponsored by the school and where need be pupils' contributions was overwhelming towards field trips. The most popular EE activities identified in conservation clubs included clean up campaigns, picking up of litter and tree planting as well as field trips to game parks and natural sceneries.

At Lilayi basic School, a small forest and orchard had been created and was being managed by the Chongololo club. At Lusaka Girls basic school, waste management campaigns, tree planting and education tours were the common activities the club was implementing (Appendix E). However, it was observed that evaluation was not effectively done as the schools visited were not able to produce even a single annual report. The similar situation prevailed at WECSZ head office. The only annual report which was found at WECSZ during the interview was from Mipa East Basic School in Luapula Province (Appendix F). The intended activities for 2006 at this school included tree planting, organic gardening and school production unit by introducing crop rotation.

For the Chipembe Conservation Clubs which targets high school pupils, the situation was different. The club seemed non-existent in all the schools visited. At both Munali boys and Girls, the teachers reported that clubs in most high schools were not active. Most of the teachers were occupied by the Academic Production Unit (APU) classes in the afternoon. The similar response was obtained from Kabulonga and Kamwala High schools respectively. The coordinator reported that WECSZ was doing quite well and effective although he could neither produce an evaluation report nor annual report for the last two years, 2005 and 2006 respectively. However, a format of an evaluation report form was available (Appendix G). It contains guidelines and details about the CC and evaluation of the activities of the clubs.

#### **4.5.3 Challenges and Prospects Facing WECSZ.**

At institutional level, an interview with the EE coordinator revealed that WECSZ was

geared to provide EE. As was reported in the literature review, the institution depended on charity and donations. Erratic funding had been the major challenge for the institution as it hinders the publication of magazines, pamphlets and brochures for the clubs and also reduced the movement of staff to do monitoring and evaluation. Further, records were not available for evaluation of EE activities performed in selected schools since records were not well kept for easy access.

The EE coordinator reported that the prospects of EE activities were not very bright. Unless more financial resources were injected in the institution, it would be difficult to improve on the delivery of EE activities. However, with the support from the clubs, the institution could reach greater heights. The EE coordinator reported that the WECSZ had taken the initiative to raise some income for its operations. The EE coordinator said that WECSZ runs tourism camps at which tourist pay these included; Kafwala North Luangwa National Park, Chembe Bird Sanctuary in Kalulushi and Chibila in the Kafue National Park to raise additional funds for its operations.

#### **4.5.4 Approaches used in Providing Environmental Education Activities.**

WECSZ uses the print and electronic media in reaching out to the learners. These approaches seemed to be effective as they reached out to learners' countrywide. The publications of Chongololo and Chipembele magazines were distributed to various clubs throughout the country. The CCOA programme had an audience through out the country in areas with radio reception. These approaches had proved to be effective as evidenced by the increase in memberships for the conservation clubs.

#### **4.6 Environmental Council of Zambia (ECZ)**

The Environmental Council of Zambia (ECZ) was established as an autonomous body through the enactment of the environmental Protection and Pollution Control Act (EPPCA) No.12 of 1990 (CAP 204) of the Laws of Zambia. The general function of ECZ was to protect the environment and control pollution.

##### **4.6.1 Environmental Education Activities being offered by ECZ.**

ECZ have a unit responsible for dissemination of environmental awareness information to the public on environmental concerns. EIAs had been recognised as developmental planning tools aimed at improving project performance by preventing, minimising, mitigating and compensating for adverse environmental impacts. The EIA allows the public to evaluate the possible impact a developmental project could have on the environment. It gives a platform to the public to understand the environmental concerns such a project could have on them. In 2004, a total of 117 EIA related documents were submitted to ECZ which represented a 60% increase from the previous years (ECZ, 2004 Annual Report). The increase in the number of proposed projects that undertook EIA process was attributed to enforcements which had increased the level of awareness among various stakeholders.

In 2004, ECZ provided logistical support to strengthen the operations of Zambia Network for Environmental Educators and Practitioners (ZANEED). The network regularly holds meetings that allow regular interactions of network members for sharing and exchanging ideas, programmes and practices. ECZ through the information centre provided human

resource and material support to programmes targeted at community groups that were involved in raising awareness on environmental issues.

According to the 2004 ECZ Annual Report, it had produced;

- Editions of the cooperate Newsletter, the Enviro-line.
- 10,000 brochures on chemicals and hazards.
- 3 editions of the cooperate Newsletter, the Enviro-line.
- 10,000 brochures on chemicals and hazards.
- 10,000 brochures on ozone layer and many other leaflets on various topics of environmental concern.

It is important to note that all these publications were in the English language. Local languages were left out. Publications targeted mostly libraries in learning institutions such as schools, and both public and private offices.

#### **4.6.1.1 Environmental Impact Assessment (EIA)**

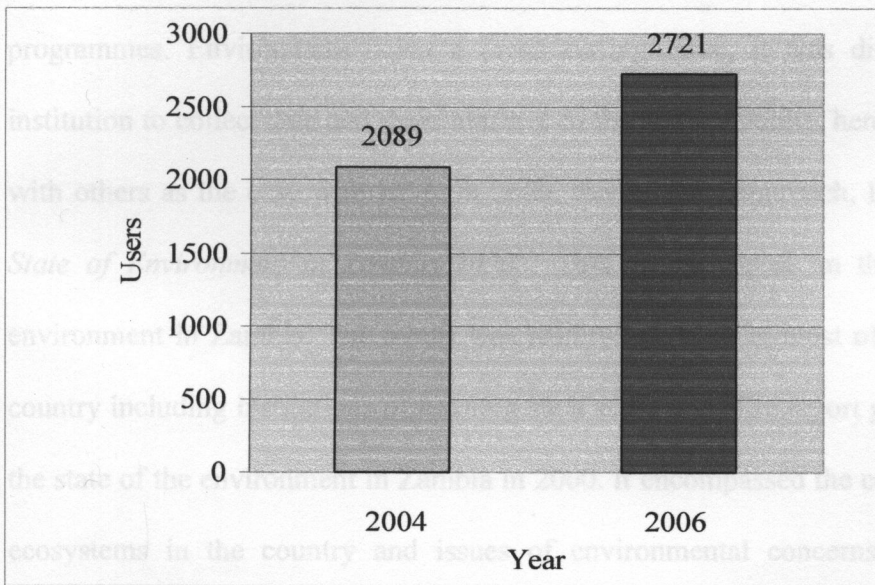
ECZ is mandated by law to ensure that all developmental projects do an EIA before they can be authorized. ECZ holds public hearings where the public is invited to learn and understand the impact a proposed project may have on the environment. Participation of the public was overwhelming during meetings for EIAs. This was seen in Kafue district where an EIA was conducted for the establishment of a Steel Plant (ZNBC TV Main News, 26<sup>th</sup> September,2006) during the hearing, the public were privileged to have access to impact the project was going to have on their environment.

Furthermore, EE activities were implemented through educational talks conducted by the

Education and Communication Department. Sensitisation workshops were being held throughout the country to sensitise members of the public on environmental issues facing the country. ECZ worked in conjunction with the Evelyn Hone College to integrate EE in the journalism course. This programme had enhanced promotion of media coverage on environmental issues (ECZ, 2004).

ECZ have a free reference library at its head office on Suez Road in Lusaka. The library is open to the general public. It is stocked with literature about environmental issues with limited local data and more at regional and international level. The library is of great use to the education sector in our country. This can be seen through the increase in attendance as shown in Fig: 2.

**Figure 2: Users of ECZ Library in 2004 and 2006**



**Source: Field data (ECZ, 2007)**

In 2004, 2089 people used the library, where as in 2006, 2721 used the facility as shown in Fig.2. However, the data for 2005 and the previous years were not available. The

librarian stated that they were still updating and compiling data on the library activities. Most of the users come from higher institutions of learning such as UNZA, Evelyn Hone College and teacher training colleges. It was also noted that there had been an increase in the number of pupils who visit the library to look for information for their fieldwork projects in Geography. An interview with some of the users reviewed that they found the library to be very reliable in terms of data concerning environmental issues. Although the, library users complained of lack of adequate space in the library and local data on current environmental issues. This library service was only available in Lusaka. Furthermore, ECZ was working with the Zambia Consolidated Copper Mines - Investment Holdings, Copperbelt Environment Programme (ZCCM-IH CEP) by providing books and other publications in public libraries in Mufulira, Kitwe and Kabwe.

ECZ works in collaboration with other environmental institutions in the provision of EE programmes. Environment being a cross cutting issue, it was difficult for a single institution to collect data and disseminate it to the general public, hence the need to work with others as the case with ECZ. In 2000, through this approach, ECZ produced "*The State of Environment in Zambia 2000*". This was a report on the condition of the environment in Zambia. The report was readily available in most of the libraries in the country including institutions of learning such as UNZA. The report gave an overview of the state of the environment in Zambia in 2000. It encompassed the conditions of various ecosystems in the country and issues of environmental concerns such as fisheries, forestry, mining and industry, waste management, climate change and environmental education and public awareness.

#### 4.6.2 The Impact of Environmental Education Activities offered by ECZ.

People were aware of environmental concerns involving developmental projects through EIA meetings. An example of this was the Kafue case, where through an EIA public rejected the establishment of a Steel Plant fearing it might affect the environment. This shows that people were given an opportunity to discuss environmental issues affecting them, hence increasing their levels of environmental awareness. The rising levels of environmental awareness at ECZ were determined by feedback from members of the general public to the through complaints which were reported to the institution. It is only after all the parameters were established that ECZ would take action. The common environmental complaints were illegal dumping of waste and air pollution as shown in Table. 4.

**Table.4 Complaints Received and Attended To by ECZ in 2004.**

No.	Nature of complaint	No. of Complaints Received	Action Taken
1.	Illegal dumping	4	Fines and clean- ups
2.	Indiscriminate disposal of waste	12	Fines and clean-ups
3.	Open air burning of waste	3	Fines
4.	Effluent discharge and water pollution	7	Fines and warnings
5.	Noise pollution	2	Warnings
6.	Air pollution	30	Reported cases were attended to
	<b>Total complaints</b>	<b>58</b>	

Source: (ECZ, 2004 Annual Report).

The evidence on the impact of EE activities could further be witnessed through public complaints on environmental issues as indicated in Table.4. In 2004, ECZ recorded a total of 58 complaints on environmental issues (ECZ, 2004 Annual Report). The main complaint was on air pollution where 30 complaints were reported to ECZ. Further, the following complaints were made; 12 on indiscriminate disposal of waste, 7 on effluent discharge and water pollution respectively. Other cases reported included, 4 cases on illegal dumping, 3 cases on open air burning and lastly 2 complaints on noise pollution.

#### **4.6.3 Challenges and Prospects facing ECZ**

The major challenges facing ECZ included, among others factors, lack of manpower to carry out EE programmes in the branches. ECZ 2004 report revealed that, retention of qualified staff was a major set back facing the institution. The other challenge was lack of cooperation from the other stakeholders such as the industries in relation to obeying environmental laws. The general public was also another culprit in terms of contributing to pollution of the environment. In towns littering was a major concern for most of the urban areas in Zambia. The Communication department use posters to educate the public and in public transport vehicles. Passengers are told to throw litter in bins. However, this rule had not been strictly followed. Some of these posters had been turned into table mats in some offices while litter was not thrown in designated places.

Since EE was a new concept in Zambia, it lacked local literature on environmental concerns. Most of the literature was foreign as it looked at the global and regional levels thereby alienating the local one. ECZ was striving to provide and update local literature on environmental issues as reported by the librarian. The library had only two computers

which were not enough as compared to the number of users. Lack of a NPE was hindering the effective provision of EE. This was because there were no guidelines on the legal framework of how the management of the environment should be implemented.

#### **4.6.4 Approaches used in Providing Environmental Education Activities.**

ECZ had recognized the vital role the media could play in disseminating information to the public. The institution was raising environmental awareness through sensitization workshops for media personnel. This was in order to enlighten them on reporting and coverage of environmental issues.

The library at ECZ was used to disseminate information concerning environmental issues. It attracted many users from both the formal and informal sectors of society. The EE coordinator though could not give detailed statistics per sector among users confirmed that the response from the public was overwhelming especially from learning institutions such as high schools and colleges.

The other approach being used was that of publications of materials. ECZ publishes calendars, posters, magazine called the Enviro-line and various kinds of brochures. These contain educative messages on environmental issues such as disposal of litter, waste management, anti-pollution activities and others. These materials were displayed in many public places such as schools buildings such as, offices and public transport vehicles. However, the researcher noted that not much of the publications were in local languages, which somehow disadvantage the local people who may not have gone far in education.

#### **4.7 Make Zambia Clean and Healthy Campaign**

President Levy Mwanawasa launched the “Make Zambia Clean and Healthy Campaign” on 6<sup>th</sup> June, 2007. The aim of the campaign was to get rid of the filth in the country which was believed to be a major contributing factor to the high prevalence of diseases. In a televised national address, the president said he had decided to launch a “Make Zambia Clean and Healthy Campaign” in order to reduce the spread of infectious diseases such as cholera and dysentery. The president urged people to develop and implement keep clean activities in homes, communities, and work places so that with coordinated effort, a difference would be made and banish the spread of environmental related infectious diseases such as cholera.

##### **4.7.1 Environmental Education Activities offered.**

Cholera claims several hundreds of lives every year in Zambia mainly due to poor sanitation and filth, especially in shanty compounds such as Chibolya and Chaisa in Lusaka. The President urged the private sector and non-governmental organizations to get involved in the exercise of driving out filth from the streets to free the country from epidemics. The government has replaced the Nuisance and Street-Vending Act with the Local Government Street Vending and Nuisance regulations 2007. Local Government Minister, Ms. Sylvia Masebo announced that the regulations had been passed as an amendment to the statutory instrument number 134 of 1992. Offenders would pay penalty fees ranging between K90, 000 to K450, 000 and failure to pay would lead to jail sentences upon successful prosecution ([www.tve.org/no/doc.cfm](http://www.tve.org/no/doc.cfm)). Ndola City Council (NCC) implemented the ‘Make Zambia Clean and Healthy’

campaign by instructing business organizations to paint their premises. Most of the business firms complied with the directive and the city looked clean at the time of this study. Other measures were also being implemented to change the face of the city through cleaning activities which involved the participation of members of the public and private institutions led by senior government officials.

#### **4.7.2 The Impact of Environmental Education offered**

The campaign received much support from senior government official and members of the public. President Mwanawasa led a team of ministers in cleaning the Soweto Market in Lusaka. This encouraged the public to fully participate in the exercise. Further, the first lady, Maureen Mwanawasa demonstrated the “Make Zambia Clean and Health Campaign” when she participated in the cleaning activities at Mandevu clinic (wards) and the surrounding areas. She also planted a tree as a perseverance measure of conserving the environment.

The business community also came on board to support the call for the clean environment. In this instance, Parmalat Zambia Ltd donated hundreds of bins to be used in the streets of Lusaka, Kitwe, Ndola and Livingstone. Further, the councils who are the major stakeholders in ensuring a clean environment were doing a commendable job.

### **4.7.3 Challenges and Prospects Facing the Campaign**

The major challenge being encountered in the campaign was lack of resources and capacity to dispose off the waste after clearing. It had not been easy for the councils to clear huge heaps of garbage to designated dump sites as it was observed at Chawama market where heaps of garbage were collected during the campaign; but remained uncollected behind the market due to lack of funds to ferry it to the dump site. As a result these had remained a healthy hazard around markets and residential areas as was reported by at Lusaka City Council Waste Management Unit. NCC Public Relations Manager said in an interview that the council would engage NGOs, marketeers, and other organizations because they were stakeholders in the programme. He further stated that regular garbage collection was on the council's priority list of activities.

### **4.7.4 Approaches used in Providing Environmental education Activities.**

Environmental awareness campaigns in the Make Zambia Clean and Healthy Campaign relied much on the electronic media. Campaign programmes aired on television such as ZNBC, Muvi and Mobi and community Radio stations. Their aim was to disseminate information to a large number of undifferentiated groups. A general appeal at national level rarely motivate people to action, but rather attempt to instil a basic appreciation of environmental issues especially on general cleanliness.

At local level, the public audio system was used to inform people about EE activities.

Most governmental and NGOs providers interviewed expected the communication

campaigns to serve broad purpose of awareness than the mere cleaning activities of public places and institutions.

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.1 Introduction**

This chapter presents the discussion of the findings based on the Evaluation of EE Activities in Selected Institutions of Zambia. The aim of this chapter is to discuss how EE activities being provided were fairing. It establishes the effectiveness of the EE activities, challenges and the prospects they were facing. As was indicated in the findings, EE in Zambia was in its infancy. Despite this, much had been done so far in trying to ensure a sustainable environment. Institutions were doing their best to ensure that the general public was well enlightened in terms of environmental awareness. Although a lot of work still remained to be done in EE. All these institutions had different objectives but aimed at achieving one goal that is, to provide environmental education and raise public awareness. They also had different strategies /activities which show that there was no duplication of ideas or activities as was indicated in table 1.

#### **5.2 Curriculum Development Centre (CDC).**

CDC had undertaken various activities in response to the national challenge to infuse EE in the formal school and college curricular.

##### **5.2.1 The Role of Environmental Education Activities Offered by CDC.**

CDC played a significant role in integrating EE in the school curriculum. The pressure to emphasize EE came as a result of pressure from the MTENR and the ECZ who lobbied to

have various school subjects such as Geography to encompass environmental issues within their subject content. Consequently, the High school Geography syllabus had incorporated fieldwork where Grade 12 pupils were afforded an opportunity to apply an inquisitive mind to identify local environmental concerns and suggest solutions. The study by Habowa (2006) revealed that several workshops were conducted in liaison with the CDC to produce the new geography syllabus. The localisation of the contents of the curriculum contributed to increased environmental awareness in that the design of such curricula involved the participation of the stakeholders. The learners became more aware of their local environmental needs in turn the same was learnt by their children in schools. As was indicated in the findings, CLZ and WWF-ZEP worked with CDC to localise the curricula in Chiawa and Mumbwa respectively. These curricula had been designed with full participation of all the stakeholders in the targeted areas. The EE activities involved learning about environmental concerns of the local area.

### **5.2.2 The Impact of Environmental Education Activities provided by CDC.**

In Mumbwa district, WWF-ZEP worked with the CDC to come up with a localised curriculum for the basic schools Banakila, Chisenga, Nakanjoli and others. CDC assisted these basic schools to come up with learning materials which were relevant to their own environment, these included collection of traditional handcrafts and methods such as story telling and poetry which were very helpful in transmitting knowledge about the environment. This curriculum was made with the aid from the community, school administrations and representatives from the MOE and WWF.

In these syllabi, the communities were made to be the originators of the learning experiences in their areas. The learning process related to how learners could link what they learn to “Environmental Care and Sustenance” as a source of ‘Economic Empowerment’. The focus moved from the individual and community to national economic development through the promotion of the learners’ independence. This was unlike the usual education set up where the syllabus was imposed on the learners from the MOE.

The teaching of environmental issues to learners in this context was not only aimed at developing their power of imagination, inventiveness and observation but also their sense of appreciation for their surrounding beauty and scenery. It had offered a chance for the learner to use one’s immediate environment conservatively analysing issues affecting them and their environment. The activities which had been designed and developed were home based in that they were contextualised and user friendly since they were meant to be used by local community members: As it was the case in Mumbwa and Chiawa areas respectively.

The introduction of fieldwork in the Geography syllabus had raised the levels of environmental awareness among pupils. Pupils could identify environmental problems in their own communities and offer suggestions on how to solve them. A pupil’s report from Munali Boys High School about waste management in the findings showed that pupils could go into society well equipped with skills and knowledge on environmental concerns facing their communities.

The review and production of education materials had greatly contributed to the teaching of EE. Participatory approaches in learning material development do help to improve its relevancy in terms of care for the environment. The other success was the integration of EE activities at Teacher Training level as it was at Chalimbana and Mufulira colleges respectively. CDC worked with WWF-ZEP to come up with the *Training of Trainers in Environmental Education, Core Text* and an *Environmental Education Module for Colleges of Education*. These teaching materials were designed to help student teachers learn how to handle EE activities when they go out in the field. A localised curriculum had a positive impact on the learners and the environment in general.

### **5.2.3 Challenges and Prospects Facing CDC.**

The challenges facing CDC include lack of adequate funding from the government. The curriculum specialist stated that, the institution lacked capacity to go out and conduct training workshops and seminars with teachers in order to explain issues related to curriculum and syllabus changes. This was what teachers complained of referring Zambia's education to being used as a testing ground by donors. Teachers are the major stakeholders in providing education hence should be fully involved in the designing and improvement of the curriculum and syllabus.

The other challenge was lack of funds to develop enough learning materials to cater for the new contents in the geography syllabus. It was noted by teachers of Geography that they had large numbers of pupils per class, this made the supervision of field projects very difficult.

The prospects for having effective EE were bright if funding could be improved. Evidence could be seen in the localised curriculum and the introduction of fieldwork project in the Geography syllabus. This showed that the capacity was there on how to localise the curriculum to make education relevant to the needs of the local environment as long as funds were available.

#### **5.2.4 Suggested Approaches used in Providing Environmental Education Activities.**

CDC's main duty is to ensure that the quality of learning materials and content for the education sector was relevant to the learners. CDC should put more emphasis on designing curricula which were learner centred (Localized curriculum). The designing of the syllabus should focus on the education needs of the local community as the case was for the localised curricular for WWF in Mumbwa and CLZ in Chiawa. These had proved to be more relevant to the needs of the local communities. Moreover, the environment is different in almost every region hence the need for the contents of the curriculum to be unique for each as intended area or region. The community needs to take part in the designing of the curriculum for EE so that the learning process does not become alien to them.

#### **5.3 Conservation Lower Zambezi (CLZ)**

The institution is committed to the protection of wildlife in the LZNP and the Chiawa GMA. CLZ was established mainly to promote tourism since it was observed that human activities such as poaching and deforestation were rampant hence destroying the habitat in the national park. In this case, the Nzou EE centre was established to provide EE

activities to the youths and members of the communities surrounding the LZNP. The emphasis on the youths was due to the fact the youths are the future leaders and that if the youth are well prepared on how to care for the environment they would grow in responsible adults aware of the need for a good environment.

### **5.3.1 The Role of Environmental Education Activities Offered by CLZ.**

The findings indicated that the mobile AVU approach had a wide coverage. In the period 2005 to 2006, 6890 learners out of a total of 7236 learners were covered in the EE programme representing 95.2% Fig.1. From those covered by the AVU, 88% represent pupils and teachers from basic schools while 850 out of 6890 represent 12% of members of the community as shown in Table.2 in the findings. During the outreach programme, learners were educated on EE topics such as fire management, the impact of deforestation on climate and other areas of environmental concern. The use of the AVU during presentations makes the learners appreciate the value of caring for the environment as they view the videos. As was reported, the EE coordinator does visit schools at least twice in a year. This was due to the fact the catchment of 40 schools was too wide for one EE educator to cover.

Representations of two (2) pupils per school, surrounding the LZNP who come to the centre to attend lessons and spend 4 days at the centre was inadequate. During the period under evaluation, 346 learners out of 7236 (representing 4.8 %) attended classes at the Nzou EE centre. The main concern here was that class lesson approach represents a small population of only 4.8% of the learners. Further, looking at the number of schools

targeted, 40 schools was a large catchment as such the impact was not felt when pupils get back to their respective schools. The representation was too small to have an impact on the school population and the environment.

A positive score for CLZ was in the area of localization of the curriculum. The contents of EE courses had been well designed to suit local environmental issues related to the local area (around LZNP). The local community participated in the design of the curriculum. The EE coordinator reported that the centre was established with the main objective of prevention rather than conservation of wildlife and natural resources for the benefit of tour operators.

The major topics in the curriculum concentrate on; water pollution and sanitation, poaching, deforestation and fire management. These environmental issues as alluded to earlier were a threat to wildlife and the environment. If left unchecked, the wildlife would become extinct in the near future and due to deforestation and fires the land would become bare and lose its fertility. Further more fire and deforestation destroy the forest which was the natural habitat for wildlife and affects the climate. Failure to address the environmental issues in conjunction with the local community was due to the fact that local people were seen as a threat to wildlife and not as co-partners. The situation had led to negative attitude towards conservation programmes. Animals destroy their crops almost every year causing hunger and poverty while they were not allowed to hunt the former (wildlife) for food to avert starvation.

### **5.3.2 Impact of Environmental Education Activities offered by CLZ.**

Environmental education topics had been prepared to suit the education needs of the local community. Even though the design of the curriculum did not involve the participation of the local community. As a result there was resistance in accepting change in the utilization of natural resources. Respondents from villages around Chongwe such as Chipekete and Rumfusa, Kafue and Chiawa wondered why they should not cut down trees since they depend on the forest for charcoal as their source of livelihood. This was a big task which CLZ was trying to solve. Based on this challenge, people were attracted to attend meetings so as to learn about why the environment should be conserved. This was confirmed by some village Headmen in Chongwe and Rumfusa who reported that people were now becoming aware of the need to conserve nature by becoming members of the CBNRM. Conservation Lower Zambezi programmes were having an impact as the community interviewed at Magurameno in Chiawa area stated that it was a challenge for them to do without hunting and charcoal burning.

Children were availed the opportunity to view wildlife when they go to the Nzou EE centre. Deforestation in this area was of great concern especially in areas surrounding urban areas especially Lusaka and Kafue. Local people were prompted to be engaged in such activities due to poor agriculture yields usually caused by drought and attacks from elephants. The idea about conservation was there but the main worry was on their survival.

### **5.3.3 Challenges and Prospects facing CLZ**

The catchments area of 40 schools in four districts is geographically too wide to be covered by one environmental educator. Field reports indicated that the mobile audiovisual unit was seen once in a year on average. On one hand, there was no consistence in terms of EE activities provided, while on the other, the bringing of pupils at the Nzou EE centre was not an effective approach. Only a few pupils from the 40 basic schools were invited for a four day workshop (2 pupils per school). The number was too small to be representative of the area of coverage.

The main concern of EE seemed to be focused on preservation of wildlife for the benefit of the tour operators and not the local people in the LZNP. There was need to do more work in finding alternative option for livelihood of the community in the manner that would benefit stakeholders from the natural resources. The camp manager further stated that anti-poaching patrols were bearing fruit but in the actual sense they were not sustainable as the real cause of poaching was poverty which needs to be addressed. This was a big challenge for CLZ. Therefore, EE should be aimed at imparting skills and knowledge on how to use resources in a sustainable manner.

The most positive step had been on the training of teachers at the centre with the view that they go out and deliver. These trained teachers act as contacts between the EE centre and the communities. When they get back, teachers were responsible for the coordination of EE activities in their schools as they spend more time with pupils than the EE coordinator. Therefore, EE activities being provided at Nzou EE centre could be said to

be effective.

The prospects of CLZ EE activities look bright and effective as the background establishment of the CLZ camp and the Nzou EE centre provides a strong base for EE programmes. The Location of the centre in the heart of the Lower Zambezi and Chiawa areas was ideal. The camp is close to the community and the wildlife it serves (Chiawa area).

#### **5.3.4 Suggested Approaches in Providing Environmental Education Activities.**

In order to have effective provision of Environmental Education, CLZ should reduce the number of basic schools to manageable size of about 20 instead of 40 and increases the number of pupils from 2 to 4 per school. It should also employ at least two more educators such that one was responsible for the village community and the other for pupils using the mobile AVU while one to be permanently based at Nzou EE Centre. The approach should also focus on offering an option to the sustainable sources of livelihood such as vegetable gardening as water is readily available.

#### **5.4 Worldwide Fund for Nature. (WWF)**

WWF had made massive contribution to the development of EE in Zambia especially in the formal education sector and conservation of biodiversity.

##### **5.4.1 The Role of Environmental Education Activities offered by WWF.**

The effective protection and conservation of the environment depend on how

knowledgeable the community was. WWF-ZEP recognized the role of formal and informal education sectors in caring for the environment. The institution had been engaged in teacher training, community education and development of learning materials and assist in curriculum development by working closely with the curriculum development centre. Though not qualified, many teachers had taken part in the training programme by WWF through short courses on EE.

The institution had contributed to the development of other EE and environmental awareness materials. Posters and brochures had been produced in local languages on Agro-forestry programmes for the schools in Mumbwa district. The programme had made education relevant to the needs of the local community. In addition, WWF-ZEP played a significant role in the localization of the curriculum to make it relevant to the environmental concerns of the local learners in schools in Mumbwa.

#### **5.4.1.1 Teacher Education**

All stakeholders participated in the preparations of the localized curriculum. WWF-ZEP recognised the importance of teacher training in providing EE. Teachers from teacher training colleges were involved in programmes to integrate EE in the college syllabus. Like the field project in Geography, student - teachers were given tasks to identify environmental concerns during their teaching practice and come up with a report. This was reported at Mufulira Teacher's College of Education. It should be noted that, EE at college level have a great contribution to the society and the environment at large. This was because teachers go out to schools in all corners of the country hence their impact

could be wide and effective.

#### **5.4.2 The Impact of Environmental Education Activities offered by WWF.**

The evaluation of WWF–ZEP contribution to education sector had been successful. The localised curriculum for Nakanjoli and other schools in Mumbwa district was an example of the impact of EE activities to equip teachers and pupils. The preparation of the curriculum was done with the participation of all stakeholders who may be affected by environmental problems. The fieldwork project for grade 12 Geography syllabus was very influential in raising environment awareness among high school pupils. Pupils were becoming more concerned about environmental problems as was evident in fieldwork project reports from high schools (Munali and Kamwala). Further, WWF contribution to the production of learning materials had also been very helpful in EE. For instance, the trainer of trainers Manuals and CBNRM manuals played an important role in enhancing the provision of EE.

#### **5.4.3 Challenges and Prospects facing WWF.**

As was observed during the findings, although the integration of the EE was done, there had been no proper guidelines for monitoring and evaluation of the EE component. The specialised staff was neither at the Examination Council of Zambia nor MoE to enhance EE provision. Hence, no evaluation was being done to assess the impact of EE in the school curriculum.

The prospects of (WWF-ZEP) programme for the fifteen years of existence before it

ended could be said that it was a success despite the challenges outlined above. It had contributed to the basic school teacher training through the integration of EE in the curriculum.

#### **5.4.4 Suggested Approaches used in Providing Environmental Education Activities.**

The approach which WWF was using can be said to be very effective. This was in the sense that all stakeholders such as pupils, teachers and the community were brought together to come up with a localized curriculum. Thus the content of the material was also relevant to the needs of the community of Mumbwa. The lesson from the approach could be that the more stakeholders are involved in the design of the curriculum, the easier it would be to implement EE activities in that area. Further, teachers need to be trained in EE for them to impart necessary skills to the learners. The approach by WWF should be emulated by other EE institutions.

The Community Resource Boards' approach seemed to be effective in that it involves the full participation of stakeholders in the managing of their natural resources. This approach should be encouraged since learners are empowered with the skills needed to look after natural resources jealously. Conflicts with conservation of natural resources in a jealous manner.

#### **5.5. Wildlife and Environmental Conservation Society of Zambia (WECSZ).**

WECSZ contribution to EE in Zambia was in the area of conservation of the environment.

### **5.5.1 The Role of Environmental Education Activities Provided by WECSZ.**

WECSZ had paid special attention to education of the youths since they were regarded as future leaders. This had been done through the two conservation clubs namely; the Chongololo and Chipembele clubs which supposed to exist in almost all the schools throughout the country. It was observed that only a few such clubs existed in schools in Lusaka. The findings indicated an increase in membership of both conservation clubs that is, Chongololo and Chipembele. In 2005 the membership for the two conservation clubs was 12.7% (333) and rose to 16.2% (425) in 2006 (Fig: 1). This was a slight improvement as compared to the CCOA which attracted a large membership countrywide with 752 members in 2005 to 1106 members in 2006. It follows that the electronic radio programme CCOA programme was taking a leading role in imparting knowledge about environmental awareness.

WECSZ specialized in the area of environmental conservation for school going children and youths. However, these figures were not a true reflection of what was obtained on the ground. Schools such as Libala, Kamwala, Munali Boys and Kabulonga Girls did not have the club ( Chipembele). Where as in basic schools visited such as St Patrick showed non existent of the Chongololo club and that it existed just on paper with less EE activities taking place. There was poor coordination between the schools and WECSZ. Club patrons and matrons were not adequately motivated to lead the clubs. The matron of Chongololo club at Lusaka Girls' Basic school said that lack of refresher courses had demoralized teachers. There was no contact between the provider (WECSZ) and the learners in schools. The other factor was that conservation clubs were not fully supported

by school administrations. School managers looked at the demands by the clubs as a burden in terms of time and cost on the normal running of school academic programmes. Field trips for instance were not supported as a result teachers had to make pupils contribute some money to facilitate logistics for field trips. Teachers interviewed expressed the need for a kind of education which was beyond classroom situation and not examination oriented as was the case during the time of the time of the dissertation. The CCOA programme was more active on the ground and involves all ages. It had membership from all ages and reaches out to almost all corners of the country.

#### **5.5.2 The Impact of Environmental Education Activities offered by WECSZ.**

The finding had revealed that EE activities being provided had not fully increased environmental awareness among the learners. Some of the common EE activities happening in schools where the clubs existed included; tree planting, litter picking and maintaining of flowers on the school grounds. The CCOA radio programme was transmitted to all parts of the country. The programme was transmitted both in English and local languages such as Bemba, Lozi, Chewa, Tonga and others aired on radio two. The evidence was on the high number of people joining the club from all the nine provinces of Zambia (fig.1).

Interviews conducted in the 10 selected schools of Lusaka district showed that these conservation clubs were only active in three schools such as Lusaka Girls Basic Schools, Lilayi Basic School and Rhodes Park School. This represents only 30% percent of the school. Patrons and matrons in the named schools also stated that they are not as active as

maybe expected. In some schools, these clubs were just on paper like the case of Libala Basic School. The deputy Headmaster said that the club do exist but he was not sure whether members do meet or not. Such attitudes show that EE activities were not well supported by the authority.

### **5.5.3 Challenges and Prospects Facing WECSZ.**

WECSZ faces several challenges in providing EE activities to its members (learners). Firstly, lack of adequate funding had hampered the provision of EE. The institution being a non profit making organisation depend on funding from donors. More funding was required for the publication of learning materials such as Chongololo and Chipembele magazines, brochures and airing environmental programme CCOA on Radio 2 every Sunday. Of late, funding had been erratic hence the publication of learning material had not been consistent. The supply of these materials to schools had drastically kept on reducing even the contact between WECSZ staff and the club members for evaluation and monitoring was almost non-existent.

Secondly, since WECSZ carters for a large area, target almost all the schools in the country. This makes the provision of EE to be less effective as resources were inadequate to carter for the whole country. Further, the designing of EE activities could not be possible to carter for such a wide coverage. This scenario was depicted in most EE institutions. It was further observed and reported that teachers were not fully involved in the designing of the EE activities and publication of learning materials. This could be another factor contributing to poor response from teachers.

The prospects of EE activities by WECSZ looked bright. It was observed that EE activities being provided were well designed and if fully implemented could greatly contribute to the increase in environmental awareness among school going children. Since the school had a system in place, WECSZ believed that coordination between the institution and the learners could be easily realized, what was needed was the supervision of conservation clubs in schools by WECSZ staff but this was hampered by limited resources.

#### **5.5.4 Suggested Approaches used in providing Environmental Education activities**

The design of these EE activities was not tailored to suit local school environmental concerns. The participation of learners in the designing of the EE activities to be included in the magazine and other learning materials was not there.

The approach used by WECSZ could have been effective if only there was adequate funding which hindered the smooth running of operations. Although WECSZ runs tourism camps, the money raised was not adequate to meet all operational costs. With adequate funding and good coordination, WECSZ had the potential to effectively reach out to all the school going children through its conservation clubs. The radio and newspaper productions which cater for the public in general also assist in raising environmental awareness.

#### **5.6 Environmental Council of Zambia (ECZ)**

The role of the Environmental Councils of Zambia had mainly been concerned with the

monitoring and ensuring that environmental issues of the country were addressed by following the right procedure.

#### **5.6.1 The Role Environmental Education Activities offered by ECZ.**

The approach being used by ECZ include publication of brochures, magazines and the Enviro-line a newsletter. The public library with various stocks of literature about the environment issues in Zambia had been available to ensure that the public was availed with documented data about the environment.

The 2004 Annual Report shows that ECZ had produced thousands of brochures and a local magazine, the Enviro-line containing various environment related news. However, as was stated earlier, much of the content of the brochures do not really take into account of local environmental concerns which often affect the common people. For instance the 10 000 brochures on ozone layer may not be that easy for a common Zambian to understand. It would have been effective if local concerns were emphasized before looking at global concerns. The ECZ Reports are all published all in English; therefore, the information may not be suitable for some people at the grass root in terms of environmental awareness who are not conversant with the English language.

#### **5.6.2 The Impact of Environmental Education Activities Offered.**

The Education and Public Awareness Unit was positively contributing to the creation of awareness through public awareness campaigns and the library. Having scanty data on the local environmental issues in Zambia, ECZ was trying to improve the stock of local

literature. The researcher visited the library and discovered that some information about Zambia do exist such as environmental reports. The attendance of the library showed that in 2004, 2089 users used the library while the number rose to 2021 users in 2006 as indicated in fig.2. The figures for 2005 and other years were not available at the time of the dissertation. The increase in the number of users indicates that environmental awareness was increasing. Most of the users include students from colleges and UNZA especially those doing the projects. Further, high school pupils who where doing field work in Geography were also frequently using the library. ECZ also do conduct public hearing whereby the members of the public were invited to attend EIA sessions. During such sessions people are educated on the impact any developmental project would have on the environment as stated earlier in the case of an EIA in Kafue district over the proposed site for the Steel Plant which people rejected.

Further, the introduction of EIAs confirms the increase in the levels of knowledge among the people. For instance, during a public hearing in Kafue conducted by ECZ for the establishment of a Steel Plant, the public rejected the project due to the impact such a project would have on the environment and the lives of the people such as pollution of the river and displacement of settlers. This showed that levels of environmental awareness among members were on the increase and in turn. The vision and mission statement of the ECZ, to attain a rich and pollution free environment in Zambia was being given special attention ([www.necz.org.zm](http://www.necz.org.zm)).

### **5.6.3 Challenges and Prospects facing ECZ**

ECZ, like many other EE institutions in the country faces numerous challenges in providing EE. The major one being lack of capacity to reach out to all parts of the country to create public awareness and education on key environmental issues. Further, the institution had only four branches that is, in Lusaka, Ndola, Livingstone and Chirundu. This made it difficult to reach out to other places. In addition, lack of the country's National Policy on the Environment hampered the provision of EE activities in the country. In addition, there was no proper guideline for ECZ to monitor and implement EE activities.

The prospects of EE appear to be bright, the EE coordinator reported. The NPE was at draft level and it was hoped to be out soon. Once it was approved, ECZ was expected to play a significant role in coordinating and regulating environmental issues among institutions in the country.

### **5.6.4 Suggested Approaches used in Providing Environmental Education Activities.**

The evaluation of EE activities by ECZ revealed that the approach used seemed quite effective. The library had greatly contributed to the data base which had been scanty. Other contributions to the library came from EE institutions such as WWF, WECSZ in form of publications (though not often updated) at the ECZ library though not often updated copies.

The approach of using brochures and publications catered for a wide coverage reaching

out to members of the public. Stickers on public awareness are stuck on public places and minibuses to educate the public on the need to keep the environment clean. Public meetings during EIAs were another approach which should be continued as the public was made to understand impact of developmental projects on environment issues before their implementation of such projects.

### **5.7 Make Zambia Clean and Healthy Campaign.**

EE activities were having a big impact on the levels of environment awareness to the general public. The Make Zambia Clean and Health Campaign recently launched have shown positive signs in keeping the environment clean.

#### **5.7.1 The Role of Environmental Education Activities offered**

There had been active public participation during these activities. The evidence was shown by the participation of President Levy Mwanawasa, the first lady and senior government officials who were involved in the cleaning at Soweto market. This motivated marketers and the public to also take part in the cleaning exercise. Of late, the campaigns seem to concentrate much on the cleanliness of public places and the general outlook of towns and cities. Councils, the private sector and government institutions had taken measure in the cleaning of their premises and other public facilities which include hospitals, markets and bus stations.

#### **5.7.2 The Impact of Environmental Education Activities offered**

The business community, marketers and the general public were being fully involved in

ensuring a clean and better environment as was observed countrywide. For instance, Parmalat Zambia Ltd, donated hundreds of bins to the local councils in Lusaka, Kitwe, Ndola and Livingstone to be used in the streets.

The regulation passed on the statutory instrument No.134 of 1992 had empowered the council to take action in clearing street vendors from the streets. Vendors had since gone to the markets. This approach had helped in having sanity in the streets of Lusaka and other towns and indeed clean and healthy. Coupled with the bins dotted around the cities, the “Make Zambia Clean and Healthy Campaign” had improved the out looks of cities and towns.

### **5.7.3 Challenges and Prospects facing the Campaign**

The major challenge facing the campaign at the time of this dissertation was lack of adequate resources to clear the garbage or waste collected during the campaign. Most councils (District, Municipal and City) in the country did not have adequate transport to dispose off the waste to designated places. As a result, garbage had remained in heaps around markets as was observed in Chawama. The campaign seemed to concentrate on public clearing garbage and cleanliness than on educating people to change their attitudes towards the environment.

The prospects of the campaign were bright. The evidence was the active participation by members of the public during the campaign. People had realized the importance of keeping the environment clean.

#### **5.7.4 Approaches used in Providing Environmental Education Activities**

The Make Zambia Clean and Healthy Campaign relied much on the public media such as ZNBC radio and television and local community radio stations. People were adequately informed on the need to have a clean environment. However, the programmes did not impact much on the need to change people's attitudes. Posters stuck on the walls do at least serve the purpose of reminding people on keeping the environment clean.

## **CHAPTER SIX**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Conclusion**

The study examined the types EE activities, their impact on the environment, challenges and prospects for EE activities in Zambia and lastly the approaches used. The results indicated that much needed to be done for EE to be effective. Most of the institutions had concentrated their efforts on preservation rather than conservation. An example of this being CLZ whose aim was to stop illegal activities such as poaching and indiscriminate cutting down of trees but did not provide alternatives for the public. Poverty, lack of adequate resources even the non-participation of the learners in the planning of the EE activities to be learnt was among the root causes of continued environmental degradation in Zambia.

#### **6.1.2 The Role of Environmental Education Activities Provided by Institutions of Zambia**

In line with objective one, indicated in chapter one, EE activities which were being provided by selected environmental institutions in Zambia. These did offer programmes which were mostly well tailored to provide public awareness and EE. The findings revealed that almost all important environmental areas of concern were catered for.

The formal sectors do provide EE to the youth who are regarded as the future leaders. WECSZ works with schools through conservation clubs namely Chongololo and

Chipembele clubs. As indicated, the institution's activities had not been effectively implemented on the ground. The schools visited revealed that the clubs existed only on paper hence no EE activities were being conducted. WECSZ records showed that schools had clubs, but in reality were not active. The CCOA, a radio program on radio 2, was another EE programme which was doing fine. As the results indicate, its membership increased from 752 to 1106 between the 2005 and 2006. The radio programs had an audience covering the whole country hence proved to be effective at national level in terms of coverage.

In most EE institutions in Zambia, the designing of curriculum were set to tackle specific environmental issues. As the findings indicated, the designing did not involve other stakeholders. Exceptional cases included WWF and CDC; these did involve the contribution of the stakeholders in the designing of the localized curriculum for Nakanjoli, Kalunzya, Mapako and other schools earlier noted in Mumbwa district. It has to be noted that for EE activities to be effective, all the stakeholders need to be fully involved. The Ministry of Education should play a major role in ensuring that the curricula designed be relevant to the needs of specific area.

In the same vein, CLZ, ECZ and WECSZ designed their EE activities with less participation of the targeted learners (Community). This approach renders EE activities to be ineffective. In the case of community environmental awareness, lack of involvement of the local people had made institutions face difficulties in terms of implementation. CLZ Environmental Education activities against poaching had not been well received

because people viewed wildlife as a source of food provided for them by God. CLZ had not designed its curriculum to change the mind set of the local people from hunting to farming. Further more, lack of coordination among these institutions had made it difficult for them to effectively provide EE and raise public awareness.

Although providers of EE reported that they coordinate their activities, information obtained on the ground revealed otherwise. The ECZ which was the monitoring institution was not up-to-date with reports of EE activities in the country. A similar situation was reported at ECZ. This showed that there was no comprehensive evaluation done by EE institutions. The regulatory bodies did not also enforce the need for such reports. As was the case at WECSZ, despite several years of existence, not a single report for any year was availed to the researcher. While at ECZ, the latest Annual Report was for 2004 and they are still compiling the one for 2006. The question is how effective were the EE activities being provided and how do these institutions ensure that they were effective without reports? The research reviewed that documentation of data was lacking in many EE institutions in Zambia. Membership of learners was questionable. From the figures given from the records, one may wonder if the figures were a true reflection on the ground.

### **6.1.3 The impact of Environmental Education Activities**

The study objective of evaluating the impact of EE activities could safely be concluded with a statement that EE activities which were being provided by EE institutions were just beginning to have an impact on the learners and the environment. There had been

much understanding and appreciation for a clean and safe environment. Programmes like the “Make Zambia Clean and Health Campaigns” do receive support from the public. Bins had been put in market places and town centres, schools and public places were found filled up with garbage, an indication that they had a concern for a clean environment. This was an indication that people had become aware of the need for a clean environment. However, they were discouraged by the delay and failure of the local authorities, (councils) to collect and dispose bins. The responses from most of the institutions attributed the lack of funding as being the major hindrance to the effective provision of EE. The same situation was for CLZ which relied on its old truck to go out to 40 schools to bring learners to the EE centre. Geographically, the areas were too wide apart and the big population to be covered. Despite all these, EE providers were willing and determined to provide EE to the public. Institutions such as the WECSZ had taken the initiative of finding other sources of income than depend on donor support. It runs tourism camps in the Kafue National Park.

The majority of EE activities being practiced in most of the institutions were mainly reactive to environmental problems. For EE to be effective there is need to take a proactive approach, that is, attending to the root causes of environmental problems before they become a source of concern. As the old adage which goes as ‘Prevention is always better than cure’ should be applied. It should be noted that few activities in the selected institutions involve the participation of stakeholders on the designing of EE activities. Generally speaking most institutions impose themselves on the communities with their already tailored EE activities, as it was the case with CLZ against poaching and

deforestation respectively. Furthermore, most of the EE programs target school going children ignoring education of the local communities. This may include training students and staff on EE approach and conservation activities to be applied within the schools and the neighbouring communities.

#### **6.1.4 Challenges and Prospects facing EE Institutions of Zambia.**

The major challenge identified was that of lack of financial resources to effectively provide EE. Institutions such as CLZ and WECSZ are facing the challenge of having very large catchment areas and population to attend to. This had made EE less effective as there was no consistency and lack of frequent interaction between the learners and the providers of EE reduced. The other challenge was in the design of the curricula for EE activities, participation of the learners have not been used in most institutions except for CLZ and CDC in the localization of the curriculum. Further, institutions face the challenge of changing the attitude of the learners towards their own local environment unlike imposing EE activities on them.

#### **6.1.5 Approaches used in Providing Environmental Education**

Further more, the continued socio-economic development for Zambia requires in part that the natural resources were managed and utilized in a sustainable manner. In this regard EE had a crucial role to play. The study had revealed that despite challenges facing EE providers, there had been an active participation of both the public and the government even Non- governmental Organizations.

In conclusion, the education approach of providing EE being taken by ECZ was effective and holistic. It took into consideration EE activities for learners from both the formal and non-formal sector. Posters and magazines were displayed in public places including buses. People do participate in public hearings in preparation for EIAs and debate environmental issues critically. In general, having assessed EE activities being provided by institutions, the future of EE in Zambia could be said to be bright. Institutions were doing their best to raise environmental awareness. The system and guidelines were already in place such as; the integration of EE in the school curriculum by CDC while Non Governmental Organizations such as CLZ and WWF had identified approaches of directly working with communities in addressing their environmental problems. In addition, ECZ gives legal guidelines to ensure that all developmental projects do not lead to degradation of the environment the fact which have of late become appreciated by the public through attending EIA meetings conducted by ECZ.

## **6.2 RECOMMENDATIONS**

In order to have effective provision of EE activities in Zambia the following steps and recommendation may have to be taken into consideration:-

1. A National Policy on the Environment should be enacted so that it provides a baseline for institutions providing EE activities in Zambia. It would give the institutions guidelines mandate to produce reports on their EE activities and further evaluate and monitor their EE activities.
2. Subjects such as Geography, Environmental Science and Social Studies which play an important role in raising environmental awareness should have a

compulsory component in their examination whereby a section in the examination be allocated for questions on EE issues. This would encourage teachers to change their attitude towards EE as an important concept in safe guiding the environment. Teachers need to go for refresher courses especially on the integration of EE in the curriculum.

3. ECZ being an institution mandated by the law for Environmental Protection and Pollution Control, should be sending EE documentaries and reports to public libraries and learning institutions to avail the public on information about environmental issues.
4. Environmental Education institutions should find ways of sustaining their EE activities by raising addition funds for their operations rather than depending on donors. Efforts by WECSZ of fundraising ventures (Parks and Bird Sanctuary) should be encouraged.
5. EE institutions should encourage conservation approach through the participation of the public (stakeholders) in designing contents of the curriculum than preservation approach of '*don'ts*' in the use of natural resources and the environment. An example of this is where people are prohibited from activities such as cutting down trees, killing animals without assisting them on alternative means of survival. This can be achieved by coming up with Community Based Natural Resource Management (CBNRM) and encourage as many people as it could be to be involved in managing natural resources.
6. The area of coverage by EE institutions need to be reduced to manageable sizes and the number of learners too. As the findings indicated, CLZ and WECSZ had

areas far more than their financial and personnel capacity could handle while teachers had many pupils to supervise for fieldwork hence reduced contacts with learners.

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**APPENDIX A**

**THE UNIVERSITY OF ZAMBIA**  
**SCHOOL OF EDUCATION**  
**DEPARTMENT OF LANGUAGE AND SOCIAL SCIENCE EDUCATION**

**Title of Research :Evaluation of Environmental Education Activities in Selected Institutions of Zambia**

**QUESTIONNAIRE FOR LEARNERS OF ENVIRONMENTAL EDUCATION**

You have been selected to participate in the research in which we wish to obtain an understanding of current practice of environmental education in your institution. Your responses will help the researcher to suggest to the providers of Environmental Education (EE) and their institutions to effectively provide EE programs. There is no right or wrong answer, therefore feel free to answer the questions.

**SECTION A: INFORMATION ABOUT THE INSTITUTION**

*Instruction: Please , answer by ticking and filling in the spaces provided.*

1.Name of Institution.....

2.Province..... District.....

3.Type of learner(specify).....

**SECTION B: PERSONAL INFORMATION**

4. Gender Male [ ] Female [ ]

5. How long have you been involved in learning environmental education at this Institution? ..... years

6.What do you understand by the term environment ?

7. How often do you participate in EE activities?  
Once a week [ ] Twice a week [ ] Others (specify).....

8. Mention environmental issues which you have been taught by providers of EE about your area.

9. What language/s do they use in teaching you?

.....  
.....

10. Are you involved in the planning for the learning activities?

Yes [ ] No [ ]

11.If yes ,Please explain how you are involved.....

.....  
.....

12.What type of environmental activities do you participate in your area ?

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

13. Are you happy with the environmental education knowledge being provided by your institution?

Very happy [ ] Happy [ ] Not Happy [ ]

If Not happy, please, give reasons

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

14. What problems (if any) do you face from the Providers of EE activities at your institution?

.....  
.....

15. Suggest how the provision of EE activities could be improved within your institution.

.....  
.....

**END OF INTERVIEW**

***THANK YOU FOR YOUR COOPERATION***

**APPENDIX. B**

University of Zambia  
School Of Education  
Department Of Languages and Social Science of Education

**QUESTIONNAIRE FOR PROVIDERS OF ENVIRONMENTAL  
EDUCATION**

**Date**...../......./2007

**Name**.....

**Position**.....

I am Adrian Phiri a Post-graduate student conducting a research on Environmental Education Activities performed in your institution. This is purely an academic research for the partial fulfillment of a masters' degree programme in Environmental Education. You have been selected to give information on behalf of your institution. You are kindly requested answer the questionnaire. Note that your response will be treated as confidential information.

**SECTION A: Personal Information.**

*Instructions answer by ticking or filling in the spaces provided*

1. Sex: Male ( ) Female ( )

2. Occupation:.....

3. How long have been working in this institution?

0-5 ( )

5-10 ( )

10-15( )

15+( )

4. Age: 25-29 [ ] 30-34 [ ] 35-39 [ ] 40-44 [ ] 45-49 [ ] 50+ [ ]

5. Educational Level: College certificate/ [ ] Diploma [ ] University Degree [ ]

**SECTION B: Historical Background of the Institution.**

*In this section you are required to give the historical background of your institution.*

6. When was the institution established? .....and where.....

7. Who are the sponsors of the institution?.....

8. When was the institution established in Zambia? .....
9. In which areas in Zambia do you provide environmental education activities?  
.....
10. What is the composition of the staffing involved in environmental education? **Give figures.**
- (a) Qualified environmentalists ..... qualification.....
- (b) Unqualified environmentalists.....
- (c) Others specify.....
11. Does your institution coordinate with other EE providers? Yes [ ] No [ ]
12. If yes, name the institution/s
- (i).....(ii).....
- (iii).....(iv).....

**SECTION C: Information about Environmental Education Activities Offered.**  
*This section is about the provision of environmental education activities by the institution offer .*

13. What environmental education activities does the institution offer to the public?
- (a) Public awareness campaigns [ ]
- (b) Sensitization of adults [ ]
- (c) Posters [ ]
- (d) Magazines and articles [ ]
- (e) Others specify.....
14. Who are your target population?
- (a) School pupils [ ] (b) college /university students [ ] (c) the general public [ ]
- (d) rural communities [ ] (e) residents of urban residential areas [ ]
- (f) Others specify.....
15. Who designs the EE activities in your institution?  
.....
16. Do you involve the participation of the community in the designing of your EE activities? Yes [ ] No [ ]
17. What is the medium of communication do you use in delivering EE activities?
- (a) English only [ ] (b) local languages [ ] (c) Both languages [ ]
18. How is the response from the public concerning the activities offered?
- (a) Very good [ ] (b) Good [ ] (c) Poor [ ] (d) Negative [ ]

Give reasons for the answer given on Question 9.

.....  
.....

19. What are the positive achievements have your institution attained so far?

.....  
.....

20. What are the challenges facing your institution in providing environmental education activities?

- (a) Lack of environmental policy [ ]
- (b) Lack of adequate resources. [ ]
- (c) Lack of skilled manpower in environmental education [ ]
- (d) others specify.....

21. What is the institution doing to address the challenges stated in question 10?

.....  
.....

22. What are the prospects of environmental education activities in your institution ?

- (a) Bright [ ]
- (b) average [ ]
- (c) poor [ ]

23. What must be done to improve the effectiveness of environmental education activities in your institution?

.....  
.....

**SECTION D: Environmental policy and environmental education curriculum.**  
*This section is about the role of the environmental policy and the curriculum in the provision of environmental education activities.*

24. Does your institution have an environmental policy?

- Yes [ ]
- No [ ]

25. If yes, indicate the statement of the policy

.....  
.....

26. Has the policy been adapted to national and/or local environmental issues?

- Yes [ ]
- No [ ]

Explain the answer.

.....  
.....

27. What environmental issues does the policy cover?

- (a) Pollution
- (b) Deforestation
- (c) Conservation of the natural resources
- (d) Sanitation and waste management
- {d}Others specify.....

28. How does the environmental policy affect the provision of environmental education to

the public?

.....  
.....

29. How often do you evaluate you EE activities?

- (a) Every 6 months [ ] (b) annually [ ] (c) After 2 years [ ]  
(d) Others specify.....

30. How do you do your evaluation?

.....  
.....

31. May you avail a copy of the latest Evaluation Report?

**THE END OF THE INTERVIEW**  
**THANK YOU VERY MUCH FOR YOUR COOPERATION**

APPENDIX C



**LOCALISED CURRICULUM SYLLABI FOR BASIC EDUCATION COURSE**

**GRADES: 1-9**  
**NOVEMBER 2006**

**MUMBWA DISTRICT**

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## PREFACE

Basic Education in Zambia has been reviewed up to the Middle Basic school level being grades: 1-7. This education reform is intended to reach upper basic and high school Grades: 8-9 and 10-12 respectively. The reform emanated from our National policy of Education "Educating Our Future" (May-1996), which set the stage for the intended review. The purpose of the reform was to use the Ministry's resources more efficiently in order to improve access to Basic Education and fulfill the Ministry's vision and National aspiration of providing **"Quality Basic Education to all Learners in Zambia"**.

In line with this policy, there have been changes in the Education system. In particular, the new reforms focus on the following:

- **Decentralization of the Education sector,**
- **Establishment of Education boards**
- **Community participation in developing their own localized curriculum**
- **Development of a curriculum relevant and life sustaining to its citizens**
- **A curriculum locally contextualized, hands-on; relevant to problem solving and realistic to the Zambian culture**

The reform moved from the Basic School Sub Sector Programme (BESSIP) under which was the Basic School curriculum Development component (BSCDC) whose major task was to carry out the review of the curriculum working with other relevant stakeholders in the Ministry and outside the Ministry. The Ministry of Education in its Decentralization policy aims at working with other interested parties at Community and National levels. It is believed that this will bring about co-operate responsibility in planning, Designing, development and implementation of the Curriculum at local levels relevant to local, Community and further to National developmental needs. The document we see today therefore was developed by the collaborative efforts of the Local Community Members, School Teachers and their Learners in Mumbwa District. These worked with Curriculum specialists under Community Studies from the Moe-Curriculum Development Centre and their Co-operating partners from WWF-children nature and the Environment project. This document is derived from the three preceding documents of the Ministry of Education; being the "Basic School curriculum Framework of (2000)", the "Teacher's Curriculum manual (2001)" and "The Guidelines to the Localized Curriculum (2005)".

The syllabi addresses lifelong Education that can help a learner or any end user Live a sustainable life. It covers activities that give the people of in the different communities their economic, social, political and Cultural values. The activities therefore are meant to empower our learners to live a sustainable life during and after their Basic Education in and outside that area. It also gives them chance to acquire pre-vocational skills, knowledge and attitudes to use in their future skills development and training. The syllabi are therefore based on survival skills, knowledge and positive attitudes aimed at giving our learners learning

experiences that will call on their analytical reasoning, problem solving, and promotion of an Entrepreneurship culture within our cultural heritage that will help each individual to eradicate poverty. It has also integrated several concepts of national concern which cannot be taught independently such as Gender, Population Education, Environmental Education, Health Education and HIV /AIDS.

It is therefore envisaged that this course will make our learners become; motivated in different ways and means of solving their immediate challenges/problems in life. It will also empower them with skills, knowledge and positive attitudes realistic and relevant to their immediate life. The experiences gained will make them become productive citizens; self-reliant; practical and able to apply hands-on approaches wherever in life. Finally but not the least, this education will build in them a sense of belonging that will make them become aware of their space and value in society.

The activities in these syllabi are therefore directly focused on **“Poverty Alleviation”** which is the root cause of most Environmental problems in Zambia to-day. The empowerment of individual learners with various skills, knowledge and positive attitudes in these selected areas drawn from their local environment; will lead to their **“Sustainable Care for the Environment and most of all sustainable living”**. I now take this opportunity to thank our co-operating partners the World Wide Fund for Nature (**WWF**) who funded and worked in collaboration with the Curriculum Development Centre and the Communities in the following Basic and Community schools: Banakaila, Chisenga; Chunga; Chungu; Kalunzyu; Kan’gomba; Lukanga ; Mapooko; Nalusanga and Nakonjoli under Mumbwa District Education Board in Mumbwa District to come up with this document of their Localised Curriculum in (November, 2006). It is my sincere hope that the syllabi will go a long way in improve the learning and livelihood of the learners and their communities where it will be implemented.

E. L.Kapulu  
Permanent Secretary

**MINISTRY OF EDUCATION**

## **APPENDIX. D**

### **A SUMMARY OF CONSERVATION LOWER ZAMBEZ LOCALISED CURRICULUM FOR THE ENVIRONMENTAL EDUCATION PROGRAMME: NZOU EE CENTRE**

#### **The Vision**

To develop collaborative and sustainable basis for understating environmental issues and approaches and initiatives so as to encourage school and community participation for better management of their local natural recourses

#### **Motto**

Educating the youth of today for a better tomorrow.

#### **Background**

The localized curriculum was presented with collaborative effort and broad based consultation from several stakeholders within and outside the ecosystem. These included teachers, chiefs, headmen and women, tour operators CLZ staff, ordinary community members in the project area (Chongwe, Rufunsa, Chiawa and Luangwa) and staff from (MOE) CDC.

The purpose of the localized curriculum as part of the national curriculum is to enhance the relevance of the curriculum to individual and community needs. Parents, learners and local community should feel that formal education is strongly linked to their day to day life activities. Further, localized curriculum is about developing the kind of teaching and learning and assessment that will benefit the community.

#### **Contents/ objectives of the localized curriculum.**

- Child centred learning activities
- Provide opportunities to learners for problem solving approaches to environmental issues.
- Participatory type of education availing a curricular that responds to environment in planning and implementation of activities suited for Zambian environment.
- Allows considerations of EE issues, causes, risks and expected solutions to practice theory in Zambian context. It is a community based and centered on the need of learners, that is, reflects the true and realistic Zambia social cultural, economic and political situation.
- Use learners life expectations in their learning process to incorporate as much as possible Zambia's environmental issues, risks in problem identified areas. Hence, become responsive to Zambian environmental situation and especially own community environmental needs and concerns.

## **TOPICS IN THE LOCALIZED CURRICULUM**

### **Topic.1**

The People of the Lower Zambezi National Park (Goba people)

- Culture(definition and acting out the roles)
- Tradition (by definition and demonstrations, songs and dance
- Care for the environment (Traditional ceremonies that commemorate the environment.

### **Topic.2**

Different wildlife managers in the LZNP

- Community Resource Base(CRB), Village Area Groups (VAGs)
- Zambia Wildlife Authority (ZAWA)
- Tour Operators and other NGOs

### **Topic.3**

Roles of wildlife Managers

### **Topic.4**

The habitats of the Lower Zambezi National Park

### **Topic.5**

The conflicting Recourses of Lower Zambezi

- Conservation and protection of fish, forest and wildlife

### **Topic.6**

Health and Sanitation

- Malaria, HIV/AIDS



# CHONGOLOLO AND CONSERVATION

## CLUBS OF ZAMBIA CCCZ

P.O. BOX 30255, LUSAKA, ZAMBIA. Tel/Fax: 260-01-251630.  
E-mail: WCSZ@Zamnet.zm, Web site: wesz.org.zm



Dear Clubleader,

We thank you for your effort and time to register/renew your club with us. We wish you all the best in all your endeavours this year. As you affiliate your club with us, we request that you cross whether your club is new or old, or whether it is a Chongololo or Conservation club.

From grade 1-7, you register your club as a Chongololo club. From grade 8-12 your club should be registered as a Conservation Club. In cases where your school is a basic school, two clubs should be registered: A Chongololo club from grade 1-7 and a Conservation Club from grade 8-9. Where clubs exist in churches, communities or any other conservation groups, clubs with members 12 years and below are Chongololo Clubs while clubs with members 13 years and above are Conservation Clubs.  
Thank you.

Clubleaders use only

We would like to register/renew our old/new Chongololo/Conservation Club (Cross as necessary) and agree to abide by the terms and conditions detailed overleaf.

New club  Old Club  Chongololo Club  Conservation Club

Please find enclosed our Fee of K6,000 for one year.

1. NAME OF CLUB Chongololo Club DATE 27th FEBRUARY  
CLUBLEADER'S NAME MS. G.M. BWALIA SIGNATURE [Signature]  
POSTAL ADDRESS 30117 LUSAKA CIVILS BASIC SCHOOL  
TELEPHONE NUMBER \_\_\_\_\_ NUMBER OF MEMBERS THIRTY  
PROVINCE LUSAKA DISTRICT LUSAKA

### 2. PROJECTS CARRIED OUT IN THE IMMEDIATE PAST:

- (A) TOUR TO WANDA-WANGA GARDENS
- (B) AN EDUCATION TOUR TO KALIMBA FARMS
- (C) \_\_\_\_\_

### 3. PROJECTS PLANNED (present or near future) AND RELEVANT COMMENT:

- (A) TREE-PLANTING WITHIN THE SCHOOL
- (B) NAPLE MANAGEMENT CAMPAIGN WITHIN THE SCHOOL
- (C) TOUR TO LIVINGSTONE ISIAVUNGA FOR PROMOTION OF NATURAL RESOURCE

Received by M. M. M. M. M. Office use only: Receipt Number 17598

Registration Number 1511/2007 Membership Card Number 251

ORIGINAL: TO THE NATIONAL OFFICE.  
DUPLICATE: RETAIN FOR CLUB REFERENCE.

APPENDIX F

MFA EAST BASIC SCHOOL CHONGOLOLO CLUB REPORT  
TERM 1, 2006

Successes

- ① The club has planted trees and grass at the school.
- ② The club has an organic garden at the school.
- ③ The club advised the School Production Unit to crop-rotate, inter-crop and use non-tillage and semi-tillage at school. And it complied.

Challenges

- ① The goats and pigs in the neighboring villages are on free-range. They destroy and disturb the club's projects e.g. gardening etc.
- ② The club lacks computers and internet access to collect more information on conservation activities.

Way forward

- ① The club looks forward to educate Headmen on the importance of not letting the goats and pigs into the school area.
- ② To have a computer and be connected to internet.
- ③ To promote Chongololo Club membership among schools in the district.

## WISDOM MUTALE INDIVIDUAL REPORT JUNE 2006

### Successes

- ① I applied non-tillage and semi-tillage for the first time in my maize field and the harvesting is impressive.
- ② I have an organic garden at my home.
- ③ I use agroforestry methods of coppicing, pollarding and coppicing in my maize field.
- ④ I have paid membership fee for the School Conservation Club and other two schools namely Chikubi and Mutampulca Basic School.

### Challenges

- ① Goats and pigs destroy and disturb my maize stock and garden because they are on free-range.
- ② How to involve the community in conservation activities such as not disturbing nesting birds, use of conservation farming methods.
- ③ Forming a Chipembete Club.

### Way forward

- ① Dialogue with Headmen over the goats and pigs.
- ② Involve the community in conservation activities.
- ③ Form a Chipembete Club.

**APPENDIX G**

**Chongololo and Conservation Club leaders Workshop**

**Workshop Evaluation Form**

Name of School:		Name of club:	
Address:			
District:		Province:	
Name of Clubleader:		Number of registered club Members:	
We meet on:		Number of active Club Members:	
From:	hrs to	hrs	Place:
Regular:	Yes/No	weekly/every two weeks/ every three weeks/ every four weeks	

1. Have you ever attended a Chongololo and Conservation Club leaders meeting before ?  
Yes/No

2. How much do you know about the Chongololo and Conservation Clubs Programme of Zambia?

Nothing	Almost nothing	A little	Adequate knowledge	Extensive knowledge
1	2	3	4	5

3. How much do you know about wildlife Environmental Conservation National Office?

Nothing	Almost nothing	A little	Adequate knowledge	Extensive knowledge
1	2	3	4	5

4. What did you like about this meeting?

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---

5. What did you not like about this meeting?

---



---

6. What do you intend to do after the meeting?

---



---

7. I feel that in future the organizers should...

---



---

8. How did you find this meeting?

Very unsatisfactory	Reasonably satisfactory	Just adequate	Very good	Excellent
1	2	3	4	5

9. Any other comments

---



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