

**RHODES UNIVERSITY**

**DEPARTMENT OF EDUCATION**

AN INVESTIGATION OF TEACHERS', LEARNERS' AND PARENTS' UNDERSTANDING AND PERCEPTIONS OF A *WHOLE SCHOOL APPROACH* TO ENVIRONMENTAL LEARNING IN SELECTED SCHOOLS IN THE OSHANA REGION, NAMIBIA

Submitted by

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In partial fulfillment of the requirements for the degree of

MASTER OF EDUCATION

(General Education Theory and Practice)

**September 2009**

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## ABSTRACT

This study sought to investigate teacher, learner and parental perceptions and understanding of *a whole school approach* in environmental education (EE). There were five schools piloting environmental education through a whole school development approach in the Oshana Region of Namibia. The study was conducted in two rural schools in the Oshana Region. The schools were selected because they participated and piloted the infusion of environmental education themes in the curriculum through the whole school approach during the Supporting Environmental Education in Namibia (SEEN) project piloting phase from 2001 to 2005.

This study was shaped and informed by international theories, practices and perspectives of *a whole school approach* as cited in chapter two of this study. In other words *a whole school approach* has provided theoretical background information and a practical framework on which this study was built. *A whole school approach* provides a theoretical understanding of how the school community, the biophysical environment, as well as the curriculum can benefit from EE projects through a whole school development approach. The whole school approach, discussed in this study, provides an opportunity to see the link between the whole school approach and ESD in order to understand the role *a whole school approach* plays in the implementation of ESD in Namibia.

The research took the form of an interpretive case study focusing on a study of two teachers, two learners, and two members of the community. Data were collected through semi-structured interviews, document analysis and site observations. This study was undertaken two years later after the Supporting Environmental Education Namibia (SEEN) pilot project phased out.

The findings indicate that despite the training and support received by the schools during the operation of the Supporting Environmental Education Namibia (SEEN) pilot project, schools are still experiencing problems with the application of *a whole school approach*. The findings revealed that the curriculum should provide guidelines and examples to support teachers on how to integrate environmental education in the teaching and learning process. The results of the study indicate that teachers, learners and members of the community have a limited understanding about how a whole school development approach in environmental education is linked to Education Sustainable Development (ESD) and the four dimensions of the environment.

## **ACKNOWLEDGEMENTS**

If it were not for the contributions from other people, I would not have completed this study. My first and warmest gratitude goes to my supervisor, Ms. Ursula van Harmelen, for her unwavering support and guidance.

My special thanks also goes to the participating teachers, the learners and the members of the community in this study. I thank them for their time as well as for generously allowing me onto their school premises to conduct project assessments. The three teachers always availed themselves and their classes to me for the entire data collection period. I would also like to thank other people who directly or indirectly contributed to the success of this study, including my class mates Martin Namutenya, Ndiyakupi Avia, Alina Angula as well as my colleagues from our regional advisory services, especially Hilda Mathews from the Mathematics and Science Department.

My deepest appreciation goes to my wife Faustina and my six children, Ndapandula, Nakwenye, Mweneni, Tumanitha, Kaunandjola, and Tulimeyolyomwa, for their love, support, and patience throughout the past two years. Finally, I thank God the Almighty who gave me the strength and courage to complete this project.

## ACRONYMS USED IN THIS STUDY

CS	Combined School
EE	Environmental Education
EL	Environmental Learning
EFS	Education for Sustainability
ENSI	Environment and School Initiatives
ESD	Education for Sustainable Development
MBEC:	Ministry of Basic Education and Culture
MEC:	Ministry of Education and Culture
MOE:	Ministry of Education
NEEC	Namibian Environmental Education Certificate Course
NEEN	National Environmental Education Network
NDP 1	National Development Plan 1
NEPAD	New Partnership for Africa's Development
NIED:	National Institute for Educational Development
SADC	Southern Africa Development Community
SDP	School Development Plan
SEEN	Supporting Environmental Education in Namibia Project
PIRLS:	Progress in International Reading Literacy Study
UNCED:	United Nations for Environment and Education Development
UNDESD	United Nations Decade of Education <i>for</i> Sustainable Development
UNESCO:	United Nations Educational, Scientific and Cultural Organization
USA:	United States of America

## DECLARATION

I, Onesmus Nashilongo, hereby declare that the investigation of teachers', learners' and parental understanding and perceptions of *A Whole School Approach* in environmental learning in selected SEEN pilot schools is my own work, and that it has not been submitted for any degree or examination at any other university.

Signed : \_\_\_\_\_

Date: \_\_\_\_\_

# CHAPTER 1

## INTRODUCTION

*As we move towards the twenty-first century, the great challenge of our time is to create ecologically sustainable communities, communities in which we can satisfy our needs and aspirations without diminishing the chances of the future generations. For this task, we can learn valuable lessons from the study of ecosystems. To understand these lessons, we must learn the basic principles of ecology. We need to become ecologically literate and the best place to acquire ecologically literacy is the school garden. (Cara, 1997 cited in Janet, 2005: 297).*

### 1.1 INTRODUCTION

The above extract from Janet served to locate this study. In the first instance it located the study in the school and its immediate environs identifying it as a locus of learning that provided possibilities for environmental learning. Second, it identified a specific focus for the nature and role of the sort of environmental learning that is deemed to be desirable; that is in the context of the current debate relating to sustainable practice as well as the conceptual framework of ecological literacy perceived as fundamental to the realization of sustainability. Finally, this short paragraph, as cited, relates to a strategy for developing an understanding of sustainable practices considered as being particularly accessible to schools. That strategy is one called *A Whole School Approach*. This approach is at the heart of this investigation.

The study revisits an environmental learning initiative that focused primarily on *a whole school approach* and seeks to investigate the perceptions and understanding of the key tenets embodied in this initiative by focusing on selected participants involved in the 2001-2004 project. My main interest in doing this research was to find out whether the conceptual framework and practices promoted by this environmental learning project have been realized through, not only a continuation of the initiatives introduced, but whether the participants were able to articulate the primary theoretical frameworks that underpinned the structural framework of the project. My primary reason for undertaking this research is to identify how in the Namibian educational context can and should continue to work towards realizing the national educational goals of ensuring a healthy and sustainable environment. This chapter serves to contextualize the study with regard to its primary focus as well as the research site.

## 1.2 CONTEXT OF THE STUDY

The primary focal areas of this study are, as indicated, the school environment as a locus for environmental learning as well as the concept of sustainability as underpinned by environmental literacy. Of particular importance, however, is the particular approach that is suggested to achieve the aims identified in terms of sustainable development. Through the context presented below, I identify a specific interpretation for environmental learning within international and the Namibian contexts in which the study is situated. The central concepts will, however, be examined in more detail in chapter two.

A number of forces converged over the past decades to create a broad international conviction that environmental education should be introduced into current school curricula. The goals included not only greater care for the environment but also extended to broader emancipating goals. Thus, for example, the Rio de Janeiro declaration, 1992 cited in Le Roux (2000:285), emphasized the need for environmental education to empower all people and promote “grassroots democratic change and participation”. This declaration further suggested that environmental education like any other education should help people develop an ethical awareness of the forms of life with which humans on this planet interact, respect all life cycles, and impose a limit on humans’ exploitation of other forms of life (Le Roux; 2000:285).

Huckle, as cited in Palmer (1998), identified nine components that education for the environment should contain. One of these nine components is the involvement of pupils in real environmental education issues. Huckle suggested that pupils should be encouraged to identify for themselves practical ways in which they can work for a more sustainable relationship with the natural environment. He explained that this would require schools to be fully integrated in the life of the community and for them to engage in projects, which promote sustainability. According to Huckle, teachers should teach, “in the spirit of optimism, build successful examples of sustainable development into the curriculum, and develop awareness of sources of hope in the society” (Palmer, 1998:136-139).

The emergence in the late ‘90s of the idea of advocating *a whole school approach* to introducing environmental education was seen as a significant approach to achieving both the ideals embedded in sustainable development and those of learner participation in the learning process. In 1999 Posh argued

that *a whole school approach* integrates pedagogy with the social, organizational, technical and economic aspects of school practice (Posch 1999 as cited in Shallcross, n.d). It was a comprehensive and integrating strategy towards EE within the curriculum and its place in the school. “A *Whole-school approach* implies that the concern shown for environmental problems in the formal curriculum are, whenever possible, reflected in day-to-day practice in a school’s nonformal curriculum. In this way values and attitudes advocated in the classroom become habituated in the daily actions of teachers, pupils, and support staff. Thus, schools practice what they teach, values are reinforced in actions and consequently caught, rather than taught” (Shallcross, n.d).

More recently and not unexpectedly, *a whole school approach* to environmental education was adopted as one of the preferred strategies being advocated to promote Education for Sustainable Development. Henderson and Tilbury (2004:5) argued that *a whole school approach* to sustainability has an important contribution to make in shifting communities towards sustainability. They suggested further that creating a sustainable school is the focus of learning in the community. *A whole school approach* involves all stakeholders in contributing to, but also gaining from, “a partnership approach to education for sustainability” (Henderson & Tilbury, 2004:6). The authors further pointed out that these approaches to school development have been in response to global calls for the need to rectify the management and practice of formal education in order to contribute to the move to “address inequalities and build a better world” (Henderson & Tilbury, 2004:23). Whole school approaches to sustainability incorporate all elements of school life such as school governance, pedagogical approaches, curriculum, management, school operations, grounds, and working in partnership with the local community (Henderson & Tilbury, 2004: 9).

Referring to the Namibian context, Murray argued that *a whole school approach* to environmental learning is seen as important because the school can model the principles of democracy, equity, access, participation and cooperation embedded in the Namibian constitution (Murray, 2005a). *As a whole school approach* is participatory in nature, it is seen to provide an opportunity for Namibia to infuse environmental education into the curriculum. *A whole school approach* to environmental learning has the following features. For example, learners are actively involved in learning about the environment and through this it is claimed they are provided with an opportunity to become aware, passionate and enthusiastic about their own environment. In *a whole school approach* the school environment is used as an ongoing educational tool and resource for both teaching and learning sustainable principles. It is further claimed that through this

approach teachers develop new pedagogical knowledge and skills. *A whole school approach* is also seen as providing the opportunity for parental involvement in taking on sustainability practices at home and actively taking part in many aspects of the school's sustainable development programmes. (Gough & Gough,n.d.).

### **1.2.1 Introducing EE into the Namibian Curriculum**

This study intends to follow the SEEN project work done in the north central regions in Namibia. The study focuses on how teachers, learners and members of the community. at selected SEEN pilot schools, perceive and understand *a whole school approach* in environmental learning. I am to examine their views and perceptions of the environmental education activities in order to gain greater clarity on its implementation in order to strengthen the adoption of *a whole school approach*. The two schools where the research was conducted were both located in a rural area of the region. These schools were selected on the basis that they were among the five (SEEN) project's environmental education pilot schools where the project modeled the application of *a whole school approach*. Both of the schools I selected are combined schools. A combined school in the Namibian context refers to a school that offers both primary and junior phase. This means the school offers grade 1 through grade 10).

In 2005, the Namibian national curriculum was revised to bring it in line with Vision 2030. This projected vision statement is a developmental vision for Namibia in the context of sustainable development and links environmental education to Education for Sustainable Development (ESD). The central aspect of Vision 2030 is recognition of the importance of environmental education in the national curriculum in the context of ESD. This implies that by 2030, every Namibian will be environmentally literate and live a sustainable life (Namibia. National Planning Commission, 2004). This is seen as important because of the emphasis given to *a whole school approach* in the context of ESD. This study is the first investigation into the whole school approach since its introduction in 2002.

### 1.3 RESEARCH SITE

I conducted this study in two combined schools in the Oshana region. Geographically, Oshana is situated in the north central region of Namibia. As is shown in Figure 1, the Oshana region (number 11) is the smallest of the thirteen regions in Namibia.

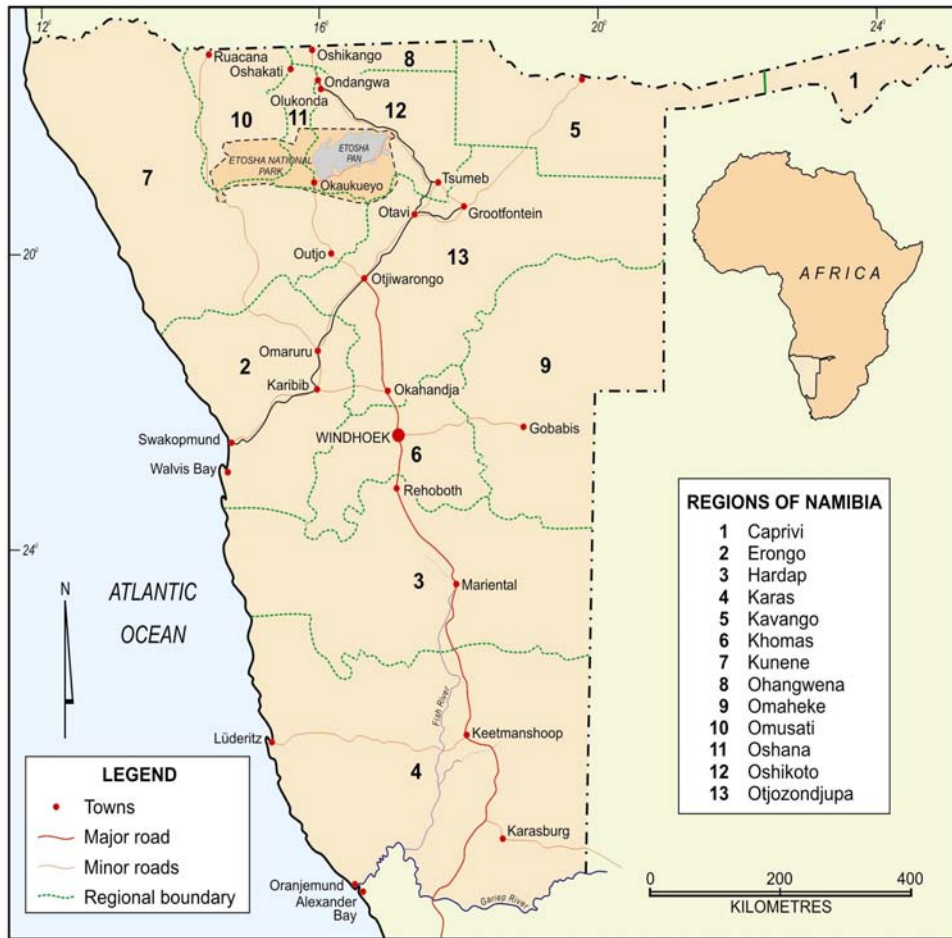


Figure 1: Map of regions of Namibia (Namibia. National Planning Commission, 2005)

Oshana Region is divided into ten constituencies as shown in figure 2 below.

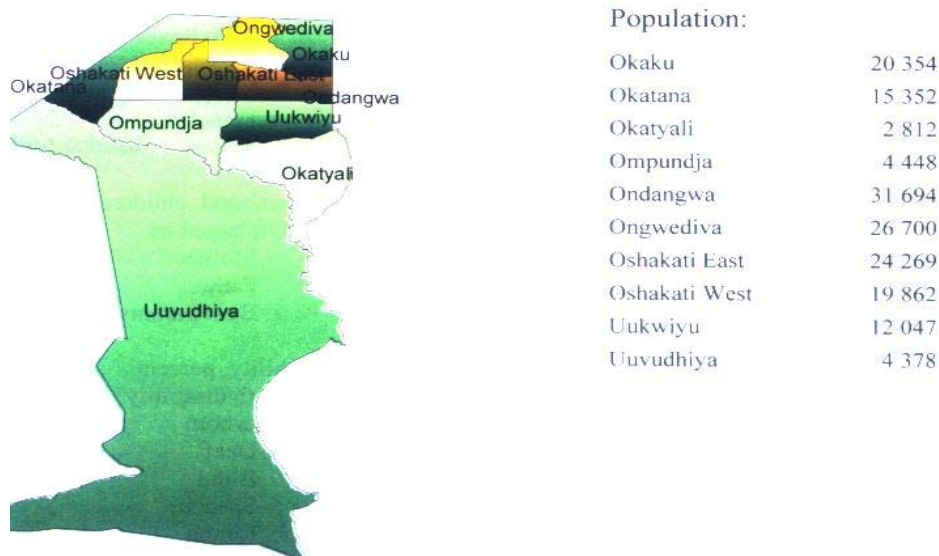


Figure 2: Map shows 10 constituencies in Oshana Region (Namibia. National Planning Commission, 2005)

According to the 2001 Namibian population and housing census, the Oshana region is home to 8.9% of Namibia's population or a total of 161 916 people who live in this region (Namibia. National Planning Commission, 2005). Fifty four percent of people living in Oshana Region are females and forty percent are males. This report indicates that sixty nine percent of people in Oshana Region live in rural areas. Only thirty one percent of the region's population lives in an urban area.

The name Oshana is derived from the Oshiwambo word "Oshana" which means a pan (a natural shallow sink or hollowed place in the ground, usually filled with rainwater or mud). This name describes its landscape features, which are flat, shallow and seasonally flooded with water mostly running from the neighbouring country Angola. The region's climate is characterized by high average temperatures ranging from 26.1°C in summer to 17.5° C in winter. The greatest problem is the low rainfall, which although higher than most areas in Namibia averages 99mm per annum. The region is a summer rainfall area with rain occurring between the months of October and April (Cunningham, Kinahan, March, Williams, Hubbard, Kreike & Seely,1992). The region contends with huge environmental problems and challenges such as depletion of natural resources caused by population pressure, poor farming practices and

deforestation, all of which lead to increased levels of poverty. Like the other three northern central regions e.g. Ohangwena, Omusati and Oshikoto, this region is affected by a major period of flooding “Efundja” which occurs when good rains fall over the neighbouring country Angola. These floods have a negative impact on socio-economic factors and development in this region. For example, flooding destroys the *Omahangu* fields (the staple food of the area), road infrastructure and other developmental projects such as household and business buildings. Other issues, which have an impact on the environment, are high levels of unemployment in the urban areas, the health risks related to HIV, AIDS, and malaria. Fifty percent of the people living in rural areas are still practicing traditional communal and subsistence farming which means that they rely mainly on both livestock and crop farming products such as *omahangu*, sorghum and maize for economic survival. This kind of farming system is dependent on the use of natural resources such as water, soil for cultivation, wood for fire, energy and building materials. Poor farming practices or methods puts natural resources under a lot of pressure. Education in this region is provided by a satellite campus of the University of Namibia (UNAM); there is a College of Education for the training of teachers, a Vocational Training College, a campus of Polytechnic of Namibia and a UNAM Faculty of Engineering and Technology campus. The region has 130 schools with 1797 teachers and a teacher to learner ratio of 1:35.

#### **1.4 RESEARCH QUESTIONS**

The goal of this research was to investigate teacher, learner and parental understanding and perceptions of *a whole school approach* in environmental education in the SEEN pilot schools and also to explore how this approach has informed teachers’ understanding and perceptions of the infusion of environmental education in the teaching and learning process. In order to realize these goals, my investigations were focused on:

- Teachers, learners and parental understanding of the application of EE and the whole school development approach.
- Teachers, learners and parental views and experiences with the whole school approach to the integration of environmental education themes into their school calendar of activities.
- The role and benefits of a whole school development approach to teachers, learners, members of the community and the biophysical environment in particular.
- The use and understanding of the environmental education project activities as a learning resource for both teachers and learners.

It is intended in the above that the examination of their understanding, views and experiences with the curriculum consequences would also be explored.

## 1.5 STRUCTURE OF THE THESIS

The thesis is divided into six chapters. Chapter 1 introduces the study. It describes the sites and discusses the context of the research. It also gives a brief account of the research question in relation to the goals of the research. I conclude this chapter by providing a brief overview of each chapter.

Chapter 2 discusses an overview of Education for Sustainable Development (ESD) and its role in providing a theoretical and methodological framework for the adoption of *a whole school approach* to environmental education (EE). I give an overview of how a *whole school approach* is linked to ESD and environmental education (EE) in particular. I follow with a history of EE in the Namibian context in both pre-independence and post independence in terms of policy formulation and curriculum development. Chapter 2 further outlines the fundamental theory of *a whole school approach* and the rationale for using it for sustainable development. This chapter is concluded with the discussion on how the literature shaped this research.

In chapter 3, I discuss my research design and the methodological framework as well as various data collection tools used such as the semi-structured interview, document analysis and site observation to investigate how schools apply *a whole school approach*.

Chapter 4 presents the findings collected from different data collection methods. The aim of this chapter is to respond to my research question.

Chapter 5 discusses the research findings that emerged from chapter four. It interprets, and provides in-depth data analysis and ascribes meaning to the findings.

In chapter 6, I present the conclusion of the study providing an overview of the main findings and a reflection on what prompted the research and why it was worthwhile to do it. It also gives an overview of the lessons learnt from the study and provides tentative suggestions of some issues that need to be addressed in the light of this research. In addition, I provide suggestions for future research in the area of environmental education/learning.

## **1.6 CONCLUSION**

This chapter introduces the study. It provides the research approach and discusses the research sites where the study was carried out. It describes the context of the study, poses the research question, and explains the structure of the thesis. This chapter provides the definitions of some of the concepts and terminologies commonly used in this study such as environmental learning and *a whole school approach* in the context of Namibia. It also sheds more light about the pre and post independent environmental education initiatives in Namibia in terms of policy formulation and introduction of EE in both formal and non-formal education sectors. In the next chapter, I review the literature related to my topic, namely the investigation of teachers', learners' and parents' understanding and perceptions of *a whole school approach* in environmental education.

## CHAPTER 2

### LITERATURE REVIEW

*...Learning is a process that takes place in a participatory framework, not in an individual mind. This means, among other things that it is mediated by the differences of perspective among the participants. It is the community, or at least those who participate in the learning context, who learn under this definition...* (Hacks cited in Van Rensburg & Lotz-Sisitka, 2000:21).

*...Without the mass-involvement of young people in caring for the environment there is no hope of sustainability...* (Shallcross, n.d.:4).

#### 2.1 INTRODUCTION

Namibia's national policy embraces the ideals of a safe, healthy and sustainable environment. (*Constitution of the Republic of Namibia, Article 95 Point, 1991* ) In achieving these ideals , however , national policy emphasises that the ideals of democracy, equity, access, participation and cooperation as the foundational tenets of the Namibian constitution must not be compromised.( *Constitution of the Republic of Namibia, 1991*) Current national educational policy for EE in the Namibian context is essentially based on the ideals of education for sustainable development (ESD) as interpreted and adopted by the world summit for ESD in 2002 held in Johannesburg (UNESCO, 2005:3). The view that environmental learning programs should aim to empower Namibians from all sectors to critically evaluate environmental information and options, to make informed decisions and take actions that will contribute to the goals of environmental and economic sustainability is at the heart of this policy (Murray, 2005: 10). Further to this, the policy supports the view that the curriculum content should explore local, sustainable solutions to social and ecological problems and argues for culturally situated, constructivist and experiential dimensions to the curriculum (Namibian. National Planning Commission, 2004).

Existing policies for education and environmental education emerged as a result of not only international thinking in and for environmental learning, but through the investigation of how best international developments in the field of EE could be related to the Namibian political, social, economic and biophysical environmental challenges. The primary task of the project, initiated by the Namibian

government and supported by IBIS, a Danish NGO, and SEEN, the Supporting Environmental Education in Namibia, was to identify, develop and implement appropriate strategies that would help to guide and inform policy revision ( Murray, 2005b).

As the SEEN project adopted the ideals of ESD as the primary theoretical perspective to frame the project development it is necessary in this chapter to analyse this concept and to provide a contextual framework for ESD. In tracing its development, from the earlier notion of 'sustainability', the main theoretical perspectives and conceptual framework is identified. This structural framework for ESD is considered later in the chapter in the context of how it was adopted and adapted by the SEEN project to meet Namibian aspirations for EE.

The second section of this chapter explores and examines ideas related to *a whole school approach*. This, in turn, is necessary as this particular approach became the vehicle used to drive the SEEN project. *A whole school approach* was the primary implementation strategy identified by the project for the implementation of ESD.

The analysis of the SEEN project that followed the earlier analyses sought to clarify the relationship that emerged between the two main conceptual frameworks, that of ESD and *A Whole School Approach*, and how these two concepts were developed into the SEEN project's vision for the implementation of EE in Namibia. This analysis highlighted key theoretical perspectives and features of the SEEN strategy. These key tenets formed the basis of this study as they informed my investigation into how my research participants articulated their understanding of the processes and procedures initiated by SEEN.

As the SEEN project did not develop in isolation, it was necessary to briefly examine the development of EE in Namibia prior to the introduction of the SEEN project and its analyses in this chapter. This provided a backdrop for understanding the developmental and structural dimensions of this project as these earlier projects and their achievements, as well as their challenges and problems, informed the development of the SEEN project. The history of EE initiatives prior to SEEN also provides a contextual background to frame my research participant's EE experiences

## 2.2 OVERVIEW OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Current environmental education approaches in Namibia are located within the context of Education for Sustainable Development (ESD) and are part of the Decade for Sustainable Development programme, therefore it is important to look at ESD in terms of its context and how it came about (Murray, 2005b). ‘Sustainable development’ is a contested term. In this section, I examined the distinction between sustainable development *per se* and Education for Sustainable Development by providing a brief overview and history of the term. Key to this however, is the question of how relevant ESD is in the context of the risks and challenges faced by Namibia.

The term environmental education emerged during the late 1960s and early 1970s, with various meanings attached to it. In an attempt to understand this range of meanings Lukas (1979) cited in (Jickling & Spork, 1998:314) suggested “that the arguments could be comprehended as falling into three main classes and the interpretations between those classes, for example, education *in* the environment, education *about* the environment and education *for* the environment”.

For Lukas, the “defining characteristic” for most environmentalists was the *‘for’* component, which is reflected in their concern to act in a way that would enhance or preserve the environment (Jickling & Spork 1998:314). Given the idea of education *for* the environment, Jickling and Spork (1998) claimed that for many environmental educators the emergence of the term education *for* the environment brought new life into the field of environmental education because it provided a tool for highlighting issues related to political and real-life dimensions of environmental issues.

Fien (1993) cited in Jickling & Spork (1998), contends that education *for* the environment seeks to address weaknesses of other approaches to environmental education. These perceived weaknesses were identified in terms of how this notion relates to EE *in* the environment and *about* the environment. It was held that EE *in* and *about* the environment serves the purpose of creating awareness about various dimensions of the environment. This, it was argued had little real effect on finding solutions to environmental issues and problems, while education *for* the environment promoted a proactive approach to solving and addressing environmental problems and issues (Fien, 1993). A further development in EE emerged because of the so-called Rio Summit (1992). This summit together with the Brundtland Report (World Commission on Environment Development [WCED],1987) popularized and deepened the term sustainable development

(SD) in contrast to the previously accepted term sustainable growth (UNESCO 2005). The Rio Summit in its Agenda 21 gave high priority to the role of education as essential in promoting the kind of development that would respect and take care of the natural environment (UNESCO, 2005).

Huckle (1991), before the Rio summit, had attempted to create a forum for the notion of SD being preferable to sustainable growth and, in line with the notion of education *for* the environment, identified components of education's link to SD. For example:

- Knowledge of the natural environment and its potential for human use. With this statement, he means environmental education should be based on a knowledge of major ecological systems, the process which sustains them, their carrying capacity and the vulnerability to human modification
- A sense of history and knowledge of the impact of changing social formations on the natural world. This, according to him, means that the study of environmental history should develop pupils' understanding of changing social formation and their use of nature. He further elaborates that pupils should understand how the transformation of nature allows social development, how human environments are socially constructed, and how social relations shape environmental relations.
- Involvement in real issues. To substantiate this statement, he explained that pupils should be encouraged to identify for themselves practical ways in which they can work for a more sustainable relationship with the natural world (Huckle, 1991: 31-32).

The World Commission on Environment and Development (WCED) 1987 report cited in Huckle (1991:29) defined the concept of sustainable development (SD) as follows:

- Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Sustainable development is a process in which the exploration of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations... (Huckle, 1991:29).

Despite the popularization of the concept of sustainable development (SD), it was not uniformly understood or accepted. Jickling in particular was skeptical about the direct link made between sustainable development and education. His argument was that sustainable development was a contested notion and to accept it uncritically in an educational context was “contrary to the spirit of education” (Jickling, 1992:7-8). By this,

he meant that leaving the notion of sustainable development unchallenged was tantamount to indoctrination. Therefore, he further critiques this notion by explaining that to talk of educating for sustainable development is more suggestive of an activity like training or the operation for achievement of some instrumental aim. This position according to him rests on several assumptions. For example, sustainable development is an uncontested concept and, secondly, education is a tool to be used for its advancement. Therefore, he declared that he would not want his children to be educated for sustainable development because the idea is inconsistent with the spirit of education. He then argued that in a rapidly changing world, we must enable children to debate, evaluate and judge for themselves the merits of contesting positions (Jickling, 1992).

The criticisms around the term sustainable development grew and in 2002, the Johannesburg Summit focused on strengthening and re-orienting the current views of sustainable development and introduced the terminology ESD (UNESCO, 2005:3).

According to Lotz-Sisitka (2006:11), “Education for Sustainable Development emerged as a “hybrid” concept, which amalgamates (merges) earlier environmental education roots with UNESCO priorities”. Therefore, according to her, UNESCO sees Education for Sustainable Development as a mechanism for adding focus and relevance to the policy framework and action programmes undertaken within the existing framework of Education for All. She further explains that UNESCO sees ESD as a means of enabling countries to achieve the Millennium Development Goals through education (Lotz-Sisitka, 2006:11). The concept ESD according to UNESCO (2005) is defined “as a life-wide and lifelong endeavor which challenges individuals, institutions and societies to view tomorrow as a day that belongs to all of us or it will not belong to anyone” (UNESCO, 2005:1-2). The UNESCO document (2005) explains that “the overall goal of the Decade for ESD” is to integrate the principles, values and practices of sustainable development into all aspects of learning to encourage changes in behavior that allow for a more sustainable and just society for all” (UNESCO, 2005:1-4).

The new definition of Education for Sustainable Development is important because:

...It promotes an improved access to basic education, reorienting the existing education programs at all levels to address sustainable development issues, developing public awareness and understanding of sustainability and providing training... (UNESCO, 2005:3).

To substantiate and understand the origin of the Education for Sustainable Development idea in Namibia, one should understand the process and the trends of the environment education debates in the SADC

Region as well as at the international level. Gough (2006) explained that within UNESCO's conception of Education for Sustainable Development, schools should implement approaches to teaching and learning that "integrate conservation goals, social justice, appropriate development and democracy in a vision and mission of it's personal and social change" (Gough, 2006:48-49).

For McKeon (2002), ESD is more than a knowledge base related to environment, economy and society. It addresses learning, skills, perspectives, values and issues. Because ESD involves studying local, and when appropriate, global issues, these five concepts must be all addressed in a formal curriculum that has been reoriented to address sustainability. The challenge for the community is to identify a knowledge base ESD curriculum that will support their sustainability goals (McKeon 2002:16). ESD mainly focuses on the major social, economic and environmental issues that threaten the sustainability of the planet. Understanding and addressing these issues are at the heart of ESD. To be successful in addressing environmental issues, ESD must go beyond teaching about global environmental challenges, risks and needs. ESD, through a whole school approach must equip people with practical skills that will enable them to address the challenges, reduce the risks, and work toward sustainable, productive lives. In order for the Namibian government to comply with ESD demands, Namibia has implemented certain Millennium 2030 goals such as ensuring environmental sustainability by integrating the principles of sustainable development into the country's policies and programmes with the aim of reversing the loss of environmental resources.

Values are also an integral part of ESD (McKeon 2002:21-22). Values are acquired in various ways in different community settings. For example, in some cultures, values are taught in schools. In other cultures however, values are modeled, explained, analysed or discussed. In ESD, values have different roles in the curriculum. However, values taught in school need not only to reflect the values of the society that surround the school, but also to examine them critically.

An analysis of ESD in relation to SD would seem to review the following differences between the two concepts:

- One of these differences was highlighted by Lotz-Sisitka (2006). While she recognizes ESD as a "hybrid" concept which amalgamates earlier views of EE, she sees ESD as providing a particular focus for achieving the millennium development goals indentified by UNESCO (2006) as central to addressing the challenges and issues facing the planet.

- To strengthen this view of ESD in relation to SD, is the emphasis of the role of ESD in addressing environmental challenges ( UNESCO, 2005:1-5). This means ESD is broader and more inclusive than SD.
- McKeon's (2002) view of ESD emphasizes the integration in an education context of a knowledge base that includes and gives equal value to concepts, skills and values. McKeon also emphasizes the need to incorporate a critical dimension when focusing on the areas linked to ESD.
- ESD also provides a clear acknowledgement of the independence that exists between the social, economic, political and biophysical domains of our world. Further, ESD emphasizes the need to relate EE to local as well as global issues, thus emphasizing the importance of EE as relevant and meaningful to a particular society or community.

These points revealed a shift from the previous view of SD as a developmental tool and refocused it to address the fundamental concerns that were identified in the context of SD. This section provides a broad overview of the nature and evolution of ESD. The analysis of ESD reveals that it is not necessarily linked to a particular subject or to a specific area of learning but, in fact; has a much wider connotation. In the next section I look at its application and importance in the context of *a whole-school approach*.

### **2.3 EE, ESD AND A WHOLE SCHOOL APPROACH**

Education for Sustainable Development (ESD) is a dynamic concept that encompasses a vision of education that “seeks to empower people of all ages to assume responsibility for creating a sustainable future” (Henderson & Tilbury (2004:7). A central idea within ESD is contained in this view of the empowerment of the entire community.

This section analyses *A Whole-School Approach* and how it is linked to EE and more particularly to ESD. There are two questions here. First, if schools are to adopt *A Whole School Approach*, then, it infers a participatory approach, which involves the whole school community, all of whom must have an understanding of the nature and the importance of environmental risks, needs and challenges that they face. The school and community must develop a sense of co-ownership and respect and need to make a link between school and the environment (Donald, Lazarus & Lolwana, 2002). Second, if schools are going to adopt a whole-school approach then they need to know something about the theory and thinking of whole school approaches and ESD. They need to see that it has a role to play in the school. They need to know why it could be important and how it links to policy. In other words, environmental learning in the context

of ESD needs to be seen as an integral dimension of the school management plan and the school development programme (Donald et al., 2002).

A further important aspect of a *whole school approach* in the ESD context is the notion of sustainable schools, and not only sustainable communities. By looking at the approach in this way, we are encouraging the idea of schools that are functioning, that are well managed and resourced appropriately because these schools are going to be effective places of learning (Donald et al., 2002). A *whole school approach* to environmental learning, according to Murray (2005:52a), implies that the school considers, not only how environmental education should be integrated through subject teaching, but examines and improves every aspect of the environment of school life to make the school “a better place to live, learn and work” (Murray, 2005:52a).

This statement tallies well with two reasons for a *whole school approach*, according to Davis (2006):

...The first reason is that every teacher is responsible for infusing environmental education into their teaching in order to help students to live and work towards a more sustainable environment for all. The second reason for a whole school approach is that learning in a classroom or even learning in the open during a class is one thing but making a way of life out of what one learns another. What children learn in school will often count for little if they do not see it happen in real life, if they do not learn to live by rules the class shows them, and if they do not see their teachers living by same rules: Young people cannot be expected to value the environment if it is obvious to them that it is not valued by the school. It is therefore important that schools should practice what they teach about the environment... (Davis, 2006:3).

Whole school approaches to environmental education according to UNCED (1992) cited in Henderson and Tilbury (2004:7), are a phenomenon that emerged alongside discussions related to the decade of sustainable development. These approaches to school development were in response to global calls for the need to re-orientate the management and practice of the formal education sector in order to contribute to equity and to build a better world (UNESCO, 2005). For Donald et al. (2002), a *whole school approach* that aims to develop a healthy school environment is characterized by the fact that it targets the development of people and structures. This means that this approach reflects “humanistic and democratic values and a commitment to collaboration and self determination” (Donald et al., 2002:155). Donald et al. (2002: 155) also suggests that this approach emphasizes a rational process of planning and development of school life.

Volmink (2003) cited in Du Plooy and Westraad (2004:10) supports these ideas explaining that a whole school approach to the development of the school environment aims to make a school a good healthy place

in which to learn and work (Du Plooy & Westraad, 2004:11). A good school according to Volmink, is a site for learning, has respect for diversity, and fosters understanding of “the world we are living in and how to participate in creating our own world and to give meaning to it”. A good environment makes a difference in the lives of students, helps them to build a society that is made up of individuals who can function together, and helps students to acquire both the skills and values that will allow them to travel with “a richer perspective to view the world and act on it” (Du Plooy & Westraad (2004:11). Barth (1990) cited in Du Plooy and Westraad (2004:12) echoes this explanation that a school such as this provides opportunities in which diversities, e.g. culture and religion, are looked for, attended to and celebrated. Barth refers to a good school “as a community for learning” (Du Plooy & Westraad, 2004:12).

For Henderson and Tilbury (2004), *a whole school approach* to environmental education incorporates all aspects of school life such as school governance, pedagogical approaches, curriculum management, school operations and care for the school’s environs. The authors further explains that *A Whole School Approach* implies links and partnerships with the community (Henderson & Tilbury, 2004:8). They pointed out that a *whole school approach* in school development seeks to engage people in a critical reflection of current lifestyles and actions so that they will be able to make informed decisions and bring about change for a more sustainable world (Henderson & Tilbury, 2004:8). Therefore, if the school adopts this approach to improve and develop it's environment, then the relationship between the school and its community will develop in various ways as well (Donald et al., 2002:163).

There have been a number of whole school development initiatives globally that reflect a range of innovative approaches to Education for Sustainable Development (Gough, 2006: 54). These initiatives include programmes such as Enviro-schools in New Zealand, Eco-schools in South Africa, the Green School Project in China, the Learning through Landscapes Project Finland and the Green Schools Awards in Sweden. Evidence of schools reflecting these new roles have also emerged in the United Kingdom, North America and Europe (Gough, 2006:55). The fundamental rationale for using whole school approaches to sustainability is based on the understanding that schools are like living systems, which are at the heart of educational change. Schools are the places “where most educational policy is put in place” (Davidoff & Lazarus, 1997:5).

Similarly, Henderson and Tilbury (2004:6) saw a whole school approach to integrating environmental sustainability as involving “all stakeholders in contributing but also gaining from a partnership approach to education for sustainability”. Henderson and Tilbury (2004) alluded to some critical success factors for whole-school initiatives as including, though not limited to:

- Alignment with national government priorities.
- Access to expertise in EE and or EFS during program design and implementation.
- Significant and continuous funding.
- Alignment with education for sustainability (EFS) approaches.
- Investment in professional development of program teams as well as school partners.
- Creating links with EE initiatives already in operation.
- Establishment of multi-stakeholder partnerships.

It is imperative that there are national policies and initiatives which support such approaches at all levels in order to enhance involvement of all stakeholders as well as quality of practice. Schools which are involved have the opportunity to “innovate and showcase” changes in practice for a better future, which embrace active participation and partnership that is not only limited to the participating school (involving teachers, learners, management, school boards) but extends to the local communities (organizations, business/industry and government) (Henderson & Tilbury, 2004:7). Henderson & Tilbury (2004: 12) draw on Smith (2004) and Mayer (2002), who indicated that the Environment and School Initiative's (ENSI) *Eco-schools* project, that goes back to 1986, is underpinned by a pedagogical approach of constructivism and the research approach of ‘action research’ which promotes both a reorientation to student-centered learning and changes in student-community and school-community relationships.

Uzzell (1999) cited in Shallcross (n.d.:4) claims that *a whole-school approach* engages with real issues because this approach is about school education getting as close as possible to the reality that awaits pupils after school (Shallcross, n.d.:5). Uzzell’s argument is that to promote cohesion within the social dimension, schools must engage with communities to become active agents of change rather than “passive transmitters of information or values” (cited in Shallcross, n.d.:5).

### **2.3.1 ISSUES ASSOCIATED WITH A *WHOLE SCHOOL APPROACH***

Smith and Williams (1999:80) when reporting on issues related to whole school improvement at one middle school in the USA highlighted some questions, which became central to the school mission statement as they committed themselves to shifting environmental education from the margins to the centre of the educational experience. These are:

- How the school could be designed to respond to the pressing ecological problems they were experiencing.
- How a safe and developmental educational community could be created where adolescents could learn from their relationship with the natural environment and the community.
- In what ways could they ensure an integrated and holistic approach to environmental education rather than a piecemeal and add-on one.
- In what ways the local green spaces, parks, and community resources could be used to supplement what textbooks, computers, or special classes have to offer.... (Smith & Williams, 1999:80).

The level of participation in whole-school sustainability programs within countries varies substantially as do the issues associated with the approaches that schools follow. The eco-school approach has been very prominent. Issues associated with the eco-school approach, that share common implementation characteristics, across countries, include the following:

- School governance
- Policy development
- Whole school committees
- Environmental audits
- Action plans
- Curriculum integration
- Professional development
- Partnership and networking
- Monitoring and evaluation and
- Accreditation/ certification (Henderson & Tilbury 2004:34)

Niemi and Junn (1998) cited in Shallcross (n.d.:4) argued that if children participate in *a whole school approach*, it could lead to their full involvement in socio-cultural actions thereby empowering them as citizens. (Shallcross, n.d.:4). To support this statement, Farrer and Hawkes (2000) (cited in Shallcross n.d.) commented that through such participatory approaches, moral education starts at an early age where early childhood education is rooted in communities of practice that involve pupils, teachers, parents, and other

members of local communities (Shallcross, n.d.). Similarly, because it is for the school to decide how they will implement environmental learning projects, it is important that everyone is involved. For example, the principal, heads of department, teachers, learners and parents all need to agree on the aims and objectives of school-based environmental learning projects. This will help the school to develop an effective and coherent programme that will meet everyone's needs (Murray, 2005:53a).

The perceived benefits of adopting *A Whole School Approach* to encourage and to implement ESD makes a convincing argument for the adoption of this approach. An analysis of the issues related to the adoption of ESD, however, emphasises the complexity of such an approach. Schools are, by their nature, complex and they therefore require considerable organization and whole hearted commitment of the entire school community to adopt this approach in a holistic manner. The question then arises whether a whole school approach to ESD can function effectively where it is promoted and implemented by a group of people within the school. This question will be answered in chapter 4 and 5 whereby the participants' perceptions and understanding of *a whole school approach* is questioned and analyzed. The analyses of ESD and *a whole school approach* revealed that essentially ESD provided a framework for a curriculum based on ESD, while *a whole school approach* provided a methodology or a particular way to approach the implementation of ESD. It must, however, be emphasised that both these conceptual frameworks share a common philosophy in terms of their ontology and pedagogy. It is this shared philosophy that lead to their perceived compatibility. This compatibility is recognised in the literature and informed the structure and organisation of the SEEN project.

In developing the project, therefore, the project team in conjunction with the Namibian educational department representatives had to develop an initiative for ESD that:

- Incorporated an appropriate knowledge base that embraced the conceptual ideals of ESD. Thus, the emphasis needed to be on aspects such as ecological understanding, an understanding of issues and challenges in not only a global context but through a particular focus on the local environment.
- Developed the appropriate cognitive, social, and affective skills that would enable the participants to critically analyse their own situation, its challenges and needs and then to identify appropriate solutions and strategies to address these in a participatory and democratic manner.

- Created opportunities to critically identify and to assess values that would lead to an acceptance of the need and benefits related to the acquisition and implementation of sustainable practices.

By adopting a whole school approach for the project development the SEEN team needed to incorporate strategies that would not only develop an understanding of the approach but that would create an enabling framework for its implementation. Thus it was necessary to:

- Create an environment in the school and its community that would be equipped to handle the democratic and participatory structures and pedagogy at the heart of the approach of whole school development.
- Provide an enabling framework for the development of appropriate school policies that would not only give credibility and status to the initiatives implemented, but which would try to ensure that these initiatives became part of the school's institutional knowledge thereby ensuring the sustainability of the process after the project had run its course
- Develop a structural basis within the school's organization that would support and enable the implementation of ESD initiatives and learning. Equally important was the need to assess the levels of support schools would need in terms of basic resources to enable the schools' implementation of ESD in the context of *a whole school approach*.

In order to understand the development and implementation of the SEEN project better as well as to better understand the focus of this study it is necessary to briefly outline the nature of EE initiatives in Namibia prior to the advent of SEEN before examining the structures and strategies that were implemented by SEEN.

### **2.3.2 INTRODUCING EE INTO THE NAMIBIAN CURRICULUM**

Namibia's' introduction of EE in the curricula had two major components. First was the experiment with small scale EE curriculum projects. The second and most recent component was the major national initiative of the SEEN Project using *a whole school approach* as the major strategy.

Therefore, in this section I begin with a brief contextual overview of EE initiatives in Namibia prior to 2001 and the introduction of the SEEN project.

## **2.4. AN OVERVIEW OF NAMIBIAN EE INITIATIVES PRIOR TO THE "SEEN PROJECT"**

### **2.4.1 EE in the context of Namibian education policy and the Constitution**

At independence in 1990, Namibia initiated educational reform, notably a shift from education for the elite to *education for all*, as well as from a teacher-centered to a learner-centered contextually relevant education (Angula, 1993:2-3). This paradigm shift has created the challenge to ensure that the implementation of environmental education in schools and classrooms is learner-centered and aligned with the policy framework. One of the problems in the application of learner-centered education is that there have been different understandings of what is actually meant by learner-centered education and how it should be put into practice. The other problem is that textbooks, learner support materials, assessment and examinations are not consistently based on learner-centered principles. Part of the problem has thus been a lack of clarity about the underlying theory and principles of learner-centered education (NIED, 2003: 1-2).

The history of EE in Namibia is the history of various initiatives that took place before and after independence in 1990. Each initiative was responding to a particular set of challenges, needs and risks. The new government inherited an education system that did not include a formal environmental policy. There has subsequently been a gradual development in environment education policy, in terms of which the government has given greater priority to environmental concerns through various provisions in policies and by being a signatory to various key international conventions. These priorities are evident in commitments such as the *Constitution of the Republic of Namibia, Article 95 Point 1*, in which the government commits itself to the maintenance of ecosystems, essential ecological processes and biological diversity. In the document *Namibia's 'Green Plan' for Environment and Development* (Brown, 1992:165), the government committed itself to "enabl[ing] Namibians to move from environmental awareness to understanding and

action”. The current revised *Draft EE Policy for Namibia* (Namibia.Ministry of Environment and Tourism[MET], 2004:2) aims to ensure that the responsibility of the state to promote the welfare of the people through the sustainable management of natural resources is met. Through these and other environmental policy initiatives, environmental responsibilities across different sectors of government are better integrated and educational goals for all areas of environmental management are set. The move is therefore clearly towards a more inclusive and contextually relevant education system. Namibia’s environmental education policy document calls for environmental learning programmes that should aim to empower Namibians from all sectors. One of the major concerns shared by people in Namibia is that the “environmental education draft policy in Namibia is inadequately activated” (Murray, 2002:2). Reasons given for why the EE policy has been “inadequately activated” include the following:

Existing EE materials have often been unsuitable:

- Either they are too few, have the wrong focus, or are not used sufficiently;
- EE concepts are inadequately defined;
- EE approaches are not well understood or practiced: EE, as practiced in Namibia, does not seem to be ‘in line’ with current Ministry policy for learner-centered, constructivist and socially critical education.
- Educators are not sure how to introduce EE: in single subjects, within carrier subjects or across the curriculum;
- Teachers do not have the professional competence to develop and implement EE programmes;
- An individual environmental ethic is lacking among teachers and learners;
- Institutions need to develop EE policies and act consistently with them;
- Monitoring and evaluation of EE experiences was insufficient. (Murray, 2002:2)

Another policy document that supported the environmental education initiatives in Namibia is the *Broad Curriculum Guide for Formal Basic Education*. The integration of environmental education into the Namibian school curriculum was initially guided by the *Pilot Curriculum Guide for Formal Basic Education*, which requires Formal Basic Education to “infuse environmental awareness within a learner-centered, cross-curricular approach” (Namibia. Ministry of Basic Education and Culture [MBEC], 1996:27). This document, in broad terms, stated that environmental awareness should be “worked into environmental studies in Grades 1-3, as part of Natural Science and Health Education in Grades 4-7, and in natural science and social science subjects in Grades 8-10” (Namibia. MBEC, 1996:27). However, it was

not clear how this integration was to be achieved, other than through EE's "incorporation into lessons in other subjects whenever appropriate" (Namibia. Ministry of Basic Education [MBEC], 1996:27). The curriculum guide further provided for the "development of environmental awareness" through:

... an understanding of the dynamic interdependence of living and non-living things and the environment; the development of a sense of responsibility for restoring and maintaining ecological balances through the sustainable management of natural resources and the promotion of the learners' involvement in practical activities to preserve and sustain the natural environment.... (Namibia. MBEC, 1996:8).

The broad curriculum guide approach to environmental education seemed therefore to make adequate provision for laying a foundation for informed and responsible attitudes and choices with regard to the balance of population growth, ecological sustainability and quality of life for all Namibians (Namibia. MBEC, 1996:14). However, lessons learned from earlier projects in the field of environmental education work in Namibia may need to be further examined in order to develop strategies for the incorporation of environmental education into the Namibian education system. Van Harmelen (2003:21) argued that the curriculum must give time and space not only to eliciting and building on learners' prior knowledge, but also for learners to explore their own immediate environment to gain and try out new knowledge. She further explained that the area of environment in the curriculum would include the study of the living and non-living environment and their interrelationship, leading to scientific understanding and skill attainment (including personal and social skills). This means that if skills and understanding are to be developed in a learner-centered way, selection of knowledge should be done in such way that it recognizes and includes indigenous knowledge systems, both in terms of content and in terms of ways of knowing (Van Harmelen, 2003:21-22).

McMaster (2003) undertook an assessment of the progress of environmental education in Namibian curricula based on studies of samples of curricula from elsewhere than Namibia, while Burt (2003) carried out a more contextually relevant audit of the Namibian curriculum for environmental education in order to:

- identify environmental themes through which issues of priority in Namibia might be taught;
- identify concepts, skills, values, ethics, and attitudes contained in each subject within each phase level in order to provide a conceptual map of the scope, scale and progression of key EE concepts;
- analyze the conceptual map thematically in order to highlight evidence of progression, assess degree of repetition, and note omissions and gaps in themes (Burt, 2003).

Despite the many initiatives to incorporate EE into the curriculum, success has been limited either because there has not been sufficient tangible support provided to teachers or because EE has been indirectly approached and examined as a cross-curricular theme rather than being included as an integral part of school subjects. These concerns were noted by the SEEN project and used to develop the support structures and strategies for the Environmental Education Project

#### **2.4.2 Summary History of Major Nambian Environmental Education projects:**

A number of projects have provided important benchmarks in the history of EE in Namibia. These include the Life Science Project (LSP), Enviroteach Project, and the Forestry Awareness and Tree Planting Project (FATPP).

The table below summarises three different projects that supported the infusion of EE in the curriculum in Namibia.

	<b>Name of the project</b>	<b>Year started</b>	<b>Year ended</b>
1	Life Science Project	1991	2000
2	Enviroteach Project	1992	1999
3	Forestry Awareness and Tree Planting	1996	2001

All of these were donor-funded projects that made significant contributions to the educational reform process and the subsequent implementation of learner-centered education. Each of these projects responded to a particular set of needs, risks and challenges. For example, the Life Science Project focused on formal education and, through the development of a specific learning area, addressed the challenge of self-sufficiency, of understanding and solving environmental problems arising from issues and problems in the biophysical environment as well as the social environment.

The LSP in particular adopted a constructivist epistemology in which to locate teaching /learning (Van Harmelen 2000:22). The syllabus also addressed the school environment through its focus on the establishment of gardens and the planting of trees on the school premises. But the success of the various activities suggested that the Life Science curriculum has been patchy, partly because teachers have not had the professional competence to develop and properly implement EE activities in their curriculum.

In her assessment of the impact of the Life Science Project (LSP) on the curriculum reform process, Van Harmelen (2000: 260) indicated that the project, through its ongoing educational reform discourse, impacted on the following:

- the development of a curriculum that focused, in content and spirit, on promoting the views of democracy, equity and environmental awareness in its broadest sense.
- the development of resources for learning and teaching that sought to facilitate empowerment through their focus on self reliance and self-sufficiency;

(Van Harmelen, 2000: 260).

Generally, the LSP's support for educational reform in Namibia "led to the consolidation and articulation of the reform vision, as it left a legacy for change and laid sound foundations for change" (Van Harmelen, 2000:262).

The Enviroteach Project (Desert Research Foundation of Namibia [DRFN], 1995), on the other hand investigated opportunities for the implementation of their EE programme or activities in Namibian Colleges of Education through both pre-service and in-service sectors, but none of it dealt with the actual evaluation of the implementation process of EE in schools or classrooms. The Enviroteach Project, however, aimed to create a platform for environmental education not only in formal education but also in non-formal education. The educational needs identified by this project included the need to develop skills to address issues such as conservation and biodiversity, as well as social issues.

Another project that supported and contributed to EE activities in the subject of Life Science was the Forestry Awareness and Tree Planting project, funded by Danish Co-operation for Environment and Development (DANCED), which supported tree-planting activities in the Life Science curriculum with the aim of enhancing environmental conditions. It supported the establishment of gardens and integrated tree planting activities on school premises. It also supported Eco-school ideas in Eco-school pilot school programmes in both former Ondangwa West and Ondangwa East education regions ( DANCED, 2000).

The aim of the Eco-school project was to "develop, test and publish methods of teaching and learning which defined good practices of EE, setting international school partnerships and conducting cooperative studies in such areas as quality criteria for Eco-school development" (Henderson & Tilbury, 2004:10). However, in Namibia neither the integration of tree planting activities into the curriculum nor the Eco-school project lasted beyond the donor support, since the Forestry Awareness and Tree Planting Project incorporated no sustainable capacity building into the programme. None of these interventions, other than with those in the subject Life Science, was formalized in the curriculum. These various EE interventions served as a backdrop to the development of the SEEN project and, in as much as SEEN was tasked specifically to develop a strategy to formalize EE in the curriculum, the prior interventions informed aspects of the project's development.

## **2.5 THE SEEN PROJECT AND THE INTRODUCTION OF EDUCATION FOR SUSTAINABLE DEVELOPMENT THROUGH A *WHOLE SCHOOL APPROACH***

The introduction of *a whole school approach* was a result of the EE initiative introduced in 2001 by the SEEN project. To understand the particular orientation to *a whole school approach* adopted by Namibia it is necessary to locate this approach within the particular initiative, which ran from 2002 to 2005. Therefore this section begins with an overview of the initiative that came to be known as the Supporting Environmental Education in Namibia (SEEN) project.

### **2.5.1 PILOTING A *WHOLE SCHOOL APPROACH* TO INTRODUCING EE INTO SCHOOLS**

The Supporting Environmental Education in Namibia (SEEN) Project was a Namibian project located in the Ministry of Basic Education and Culture launched in 2001. This was a three year pilot project with the goal to explore how best environmental education practices could be formalised in the Namibian education system. The timing of the project was the result of a number of factors operating simultaneously. Among the most important was the intention to revise the existing school curriculum as well as an increased national and international focus on issues of sustainable development and the challenges to sustainability. The need for a further exploration of ideas on how to bridge the gap between schools and communities in order to work towards raising the quality of life of all Namibian people was a further important concern. It was on this basis that the Ministry of Basic Education and Culture (MBEC) sought the support of established developmental organizations such as IBIS, a Danish funded NGO, to address these issues for education (Murray, 2005a).

A key dimension of the SEEN Project was its emphasis on *a whole school approach* to environmental learning. The way *a whole school approach* developed during the course of the SEEN Project was perceived to provide a means for linking current thought about ESD to the existing education system. The project linked a whole school approach to ESD by identifying and employing new principles. These principles supported by ESD were essential to the ideals of good education and complied with the general education reform process in Namibia.

These principles included international school based educational approaches. For example, the *whole school approach* focused on “exploring values and attitudes informing decisions and actions rather than just facts, emphasized critical thinking and reflection through questioning and action research, and through valuing and encouraging active participation as stipulated in a learner-centered approach” (Murray 2005:53-56b). The project team, in adopting the particular approach taken for *a whole school approach*, also followed the Shallcross view that “implementing *a whole school approach* requires the evaluation of the curriculum, the social and institutional practices in the schools, and their links with the local community” (Shallcross, n. d.:3-4). One of the first tasks of SEEN was to review the existing school curriculum in the context of identifying opportunities and possibilities for EE and more particularly for ESD. (Murray, 2002).

The project began its work by recognizing that the Ministry’s educational reform policy required a shift in pedagogy and a re-orientation of education. That shift was mirrored by the current debate around environmental education, which recognized the provision of education for sustainable development. (Murray, 2005:2a). The project further situated its work within a broader constructivist pedagogy that recognized that learners and school communities needed to develop skills and competencies that would enable them to “reconstruct their own social interactions, construct meaningful understanding of own environments, and take appropriate actions in order to adequately respond to various environmental challenges”. (Murray, 2005: 4 a). The project’s work was guided by some key outputs within the project document. These outputs did not prescribe a specific approach to follow, and in so doing, encouraged considerable flexibility in the choice of approaches used by teachers in the classroom.

This flexibility in different approaches, led to the emergence of a variety of models for professional development within the framework of *a whole school approach* (Murray, 2002). The project piloted a variety of strategies to incorporate EE into the curriculum through "*a whole school approach to environmental learning and curriculum review*" ( Murray,2002: 8).

In the pilot region, some key project activities entailed the following:

- raising awareness and helping schools to establish school projects.
- assisting schools in auditing their school environment and current environmental practices in order to see what environmental learning opportunities were in place, and what should be in place.
- assisting schools in the development of school environmental policies and plans that supported their needs.
- facilitating the process of schools in designing action plans and projects that meet their needs and those of their local communities, in order to adequately respond to local environmental issues and challenges.

- Encouraging the schools to become a model for environmental practices for teachers, learners, parents and the wider community. This was intended to lead to the development of increased co-operation between teachers, learners and parents.

Each pilot school was expected to engage in specific projects of its choice. Projects that were identified and implemented included:

- An energy saving project
- Waste management projects
- Water harvesting projects
- Water saving techniques
- A garden for crop/vegetable production
- Tree nurseries
- Tree planting
- A sanitation and health project
- Environmental education clubs
- HIV and AIDS clubs
- Animal husbandry; e.g. guinea fowls
- Fish breeding/ fish farming (Murray,2002)

Murray (2002), when arguing for the decision to opt for *a whole school approach* to environmental learning, explained that it implies that more than a few teachers of carrier subjects are involved and that the curriculum content is matched with the school's broader environmental practices. The classroom work is complemented by all aspects of school life. The whole school development process is therefore driven by (wherever possible) all teachers at the school, with the support of learners and parents, in order to ensure that a shared understanding of the aims and objectives of an effective and coherent school-based environmental learning programme is secured (Murray, 2005a). Murray (2002) explained that this process requires more than just integration of EE through subject teaching. It includes reviewing how everyone at the school can model better environmental practices; how the school can model the principles of democracy, equity, access, participation, and cooperation in the implementation of its own school policies and plans; and how the school's practices can model the wise and efficient use of resources and contribute to the improvement of the quality of life. These were all aspects of the broader picture encompassed within *a whole school approach*. Therefore, on the basis of this ideal practice, the whole school development approach was applied and implemented by the schools themselves through different environmental education activities with support of the SEEN Project.

The support was provided in the form of training through cluster/circuit workshops, seminars, and school based subject meetings. It was through these supports that teachers were trained on how to use the school environment as a learning resource. Teachers were educated on how to design lesson plans as well as learning activities that integrate environmental education themes as indicated in the curriculum. Teachers, learners and members of the community were trained and at the same time educated on how to conduct school environment audits and identify environmental problems, challenges and risks. They learned to formulate internal environmental policy guides for their schools and establish school environment-clubs. In addition, members of the community and parents of learners schooling at the pilot schools in particular, were educated on how to work together with the aim to support these schools in different ways and means. For example, members of the community provided schools with materials such as seeds, animal fodder and animal manure to be used in the school garden and poles to erect tree nurseries. In light of the aforementioned support provided to schools, the project also assisted schools with both financing and materials. For example, schools were provided with a certain amount of money to purchase seedlings from the local tree nurseries. And in the case of materials, the project provided schools with shade nets and diamond meshes to protect their school gardens.

### **2.5.2 DESIGNING A REVISED CURRICULUM THAT INCLUDES EE**

Davidoff and Lazarus (1997) are of the opinion that the relationship between the whole school development process and the curriculum is that the school be viewed as a dynamic institution. Each school has its own cycles and phases of development, which dictates that they are looked at holistically and not in a ‘fragmented or piecemeal’ way in order to ensure that real development takes place. They further argue that the commitment of teachers to quality classroom practice largely depends on how the school environment supports their endeavours. The school environment should be an enabling environment in which teachers and learners are happy to live, learn and develop. This enabling environment requires that every contribution from every teacher is acknowledged and supported. Teachers are potential change agents at school and need to be given enough scope to contribute, hence the phrase the whole school development approach (Davidoff & Lazarus, 1997).

The literature “Developing a Healthy Classroom” Davidoff & Lazarus (1997), shows ample evidence to suggest that whole school programs link to, and contribute to the national curriculum as these programs may:

- 1) be based on and assist in implementing the national curriculum,
- 2) be developed independently but complement the national curriculum, and
- 3) add value to and extend the national curriculum.

When trialed by the SEEN project, *a whole school approach* to integrating environmental sustainability dictated that all aspects of school life should be assessed including, “school governance, pedagogical approaches, curriculum and resource management, school operations and school grounds, general school organization and improvements to make schools better places to live, learn and work (Henderson & Tilbury, 2004:9)”. The SEEN project’s experiences showed that it was not possible to implement democratic and consensual discussions and actions concerning environmental improvements at schools without first dealing with the problem of active involvement of school management and school boards (school governing body) in all aspects of decision making, planning and implementation of policies and plans at school level (Murray, 2005:4a). Davis (2006) supported this statement by explaining that a key first stage in whole school approaches to sustainability requires a focus on school governance, especially the active engagement of the school management, the application of distributed decision-making processes and the inclusion of students. Davis (2006) further explained that when implanting a whole school approach in environmental education, there is a need for a wide range of

stakeholder and community support. This echoes the SEEN project's approach to a whole school development approach, which promoted the involvement of the whole school community, including teachers, learners and members of the community.

The project activities were organised through conducting regional, circuit and cluster workshops, seminars and meetings for teachers, learners and parents and members of the community. Schools could implement any project of their choice and were assisted with the provision of materials, such as seedlings, finance to buy fencing materials such as poles, and diamond mesh. Participants were given support developing skills to carry out school environmental audits, develop school environmental policy and to involve members of the community in school environmental activities. Teachers in particular, were shown how to design lesson plans that integrate environmental education activities as well how to design enquiry-based learning activities that enhance learning with understanding (Murray, 2005). The project's technical team constantly provided support and guidance through all of the developmental and implementation stages of the various school initiatives at each of the pilot schools.

In addition to these various support strategies the project team initiated a variety of education programmes for educators. Through these programmes it was hoped to create a more lasting legacy for ESD and thereby to increase the project's sustainability. Central to this was the development of the Namibian Environmental Education Certificate Course (NEEC) for professional development, which ran concurrently with the project. This course had its origin in the suite of courses initially developed at Rhodes University as the Rhodes-Goldfields Environmental Education Course (Van Harmelen, 2005:6). The development of this course for Namibia by the SEEN project was with the understanding that the existing Rhodes-Goldfields course would be adapted to meet the particular needs of Namibian environmental education practitioners in both formal and non-formal sectors and to reflect the Namibian situation. The course provided environmental educators with foundational knowledge about the theory and practice of environmental education and services to develop skills and reflective competencies that enhance their capacity to provide appropriate ESD programs in their own professional contexts (Van Harmelen, 2005: 6). The NEEC was conducted through national and regional workshops, tutorials and meetings of Advisory Teachers, Inspectors of Education, teachers, teacher educators and officials from non-formal environmental education centres.

This professional development course is accredited and administered by the Polytechnic of Namibia and it is still run by this institution of higher learning drawing its participants from the formal and non-formal education sector (Murray, 2005b). The course mainly focuses on the modules:

- Our environmental: issues, risks and responses.
- Environmental education approaches, theories and practice.
- Developing, implementing and evaluating the EE curriculum, programmes and resources.

According to Van Harmelen (2005:7), another important model the project embarked on was the professional development courses for in-service teachers. For example, there was the Pilot Environmental Learning Course (PELC), which focused on a practice-based approach that modeled teaching and learning strategies for environmental learning at the classroom level, especially to promote a whole school approach. The course concentrated on developing teachers' capacity to incorporate environmental learning activities in both their own classroom situation and in relation to developing a whole school approach. This course was especially designed for in-service teachers and Advisory Teachers. It was run via regional, circuit and cluster workshops, seminars and meetings (Van Harmelen, 2005).

Henderson & Tilbury (2004:27) refer to other programs, such as the South African *Eco-schools* program, which is designed "to encourage whole-school learning with a key focus on curriculum based action for a healthy environment," as well as to foster a close partnership between the Wildlife Environment Society of South Africa (WESSA) and the Department of Education in ensuring ongoing cooperation (Henderson & Tilbury, 2004: 27). The *Eco-schools* program focuses on strengthening the curriculum and its implementation, and takes the curriculum and pedagogical processes as a key starting point to working towards sustainability in schools. A number of the pilot schools joined the Eco-schools program linking this with their project initiatives.

While the theoretical framework on which the whole school approach for Namibia was informed by relevant international theory, the implementation of the approach was shaped by the Namibian situation and conditions in the pilot schools.

As the project progressed, a number of key issues emerged, including:

- The realization that while it was not possible to involve every member of the school community, the success of the whole school approach depended on at least having the tacit support of the school hierarchy. In line with this, it also became apparent that where a small, but committed committee was established, whole school activities were successfully implemented.
- Support for the school-based activities from outside sources such as Advisory Teachers and project staff was a key dimension of the success of whole school activities. Given this need, the value of initiatives that provide support such as the Eco-school project was highlighted.
- The importance of ongoing in-service professional development was also highlighted.

It was recognized that earlier EE initiatives had played an important role in providing a sound foundation on which to build. Without this, the SEEN project's efforts would have taken far longer to take root (Muray, 2005a). The most recent aspect of EE development after the SEEN project was a product of the government's desire to implement the broad national development policy referred to as Vision 2030. A central aspect of this policy was the recognition of the importance of EE in the curriculum, and, more generally, of ESD.

The Vision 2030 policy framework for long-term national development, states that:

Our environment is clean and we will continue to keep it so. We fully embrace the idea of sustainable development, the type of development that meets the needs of the present without limiting the ability of future generation to meet their own needs.

To this end, we encourage people to take responsibility for their own development activities that address the actual needs of the people and require increasing community contributions to development services and infrastructure... (Namibia National Planning Commission, 2004:34).

Emphasising that Namibia's economy relies heavily on its natural resources, the document embraces the principle of sustainable development as the cornerstone of the policy framework (Namibia. National Planning Commission, 2004:14). The document also stresses the importance of the "management of natural resources, and the maintenance of Namibian ecosystems" (Namibia. National Planning Commission, 2004:178). However, the document does not identify strategic approaches for the integration of education for sustainable development (ESD) in Namibia's national operational systems, especially the education system (Namibia. National Planning Commission, 2004:178).

## **2.4 CONCLUSION**

This chapter presented an analysis of ESD in the context of a whole school approach and how these two concepts were adopted and adapted in the Namibian context. The whole school approach is seen as a key enabling strategy for introducing ESD into the Namibian schools. Therefore, for further development of the whole school approach in environmental education, Namibian policy documents, such as Vision 2030 and millennium development goals for environmental education, embrace the ideals of ESD through a whole school approach as a driving force to foster and develop environmental knowledge based values and skills in order to addresses the risks, challenges and issues faced by the communities. What remains to be seen is how viable this approach will be if introduced across the entire spectrum of Namibian educational institutions. Thus, in undertaking this small scale study, I hope to provide some insights into some of the issues that will need to be addressed to make the ESD ideals in Vision 2030 a reality.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 INTRODUCTION

The purpose of this research is to investigate the perceptions of a whole school approach in the context of ESD held by teachers, learners and parents in selected Supporting Environmental Education in Namibia (SEEN) pilot schools in the Oshana Educational Region in Northern Central Namibia. Through establishing my research participants' perceptions, I hope to elicit their understanding of *a whole school approach* as an appropriate means to implement ESD. This chapter provides an overview and description of the research design. The instruments used for collecting data and the nature of the research site are explained in this chapter. I also provide an explanation of how the study participants were selected. I discuss ethical issues and how data analysis was carried out.

The chapter is structured as follows:

- Research design and orientation
- Research process
- Sample and site
- Data gathering, e.g. techniques used
- Data analysis
- Research ethics
- Validity
- Limitations
- Conclusion

### 3.2 RESEARCH DESIGN AND ORIENTATION

The goal of my research framed the way in which the research was approached and influenced the research decision taken to take that particular route. Maxwell (2005) defines the term *goal* in a broad sense to include motives, desires and purpose – anything that leads someone to a study involving research.

Maxwell draws on Hammersley in saying that:

Your goals inevitably shape the descriptions, interpretations, and theories you create in your research. They, therefore, constitute not only important resources that you can draw on in planning, conducting, and justifying research, but also potential validity threats, or sources of bias for the research results, that you will need to deal with... (Maxwell, 2005: 15).

Research design is a plan for conducting a study that includes the orientation, the approach, the methods and the tools that a researcher chooses. Philliber, Schwab and Samsloss (cited in Yin, 2003:21) refer to such a plan as a “blueprint of research, dealing with four problems: what questions to study, what data are relevant, what data to collect and how to analyze the results”.

To the interpretive researcher the purpose of the research is to advance knowledge by describing and interpreting phenomena in the world, in an attempt to arrive at meanings shared with others. Interpretation is a search for deep perspectives on particular events and for theoretical insights. Bassey (1999:44) suggests that it may therefore “offer possibilities, but no certainties, as to the outcome of future events”. Because my study required me to collect data and interpret these data to understand the meaning that teachers, learners and members of the community make of environmental education in the context of *a whole school approach*, I located my research in an interpretive orientation within the qualitative case study paradigm, which I discuss below. The interpretative orientation gave me the opportunity to interact with participants in order to get a deeper understanding of their perceptions of *a whole school approach* based on their experiences of implementing this approach in their attempts to develop a program for ESD. Cantrell (1993:101) states “interpretive research emphasizes an understanding and interpretation of complex interrelations between social structures and the meanings people give to phenomena”. Conole (1998:14) confirms that in this orientation, the task of the researcher is to understand what is going on, while Bassey (1999: 44) formulates the purpose of an interpretive researcher as that of “advancing knowledge by describing and interpreting the phenomenon in attempts to get shared meanings”. He further explains that the researcher proceeds by identifying emerging patterns (Bassey, 1999: 44). Patton (2002) has pointed out that patterns, themes and categories should emerge from the data and not be imposed on people.

In the light of the selected orientation, I found a qualitative case study approach appropriate for my study. Van Rensburg (2001:16) states that a qualitative case study reflects an “interest in contextual meaning making rather than generalized rules”. Instead of surveying large groups, this method takes a close look at individuals or small groups in “naturalistic” settings. According to Maykut and Morehouse (1994:45), a natural setting is a place where the researcher is most likely to discover, or uncover, what is to be known about the situation being considered. In a natural setting, human behaviour can be accurately observed and its meanings interpreted.

Qualitative research requires methods that “probe deeply and analyze intensively” (Cohen & Manion, 1994:106). Thus Bogdan and Biklen (2006:58) define a case study as a detailed examination of one setting, a single subject, or a particular event. The unit may be a school or even a setting within it, or a teacher or a learner. My reason for choosing the case study approach is that it provides a unique way to interact with real people and events within the context of their own particular ontology which I hoped would enable me to understand the situation being investigated more clearly than by ‘way of abstract theories and principles’ (Cohen, Manion & Morrison, 2000:181). A case study strives to portray ‘what it is like’ to be in a particular situation, to catch the close-up reality and ‘thick description’ of participants’ lived experiences of a situation and their thoughts and feelings about that situation (Cohen, et al., 2000). Thus, I allowed the teachers, learners and members of the community to speak for themselves rather than imposing ideas. In sum, I adopted a qualitative case study approach because it provides opportunities for more information to be gathered and a more intensive and detailed examination of the phenomenon to be made in order to make a fair judgment of the situation being studied.(Anderson & Arsenault, 1998:95).

This approach, as Patton (2002) has pointed out, has some limitations. One problem is that one cannot generalize information from a single case study. Another is that the case study is necessarily subjective and raises questions of validity (Flyvbjerg, 2006). The former, however, was not my intention. Rather through my interactions with a small, but representative sample, of participants I hoped to illuminate aspects and issues that my research participants perceived as at the heart of implementing ESD through *a whole school approach*. A further limitation of the case study, according to Merriam (2001:41), is that it can “oversimplify or exaggerate a situation, leading the researcher to erroneous conclusions about the state of affairs”.

I was more concerned about this particular warning and I tried to minimize my study's susceptibility to this perceived weakness by using an approach that was as multifaceted as possible given the research goal and situation. I explain this further later in the chapter.

### **3.3 SAMPLING**

My data was collected at two former SEEN project pilot schools, at each of which I worked with three stakeholders: one teacher, one learner and one community member. Sampling refers to the way or method used to determine the number of people who will participate in the study as well as the time and accessibility needed to conduct the research (Cohen et al., 2000:78). Bless and Higson-Smith (1995: 85) define sampling as a “technical accounting device to rationalize the collection of information, to choose in an appropriate way the restricted set of objects, persons, events ...from which the actual information will be drawn”. I used purposive and convenience sampling. McMillan and Schumacher (1997:169) see convenience sampling as a group of subjects selected “on the basis of being accessible, appropriate or convenient”. My decision to use purposive sampling was influenced by Patton (2002), who claims that this approach to sampling is useful when selecting a small sample for an in-depth investigation to illuminate the questions under study (Patton, 2002:169).

Patton argues too that “the logic and the power of purposive sampling lie in selecting information-rich cases for in-depth study.” Information-rich cases are those “from which one can learn a great deal about issues of central importance to the purpose of the research” (Patton,2002:169).

Cohen et al. (2000) refer to sampling procedures that involve choosing the nearest individuals to serve as respondents as “convenience sampling” . Convenience sampling is particularly valuable in the context of small scale research projects where time and monetary constraints are very real issues. It is, however, important to note that in basing a research sample on a convenience approach it is important to ensure that the selected participants and participating institutions fit or match the general profile of the situation being investigated.

### 3.3.1 Selecting appropriate research participants

On the bases of Patton(2002)'s arguments, I decided to focus on two out of the possible five schools involved in the SEEN project in my region. One of the two selected schools is a rural school and the other is a semi-urban school.

The SEEN project focused primarily on rural and semi-urban schools on the basis of the more cohesive and homogeneous communities that exist in these settlements. The two schools selected were therefore representative of the general profile of schools involved in the project. I also selected these two schools as they had proved to be particularly active and enthusiastic participants in the SEEN project. Purposive sampling such as this, based as it is on a positive rather than a deficit model increases the value of data in interpretative research ( Patton, 2002).

I also chose a limited number of teachers, learners and parents as members of the community from the SEEN projects former ESD pilot schools because I wanted to get an in-depth understanding of their perceptions about *a whole school approach* in which they had been involved. The SEEN project structures provided for EE committees at each school of which two teachers were elected by each school community to act as coordinators of ESD activities at the two schools. The two learners were coordinators of EE clubs and parent from each of the two schools represented the community on each of the ESD committees. These participants were selected on the basis of the activities they were involved in at the school level. For example, teachers were environmental education facilitators at their respective schools, learners were members of environmental clubs at the two schools and members of the community were selected because of the role they play in the process of school development activities. Each of them was a member of the school environmental education committee. The schools and the committees each had the opportunity to decide which of the committee members would participate in the study. The schools were selected on the basis of their accessibility in terms of a passable road, making it possible to reach them by car, which was necessary given the time constraints of the study. The two schools also happened to lie within a seven-kilometer radius from my work place (Cohen et al., 2000; McMillan & Schumacher, 2001).

### **3.4 DATA COLLECTION METHODS**

Prior to collecting data, the research process was planned. The first steps involved my identification of the sort of data I needed. This was influenced not only by my research questions but also by my reading of the appropriate literature. It was then necessary to select appropriate data collection tools in the context of the research approach. I elected to include interviews, document analysis and *in situ* observation in the collection of data for this study.

#### **3.4.1 Interviews**

In this section, I describe how and why I opted for interviews as an appropriate tool to collect data. According to Patton (2002:10), quality data consists of “direct quotations from people about their experiences, opinions, feelings, and knowledge obtained through interviews, detailed description of people’s activities, behaviours, actions recorded in observations and quotations or passages from various types of documents”. Influenced by Patton’s ideas, for this research process, it seemed essential to include interviews as one of the main data collecting tools.

According to Merriam (2001), an interview is a person-to-person encounter in which one person gets information from another. This encounter can be regarded as a conversation, the purpose of which is to obtain a specific kind of information. Cohen et al. (2000:111), see interviews not as a “dispassionate and technical instrument of data generation but as an emotionally engaged social interaction about people’s real experiences in constructing their personal accounts on a particular topic”. According to Whyte (1982, quoted in Cohen et al., 2000), the interview process is characterized by continuous probing in order to elicit more information.

Cohen and Manion (1994:313) pointed out that open-ended questions:

Enable the interviewer to test the limits of a respondent’s knowledge, they encourage co-operation and rapport; they allow the interviewer to make a truer assessment of what the respondent really believes. (Cohen and Manion, 1994:313).

I decided to use semi-structured interviews. Markson and Gognalons-Callard (cited in Stones, 1998:152) point out that the semi-structured interview has “the advantage of flexibility” (Stones, 1998:152). My research needed a level of flexibility given that my research participants, while involved in the same processes, were located in different contexts.

I also used semi-structured interviews because they included open ended questions that allowed the respondents greater freedom of expression while allowing me to probe the interviewee in order to get a deeper understanding of the issue under discussion. Merriam (2001) views semi-structured interviews as halfway between structured and unstructured interviews. According to O'Leary (2004:164), these interviews are "neither fully fixed nor fully free". Semi-structured interviews start with a "few defined questions" but allow an interviewer to pursue any interesting issue that may evolve (O'Leary, 2004:164). For Welman, Kruger & Mitchell, (2005) the semi-structured interview allows the researcher to explore further with a view to clearing up vague responses or to ask for elaboration of the incomplete information.

According to Bell (1994:91), "a skillful interviewer can follow up ideas, probe responses and investigate motives and feelings...and enables one to develop and clarify responses".

I used semi-structured interviews with open ended questions to create scope for the provision of in-depth information. Before embarking on my interviews, I drafted a personal detail form to record the experiences and backgrounds of the participants, which saved time at the beginning of each interview (Appendix 1). The duration of all interviews was approximately one hour thirty minutes for teachers, and fifty minutes for learners and parents or members of the community. All participants were interviewed individually. Teachers and learners were interviewed in English, while parents and members of the community were interviewed in their home language to enable them to express themselves freely. Probing questions were asked to give the interviewees time to clarify their feelings (see Appendix 5 Interview Questions). I used an audio tape recorder to record responses in order to supplement the notes I took during interviews, and to facilitate the production of interview transcripts. Tape recordings made it possible for me to check the wording of any statement I might wish to quote and to check that my notes were accurate. In addition, tape recording ensured that everything said during interviews was preserved for analysis. I listened to the recordings, transcribed and (where necessary) translated them myself.

Denzin and Lincoln (1994:213) provide the following advice: "Before devoting oneself to the demanding and significant time of the qualitative study, it is a good idea to do a pilot study". The purpose of the pilot study, according to Huysamen (1993:205, quoted in De Vos, 1998:179), is "an investigation of the feasibility of the planned project and to bring possible deficiencies in the measurement procedure to the fore".

Prior to the actual semi-structured interviews, I drew up interview schedules with a series of questions. The questions developed were piloted in two schools that were not part of the actual research project.

I held pilot interviews with four teachers, four members of the community and four learners whom I selected in order to meet the needs of my study, bringing the total number of people sampled to 12. Conducting a pilot study has many benefits, one of which is to provide additional information in order to improve the final draft of the questions Welman et al.( 2005). The main reason for piloting questions was to check whether these questions would really generate the desired data and if it was necessary to make some adjustments. In addition, I conducted a pilot interview to determine the length of the interview, the suitability of the questions, ethical issues and practical issues related to the use of a tape recorder and finally to identify good sites for the interviews..As result of the pilot interviews, some of the questions were rephrased, the order changed, deleted or reduced.

I held my actual interviews with a teacher, a parent and a learner whom I selected purposefully from two different schools involved in the study. I used a tape recorder to record the conversations. I felt that this was to my advantage because I had to listen to the conversations when I was transcribing the interviews rather than rely on the notes taken during the interviews. Because I needed to use the tape recorder, I obtained permission from the participants. I explained that the tape recorder helped me to capture any information that I would miss out when taking notes. I negotiated suitable dates and times for interviews with the participants. All the participants were interviewed at the relevant school as it proved to be the most convenient place and it allowed the interviewees access to any resource materials they might want to refer to. Most of the interviews were conducted after normal teaching hours.

Despite the fact that this method seemed to work well for me, there were some problems. First, I had a problem with one of the schools that kept on postponing my visit. This delayed my data collection from this school. Second, parents or members of the community interviewed were not comfortable with the questions asked and with the tape recorder used to record the conversations. They were suspicious about what the information was going to be used for. The third problem was that the learners interviewed were also not comfortable with the tape recorder. At one point, they were not able to elaborate on the questions. They seemed to fear the interviewer and were clearly not used to this kind of interview. Finally, the fourth problem was, the sites and the times selected by teachers. They were not always convenient for me to conduct the interviews without noise and distraction. On one occasion we scheduled an appointment with a teacher to take place at 14h00.

I drove about 7 kilometers to the school only to find that the teacher had taken learners to a soccer tournament. Therefore, I had to re-schedule the appointment.

### **3.4.2 Document analysis**

My second method of data collection was document analysis. This is an equally important strategy of data collection because it provided information which could not be obtained through interviews and observations. Merriam (2001) views 'documents' as an umbrella term referring to written, visual and physical materials that are relevant to the study. For me to have rich data I studied and checked documents and other materials related to the implementation of *a whole school approach* to environmental education in these specific schools. Documents analyzed included national, regional and school based documents such as the Broad Curriculum Guide for Basic Formal Education, subject syllabi, subject policy, general school policy, reports, environmental education policy, and school environmental education development programmes. The SEEN Project EE portfolios and minutes of meetings provided me with hard evidence of EE activities at schools because these sources of information indicated the structure of the EE committees, school maps and photographs that tracked developments at the schools during the course of the SEEN Project's program.

### **3.4.3 Site observations**

In this study, I used site observation as one of the techniques of data collection. After the interviews, I conducted a site observation. According to Gillham (2000), observation has three main elements: watching what people do, listening to what they say and sometimes asking them clarifying questions (Gillham, 2000:45). Gillham further explains that there are two types of observation. First, is a participant observation, which according to Gillham means being involved and it is mainly qualitative in nature. Secondly, detached or structured observation refers to watching from outside in a carefully timed and specified way. This involves counting and classifying what one has seen, i.e. a quantitative method (Gillham, 2000:48). O'Leary (2004:170) defined observation as "a systemic method of data collection that relies on a researcher's abilities to gather data through his or her senses". Robison (2002) and Creswell (2003) describe observation as a natural data collection technique that is central in all enquiries. Thus, the actions and behaviour of people are watched, recorded, analysed and interpreted at the research site all at one time.

Observation has a particular advantage because it is the most direct way of obtaining data. Watching precisely what people do can be informative and enlightening. It provides evidence on what has been reported in interviews while an interview allows the observer to go beyond external behavior to explore the feelings and thoughts of people (Patton, 2002). Welman et al.(2005) supported Patton's views emphasizing that observation allows the researcher to obtain first-hand information as compared to interviews where information is presented as second-hand. Despite these advantages, observation of any kind has problems, i.e, data from observation are troublesome to collate and analyse, and difficult to write up adequately. It is time consuming because getting to know your case whether individual or institutional is a slow process (Gillham, 2000:46-49). For this study, I used structured observation. For Gillham, structure observation is about sampling. Interval sampling means looking every so often, for example, how many people are doing this or that in a particular social setting. Event sampling is a form of continuous observation where one notes how often or when things are happening (Gillham, 2000:55). In my case, as the information unfolded from the interviews, I went to schools to see what type of projects and just how many projects were underway. I took photographs of the projects at selected schools. The pictures were used as hard evidence of the EE activities that had been taking place at the two schools and at the same time support and complement the data generated from interviews, documents analysed and *in situ* observations in order to get deeper understanding of the situation under review.

### **3.5 DATA ANALYSIS**

Bogdan and Biklen (2006:154) indicate that, "Data analysis involves working with data; organizing it, breaking it down, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others".

After I had collected all the relevant data needed for my study, I started transcribing the interviews from the audio tapes I recorded. Silverman (2000) describes transcription of audio tape records as conversational analysis and discourse analysis. He pointed out some of the advantages of working with tapes and transcriptions. For example, "first, tapes can be replayed and transcriptions can be improved, analyses can take off on different tacks unlimited by the original transcript. Second, we get the actual happenings on the tape and transcribe them more or less the same" (Silverman, 2000: 829). Therefore, based on Silverman's point of view, I started by playing and, replaying the tapes so I could type them out and study them. Data analysis enabled me to identify themes, categories and patterns (McMillan &

Schumacher, 2001:493). After I had finished transcribing the interviews, I took this information, compared it with the data from my observations and documents, and tried to identify patterns and themes.

### **3.6 RESEARCH ETHICS**

In terms of educational qualitative research, the concept of research ethics is concerned with universal moral principles towards others. According to Brewster Smith (2000) cited in Lugosi,(n.d.), beneficence, justice, fidelity, integrity, trust, and respect for persons are important pointers for applying ethical principles. In order to meet the goals of my research as well as to maintain the rights of the participants, I used these ethical principles to guide me in addressing the initial and on going issues arising from this study (Orb, Eiseuhauer & Diane, 2000).

This is also supported by Cohen et al. (2000:292) who argued that it is important to take the following ethical issues into account e. g. “informed consent, gaining access, and acceptance” when conducting the research.

According to McMillan and Schumacher (1997) when one is conducting research through an institution such as a school or university, approval and permission should be obtained from the relevant authority before such research was conducted in that particular institution (McMillan & Schumacher, 1997:195). Therefore, before I started with the study, I obtained permission from the Permanent Secretary of Education. When the office of the Permanent Secretary granted me the permission, I then took this letter to the Regional Director of Education for endorsement. I wrote a third letter to principals of the selected schools. To save time, I personally delivered these letters to the schools.

Copron (1989) (cited in Orb, Eisenhauer & Diane,2000) said that any kind of research should be guided by principles of respect for people, beneficence and justice. He further explained that respect for people is the recognition of participants' rights including rights to be informed about the study and the rights to withdraw from the study at any time without penalty. To show respect for people and recognize the participant's rights, I clearly explained the purpose of the research to the participants and asked them to sign a letter of consent to serve as a guiding agreement between them and myself, the researcher. At the same time I informed them of their right to withdraw from the study any time they wished to do so (Appendix 6 Consent form). I further explained that their identities and that of their schools would not be disclosed to anyone.

I assured the participants that all information about them and their schools would remain anonymous. This process started on January 28, 2008, when I wrote my first letter to get permission to conduct research in state schools in the Oshana Region, and was completed in May 2008.

### **3.7 VALIDITY OF THE RESEARCH**

#### **3.7.1 Triangulation**

Patton (2002) claims that using a combination of interviews, observations and document analysis methods helps one to validate and cross-check findings through a process of triangulation. According to Cohen et al. (2000:101), triangulation is a powerful way of “demonstrating concurrent validity in qualitative research through the use of two or more methods”.

In order to enhance the validity of my research, I used multiple data sources. For Cohen et al. (2000:112), triangulation, using multiple data sources, helps the researcher to “map out, or explain more fully the richness and the complexity of human behavior by studying it from more than one stand point”. Anderson and Arsenault (1998:131) echo this sentiment by stating, “Triangulation is the use of multiple data sources, data collection methods and theories to validate research findings”. Furthermore they pointed out that, “triangulation also helps to eliminate bias and can help detect errors in your discoveries” (Anderson & Arsenault, 1998:131). In trying to ensure validity and trustworthiness and add credibility to my research topic, I also used teachers, learners and members of the community involved in *a whole school approach* programmes and projects at two selected schools as multiple sources of information (Cohen & Manion, 1994:38).

#### **3.7.2 Member checking**

This is a second strategy I used to increase the validity of my study. As I completed my transcripts, I asked the participants to review the information. I did this to give the participants an opportunity to both verify and add further information if so desired (Cohen et al., 2000).

### **3.8 PROBLEMS AND LIMITATIONS**

There were problems and limitations. One of the problems I encountered was that I could not start with my data collection as scheduled because of delays in obtaining the required permission from the Ministry and the Regional Office to conduct the study. At one school, the teacher withdrew very late from the study, but fortunately I had already agreed with another teacher at the same school to assist me if necessary. This caused problems with the scheduling of the times of the interview. One of the limitations was that the parents/ members of the community were not comfortable being interviewed by a stranger. Learners had problems with expressing themselves in English. When I realized this was a problem, I switched to their vernacular to further their understanding of the questions and to enhance their ability to express themselves.

### **3.9 CONCLUSION**

In this chapter, I discussed the research methodology that directed and guided my research. I also discussed and described the different methods and tools I used to collect data such as semi-structured interviews, and document analysis. I further discussed how data was analysed and elaborated on how validity and research ethics were handled during the study. Limitations and problems encountered during this study were highlighted in this chapter. In the next chapter, I explore the findings from the semi-structured interviews and document analysis.

## CHAPTER 4

### DATA PRESENTATION AND ANALYSIS

#### 4.1 INTRODUCTION

This chapter presents and analyses the research data. This data was obtained from the semi- structured interviews, the site observations and the document analysis for the purpose of investigating the perceptions of *a whole school approach* in selected schools in the Oshana Region, North Central Namibia. The data was collected from the stakeholders at the two selected schools. These stakeholders included teachers, learners and parents as members of the community.

The data are presented in this order:

- A brief description of each school in which the study took place.
- A profile of each research participant.
- A description of the participants and their narrative account.
- The research participants' views on the concept of environment and *a whole-school approach*.
- The reasons for selecting EE project activities.
- Environmental education/learning projects and the curriculum.
- The use of environmental education project activities as a teaching and learning resource.
- The benefits of a whole-school approach in environmental education.
- The challenges, problems experienced. and, progress and development.
- The data collected through document analysis and site observation

## 4.2 DESCRIPTION OF THE SCHOOLS

This section provides a contextual overview of the two schools in which the study took place. Both schools were SEEN pilot schools and were involved in *a whole school approach* for environmental learning. Omeho is a combined school situated in Ompundja Circuit east of Oshakati and is situated in a rural village 17 kilometers from the Regional Office. As a Combined school it provides for Grades 1 through to 10. The school has 13 teachers and 340 learners. The school has access to potable water, a pit-latrines and a staffroom. The school premises are well fenced, are animal proof, and include indigenous and exotic trees to provide shade for both learners and teachers. There is a school garden, fishpond, tree nursery and a pen for guinea fowl. All the classrooms in the school are permanent structures., The school, however, does not have a modern library or laboratory. Books are kept in a storeroom, which has been converted into a library. The school does not have electricity. Omeho was a SEEN project pilot school for 4 years. There are two EE facilitators at this school. The SEEN project supported this school by providing it with technical and material aid. The school was also provided with education and training involving teachers, learners and parents regarding the development, implementation and management of environmental activities and sustainability.

The second school involved in the study was Onzo Combined School. This school is situated 7 kilometers south of the town of Oshakati and 9 kilometers away from Ompundja Circuit Office. It is a rural school offering Grades 5 to 10. There are 22 teachers and 620 learners. The school has potable water, electricity and sufficient pit-latrines. There is a library, a laboratory and the school is provided with a Life Science classroom science kit. The school premises are well demarcated. There is a school garden and many trees planted around the school premises, mostly exotic with few indigenous trees. All the learners are taught in permanent classroom structures. This school was also a SEEN project pilot EE school for 4 years. There are two EE facilitators. This school had been participating in tree planting competitions that were conducted by the Directorate of Forestry, before the SEEN project came into being, and won the competition several times. Onzo school was provided with the same forms of support as Omeho.

The resources in these schools are well managed. Both schools rely on school development funds collected from learners (children of the subsistence farmers). All teaching and non teaching staff members working at the two schools are government employees. Both schools have a number of orphans and vulnerable children who are receiving monthly grants from the government's social fund. These children are exempted from paying school development fees. This, however, has affected the

economic development of the two schools. Both schools have HIV and AIDS programs, e.g. Window of Hope, which is mainly for children in the lower and upper primary phase, and the Lilonga Eparu program for children in the junior and senior secondary phase. Both schools are 10 to 12 kilometers from Oshakati and from Ongwediva hospitals and clinics. The area in which the two schools are located is politically stable. The two schools have not experienced changes in management since the time of the SEEN project or during the time this research was conducted.

The rural environment in which these two schools are situated depends on subsistence farming. The communities primarily depend on crop production; mainly *omahangu*, sorghum and maize, however, goats and cattle are also important sources of income. The environment in these areas is characterized by deforestation. Trees are cut for firewood, fencing materials and building materials. The other significant environmental problems are overgrazing and land degradation because of overstocking, grass is over harvested mainly for thatching and the soil is poor due to over cultivation. This means that the people in these areas are heavily dependent on natural resources which are at risk regarding their sustainable use.

### **4.3 PROFILE OF THE TEACHERS, LEARNERS AND PARENTS WHO PARTICIPATED IN THE STUDY**

This section presents and analyses the profiles of teachers, learners and parents who participated in the study.

**Table 4.3.1 Profile of teachers interviewed**

<b>Name</b>	<b>Sex</b>	<b>Age</b>	<b>Academic and professional qualification</b>	<b>Subject taught</b>	<b>Duration stayed at school</b>	<b>Years of experiences</b>	<b>Other roles</b>
<b>Foelo Zelo</b>	<b>Female</b>	<b>28</b>	<b>BETD &amp; ACE</b>	<b>Life Sc and Agriculture</b>	<b>2002-2007</b>	<b>6</b>	<b>EE facilitator</b>
<b>Fude Siyo</b>	<b>Male</b>	<b>37</b>	<b>BETD</b>	<b>Agricultural Sc</b>	<b>1997-2007</b>	<b>11</b>	<b>EE facilitator</b>

**Acronyms used in the table**

**BETD-** Basic Teachers' Diploma

**ACE -** Advanced Certificate in Environmental Education

**EE –** Environmental Education

**SC-** Science

The table presents the professional data of the teachers interviewed in this study. As I indicated in chapter three, for the sake of confidentiality, anonymity and privacy, each school, teacher, learner and member of the community was given a pseudonym.

The first teacher is Foelo Zelo a teacher at Omeho Combined School in Ompundja Circuit Oshana Region. She has been teaching at this school for six years since 2002. She teaches Life Science and Agricultural Science subjects from Grade 8 -10. Foelo has six years' experience in the two subjects. She is an EE facilitator at her school.

The second teacher is Fude Siyo teaching at Onzo combined school in Ompundja Circuit Oshana Region. He started teaching 1997 and so has 11 years teaching experiences. He has taught Agricultural Science Grade 8-10 for 11 years. Fude has been an EE facilitator of the former Supporting Environmental Education in Namibia (SEEN) project. These teachers were interviewed because they were and still are environmental learning facilitators at their respective schools. They play a major role in the running of environmental learning projects and activities at the schools and circuit level. Their schools serve as models for environmental learning to the other schools in the circuit as well as for the entire region.

The table below presents the biographical data of learners interviewed in the study.

**Table 4.3.2 Profile of learners interviewed**

<b>Name</b>	<b>Sex</b>	<b>Age</b>	<b>Grade</b>	<b>Number of years at school</b>	<b>Other roles</b>
<b>Tulo Polika</b>	<b>Female</b>	<b>16</b>	<b>10</b>	<b>9</b>	<b>Caretaker and organizer ( EE and HIV &amp; AIDS awareness)</b>
<b>Mulo Picy</b>	<b>Female</b>	<b>16</b>	<b>10</b>	<b>9</b>	<b>Club secretary and a dancer</b>

Two learners, aged sixteen, one from each of the two schools taking part in the study were interviewed. The first learner is Tulo Polika a learner at Omeho Combined School in Ompundja Circuit in Oshana Region. She is a member of the environmental education and AIDS awareness club at her school. She is the caretaker of the tree nursery and organizer of the HIV and AIDS activities at the school level. The second learner is Picy Mulo, a learner at Onzo Combined School in Ompundja circuit in Oshana Region.

She is a member of the Cultural group at school and acts as the secretary and dancer of the group. These learners were interviewed because they played different roles in various environmental learning project activities that were taking place at the schools that participated in this study.

The table below presents the biographical data of parents interviewed.

**Table 4.3.3 Profile of parents interviewed**

<b>Name</b>	<b>Sex</b>	<b>Age</b>	<b>Job status</b>	<b>Other roles</b>	<b>EE experiences</b>
<b>Ruos Ameho</b>	<b>Female</b>	<b>37</b>	<b>Self-employed</b>	<b>EE advisor</b>	<b>Traditional knowledge</b>
<b>Efolo Peto</b>	<b>Male</b>	<b>45</b>	<b>Self-employed</b>	<b>Headman</b>	<b>Traditional knowledge</b>

Two members of the community were interviewed, one from the surrounding community of each of the two schools that participated in the study. These parents were interviewed because they were part of the school environmental learning project activities in the participating schools. In keeping with the confidentiality agreement, pseudonyms were also used for the members of the community interviewed. The first community member interviewed is Ruos who lives in Oshinyandila village near the Omeho School. Ruos is a self-employed female in that she is a subsistence farmer with her husband . She is serving as the EE project activities advisor to the school. She has been involved in the school building community programme. One of the project’s achievements has been the construction of additional classrooms. The second community member interviewed was Efolo Peto. He lives in Omeege village and is the headman of Omeege, a village near the Onzo Combined School. His major role as a member of the school’s environmental committee is to mobilize other members of the community to support the school in its effort to improve its environment.

## **4.4 INTERVIEW FINDINGS**

### **4.4.1 Perceptions of the concepts of environment and *a whole school approach***

In this section, I present the perceptions of my research participants regarding the environment and *a whole school approach*. The data in this section was primarily generated from interviews.

I present the findings by first considering the views of the teachers, then the perceptions of the learners, and finally those of the community.

Ms. Foelo, ( a teacher) perceived the environment as “ *the world around us including plants animals and non-living things and the effect that it has and that they have on each other*”. She said she heard about the concept during her primary education in some subjects but she did not understand its meanings. “*I at least had an understanding around the year 2000 to 2003 when I got involved with the funded project called Supporting Environmental Education in Namibia (SEEN) project when our school was chosen as a pilot school*”. For her, environmental education was a learning process where people were educated about the importance of the environment and what effects they have on the environment. The result was that people were equipped with the knowledge and skills to take care of the environment.

Ms. Foelo defined a whole school approach as follows:

*“I think a whole school approach is about involving different stakeholders in education, in environmental education so to say. So, different stakeholders say you involved the learners themselves, the teachers the community members, non-governmental organizations and any other person that might be interested in environmental learning program”.*

Mr. Fude (a teacher) responded as follows:

*“The concept of environment means the part of nature which is useful to us. Then by that, I mean plants, animals and other undistinguished areas. I first heard about the concept of environment when I was in Grade 3. I learned about it in the subject called “Health Education” where we used to learn about the importance of the environment and how they take good care of their surrounding in terms of pollution and environmental issues”.* For him, environmental education was about educating or making people aware about litter or any other harmful things that may affect them. He understood the concept a whole school approach to mean to get everyone, all the parties or stakeholders of education involved in environmental issues, for example, learners, teachers and parents/members of the community.

Fude was interesting because his emphasis was on the environment that was useful to humans.

In response to the question of “How do you understand the term environment?” learners had this to say: Tulo a learner at Omeho combined school said:

*“Environment is the world around us in which we stay including animals, plants, land, water and air”.*

She further pointed out that she heard about this term in 2003 at school while she was Grade 3 in the subject Environment Studies. When it came to the question of how the term environment differs from the concept environmental education, Tuli said that environmental education is just a learning process through which people gain knowledge and skills. When asked to explain the term *a whole school approach*, she said:

*“A Whole school approach means involving all teachers, learners, principal and heads of department. In other words it means that not only teachers should be involved in environmental education but the whole school community should take part for the environmental education to be successful”.*

Picy, (a learner) interviewed at Onzo Combined School identified the concept of environment as follows:

*“The term environment is the physical and social condition in which people live as they influence their feeling and development. For example, like Onzo is environment because people are feeling that is where they want to live”.*

When she was asked when she was first introduced to the term environment, she explained: *“I heard about it at my Primary school in 2001 when I was in grade 2 when we did environment studies”.*

She viewed the difference between the concepts of environment and EE as follows:

*“The term environment differs from the environmental education because environmental education is the process which teachers teach learners and community on how to respect and care of the natural resources in the surrounding and to know there is their life”.*

Picy’s view of *a whole school approach* was as follows:

*“The whole school approach to environmental education implies that the school must consider not only how environmental education is integrated through subject teaching but examine and improve the state of the school”.*

She further explained that this includes how the school models the principles of democracy, equity, access, co-operation and participation. According to her, "these key elements are concerned with how they learn and organize the school. Improvement is the focus of the Namibia education reform process and everyone, particularly, teachers can model better environmental practices." She said that there were many areas where the environment could be examined in order to help the school become a better place in which to live, learn and work.

Members of the Community that were interviewed were those directly involved in the school environmental learning activities. The first member of the community interviewed was Rossy (a community member). When she was asked how she understood the concept of environment, she responded:

*“The environment is the word which means that the environment is the place we are, where there are animals, trees, water and air”.*

She pointed out that she first heard about the term or concept of environment between 2002 and 2004 at the school in meetings where it was clearly explained what environment is all about. She claimed that there had been many changes in her environment. For example, the forest in her area was quite thick with many trees and wild animals but people started hunting and killing these animals. Trees had been cut down and cleared.

In answering the question of how the concept of environmental education differs from the term environment, she explained:

*“Environmental education differs from environment because it is environmental education of place environment which includes plants, animals and to care for water and the other things”.*

The second member of the community interviewed was Efolo (a community member). He was a parent and a member of the community in which Onzo Combined School is situated. To the question "what do you understand about the concept of environment?" Efolo responded:

*“The concept of environment is the place where you stay including everything found in the surrounding e.g. animals, plants and many other small animals which are not always visible”.*

When asked when and where he heard about this concept, he said; *“I heard this concept/term at school. First, we were taught the subject ‘Omudhingolokolongo’, which in English means Environmental studies”* He claimed that there had been many trees in his area but now there were only a few trees. The forest disappeared because people chopped trees for building materials for their homesteads, and for making fences and firewood.

In my conversation with the members of the community, they were happy to respond to the notion of environment and environmental education but were uncomfortable with the term *a whole school approach* because it was obviously not a term with which they were familiar.

#### 4.4.2 Reasons for selecting environmental learning projects

This section provides evidence of environmental learning activities at the school level and the reasons for selecting these activities at the selected schools. The findings are presented in the same order as in section 4.4.1.

When asked what environmental education project activities their schools had embarked on, the teacher, Ms. Foelo described the following:

*“We have tree planting, so we have a nursery at school. We collect seeds ourselves; we prepare poly pot bags putting in soil, the learners plant trees and then we take care of the seedlings”.*

She further pointed out that her school had a natural earth fishpond where they bred a variety of fish, e.g. tilapia, catfish and bumble. Helping to keep the environment clean is another activity carried out at her school. Part of the environmental education activities included maintaining the school environment and ensuring the learners informed about why it is important to keep their school environment clean. She continued to point out that her school had water saving techniques and re-cycling of waste materials. One of the strategies for saving water she mentioned was having the learners use cups or water bottles when drinking water from the tap in order to not waste water.

Ms. Foelo’s description of the school’s environmental activities included:

*“what we did, conducting a school audit looking at what problems do we see at school, which one do we think needs immediate attention and it turned out that the school needs trees as many as possible that will also help the community realize and start valuing the trees”.*

She emphasised that the learners were involved in this process and were asked to audit the environment of the school, to identify problems, and to decide which of these problems needed immediate attention.

She concluded her answer to this question saying:

*"This means that we did not work alone but involved learners. Almost every class was represented. And then through this data collection, we are able to at least figure out which problem is to be addressed as soon as possible according to how the school community feels."*

Mr. Fude (a teacher) responded to the same question saying:

*“So, our school was involved in projects such as tree planting and then we also had a garden project, we also have a fish pond and also had some other programme activities like Window of Hope and My Future is My Choice and AIDS club”.*

To the question of why the school chose, and prioritized a particular activity, he responded:

*“So, first we look at the availability of the space the school has and we also look at the resources that we have in terms of the local available materials that do not require more money. Then we decided that we could start with vegetable garden project because we do have enough for that. And then we also put structures where we can harvest water and we find that water won’t be a problem”.*

The same questions were posed to the learners. Picy (a learner) said:

*Our school chooses growing vegetable crops at the garden and keeping fish in a pond. The reason for our school to grow vegetables is to sell some of these vegetables to learners and people to earn an income to buy simple school equipment such as pens, erasers, rulers etc. And also to give vegetables to those people who are infected with HIV and AIDS.*

In supporting Picy, Tuli (a learner) responded:

*So, we have tree planting, agriculture, fishing, water saving and cleaning the environment. The reason for my school to choose these project activities is just to make our environment the place or the best environment of study or learning”.*

When members of the community were asked why schools chose these environmental learning activities, they responded as follows.

Ruos (a community member) said:

*Parents are helping in tree planting activities. For example, when children are planting trees then a parent or a community member can guide them. What made us to choose to plant trees around the schoolyard is because we want to reforest our area and make our area as it was before because we know that trees bring us fresh air and at the same time, trees beautify the natural environment. So, through this process the parents or members of the community will gain knowledge and skills on how to plant trees.*

She added that the school was also breeding fish. According to her, these project activities gave learners knowledge and skills. The other activities were to encourage learners to pick up waste around the school premises together with the school institutional workers in order to keep the school's environment clean.

Mr. Efolo’s (a community member) response was:

*“So, this committee came up with a vegetable garden project that has to be established in school. In addition, this project was given a name “Tonata” project in vernacular language, which means wake*

*up. So, this project's aim was to produce vegetables and raise funds for future plans and smooth running of this project..”*

He further explained that the focus was on vulnerable and HIV infected children at school to provide them with fresh vegetables to enhance their health.

#### **4.4.3 Parental and community involvement in EE activities**

Part of my study was concerned with finding out about the extent of the parent and community involvement in the environmental activities of the school.

To the question of whether the parents and members of the community were involved in EE/L activities at school, Ms. Foelo ( a teacher) responded as follows:

*“Actually, what we did first we conducted a meeting with learners at school in which we were creating awareness about environmental education, why is it important, why it is all about, who are the participants and activities can one participate in if they become members of the environmental club. So, first it is about informing learners and asking them to inform their parents and thereby we... invite them to attend the second meeting in which we explain to them.”*

To clarify her point she explained that initially only a few parents turned up and then only three parents showed an interest in joining the team.

Mr. Fude (a teacher) responded:

*“So, the first thing that we did to get them involved is to explain the whole issue to them and make them understand the importance of the environment if it is properly managed”.*

To support this statement, he further explained that they helped the community to understand what they were trying to communicate to them.

When learners asked how parents/members of the community were involved in the idea of *a whole school approach* to environmental learning activities, learners responded as follows:

Picy (a learner) said:

*“Our parents or members of the community were called to attend the parents meeting. Our teachers explained more about environmental education to them and encouraged them to join in different activities e.g. nursery, fish etc”.*

Tuli's (a learner) comments concur with what Picy said about how parents/members of the community were involved in environmental activities at school.

She said:

*“They are involved in environmental education in different ways, like during meeting they discussed the need of the school activities, for example, what they want to plant in the garden and why, to make prevent the garden from vandalism during the afternoon week and holiday. They also make the activity to be known outside that support either financially or other resources”.*

The responses of the members of the community to the same question were as follows:

Ms. Ruos (a community member) responded:

*“First, I attend one meeting at this school where we were told that there is a programme like this or that. There is a group or tree planting committee at school and if parents are interested they can take part”.*

Parents were told that they could register with the project and they could always come together and meet. She concluded by saying that this means *“I got involved through meetings”.*

Ms. Efolo (a community member) responded:

*“I have interest and love to plant trees and like to put and place things in order that is why I was selected to be part of the school environmental project committee”.*

#### **4.4.4 Participation in the environmental education activities**

In reply to the question about who participates and does most of the environmental education project activities at school, both teachers responded by saying that learners do most of the work.

For example, Ms. Foelo (a teacher) responded:

*“I must say the learners are, under the supervision of the environmental education facilitators”.*

She continued by explaining that most of the activities are carried out by the members of the environmental club. For example, they have to water seedlings in the tree nursery, record data, conduct meetings and discuss different issues.

Mr. Fude (a teacher) echoed this sentiment:

*“So, I may say those parties are involved, but the learners are the one who are taking the lead since they are the one who are dealing with practical activities in term of gardening. They do study a lot of gardening activities in Life Science and Agricultural Science. So, they are the ones who are planting, weeding, and watering so that they can do their practicals”.*

In answering the question, Who participates and does most of the work in environmental education project activities, learners have this to say:

Picy (a learner) said, *“Teachers and learners and some teachers are the one who do most of the work in the project”*.

Tuli (a learner) echoed Picy’s ideas, *“we have teachers and learners, we have community members but only three who participate and learners do most of the work with the support of teachers”*.

When the members of the community were asked this question, they responded as follows:

Ms. Ruos (a community member) said, *“Teachers and learners do most of the work because they are always at school but mostly learners”*. She explained that parents and members of the community were mostly involved when there was a tree planting activity day.

Mr. Efolo (a community member) said, *“Most of the work is done by the learners, of course they are the majority here and they are also members of the “Namgreen Environmental Club”*.

#### **4.4.5 The use of environmental learning projects as a teaching and learning resource**

The environmental activities linked to *a whole school approach* were expected to play a role in the subject teaching across the curriculum. When teachers were asked how they used environmental education project activities as a resource for teaching and learning, their responses were as follows

Ms. Foelo (a teacher) said:

*We actually use it for outdoor teaching especially when they are talking about trees in Lower Primary phase in a subject called Environmental studies. The mathematics people also use these activities to do statistics e.g. counting how many mango trees are there in the school and how many mopane trees and so on.*

She pointed out that by taking learners to the tree nursery, they were able to identify different trees. *“I mean they will then by visiting the nursery they will be able to say oh! This is the tree we learned for example, so, this is what a lemon tree looks like.”* She also pointed out that in agriculture, for example, the Grade 9 syllabus includes a section on fish farming and they use the fishpond to study this topic.

Following Ms. Foelo ( a teacher), Mr. Fude responded:

*“They are using them as I mentioned by integrating the theoretical and practical part of learning. So, after they teach learners in the classroom theoretically, then they have to take them out so they can do the practice to put what they learned on the ground”.*

When learners were asked the same question, they had this to say:

Tulo (a learner) responded as follows:

*“Like the fish pond is used by grade 9 in fishing farming and the nursery is use by all learners in different subjects, for example Natural Science, Environment... and Environmental Studies in grade 3”.*

To the question of how they used it, she said they go and observe the beauty of the plants and trees. She continued explaining that they do theory and go out to observe. For example, they went to the tree nursery to see different trees. Therefore, learners will know what kind of trees there are and their names as well.

Picy (a learner) response was:

*“As learning resource, our teachers use to teach us. They use to... they use some of the fish and crops in their explanation to help learners understand their subject better”.*

Ruos (a community member) responded:

*“Teachers use these activities when they are teaching learners showing them different things in premises of the school for example show them parts of the plants such as leaves and stems ”.*

Efolo (a community member) responded:

*“There are many disciplines/subjects which have same topic like topic of HIV, littering or pollution are topics in Life Science subject. They are also in Geography but also easy to include in English just after having an cleaning campaign it is easy to ask learners to write about “cleaning campaign at our school or ask them to write to your friend explaining how they cleaned the school three weeks ago”.*

#### **4.4.6 Benefits of environmental education project activities**

Questions in this section explored how *a whole school approach* benefits the school in terms of environmental learning. To the question of how the school benefits from environment education project activities, teachers responded as follows:

Ms. Foelo (a teacher) said:

*“Now it is like the school through environmental education, a school is able to come up with a lot of projects that did not exist before. It has put the school now at a different standard compared to how it was looking in the past”.*

To clarify her point, she explained that through environmental education projects, the school has developed systematically and through this, the school environment has improved.

Mr. Fude (a teacher) responded:

*“The major benefit is to strengthen the relationship between those parties, which is learners, teachers and members of the community. The community will also feel ownership that yes; the school is ours because they are not sidelined in what ever activity is taking place”.*

When learners were asked the same question, they had this to say:

Tulo (a learner), said, *“This project makes our school a better place to live and learn. We use them in our learning e.g. Agriculture and Life Science. Other grades also use them in the learning”.* While Picy (a learner) said *“Our school is benefiting a lot from project activities such as tree nursery and garden. Learners are collecting different seeds of tree and grow them sell it to the community for a reasonable price, a school gets income”.*

To substantiate this point, she explained that they normally grew tomatoes and fruit in the garden. Teachers and members of the community bought the products and the school used this money to buy seeds and manure, and the school benefited financially.

Ms. Ruos (a community member) responded by saying:

*“The school is somehow benefiting from the community in the form of money which can be used to buy for example seed to be sown the next year and the school physical environment is always looking good and beautiful”.*

Mr. Efolo (a community member) said:

*“The benefits that we get from this relationship are for example, we have shade in the garden”.*

He further explained that the community gave the school different types of information and advice on what to do so that the school garden activities could progress.

#### 4.4.7 The support the school gets from the community involvement

When the question was posed to the teachers about the support the school got from the community, they had this to say:

Ms.Foelo (a teacher) , *“when we have a tree planting activity day, we invite the parents or members of the community to attend and ask them to deliver inspirational speeches”*.

For example, she said, the school asked the headman to give a speech on the importance of keeping the environment clean. Political leaders were asked to deliver a message about a specific topic, whether it was World HIV and AIDS day or World Environmental Day.

Fude (a teacher) responded by saying:

*“So, they were very much helpful to us in terms of supplying local available seeds”*.

He continued to explain that members of the community were helping them when it came to supplying tools or materials that were used in the preparation and establishment of a tree nursery.

In response to the same question, learners had this to say:

Tuli (a learner) explained that learners received information from parents and members of the community and that parents and members of the community supplied the school with animal manure for the tree nursery. Picy ( learner) said that parents and members of the community gave instructions and advice to learners and the teachers on how to carry out the various environmental activities.

To support what learners said, members of the community expressed themselves as follows:

Ms. Ruos (a community member) said:

*“In case learners sent to bring fertilizers, parents provide learners with animal manure and seeds to bring to the school. If parents or members of the community come across with good seeds and other relevant environmental education materials, they bring them along to be used in the school”*.

She claimed that when parents or members of the community were involved in school activities, it enhanced and created a good relationship between the teachers and the learners, and between the teachers and the community. According to her, through a good relationship between the school and the community, learners saw that parents were interested and involved in their education.

Mr. Efolo (a community member) responded by saying:

*“This whole school approach has a big influence to everybody who is involved especially to learners who were involved in tree planting and cleaning campaign. You know that they come back to you and tell you that I also want to buy my mango tree so that I go and plant it at home”*.

He further explained that this had an influence on learners and even teachers who bought trees to plant at their own houses.

#### **4.4.8 Challenges and problems encountered with *a whole school approach***

When teachers were asked about the challenges they face with the implementation of *a whole school approach* to environmental education activities, they had the following to say:

Ms. Foelo (a teacher) explained, “*The challenge we have is to make people e.g. teachers and learners understand what environmental education is all about*”.

She claimed that some people, including teachers, showed negative attitudes towards environmental learning activities. With regard to problems encountered, she explained that at the beginning “*you plant seedlings today, the next day you may find that some of them have just gone missing.*” She gave an example citing that vegetables like chilies and green peppers are sometimes never harvested. According to her, people from the community come into the school garden, root out and steal the vegetables.

Mr. Fude (a teacher) responded:

“*The major problem we have encountered is to be on top of water because when we have a lot of activities going on in the garden, we sometimes used to receive letters from the Ministry asking to explain why the school water bill is so much higher than that of other schools*”.

To the question about how the school solved this problem, Fude added that they made their own water catchment through dams and harvested rain water from the roofs of the buildings so that the school used harvested water when it stopped raining. He did not cite any challenge the school faced with the implementation of *a whole school approach* to environmental education.

Learners had some understanding about the same the question. They responded as follows:

Picy (a learner) said:

*The problem is finance or money to buy equipment, for example textbooks.*

She added that some learners forgot to water their vegetables and feed the fish in the fishpond. This according to her affected the growth rate of both the vegetables and the fish in the pond.

Picy responded:

“*Some of our seedlings in the nursery destroyed by animals and sometimes by people in the surrounding area of the school*”.

The two learners did not cite any challenges faced by their schools in the application and implementation of environmental education/learning activities.

The two members of the community responded to the same question as follows:

Ruos (a community member) explained, *“Problems are there and there are always some people who do understand and those who do not understand how the school environment is important.”* For example, she said, sometimes people opened the school gate and goats got in and fed on the vegetables in the garden. She added that sometimes children in the neighborhood of the school jumped over the school fence and caught fish from the fishpond.

Efolo (a community member) said:

*“The problems are only when the school fence is not strong enough or animal proof and animals like goats broke in to feed and destroy our plants”.*

#### **4.5 SITE OBSERVATION**

Site visits were conducted to see what projects were ongoing, to assess how effectively these environmental projects were run and how well each of the projects was planned and organized. I also used the information to comment on what had been observed and to add additional information about the projects that had been carried out at the two schools.

My first site visit was at Omeho Combined School. The teacher, Ms. Foelo took me around the school premises. My first impression was that the school environment was clean and beautiful.

The teacher explained to me that the school bred chickens and guinea fowl as part of the environmental learning project. These two projects, according the teacher, were established for education purposes and to educate the community that guinea fowls are not only important as food for humans and other carnivores but they enhanced the beautification of the environment. She said:” *So, guinea fowls together with other birds, fish in the pond and trees make up a school ecosystem whereby learners and teachers can identify different populations.”*



**Picture 1 shows guinea fowls and chickens at Omeho Combined School.**

These two projects (guinea fowl and chickens) were not mentioned during interviews with any of the stakeholders at the school.

The Omeho school had a thriving and functioning fishpond project. The fishpond had clean water, tall grass around it and fish. The teacher interviewed at the site while viewing the fishpond explained that the school bred fish for both educational and income generation purposes. The picture below shows an earth fishpond of Omeho Combined School.



**Photograph 2 Shows an earth fishpond at Omeho Combined School**

She explained that teachers used the fishpond when they discussed fish farming with learners in Agricultural Science and to demonstrate to the members of the community how to farm with fish.

Through this demonstrations, members of the community and parents were encouraged to establish their own fish ponds at home.

Foelo further explained that when they harvested fish, they sold some of the fish to the community and used the money to support and sustain the project.

The tree nursery had a fence around it and there were seedlings in the nursery. These seedlings were healthy and cared for. It had a shade net to provide shade for seedlings.



**Photograph 3 Shows a tree nursery at Omeho Combined School.**

The Life Science and Agriculture Science school garden is fenced off with a living fence made of *Dodonea* trees. The fence looked beautiful. There was, however, nothing planted in this garden at the time of my site visit. There were many various indigenous and exotic trees planted around the school premises. These trees beautify the school environment and provided shade for the teachers and learners as well as the animals, such as the guinea fowl and chickens, and at the same time trees helped to stabilize the weather.



**Photograph 4 Shows the living fence around the school garden of the Omeho Combined School.**

Discovered during this site visit was the fact that Omeho CS had an energy savings project. It was not mentioned in the interviews. This project was based on an energy saving stove that made use of sunlight rather than solid fuel. Asked how the school used this energy saving stove, the teacher interviewed at the site explained:

*“The school demonstrates to teachers, learners and member of the community how to save energy using a solar energy saving stove and as alternative energy sources in order to save fire wood and to reduce deforestation activities. What we actually do is that, when we received something like this, we inform other teachers for example, saying that we received a solar stove. So, every one is free to use it in the classroom when he or she is talking bout issues such as deforestation, energy and so on”.*

She further explained that she normally called learners to observe what is happening especially when she was cooking something in this stove during tea break.



**Photograph 5 Shows teachers and learners standing next to solar energy saving stove at Omeho Combined School.**

When they had a meeting, members of the community were asked to bring traditional food to be cooked in this energy saving stove and asked to taste the food cooked in the solar oven in order to encourage them to make use of this energy saving stove as they cannot afford to buy one.

The Omeho School had an environmental club and an HIV and AIDS club.



**Photograph 6 Shows members of the Omeho Combined School environment club on an exchange visit to the neighboring school.**

Given this information, it was observed that projects from this school were effectively run and there was proper planning, organization and monitoring of the projects.

My second site visit was at Onzo Combined School. My site visit at this school was done on the same day that I interviewed learners and the teacher. After I had finished with the interviews, the teacher, Mr. Fude took me to different areas around the school to see the projects they had in place. I was impressed by the cleanliness of the school environment. The school environment looked beautiful because there are many trees planted around the school premises. Many of the trees were exotic trees. The trees provided shade for both teachers and learners. Fude explained to me that many trees were planted over the years when the school participated in regional school tree planting competitions before the SEEN project came into being. However, with the support of the SEEN project, the school expanded its current tree planting project activities.



**Photograph 7** shows trees planted around premises of the Onzo Combined School.

The school had a garden but nothing had been planted at the time of my visit. The teacher claimed that domestic animals destroyed their crops during the long school holiday and they were recovering from the flood waters that covered the school grounds in March that year (2008). The fishpond was one of the projects discussed during the interviews but the pond was dry when I visited the school. The teacher claimed that they were in the process of establishing a new fishpond but the preparations took them time as they relied on external support.



**Photograph 8** shows the site of a fishpond at Onzo Combined School.

The school had a water-harvesting project but at the time of the visit, this project was not functioning because it was the rainy season. The infrastructure looked damaged. For example, the gutter structure to take water from the roof of the building was broken and the earth dam they used to pump water was full of sand. The teacher explained that they used this water-harvesting project to harvest water from the roof of the classrooms during the wet season in order to use harvested water for the fishpond and to water plants during dry season. The school did not have a tree nursery or animal husbandry project. From the look of things, projects from this school were not properly run and effectively used for the

purpose of learning and environmental care. There appeared to be a lack of proper planning, organization, evaluation and monitoring of the projects.

The similarities between the two schools was that both schools have tree planting projects but the difference was that the Omeho school maintained a functioning tree nursery, a guinea fowl and chicken projects and fish pond, while Onzo school had a non-functioning garden and fish pond.

## **4.6 DATA COLLECTED FROM DOCUMENT ANALYSIS**

In this section, I analyse the development plans of the two schools in my study. In each of the school's development plan (SDP), I identify the extent to which it could support *a whole school approach* and more specifically the extent to which EE is either implicitly or explicitly embedded in these documents. Thereafter, I look at the syllabuses and lesson plans of the specific subjects taught by the two teachers involved in this study.

### **4.6.1 School development plans, Environmental education policy and Mission statements**

According to the national standard performance indicators for schools in Namibia, each school in Namibia should have a development plan, which guides and directs school development activities. Initially this school development plan (SDP) document should include whole school life development (Namibia. Ministry of Education [MoE], 2006). The findings show that the two schools involved in this study had school development plans in place. However, these development plans did not describe or indicate how the school was going to deal with environmental issues, challenges and risks. Each school that embarked on *a whole school development approach* to environmental learning was expected to have an environmental learning policy guide that directed its activities. Document analysis revealed that each of the two schools involved in the study had a written environmental policy guide. However, these policy guides neither supported nor were they linked to the school development plans (SDP) of the schools in any way. Although environmental education and *a whole school approach* development plan were not explicitly dealt with in the school development plan, there were influences, for example, in Onzo Combined School's SDP that indicated the importance of fencing the school for safety reasons. The SDP also indicated the need for action that would improve the quality of educational teaching and learning.

One problem evident with these policy guides was that they were not adequately developed to include relevant details about how the school was to deal with environmental learning programs (**Appendix 7 SDP** ).



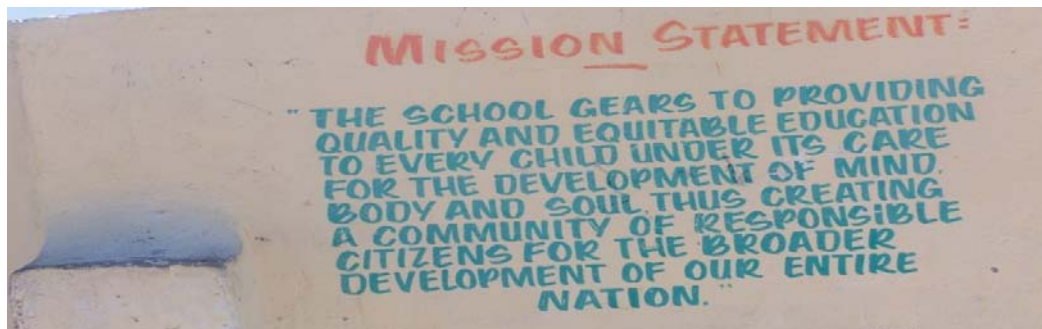
**Photograph 9** shows an environmental policy printed on the gate walls of the Omeho Combined School.

The EE policy guide from Onzo Combined School is formulated as follows:

Title: *Onzo Environmental Education Policy*

*Learners, teachers, and community will try to:*

- *Conserve our environment*
- *Use and manage natural resources around us more wisely and conserve sustainable ways to produce extra food*
- *Minimize water and electricity use*
- *Keep our school grounds litter and pollution free*
- *Beautify our school grounds by planting more trees and flowers*
- *Incorporate environmental days in the school calendar and cerebrate them*
- *Share ideas, improve co-operation throughout the school community and the community members at large.*



**Photograph 10** shows a mission statement printed on the gate walls of the Onzo Combined School

Given this mission statement, one can see that EE was implicitly embedded in the concept of providing quality and equitable education and creating a community of responsible citizens. This meant that education provided at the school according to this mission statement aimed to help children develop different life skills, knowledge, values and norms including environmental education if one was looking at it from the broader perspective of education and development.

In order to confirm what the participants said in the interviews and what I observed when I conducted the site observations, I selected and studied syllabuses that showed the rationale and implementation for *a whole school approach*, and looked to ascertain to what extent these syllabuses addressed and provided opportunities for environmental learning for teachers and learners.

#### **4.6.2 Syllabuses analyzed**

The syllabuses analysed in this section were specifically syllabuses of the subjects taught by the two teachers directly involved in this study.

Ms. Foelo, the teacher from Omeho Combined School taught Life Science from Grades 8 to10 as well as Grade 10 Agricultural Science. Mr. Fude, a teacher from Onzo Combined School taught Geography and Agricultural Science in Grade.10.

My examination of these syllabuses revealed that in the Life Science syllabus taught by Ms. Foelo, the following opportunities were provided for environmental learning.

- Learners are expected to acquire skills on how to maintain a school garden and why it is important to shade and water plants.
- In the topic health education they learn about the impact of STDs especially the transmission of HIV and AIDS.

- In the topic the Local, International and Global Environment they learn about pollution and the impact of this environmental problem on people and animals.
- In the syllabus section on Food Production they look at people, food and the environment with the focus on how natural resources are used and to recognize why it is important to consider sustainability in the area of farming in relation to environmental problems that may occur if sustainability is not considered.

The Agricultural Science syllabus taught by both Fude and Foelo provided environmental learning opportunities in the following areas:

- Economic importance of agriculture.
- Environmental problems associated with agriculture e.g. soil erosion.
- Animal production: this includes poultry farming and fish farming in Namibia and the economic importance of animals.
- Plant production: Included here are topics such as methods of producing vegetables - preparation of soil, growing plants within the school grounds to beautify the school environment.
- The importance of conserving natural resources.
- Health education: learners are to describe the effect of HIV and AIDS on agricultural production.

#### **4.6.3 Teachers' lesson plans**

The findings indicated that the two teachers interviewed had lesson plans in their possession as evidenced in the interviews. Objectives of the lesson plans supported, to a certain extent, environment education but the contents of the activities, in the lesson plans were not really linked to the development of *a whole school approach* activities because these activities did not show how learners and teachers developed problem solving and decision making skills using their school environment. Again, the lesson objectives were too broad to be covered in the lesson that lasted for 40 minutes. For example, the objective number 2 said, “learners will be able to identify the importance of all components of the the environment”. Given these lesson plans, one could see that these are more theoretical classroom-based activities than outdoor teaching activities as participants claimed in the interviews (**Appendix 8 A lesson plan as evidence- Omeho School**).

## 4.7 CONCLUSION

In this chapter, I presented the findings from data gathered from semi-structured interviews, site observations and document analysis. The findings that I reported were linked to the research question and which was to investigate teachers, learners and parents understanding and perceptions of *a whole school approach* to environmental learning in selected schools in Namibia. In the next chapter, I discuss the findings under the themes that emerged from the literature reviewed within my research question.

## CHAPTER 5

### DISCUSSION OF FINDINGS

#### 5.1 INTRODUCTION

In chapter four, I presented the views, understanding, perceptions and experiences of six participants; two teachers, two learners and two members of the community regarding the application of *a whole school approach* in environmental learning and the involvement of members of the community/parents in the development of environmental education activities. In this chapter I examine these findings in light of the ideals of ESD as adopted by the Namibian school curriculum and the challenges identified by Namibia that need to be addressed to ensure a sustainable future.

The following themes form the core of this discussion:

- Participants' views and understanding of environmental learning and *a whole school approach* and their perceptions of the benefits of *a whole school approach* for environmental learning in relation to *a whole school approach* and ESD.
- The participants' views on the implementation of *a whole school approach* program.
- The impact of *a whole school approach* on the curriculum.
- Challenges and problems with the application of *a whole school approach* in environmental education.

#### 5.2 PARTICIPANTS' VIEWS AND UNDERSTANDING OF ENVIRONMENTAL LEARNING AND A WHOLE SCHOOL APPROACH

In this section I discuss the views and understanding of all six stakeholders of *a whole school approach* in the context of environmental education for sustainable development. In order to obtain clarity about the participants' tacit understanding of the need for sustainability in the light of the challenges these communities face, I begin by considering their views related to the environment and to environmental education. These views when considered alongside their responses to *a whole school approach* provide insight into the core issue of the role of *a whole school approach* in the context of ESD.

In the light of this information, in investigating the participants' views and perceptions of ESD, this study revealed that the participants did not have a clear understanding of ESD as it is new information to them.

### **5.2.1 The participants' view of the Environment and Environmental Education**

In the literature review chapter, Jickling and Spork (1998) claimed that the term environmental education emerged during the late 1960s and early 1970s, with various meanings attached to it. To understand this range of meanings, Lukas (1979) cited in (Jickling & Spork, 1998;314) claimed that arguments and interpretations of the concepts of the environment and environmental education could be comprehended as falling into three main classes; education *in* the environment, education *about* the environment and education *for* the environment. ESD is essentially education *for* the environment as it specifically incorporates an understanding of the integration of the bio-physical, social, political and economic dimensions into environmental learning.

The findings revealed that my research participants focused primarily on the bio-physical dimension of their environment as they defined environment as the world around us in which we live and the natural physical conditions. A particularly interesting emphasis was that of the natural environmental aspects which 'are useful to us', including animals, plants and non-living things, e.g. land/soil, water and air. This interpretation would appear to be somewhat problematic in the broader context of sustainability. Thus while there was a tacit understanding that their environmental endeavours were to enhance and to maintain their environment, the views expressed lacked the conceptual sophistication needed for a deep understanding of sustainability in the contexts explored in chapter two.

While it was apparent that the participants were aware of the environmental challenges faced by their communities, nobody specifically related these environmental challenges to the social, political or economic effects on their communities. For example, they could see how over-harvesting of wood, deforestation and overgrazing were their everyday problems, but they did not relate these specifically to the social, economic and political effects of these issues. A closer analysis of the ESD programmes, as will be seen later, does reveal an inherent appreciation of the relationships between the bio-physical, social and economic aspects of the environment.

On the positive side, the environmental issues that were being addressed by these two schools focus on aspects of the environment that, to them, were real in the context of their local environment.

The research participants interpreted environmental education as a process of learning in which people gain knowledge and skills while educating people about the importance of the environment and what effect they have on the environment. While the views expressed indicated an appreciation of the body of knowledge associated with environmental learning, as well as the development of particular skills, what was less apparent was how these related to an inherent value system.

### **5.2.2 Participants' views of a whole school approach**

Henderson and Tilbury (2004:6) saw *a whole school approach* that integrated environmental sustainability as involving all stakeholders in contributing to but also gaining from a partnership approach to education for sustainability, thus, involving teachers, learners, management, school boards and parents/members of the community in the development of the school's life.

Those interviewed in this study echoed this sentiment as they understood *a whole school approach* as a method of getting everyone, all the stakeholders in education, e.g. teachers, learners, members of the community and non-governmental organizations, involved in the environmental education issue. There was also an understanding that all participants would develop knowledge, values and skills from this partnership. Documents that were analysed, such as syllabuses and school environmental policy guides, provided a rationale for the adoption of *a whole school approach* programs. For example, schools in their aims and objectives stated that they planted trees and have a tree nursery to encourage ideas of re-forestation in their own school environment; to produce shade trees, trees for beautification, and to improve their school grounds to make their school a good place to study and learn. These ideas tally well with Murray (2005:52a) who claimed that *a whole school approach* in environmental learning implied that the school considered not only how environmental learning should be integrated through subject teaching but examined and improved every aspect of the environment of the school life, to make the school a better place to live, learn and work.

The next section discusses the implementation of *a whole school approach* program in terms of what they are, how and why they were developed and monitored. In this analysis I elicit greater clarity relating to the participants' tacit understanding of sustainability as well as clarity relating to the understanding of *a whole school approach*.

### **5.3 THE IMPLEMENTATION OF A *WHOLE SCHOOL APPROACH* PROGRAMMES**

In this section, I discuss the environmental education programmes linked to *a whole school approach* at the two schools that took part in this study. I analyse the programmes in the context of how they were planned, implemented, managed and monitored. According to my findings, based on my research questions, there were a number of issues that emerged that were linked to my research question(s) and that I needed to find answers to. So, the first question I asked, when I looked at my findings was the extent to which the projects identified at these schools were linked to the key ideas of ESD, identified in chapter two. In addition, to what extent were they related to the environmental challenges that Namibia raised in 2002.

#### **5.3.1 Participation in *a whole school approach***

Examining how the schools adopted *a whole school approach* revealed the key issue of participation. I found that while there was participation it was not at the level envisaged by the theory and thinking informing of whole school approaches because not everybody was involved at the two schools. The reasons given by the participants included the view that some teachers were not involved in the whole school development approach because they felt that EE was adding to the workload they already have. EE was considered as an extra-curricular activity which had nothing to do with the promotion of learners to the next grade and was not part of official continuous assessment. This was important as it revealed a lack of understanding of the various syllabuses in the context of their implicit links to environmental knowledge, skill and values. It was also symptomatic of the lack of conceptual cohesion relating to the integrated nature of environmental learning as that which incorporates aspects of social, political and economic dimensions affecting the lives of communities. Finally, this was a further indictment of the gap between education policy and its articulation in syllabus development.

#### **5.3.2 Organisation and management of whole school projects**

Donald et al.,(2002) emphasized that environmental learning in the context of ESD needed to be seen as an integral dimension of the school management plan and the school development program (Donald et al., 2002). Evidence from the school policies and management plans that were analysed has shown that environmental learning in the context of *a whole school approach* were written into the school policies.

The school development plans, however, did not include details on how each of these schools would deal with whole school development approach programs. (Appendix 5-development plan). This deficiency is discussed in more detail later in the chapter. Apart from data collected from document analysis and interviews, I also conducted situation observations to provide evidence for the information gained through interviews and document analysis and related these data to the relevant literature.

What became evident through the interviews was that the establishment of the projects differed from one school to another because each school had its own priorities regarding environmental issues, needs and challenges. However, the participants interviewed explained that they started with an audit of the school grounds and the surrounding environment. They then listed all environmental issues they would like to focus on citing the reasons why each individual environmental project should be prioritized. The documents analysed such as reports and minutes of meetings provided information on how projects were prioritized. Committee meetings, site workshops, audits and seminars were the venue opportunities when the prioritization of the environmental learning projects at the two schools were discussed.

The text box below is an example of some prioritized areas after an environmental audit was conducted at Omeho CS.

***The following areas were prioritized after an environmental audit:***

- *School grounds*
- *Health*
- *EE and cultural clubs*
- *Active learning programs and the curriculum- EE information should be infused in the curriculum.*

***Other health issues prioritized were:***

- *HIV and AIDS,*
- *Drug abuse*
- *Sex education*
- *Personal hygiene*

An analysis of the initial audit revealed that while this audit informed the initial projects it seemed not to have been referenced since the original projects were put in place.

As seen in the previous chapter the management, monitoring and general maintenance of environmental projects is primarily the responsibility of the EE facilitators and the school's EE committees.

These committees have the tacit support of the School Management which includes the head teachers and representatives from the various stakeholders connected with the schools. What was not apparent was whether there were regular reviews and assessments of the projects and EE programmes, or whether the school management ever involved themselves in such a review process. This is examined in more detail below.

### **5.3.3 The relationship between *a whole school approach* and the school management**

In Namibia, schools are expected to have well-structured school policy guides to guide whole school developmental activities, and the general administration of the school. According to EE Draft policy for Namibia ( Namibia. Ministry of Environment and Tourism [MET], 2004:2), the educational goals for all areas of environment is better integrated in the curriculum through environmental policy initiatives.

Murray (2002:2) stated that institutions need to develop EE policies, act on them consistently, monitor and evaluate EE experiences to keep their plan of action on track. Therefore, schools that embark on *a whole school approach* in environmental education should have an environmental education policy guide to direct its activities. Accordingly, a whole school environmental policy guide can be part of the general school policy guide and development plan. This study revealed that both schools involved in this study had written environment education policies, but these policy guides were not integrated in the general school policy guide of the school. It stood as a separate policy with no reference to the other policies of the school. The problem was that these EE policy guides were statements of intent rather than detailed guidelines for ESD. For example, Omeho CS had an environmental education policy guide with very few components.

#### ***School Environmental Policy***

*Our policy statement includes school grounds, school calendar action projects and field work.*

*We, the community of Omeho Combined School will work towards the betterment of our school create a conducive environment to the learning and teaching process. This creates a community of responsible citizens who are environmentally aware and eager to ease and share the burden of the environmental issues.*

#### **Omeho EE Policy**

Given this policy, one can see that it is more of a statement than a policy guide. Site observations revealed that Omeho CS had its EE policy printed and displayed on the walls of the school gate. This made it known and accessible to each and every one in the school.

Onzo CS EE policy guide was more structured than the Omeho policy because it listed environmental problems the school should deal with and provided strategies on how the policy was going to be implemented in the school.

**Title: *Onzo Environmental Education Policy***

*Learners, teachers, community and we will try to:*

- *Conserve our environment*
- *Use and manage natural resources around us more wisely and conserve sustainable ways to produce extra food.*
- *Minimize water and electricity use*
- *Keep our school grounds litter and pollution free*
- *Beautify our school grounds by planting more trees and flowers*
- *Incorporate environmental days in the school calendar and celebrate them*
- *Share ideas, improve co-operation throughout the school community and the community members at large.*

***Implementation strategies***

- *The EE Committee detailed an action plan for environmental projects and policy implementation.*
- *The committee and staff must promote and build capacity by involving the wider school community in the implementing policies, planning EE projects and making decisions*
- *The committee and staff must strive to improve the lesson presentations, quality and effectiveness of environmental learning projects throughout the school.*
- *The school management and subject heads will monitor and evaluate the integration of environmental education in the classes.*

*The school committee and staff must plan active learning programs that promote*

- *environmental awareness, understanding and skills especially when we approach real environmental situations such as orientation, health and safety, personal hygiene, healthy habits, courtesy, nutrition, HIV and AIDS, TB, infectious diseases and road safety.*

*By: Onzo school management 2004*

The problem with this policy was that the school management formulated the policy without consulting the other stakeholders, e.g. teachers, learners and members of the community.

A school development plan is a participatory plan of action drawn up by the school in order to develop the whole school. This action plan indicates how the school should be developed. According to the national standard and performance indicators for Namibian, each school is expected to have a well-structured school development plan to facilitate and direct school development activities (Namibia. MoE, 2006). The findings from the document analysis has shown that the two schools involved in this study had school development plans in place. However, these key documents from the two schools had no components describing the types of environmental learning activities to be carried out at the school. This is an indication that participants at these schools had a limited understanding of how environmental learning is linked to whole school development. This was further revealed through the interviews when stakeholders explained that the whole school community was involved in whole school development but they had little knowledge about the theory underpinning *a whole school approach*.

#### **5.3.4 The Focus of the ESD Programmes**

Murray (2002) stated that schools that embark on *a whole school approach* to environmental education should be engaged in different environmental education programmes such as surveys and interviews, fieldwork, investigating issues, tree planting projects, improving school grounds, a tree nursery, waste management, sanitation and health projects, energy saving projects, crop/vegetable production, water saving techniques and environmental education clubs, e.g. HIV and AIDS (Murray, 2002). These projects according to him were linked to the six identified environmental learning themes or areas in the context of the Namibian environmental challenges and risks, such as the use of natural resources, poverty, inequality, development and the environment, and health and the environment. The school projects and environmental programmes undertaken at the two subject schools were worthwhile in light of the above. While both schools were involved in a range of programmes, the following was noted:

- Having decided on their projects they tended not to review the projects' sustainability and this may explain why some of the projects were apparently no longer functional.
- An audit by the schools did not review the results to see if additional or new programmes should be introduced, or whether it would be worth rotating programmes. Projects often fail as those participants who are the driving force behind them become bored after the initial novelty has worn off and they need either to develop the projects further or to take on new challenges.

- The responsibility for the projects tended to remain with the same group of people and, while this was in many instances one of the realities of school organization it should not mean that there is a limited infusion of new ideas.

At the same time, the results revealed that the schools appreciated what had been achieved by the projects they had embarked on. There was a healthy support and appreciation of what the schools had achieved which was a very positive aspect of their endeavours.

Data from interviews and documents such as EE school policy, reports and portfolio files analysed provided evidence that schools involved in this study embarked on various EE projects such as tree planting, tree nurseries, animal husbandry, vegetable gardens and fish farming. These projects were linked to ESD ideas, which were in turn linked to the ideas of poverty eradication, a healthy school and good use of natural resources among others. When I looked at these projects at these schools, it became clear that the schools involved in this study tried to address the core environmental problems such as social and economic problems that face their surrounding communities through the environmental education *a whole school approach* activities. For example, the vegetable gardens and animal husbandry projects would help to alleviate hunger and poverty while the sanitation and health projects addressed social environmental problems; e.g. diseases, unhealthy and poor environment conditions as well as epidemic and pandemic health problems. The tree planting and tree nursery projects addressed environmental problems such as deforestation, overgrazing and desertification and at the same time satisfying the need of wood for fuel and shade for the community.

The site observations provided concrete evidence of the EE projects on the ground that the participants had cited in the interviews and the documents analysed indicated how these projects were run and monitored. Data from site observation also established how sustainable these project activities were. My findings revealed that there was a tacit understanding of the need for the concept of sustainability because there was genuine desire at these schools to ensure that these projects did not die away. There was a sense that they were worthwhile projects. There was a sense that it was important to plant trees, to have a tree nursery, and to teach about vegetable gardens to enhance food security, as claimed by the participants in the interviews. However, from the evidence from the site visits I wondered whether most of the projects were sustainable.

For example, the participants interviewed at Onzo CS claimed that this school had tree planting projects, a crop/vegetable production garden, fish farming and a water harvesting project but findings from site observations showed that this school (Onzo Combined School) did not have a live, active and functioning fish farming project, water harvesting project or vegetable garden project as was stated in the interviews. The problem according to the EE facilitators was that their motivation was fading because they got little support from school management. The other factor that demoralized teachers and learners at this school was that the regional office was concerned more with the usage of water by the school instead of supporting the effort of this school to integrate environmental themes in the curriculum as required by the syllabus.

The study, through observation and documents analysis, revealed that Omeho Combined School bred chicken and guinea fowl, which were not mentioned in interviews. This school managed to maintain some of its projects because teachers and learners were supported by the school management. Findings from this research also revealed that neither of the two schools had a functioning vegetable garden, although this was indicated during the interviews and documents analysis. Participants cited the high demand of water during the dry season as a reason for the lack of a vegetable garden project.

When it comes to EE health related projects, both interviews and school documents analysed showed that both schools had HIV and AIDS clubs as a way to address environmental health related problems. However, reports and minutes of meetings filed in the EE portfolio files showed that these project activities were mostly run by learners and teachers. In addition, data from the site observations provided information that the current EE practices at these schools embraced the initial EE ideas emphasized by Life Science, Forestry Awareness and Tree Planting Projects and Enviroteach Project. Ideas such as the integration of animal husbandry, tree nurseries, tree planting and vegetable gardens were woven into the curriculum, as stated in chapter two of this study. This study revealed that all six stakeholders involved in *a whole school approach* were able to list environmental education programme/project activities. However, the level of understanding and reasoning why this or that environmental learning project/programme was important differed from one stakeholder to another.

### **5.3.5 The wider impact of the projects on the school**

A further consideration that was significant was the wider impact of the projects on the life of the school and the community. Davis provided the following reasons for adopting *a whole school approach*:

...The first reason is that every teacher is responsible for infusing environmental education into their teaching in order to help students to live and work towards a more sustainable environment for all.

The second reason for *a whole school approach* is that learning in a classroom or even learning in outdoors during a class is one thing but making a way of life out of what one learns is another. What children learn in school will often have little impact if they do not see it happen in real life, if they do not learn to live by rules the class shows them, and if they do not see their teachers living by the same rules: Young people cannot be expected to value the environment if it is obvious to them that it is not valued by the school. It is therefore important that schools should practice what they teach about the environment... (Davis, 2006: 3).

Participants that were interviewed echoed these sentiments, especially the teachers and learners, when they said EE projects were used to integrate the theoretical and practical part of the learning. One of the teachers captured this well in saying: "*if learners just read what is in the books without doing practical experiment, this will mean nothing to them but if they practice it, they gain knowledge and skills which they can put into practice when they leave school*". This statements supports the theory of including learning *in or through* the environment as well as for the environment which, according to Murray 2005, provides experiences that play an essential part in the learning process as well as providing a stimulus for learning a wide range of skills needed to identify and explore environmental challenges at the school or in the immediate neighbourhood environment.

The real problem here is that the role and value of school environmental programmes in the context of learning in a broader context is not recognised by those involved in the ESD activities because not all teachers are fully involved in the programme, therefore learning opportunities are limited by the level of participation in *a whole school approach*.

## **5.4 BENEFITS OF A WHOLE SCHOOL APPROACH**

In this section, I discuss how the schools involved in this study benefited from *a whole school approach* programs in terms of the school's physical environment, academic, socio-economic inter-relationships, development of knowledge, and the practical skills and appreciation of resources. Schools, through *a whole school approach* are looking at food security, looking at the environment, looking at conservation, social justice, and development and democracy issues.

A further important aspect of *a whole school approach* in the ESD context is the notion of sustainable schools as well as sustainable communities. Therefore, by looking at the approach in this way, Donald suggested that we are encouraging the idea of schools that are functioning, that are well managed and resourced appropriately because these schools are going to be effective places of learning (Donald et al., 2002). Although sustainable development was not explicitly mentioned in the interviews, when I looked at the projects, I could see the desire for a better future and food security for the next generation. For example, the idea of promoting access to basic education addresses sustainable development issues such as poverty, HIV and AIDS programs at the schools, and management of resources. The schools through *a whole school approach* are looking at food security, looking at the environment, looking at conservation, social justice, development and democracy issues.

(McKeon, 2002:21-22) claimed that ESD, through *a whole school approach*, must give people practical skills that will enable them to continue after they leave school to address challenges, to reduce risks, to work towards a sustainable livelihood, and to live sustainable lives. This reflects the benefits of a whole school development approach ranging from academic, social, economic, physical material, and interrelationship benefits. The inter-relationship between the teachers, learners and members of the community is strengthened. In another example, participants involved in this study pointed out that through *a whole school approach*, they could keep their school grounds clean, trees provide shade and beautify the school environment.

From the perspective of academic benefits, participants explained that through *a whole school approach*, the school environment became a good resource for outdoor teaching and learning. In this instance, the view was expressed that teachers were able to bring learners outside and link subject learning to the outside world or to the environment to enhance learning with understanding and, at the same time, expose learners to different environmental settings. As Donald et al., 2002:163 pointed out that if schools were to adopt *a whole school approach* to improve and develop their environment, then the relationship between the school and the community could be developed in various ways. The participants involved in this study expressed the view that their schools benefited from having parents and members of the community involved in school development programs.

They further explained that this partnership improved the relationship between the school and the community in terms of communication and material support.

A good school is a site for learning, has respect for diversity and provides a perspective. According to Volmink (2003) the school sees cultural diversity as a resource for learning. When it comes to a school providing a perspective, he pointed out “that a good school environment helps us to understand the world we are living in and participate in creating our own world site and to give meaning to it... ( Volmink cited in Du Plooy & Westraad [2004:11]). One example from the data is that learners from both schools, involved in whole school approach programmes, were benefiting from HIV and AIDS clubs because it was through these programmes that learners were educated and gained skills on how to fight and protect themselves against HIV and AIDS. This showed that the schools were involved in the development of the social dimension of environment without actually realizing it.

Niemi and Junn (1998) cited in Shallcross (n.d.:4), argued that:

.....A school involved in *a whole school approach* in environmental education has the opportunity to innovate and showcase changes in practice for a better future, embrace active participation and partnership which is not limited to the involvement of teachers, learners, management and the school governing body, but also extended to the local communities e.g. organisations, businesses and industrial communities etc... (Shallcross, n.d.:4).

According to participants interviewed and documents analysed, provided information that the members of the community, who participated in *a whole school approach*, supported the school by providing materials such as seeds and animal manure to be used in the vegetable gardens and tree nurseries. Evidence from this study showed that the local communities were not only benefiting from being active members of the EE school committee and working in partnership with the schools but they also acquired knowledge and skills about how to plant trees and manage their own vegetable gardens and tree nurseries.

From an economic environmental point of view, the schools benefited through *a whole school approach* by selling products from their vegetable gardens and tree nurseries to the public to get money to maintain different projects and other school materials. The other benefit claimed by participants was the interaction between all participants (learners, teachers and members of the community) and the development of an interest in and love for the environment. Through the participatory process, the teachers and learners benefited from the community’s traditional knowledge and skills. They also recognized the importance and value of the natural environment to their well-being.

Being involved in the environmental impact assessment evaluation, and through the study of the role the environment plays in their lives, participants gained knowledge and acquired skills and values that helped them to deal with local environmental risks and challenges that faced them.

McKeon (2002) echoes this sentiment explaining that ESD is more than just a knowledge base related to environment, economy and society but it addresses learning skills, knowledge, perspectives, values and issues. Because ESD involves studying local and appropriate global issues, these five issues must be all addressed in a formal curriculum that has been reoriented to address sustainability.

The next section provides information on how the school curriculums addressed environmental learning. Evidence was obtained from interviews and document analysis, e.g. the syllabuses, teachers' lesson plans, school development plans and the school policy guide, as well as notations on the impact of *a whole school approach* programs on the school.

## **5.5 THE IMPACT OF A WHOLE SCHOOL APPROACH ON CURRICULUM**

This section discusses how a whole school development approach has an impact on the curriculum in terms of the syllabus, lesson plans, school environmental policy and school development plans. I begin this discussion by pointing out how teachers use *a whole school approach* programs as a teaching and learning resource in their teaching. I further elaborate on how they use these programs in relation to the syllabus and lesson plans.

### **5.5.1 Using EE projects in teaching and learning situation**

This section discusses how teachers use a whole school development approach program as a teaching and learning resource to impart knowledge and to give both relevant theoretical and practical life skills. Davidoff and Lazarus (1997) explained that the relationship between the whole school development process and curriculum is that the schools, as dynamic institutions, each with their own cycles and phases of development, dictated that we look at them holistically and not in a 'fragmented or piecemeal' way. The two authors further argued that the school environment should therefore be supported to become an enabling environment, in which teachers and learners are happy to live, learn and develop.

Site observation revealed that the physical environment of the schools engaged in *a whole school approach* had improved and had been turned into enabling and conducive learning and teaching environments that had enhanced potential for teaching and learning. Interviews revealed how teachers used the school environment as teaching and learning resources.

For example, they brought learners to the garden and the tree nursery when they discussed how trees and vegetables were produced and cared for. According to the participants, learners were also brought to the fishpond when they discussed ecological systems, inter-relationships and the importance of food chains in the ecosystem in order to link theory to practice to enhance learning with understanding.

Despite the challenges that emerged from the interviews, it was apparent that participants at the schools involved in this study developed a positive attitude towards environmental issues and were willing to continue working towards further improvement of their schools' environment. This means that *a whole school approach* has contributed to their way of thinking and has given them a new perspective and understanding. The involvement of the members of the community in school development activities has had a positive impact on the relationship between the school and the public. This benefit emerged from interviews in chapter four where the participants indicated that the members of the community supported the schools by providing them with physical materials.

### **5.5.2 The use of EE projects in relation to syllabuses and how this is linked to lesson plans.**

In Namibia, the syllabus design is based on the national broad curriculum policy guide, which outlines the aims and objectives of both formal and non-formal education and provides the bases and foundation on how EE should be infused in the curriculum. For example, the document states that environmental awareness should be “worked into environmental studies in grades 1-3, as part of Natural Science and Health Education in grades 4-7, and in natural sciences and social science subjects in Grades 8-10” (Namibia. MBEC, 1996:27).

However, it was not clear how this integration should be done except through the provision for “incorporation into lessons in other subjects whenever appropriate”.

This section attempts to address how different syllabuses address environmental education in accordance with the national broad curriculum guide. The section also provides information on how the teachers use *a whole school approach* programs in regard to the syllabus and how they linked it to their lesson plans to create a good platform to infuse EE into the curriculum.

Murray (2005) pointed out that *a whole school approach* to integrate environmental sustainability as adopted and trialed by the SEEN project suggested that all aspects of school life should be assessed including, “school governance, pedagogical approaches, curriculum and resource management, school operations and school grounds, general school organization and improvements”(Murray, 2005: 53) to make schools better places to live, learn and work.

Shallcross, who claimed that *a whole school approach* had implications for practice in each subject or discipline at school, supported this idea. According to Shallcross, the curriculum through topic work, thematic approaches, monitoring and managing the subject content should emphasise interconnectedness (Shallcross, n.d.: 3-4).

I analysed both the Life Science and Agricultural Science syllabus. Information gleaned from the interviews indicated that these two syllabuses covered more environmental education themes compared to the Mathematics syllabus. The findings through document analysis revealed that environmental education should be treated and integrated in the curriculum as a cross-curricular theme in the same way as described in the Pilot Curriculum Guide for Formal Basic Education (Namibia.Ministry of Basic Education and Culture,1996). The two syllabuses listed different cross-curricular themes including environmental learning themes but the way the environmental learning was detailed and structured for teaching and learning differed from one syllabus to another.

The Life Science syllabus for instance listed all the cross-curricular themes to be taught. It also provided basic competences but in a different structure or format. The nature of this syllabus was that it covered many environmental learning related themes but did not make provision for activities and skills to be dealt with in each cross-curricular theme. This means that the Life Science syllabus, in its preamble, did not provide guidelines and exemplars to support teachers on how to integrate environmental learning in their teaching and learning activities.

The Agricultural Science syllabus presented cross-curricular themes in a format different from that of the Life Science syllabus because it provided action competencies for development to be acquired as well as sub-topics and what the learners should learn in each sub-topic. The examples of sub-topics and action competencies are shown in the table below.

<b>Sub topic</b>	<b>What learners should learn</b>
Physical environment	Learners should learn the importance of conservation of natural resources, effects of population growth on environment, effects of the destruction of trees and wild life etc.
Environmental problems associated with Agricultural activities	Learners learn about soil erosion, pollution from fertilizers, pesticides, herbicides and oil spills.
Awareness of HIV and AIDS	They learn about the effects of HIV and AIDS on the workforce and the impacts on Agricultural production and safety.

The guidelines given in this table are clear and show what is expected from the teacher as well as from learners. Both the Life Science and Agricultural Science syllabus listed HIV and AIDS as a separate main cross-curricular theme instead of making it part of health education and the study of social related problems in the curriculum. This way of listing HIV and AIDS as a cross-curricular theme, gave it a very low status amongst the other health education themes in the curriculum. The cross-curricular themes were given a low status because the value given to the examined themes in the syllabuses overweighed the importance of the cross-curricula themes in that particular syllabus. As was the case with the interviews, the documents revealed that the syllabuses put more emphasis on biophysical and social environment issues than on the economic and political dimension of the environment. The two syllabuses lacked guidelines and examples of how to link these environmental issues to each other as well as to learning contents. This is an indication that the economic and political dimension of the environment were implicitly presented in the curriculum.

The evidence from analysed lesson plans have shown less learning content in the environmental learning activities that were integrated in various lessons at the two schools involved in this study. The lesson plans gave the impression that teachers do not make the best use of the opportunity offered by the syllabuses they teach and that of the environmental learning projects they have in their schools to enhance the learning with understanding that they claimed in the interviews.

Given this information from the lesson plans, what I noticed in my findings from the situation observation, in terms of EE in the lessons is that, although the teachers continued to give specific EE lessons, what they were doing was incorporating environmental learning into lessons as part of the syllabus. But, I also noticed, that when it was appropriate, teachers took the learners to projects and used the projects help them to learn (**Appendix 6 A lesson plan**).

### **5.5.3 CHALLENGES AND PROBLEMS WITH THE APPLICATION OF A *WHOLE SCHOOL APPROACH***

This section discusses problems and challenges experienced by schools with the implementation and application of *a whole school approach* to environmental education. Davidoff and Lazarus (1997) claimed that the school should be supported to have an enabling environment in which teachers and learners are happy to live, learn and develop. Murray (2005) pointed out that the SEEN project experienced problems in reaching a democratic, consensual agreement to implement actions concerning environmental improvement at schools. He further added that problems experienced were the problems of active involvement of the school management and school governing body in their decision making, planning and implementation of policies and plans (Murray, 2005a).

Despite the fact that application and implementation of most EE project activities at the two schools involved in this study had some successes, these schools also experienced various problems. For example, during the interviews teachers explained that the challenge facing their school in the application and implementing of *a whole school approach* is was to make people (teachers, learners, school management and members of the community) understand the importance of environmental education/learning. Changing peoples' attitudes emerged as one of the challenges that had hindered the application of *a whole school approach* in environmental learning at schools involved in this study. Negative attitudes and lack of understanding of environmental education led to less active involvement of some teachers and learners. It was discovered that some teachers felt that a whole school development approach in environmental education was an extra burden to the existing teaching load. One of the major problems expressed by teachers was water to maintain some of the environmental education project activities such as tree planting, setting up a nursery and gardening because the school had been warned not to use excessive water especially during dry seasons. This led to the suspension of some environmental learning activities at schools.

Learners expressed more concerned with the financial and other aspects such as the destruction of the tree nursery by animals and vandalism of the vegetable garden by people from the surrounding community. Another issue raised by the learners was a general lack of commitment among their peers that affected the smooth running of the EE project activities such as watering plants and the cleaning and feeding of fish in the fishponds. Members of the community were also able to point out problems encountered with projects at these schools but the problems were more related to theft and vandalism by people in the neighbourhood and the destruction of trees, vegetables and gardens by animals. One member of the community claimed that where there are many people involved in project activities, there are always problems because there were people who understood and those who didn't understand how things worked at the school level..

## **5.6 CONCLUSION**

In this chapter, I discussed the results of the study with regard to the stakeholder's understanding and perceptions of *a whole school approach* in environmental education. I discussed the opinions of the stakeholders of the school examining their perceptions and understanding of the concept of environmental education in relation to the literature review in chapter two. I also discussed the findings that emerged from documents and situation observations.

In the concluding chapter, I attempt to pull together the findings of my research including the limitations of my study and suggestions for further research in this area of environmental learning and development.

## CHAPTER 6

### CONCLUSION

#### 6.1 INTRODUCTION

In this final chapter, I provide an overview of the main findings that emerged from this study. In the first section, I reflect on what prompted the research and why it was considered worthwhile. The second section discusses and reflects on the lessons learnt about the research process with the focus on my findings and the research design process. In the third section, I discuss the main findings of the study. This is followed by a brief discussion of the limitations of my study. Thereafter, I provide tentative suggestions about some of the issues that need to be addressed in the light of this research. I end this chapter by suggesting possible areas for future research.

#### 6.2 PURPOSE OF THE STUDY

In this section, I discuss the purpose of the study and what prompted the research.

The aim of this study was to investigate the teacher, learner and parental understanding and perceptions of *a whole school approach* in environmental education in the context of ESD. Since I worked with environmental education programs in these schools at the cluster level, I wanted to explore how the schools and their communities viewed EE projects developed through *a whole school approach*. The other dimension was to follow up and track how *a whole school approach* initiative was progressing after the Supporting Environmental Education in Namibia (SEEN) Project piloting phase. This research process enabled me to discover how selected pilot schools had continued to apply *a whole school approach* in their environmental learning programs since the Supporting Environmental Education in Namibia (SEEN) Project was phased out in 2005. It also provided me with an opportunity to further explore the understanding and perception of the stakeholders of *a whole school approach* to environmental education at the school level.

## **6.3 OVERVIEW OF THE STUDY**

This section summarizes the main findings as presented in the previous chapter.

In this overview of the study, I provide a critical overview of the main results that emerged from this study. I begin by reflecting on the research design and the research process. This is followed by reflection of the actual results.

### **6.3.1 Research Design and Process**

As I indicated in chapters one and three, I placed my study within an interpretive paradigm using a qualitative approach. The design and approach of this paradigm shift helped to shape the success of this study. Placing my research within the interpretive paradigm allowed me to make sense of what the teachers, learners and members of the community in this study said and did. The adoption of a qualitative approach helped me to probe their perceptions and views with regard to issues surrounding the concept of *a whole school approach* in the environment and environmental education. This was made possible through the integration of three methods of data collection: interview, site observation and document analysis. Because I needed further clarity, other methods such as document analysis and situation and site observation were considered. Interviews in this study were essential and, notwithstanding certain difficulties indicated in chapter three, they provided a platform for the collection of further data.

The analysis of documents enabled me to further understand how environmental education (EE) themes were addressed in the curriculum and at the same time exposed me to new insights. This process allowed me an opportunity to check policy documents such as syllabuses, school development plan policy guides, environmental education policy guides, teachers' lesson plans and portfolios. Site observations allowed me an opportunity to assess what schools did in order to verify some of the claims made by the participants during interviews and at the same time exposed me to EE project activities and practices in schools. Through this method, I was able to discover additional information which had not been discovered in the interviews. This helped me to understand how environmental education projects were implemented in these schools.

In order to ensure validity, I used triangulation as indicated above to eliminate bias and errors in the findings. Triangulation helped me to crosscheck the information. However, It is important to mention here in the light of the above discussion.

### **6.3.2 Main Findings**

In this section of the chapter, I reflect on the findings that are significant to this study in context of my research question. The data highlighted aspects that are pertinent to the attempt by Namibia to provide a system of education that addresses the environmental challenges faced by communities in recognition of the need to ensure sustainability. While I reiterate that these data cannot be generalized I believe that these findings will provide a foundation for further discussions in the continued attempt to develop the curriculum. The evidence revealed that those participating in this study were aware of the environmental challenges and problems within their own communities. They acknowledged them, they examined them and had a clear understanding of these challenges. Most importantly, they recognized the need to take action and accepted their responsibility in addressing these challenges. There was never a sense, despite the problems encountered in maintaining and developing environmentally oriented programmes, that these groups saw themselves as powerless.

Evidence from the interviews showed that teachers had a theoretical and practical understanding of the concept of *a whole school approach* in relation to the environment and environmental education. Their level of understanding was sufficient to enable them to identify and to prioritise issues, to link these to *a whole school approach* to the environment and environmental learning, as well as how it can be linked to the curriculum. It also emerged from this study that the teachers had some understanding of how *a whole school approach* in environmental learning was linked to education for sustainable development(ESD). This study revealed that learners had a practical understanding of how the process of *a whole school approach* worked because, through explanations, they demonstrated an understanding of how the teachers used environmental learning as a source of learning and teaching. Members of the community contributed to the success of this study.

The study revealed that they understood what the concept of environment is all about but they were not able to differentiate between environmental education and the concept environment, and to explain how these concepts were linked to *a whole school approach*. Neither were they in the position to explain how environmental learning programs were linked to the curriculum. This may have been due to their pre-independence level of environmental learning literacy and general education.

Although the views expressed revealed a lack of sophistication related to a deep conceptual understanding of the relationship between the key concepts, the level of understanding shown highlighted the possibilities inherent in initiatives such as the SEEN project. To me it was significant that the professional help provided by SEEN had had an effect. The real problem that emerged was how to sustain, maintain and further develop the knowledge and skills needed.

Whether the low level of participation was because of *a whole school approach* methods adopted by these two schools or because of the nature of the particular environmental programmes, I felt that there was a development problem in terms of the ideas and ideals of sustainability. Reasons for this included the following:

- The status of environmental learning in the current curriculum. A cross-curricular theme tends to lose focus and to become overly generalised as well as repetitive. Further to this is the fact that environmental topics and concepts within the curriculum are not coherently developed which means that a piece meal view of the environment is presented rather than a fully integrated one. Finally, in this context, environmental learning is primarily assessed only in the context of factual knowledge as it pertains to a particular subject area such as Agriculture and Life Science.
- All syllabuses analysed presented HIV and AIDS as a separate theme from other environmental themes. This in itself makes it hard for people (teachers, learners and member of the community) to see how it is linked to the social dimension of the environment.
- The curriculum guidelines do not provide the sort of support needed by teachers to do justice to the development of a coherent conceptual understanding.

Where the formal school curriculum lacked a clear emphasis and focus on environmental learning in the context of ESD, the school was influenced and effected by the limited level of participation in terms of the adoption of *a whole school approach*.

In addition, the problems identified by these two schools regarding maintenance of the programmes is also symptomatic of the need for the educational authorities to provide real and not only tacit support and recognition for *a whole school approach*.

The study has shown that schools have development plans and environmental education policy guides in place. However, these documents were not adequately structured to include environmental learning themes. The other issue evident from this study was that the school development plan was silent about environmental learning activities at school despite the fact that schools had active environment learning projects.

## **6.4 LESSONS LEARNT**

This section discusses the lessons learnt during the research process carried out over two years. It highlights the two areas of lessons learnt from the research process and from *a whole school approach* to environmental education.

### **6.4.1 Lessons learnt from the research process**

This research has taught me a number of valuable lessons related to the research process such as the importance of formulating a clearly defined research question and how to relate it to the research design. The purpose of this section is to provide a reflective synthesis of key insights that will serve to help other researchers to promptly react to the need to conduct research focusing on how environmental learning enhances and develops learning with understanding. Placing my research within an interpretive paradigm in the form of a case study does not allow me to pass judgement and generalize information, but instead to understand what teachers, learners and members of the community in this study do and say.

### **6.4.2 Lessons learnt from a whole school approach**

Through interviews and conducting situation observations, I learnt that the understanding that teachers had about environmental learning to a certain extent influenced the choice of EE programs at the school level. Therefore as an Advisory Teacher, my role is to give all stakeholders greater opportunities to interrogate the theory behind a whole school development approach in environmental learning and to understand it in the context of their curriculum. I also learnt that the support and training the stakeholders received during the lifetime of the Supporting Environmental

Education in Namibia (SEEN) Project needed to be built on and developed further to ensure the sustainability of environmental programmes and projects. Equally the data revealed that much has yet to be done in terms of integrating these projects into subject areas..

Through the process, I learnt that the successful application of *a whole school approach* in environmental education in schools requires the support and involvement of all stakeholders in education. These stakeholders should work as a team. At the same time this requires a change in teachers and school management's thinking and attitudes towards environmental learning since they are taking the lead in school development programs. The others important aspects that emerged from this study was that schools that had embarked on a whole school development approach to environmental learning managed to involve the members of the community in school developmental activities which, in return has an impact on the positive relationship between the school and the general public. Having schools involved in a whole school approach, changed people's minds and attitudes, and encouraged them to love, appreciate, recognize and value the importance of the natural environment. I also learned that it provided the schools with the opportunity to develop and turn their school's physical environment into a good outdoor learning and teaching resource. This has a direct influence on learning with understanding.

## **6.5 LIMITATIONS**

A small-scale study like this half thesis may have certain limitations but it can also provide relevant insights. A large-scale study would obviously have the advantage of generalizing the findings but it may lack the depth a case study can achieve. Therefore, my findings are exclusive to the six participants in this study. Having conducted this research, I felt that the level of sophistication of the learners and the community members might have limited their ability to fully express themselves. In addition, lack of effective communication affected the scheduling of the times for meeting the participants, which in return contributed to the slow pace of data collection.

## 6.6 ISSUES TO CONSIDER AND ADDRESS

This section of the research is not designed to make recommendations, but there are issues that emerged that need to be addressed if schools are to embark on *a whole school approach* in environmental education/learning. The following issues should be addressed:

- Although, the curriculum revision is complete in some subjects and it continues in others until 2010, there are inconsistencies among these revised syllabuses. This study reveals that only some of the revised syllabuses provide guidelines on how to integrate environmental education in teaching and learning activities. For example, the English syllabus, develops environmental education/learning themes in a coherent manner and provides for the development of action competencies. Therefore, there is a need for all the syllabuses to provide pedagogical guidelines that include practical examples to support teachers in developing aspects of environmental learning. These guidelines should provide information about environmental learning (concepts, values skills and competencies) issues that could be covered in the syllabus.
- The teachers, learners and members of the community in my study need to be supported. It became very clear through this study that participants in this study had not received any kind of professional support, materials or financial support from the regional advisory services supporting body after Supporting Environmental Education in Namibia (SEEN) Project phased out in 2005. There is a need for training sessions in order to keep abreast with the current changes within the environmental education arena to upgrade their skills and boost their morale.
- If we allow schools to experiment with different environmental learning issues, then the schools will be in position to set up working documents to guide them and to be added to the school policy guide.
- Pre-service and in-service curriculum programmes should be revised to include more environmental themes to help build a more reliable level of environmental literacy in student teachers by the time they finish college and, at the same time increasing the overall capacity of teacher educators to teach environmental subject matter.

## 6.7 POSSIBLE AREAS FOR FUTURE RESEARCH

This section sheds light on some possible areas for research in environmental education/learning especially in Namibia. I feel that further research may eliminate environmental myths. The possibilities for further research that were evident in this study are as follows:

- An investigation of parental and community involvement in education in the area of *a whole school approach* to development through environmental education/learning.
- Looking into the possibilities of integrating environmental education in both pre-service and in-service teacher education curriculums in order to produce teachers with reliable environmental literacy by the time they leave college.
- Infusing environmental education across-the-curriculum. Create the possibility that all teachers of all subject areas have the capacity to integrate an environmental education/learning perspective as a cross-curriculum theme in their teaching.
- Looking across approaches to ESD within different eco-school type programmes with the focus on what an ESD-school is for and how it might be developed.
- The role of the environmental education/learning in enhancing and developing learning with understanding.

## 6.8 CONCLUSION

This chapter provides an overview of the main findings of the study. It further discusses and summarizes lessons learnt and the limitations of the study. Issues to be addressed and possible areas of future research were provided. This case study provided me with valuable insights into the issues underpinning *a whole school approach* in environmental education. The findings from this study present a challenge, which requires me as an advisory teacher to provide the necessary support to the schools in the field of environmental education. As the study indicated, if schools do not get the necessary support from the regional supporting body in the application of *a whole school approach* in the area of environmental education we cannot expect much progress in these vital areas, especially teaching environmental education/learning as a cross-curricular theme.

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## Appendix 1

### PARTICIPANTS' PERSONAL INFORMATION: MAY/JUNE 2008

Name of the school:.....

<b>Personal details</b>	<b>First name:</b>	
	<b>Surname:</b>	
	<b>Age:</b>	
	<b>Town/village:</b>	
<b>School details</b>	<b>Name</b>	
	<b>Region</b>	
	<b>Circuit</b>	
	<b>Location</b>	East, west, north south of Oshakati:
		Rural, urban or semi-urban:
		Kilometers away from Regional office:
		Kilometers away from circuit office:
	<b>Phase</b>	Phase level, e.g. grade 1-10:
Number of teachers:		
Number of learners:		
<b>Subject taught</b>	<b>Name of subject</b>	<b>Number years taught</b>
<b>Experiences</b>	Year start teaching:	
	Number of years of teaching:	
	Other Life and work experiences:	
<b>Qualifications</b>	Professional: e.g. ECP	
	Academic: e.g. grade 10	
	Rank: e.g. HOD	
	Title: e.g. Councilor etc.	

## Appendix 2

### *LESSONS LEARNED FROM PILOT STUDY*

Interview with Life Science teachers, learners and members of the community' former SEEN project schools on whole-approach to environment education in Oshana Region, Northern Central Namibia.

2. Briefly explain what is meant by the term/concept environment. Where first did you hear this term/concept being used? (*becomes 1*)

4. How is environmental education differing from environment? (*becomes 2*)

I know that your school had been involved in SEEN programmes with regard to environmental education projects/activities. Tell more about how your school dealt with whole-school approach and development to environmental education project/activities within your school. (*becomes 3*)

5. What environmental project/activities does your school embark on and why these particular activities?

(*becomes 4*)

6. Who does most of the work in these projects/activities in your school and at what time and day of the week? (*becomes 5*)

7. As a teacher in this school, what are your roles/responsibilities in these environmental education programme/project/activities? (*becomes 6*)

As a learner and member of this environmental education club, what are your roles/responsibilities in these club projects/activities?

Since you are/were involved in these activities, what have you learn from these environmental projects/activities which you can apply in life?

Looking into 10-15 years back, what changes do you see in your surrounding environment compare to now?

How did you get involved in the school environmental projects/activities?

8. How do see these EE activities? In other words do you see them integrated into your normal teaching activities or separate. If these activities are integrated, how and if they are separated explain how. (*becomes 7*)

9. What support did you get before SEEN project phased out and what support do get after the project was phased out? (*becomes 8*)

10. How does the school benefit from these environmental education programme/projects/activities?

(*becomes 9*)

11. Explain more on how these projects/activities contribute to learning with understanding in relation to syllabus? (*becomes 10*)

12. How do parents/members of the community contribute to school projects and or what kind of contribution do they make towards these school environmental education activities? (**added on 29/04/2008**) (*becomes 11*)

As a member of the community, what role do you play in these school environmental projects /activities? In other words support do you offer to the school (materials, moral, knowledge etc)?

Why do you think is it important to involved parents/members of the community in school project/activities?

What benefits do you get from being involved into school project/activities?

13. To what extent does the school management support whole-school approach in environmental education activities? (**added on 29/04/2008**) (*becomes 12* )


14 Some learners of this school are involved in different environmental education activities e.g. tree nursery, vegetable gardens, HIV and AIDS clubs etc, what support do they get from teachers, parents/members of the community and fellow learners of school?

How do you feel about the relationship between the community and the school? In other words what benefits does this relation bring to both parents/community members and the school itself? (*becomes 13*)

—15. Tell me more about problems and your school encountered in carrying these projects/activities and how do you usually solve these problems? What do you regard as problems and challenges of the community being involved in school programmes/activities? With these challenges and problems, how do you see the progress of EE activities in your school compare to the time the project was in force? (*becomes 14* )

## Appendix 3

### LETTER TO PERMANENT SECRETARY

	<b>Ongwediva Teachers Resource Life Science Advisory Services</b> <b>Private Bag 5550</b> <b>Tel:+264 065 230057 / 232018</b> <b>Oshakati</b> <b>Fax: +264 065 230035</b> <b>Namibia</b> <b>OSHANA REGION</b>
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27 March 2008

**To:** Mr V. Ankama  
Permanent Secretary  
Ministry of Education

Dear Mr Ankama

#### **SUBJECT: PERMISSION TO CARRY RESEARCH IN STATE SCHOOLS**

I am registered as part time student at Rhodes University, Grahamstown in RSA. I have been studying for a Master's degree in general education theory and practice (GETP) since February 2007 to date. To qualify for my Master's degree, I am required to write a research report on the topic that linked to an aspect of the work undertaken in the course work of the Master's degree programme. I have chosen to focus on whole-school approach and development specifically looking at the aspect of environmental learning in the curriculum.

My research topic is: *The application of a whole-school approach in environmental education in selected schools in Namibia.*

The aim of the research is to investigate whether Supporting Environmental Education in Namibia (SEEN) project's pilot schools are keeping up whole school development approach to teaching and learning that was introduced and developed through (SEEN) project, specifically looking at how these schools adopt the approach and develop through this approach.

I would be grateful if your office would grant me permission to use the following schools, Olukolo JS, Ondjora JS, Omuhama CS and Onekondjelo JPS as the research site for the research report I am required to write.

School managers, teachers, learners and parents/members of the community involved will be assured of anonymity in the final research report.

I am looking forward to hearing from your office at your earliest convenient time.

Sincerely yours,

.....  
**ONESMUS NASHILONGO**  
**EDUCATION OFFICER: OSHANA REGION**

## Appendix 4

### *LETTER TO THE SCHOOL PRINCIPALS*



Ongwediva Teachers Resource Centre  
Private Bag 5550 Tel:+264 065 230057 / 232018 Oshakati Fax  
+264 065 230035 Namibia ,Oshana Region

13 May 2008

Ref: 19/12

To: The school principal  
.....Combined School  
..... Circuit

Dear Sir/Madam

**SUBJECT: PERMISSION TO CONDUCT EDUCATIONAL RESEARCH**

I am registered as part time student at Rhodes University, Grahamstown in Republic of South Africa. I have been studying for a Master's degree in general education theory and practice (GETP) since February 2007. As part of my study, I am required to carry out a research in schools in my region where I have to consult, interview and do situation observations. I have chosen to focus on whole school approach and development specifically looking at the aspect of environmental learning in the curriculum. I would like to work with teachers, learners and parents/community members who were involved in school based environment education activities. Therefore, I have specifically chosen to work with your school because it was involved in whole-approach to environmental education/learning during the SEEN Project.

I would be grateful if your office would grant me permission to use your school as the research site for the research report I am required to write. Attached are letters from the Permanent Secretary and the Regional Director which serve as a proof of permission granted to me to carry out the said activity in schools of my choice.

I am bound by and aware of the ethical policy regarding research and I will abide with the principles of confidentiality in the final research report.

I am looking forward to hearing from your office at your convenient time.

Sincerely yours,

.....

**ONESMUS NASHILONGO**  
**EDUCATION OFFICER: LIFE SCIENCE**

## Appendix 5

### *ACTUAL INTERVIEW QUESTIONS*

#### **Understanding the concept**

- Briefly explain what is meant by the term/concept environment.
- Where first did you hear this term/concept being used?
- How did you hear about this term/concept?
- How is environmental education differing from environment?

#### **Whole-school approach to environmental education/learning**

- Explain what is meant with term/concept whole school approach to environmental learning.
- I know that your school had been involved in SEEN project environmental education projects/activities. Tell more me about how your school dealt with whole-school approach to environmental education project/activities within your school.
- How did you get involved in SEEN project activities and when?
- Who participates in whole-school approach programme and activities at your school?
- Are parents and the community involved in these EE activities? If yes, how did they being involved and how easy was it to get them involved?

#### **Programme/projects /activities**

- What environmental project/activities does your school embark on? Give examples.
- Why did the school choose to work with these particular projects/activities?
- How did the school prioritize these projects/activities? In other words what did the school start with and why?
- Who does most of the work in these projects/activities in your school?
- What time and week day are these activities being carried?
- How do teachers use these EE projects/activities as a resource of teaching and learning?
- What impact do these activities have on the school environment?
- Explain how learners at your school use these activities as a learning resource.
- Explain whether these activities are linked to every day teaching activities or are done separately. If they done separately why so?
- Since you are/were involved in these activities, what skills have you learn from these environmental projects/activities which you can apply in life?

#### **Roles and responsibilities in EE school projects/activities**

- As a teacher and EE facilitator in this school, what are your roles/responsibilities in these environmental education programme/project/activities?
- What are the responsibilities of learners in these projects/activities?
- What contributions do parents/community members make to school EE projects/activities and what form of contribution do they make?
- How does the school management contribute to the success of the school EE projects/activities?
- What support did you get before SEEN project phased out and what support do get after the project was phased out? Since you are/were involved in these activities, what skills have you learned from these environmental projects/activities which you can apply in life?

### **Environmental education (EE) club at school**

- Which type environmental education related club(s) e.g. cultural group, are there at your school?
- What motivate learners to join these club(s)?
- What are the responsibilities (roles) of learners in these club projects/activities?
- Some learners of this school are involved in different environmental education activities e.g. tree nursery, vegetable gardens, HIV and AIDS clubs etc, what support do learners get from parents/members of the community, teachers and other fellow learners?
- What do learners learn from these club(s)? In other words why these club activities are important to learners and teachers?

### **Whole school approach to environmental education and the curriculum**

- Which syllabus/subject offers most EE themes/topics?
- What are the examples of topics or themes that deal with environmental issues and problems in subject(s) you have just mentioned?
- Which subject teachers are mostly involved in EE projects/activities?
- How do teachers see these EE activities? In other words do you see these activities integrated in normal teaching activities or separated? If these activities are integrated in teaching explain how? And if they are separated from normal teaching process explain why this is so?
- Explain more on how these projects/activities contribute to learning with understanding in relation to syllabus?

### **Advantages of whole-school approach to EE activities**

- How does the school benefit from these environmental education programmes /projects/activities?
- What benefit do parents and the community get from being involved in EE school activities?
- In what way do learners benefit from these EE activities they are involved in?
- I have learned that your school had been involved whole school approach during the time of SEEN Project. What impact do you think whole school development approach has on you as person in terms understanding the concept environmental education and as well as on the school environment?

### **Challenges**

- Tell me more about problems your school encountered in carrying these projects/activities.
- How does your school usually solve these problems encountered? What do you regard as problems and challenges of the community being involved in school programmes/activities?

### **Progress and development**

- Despite these challenges and problems, how do you see the progress of EE activities in your school now compare to the time the project was in force?
- What is the school future plans to sustain EE activities and the relationship with the community? Give examples.

## Appendix 6

### *CONSENT FORM*

Mr Onesmus Nashilongo is hereby granted permission to interview me as well as to conduct situation observations in my school. I am aware that the interview will be recorded, and that transcripts will be made of the interview and that extracts from situation observations may be used in the final report. I have also been assured of my anonymity and that of the school.

Name: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Appendix 7**

**MINISTRY OF EDUCATION  
OSHANA REGION**

**School Development Plan (SDP)**

**ONZO COMBINED SCHOOL  
EHEKE CIRCUIT**

## 2008

<p><b><u>Key Area 1</u></b> <u>Provisions of resources for the school</u></p> <ul style="list-style-type: none"> <li>• Ensure Regional office fulfills its obligation to provide a full staffing component manner</li> <li>• Order and control sufficient cleaning materials</li> <li>• Approach possible donors for financial assistance or donation to improve communication facilities</li> <li>• Fence the school for safety reasons</li> <li>• Plan actions to collect ± N\$90 of schools fees per annum</li> </ul>	<p><u>Who takes responsibility</u></p> <ul style="list-style-type: none"> <li>• Principal</li> <li>• Secretary</li> <li>• Mr Nando, Nangu, Hanga+Ms Estre – Ann.</li> <li>• Entire school community</li> <li>• A delegated committee</li> </ul>	<p><u>Time frame</u></p> <p>January 2008 Once per term</p> <p>Beginning of the year (January) 2008 (Jan-August)</p> <p>End of each term</p>
<p><b><u>Key Area 4</u></b></p> <ul style="list-style-type: none"> <li>• Create a clear channel of communication throughout the school community</li> <li>• Take disciplinary steps against teachers and learners who violate the rules (disciplinary committee to meet every second Thursday of the month)</li> <li>• Assist learners to state academic targets and motivate them to achieve the required marks</li> </ul>	<ul style="list-style-type: none"> <li>• School Management</li> <li>• Disciplinary committee</li> <li>• All teachers</li> </ul>	<p>Beginning of the year (January)</p> <p>Throughout the year</p> <p>January 2008</p>
<p><b><u>Key Area 5</u></b> <u>Management and leadership of school</u></p> <ul style="list-style-type: none"> <li>• Involve the school Board in the SSE</li> <li>• Focus the SDP and PAAI on actions that will improve the quality of education, teaching and learning.</li> <li>• Develop a compensatory teaching programme to support learners who are not</li> </ul>	<p><u>Who takes responsibility</u></p> <ul style="list-style-type: none"> <li>• School governing body</li> <li>• All stake holders</li> <li>• School management and</li> </ul>	<p>*</p> <p><u>Time frame</u></p> <ul style="list-style-type: none"> <li>• October 2008</li> <li>• January → Nov 2008</li> </ul> <p>1<sup>st</sup> term</p>

<p>meeting grade –level standard – especially for transferred learners</p> <ul style="list-style-type: none"> <li>• Delegate duties and responsibility to the HoDs, the phase heads and the staff.</li> <li>• Monitor the performance of the teachers regularly</li> <li>• Draw up a fair duty allocation for extra curricular activities for teachers</li> </ul>	<p>all teachers</p> <ul style="list-style-type: none"> <li>• School Management</li> <li>• School management</li> </ul>	<p>Throughout the year</p> <p>Throughout the year</p> <p>*Once a day</p> <ul style="list-style-type: none"> <li>• January 2008</li> <li>• Throughout the year</li> </ul>
<p><b><u>Key Area 7</u></b></p> <ul style="list-style-type: none"> <li>• The Cluster school contribution to the cluster development fund.</li> <li>• Requests and queries from the school to the Regional Office are promptly attended to.</li> </ul>	<p>Cluster schools</p> <p>Principal</p>	<ul style="list-style-type: none"> <li>• 1<sup>st</sup> term</li> <li>• Throughout</li> </ul>

## Appendix 8

### *LESSON PLAN SHEET*

**Subject:** Life Science

**Grade:** 8

**Date:** 20/06/2004

**Theme:** Ecosystem and energy cycling matter

**Lesson objectives:** At the end of the lesson learners should be able to:

- List the things that they feel are very important.
- Identify the importance of all components of the environment.

**Teaching aids:** Pictures of various animals

**Introduction:** The teacher introduced the lesson by displaying the picture of the various animals. He asked learners to tell/choose the animals that they thought were not important in the environment. He explained to learners what the importance was of all components.

### **Teaching and learning activities**

<b>Teachers activities</b>	<b>Learners activities</b>
He asked learners to work in groups and discussed the importance of some animals to our environment. He asked all groups to present or give feedback.	They gave feedback.

### **Conclusion:**

He emphasized the lessons main points, gave comments and concluded the lesson.