ENABLING SOCIAL LEARNING AS A RESPONSE TO ENVIRONMENTAL ISSUES THROUGH TEACHING OF LOCALISED CURRICULUM IN ZAMBIAN SCHOOLS

A thesis submitted in fulfilment of the requirements of the degree of

MASTERS IN EDUCATION

Of

RHODES UNIVERSITY

By

IMAKANDO SINYAMA

February 2011

Supervisor: Prof Heila Lotz-Sisitka

ABSTRACT

Schools are traditionally established as the main meeting platforms for awareness, education, training and capacity building in the local communities, and as such, are highly regarded and respected. They are situated and integrated in nearly all local communities. They are thus perfectly suited to reach, draw on and provide capacity building to the communities. Zambia recently introduced a new curriculum aspect named localised curriculum, which makes up 20% of the curriculum. This curriculum area encourages schools to address issues of sustainable development that are locally relevant through this curriculum component, but it is not clear what kind of learning emerges from this curriculum aspect.

The study looked at the shift in pedagogical discourse since the introduction of the localised curriculum. Using case study methodology and observation of a number of classroom activities in the Keemba District near Monze in Zambia, I observed social learning interactions taking place in the implementation of the localised curriculum. In particular, I was interested in how the different aspects of the localised curriculum enabled social learning, at different levels. What is important in this research is that it focused not so much on what people should know, or be able to do, but rather, drawing on some of the questions raised by Wals (2007), I considered questions of *how people learn*, and how social learning emerges in school-community interactions in the localised curriculum. The main research question was to investigate: *How does localised curriculum enable social learning in response to environmental issues in Zambian schools?*

This research drew on a number of associated research projects that were carried out in southern Africa and beyond. In his research, Namafe (2008) states that he saw a great need to institutionalise increased participation of Zambian Basic Schools and their local communities in sustainable development of the country in order to alleviate poverty and achieve equitable development. Hogan (2008, p. 122) researching in a different context, argues that contextualisation of the curriculum allowed for indigenous knowledge to come in to the classroom, stating that 'Weakening of the frames provided the opportunity of

closer relationships to give space for knowledge other than teacher selected knowledge or book knowledge to enter the classroom.'

In this study I found that:

- Teaching localised curriculum allowed for contextualisation and integration of environment and natural resource management issues.
- Localising the curriculum contributed to curriculum relevancy: teaching localised curriculum helped learners, teachers and community to develop concern for quality of life and contributed to an understanding of sustainable development.
- Localised curriculum allowed for frame awareness, frame deconstruction and reframing to take place: this allowed teachers to use methods which promoted active pupil participation and interaction, encouraging learners to be reflexive thinkers rather than just using rote memory.
- Participation of teachers, community and learners in the implementation of the localised curriculum: The involvement of community members to teach topics of the localised curriculum was useful and articulated processes of inter–epistemological dialogue between traditional or every day and scientific or institutional knowledge.
- The localised curriculum implementation involved various roles and was influenced by various factors. Of key interest to this study was the fact that neither parents, learners nor teachers saw the localised curriculum as an opportunity for problem solving, but rather emphasised the learning of practical life skills relevant to the community. This differed from the curriculum manuals, and reduced the environmental education potential and also social learning opportunities.

ACKNOWLEDGEMENTS

Many thanks go to Professor Lotz– Sisitka for showing patience and support to me during the period of my study. The support and encouragement I received from her gave me the strength to go on. I wish to also thank the rest of the Masters Course Tutors for making the course lively, reflexive and interactive, without your support, I would not have been able to finish my work. To all of you, I say keep up the good work.

I would like to thank the SADC-REEP for the financial support that was provided to me during the duration of my study. This helped in covering my course fees and supplemented my accommodation costs, allowing me to stay in decent accommodation. I thank everyone at the SADC–REEP office in Howick, South Africa for the wonderful work they are doing in providing support to the region for capacity building programmes such as the Master of Education Degree (EE).

To my lovely wife Laura, I am at loss for words to express how thankful I am for the love and support you gave me during this journey. You were there to make sure that I was in tune with my work. Even during our most difficult times of our life, you never let me give up.

To my children, Imakando Robert Jnr., Katriona Chiyoosha and Nicholaus Mooka, thank you for escorting me to 'school', 3800 Kilometres from home, in Lusaka, Zambia. We took it one kilometre at a time!

I would like to thank:

- The teachers, pupils, parents and the entire community of Keemba Basic School for allowing me to be a part of your lives.
- The Ministry of Education at District and National level for allowing me to conduct my research in the schools.

And finally I would like to thank my fellow M.Ed students of 2010 for being more than just classmates, being a community of practice. For all the interactions that took place from the day we met, I shall always cherish every moment we spent together.

TABLE OF CONTENTS

ABSTRACT.....**i**

ACKNOWLEDGEMENTS.....**iii**

TABLE OF CONTENTS.....**iv**

LIST OF APENDICES.....vi

LIST OF FIGURES.....vii

LIST OF TABLES..... viii

CHAPTER 1 INTRODUCTION AND ORIENTATION TO THE STUDY..... 1

1.1 INTRODUCTION.....1

1.2 THE STUDY SITE.....2

1.2.1 Geographical and domestic co-ordinates.....2

1.2.2 Environmental issues and challenges.....3

1.2.3 An historical perspective of the area 5

1.2.4 Keemba community's dependency on natural resources..... 6

1.3 LOCALISED CURRICULUM AND ENVIRONMENTAL EDUCATION 8

1.4 THE RESEARCH QUESTIONS..... 11

1.5 OVERVIEW OF THE STUDY..... 11

1.6 CONCLUSION.....13

CHAPTER TWO LITERATURE REVIEW: CONTEXTUAL AND THEORETICAL PERSPECTIVES 14

2.1 INTRODUCTION 14

2.2 THE ZAMBIAN EDUCATIONAL CONTEXT 15

2.2.1 An overview of policy change..... 15

2.2.2 Global and regional perspectives 18

2.2.3 National Perspectives 20

2.3 WWF ZAMBIA EDUCATION PROJECTS AND THE CURRICULUM..... 22

2.4 LOCALISED CURRICULUM 26

2.5 SOCIAL LEARNING 30

2.5.1 Introduction 30

2.5.2 Social learning research in southern African curriculum contexts 34

2.5.3 A framework for observing social learning processes 38

2.6 CONCLUSION 40

CHAPTER THREE METHODOLOGY AND METHODS 41

3.1 INTRODUCTION 41

3.2 THE RESEARCH METHODOLOGY AND STUDY DESIGN 41

3.3 METHODS OF DATA GENERATION: 44

3.3.1 Document analysis: 44

3.3.2 Observation: 45

3.3.3 Interviews 49

3.4 ANALYTICAL FRAMEWORK AND DATA ANALYSIS 53

3.5 RESEARCH ETHICS 56

3.6 DATA MANAGEMENT, RIGOUR AND TRUSTWORTHINESS 58

3.7 CONCLUSION 62

CHAPTER FOUR E**NVIRONMENTAL DISCOURSE, SOCIAL LEARNING PROCESSES AND FACTORS INFLUENCING SOCIAL LEARNING PROCESSES** 63

4.1 INTRODUCTION 63

4.2 BRIEF SYNTHESIS OF LESSONS OBSERVED 64

4.3. EVIDENCE OF ENVIRONMENTAL / NATURAL RESOURCE MANAGEMENT DISCOURSE 66

4.3.1 Document analysis 66

4.3.2 Lesson observation 70

4.3.3 Interviews 71

4.4 EVIDENCE OF SOCIAL LEARNING PROCESSES/ LEARNING NTERACTIONS.....73

4.4.1 Document analysis.....73

4.4.2 Lesson observation.....81

4.4.3 Interviews.....90

4.5 FACTORS INFLUENCING THE LEARNING AND ROLES OF LEARNERS AND PARENTS.....92

4.5.1 Roles of parents.....92

4.5.2 Roles of learners.....94

4.5.3 Community strengthens including but not limited to indigenous knowledge.....95

CHAPTER FIVE: SOCIAL LEARNING, LOCALISED CURRICULUM AND ENVIRONMENTAL EDUCATION 98

5.1 INTRODUCTION.....98

5.2. LOCALISED CURRICULUM, ORIENTATION AND CONTEXTUALISATION OF ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT CONCERNS.....99

5.3 LOCAL CURRICULUM, PRACTICE ENCOUNTERS AND ENVIRONMENTAL ISSUES.....104

5.4 LOCALISED CURRICULM, RELEVANCE AND NEW KNOWLEDGE.....108

5.5 LOCALISED CURRICULUM, DEFRAMING, RE-FRAMING AND LEARNER PARTICIPATION.....110

5.6 LOCALISED CURRICULUM AND INTER-EPISTEMOLOGICAL DIALOGUE.....112

5.7 ROLES AND STRENGTHS IN ENABLING SOCIAL LEARNING IN A LOCALISED CURRICULUM 114

5.8 CONCLUDING COMMENT 115

References 117

LIST OF APPENDICES

Appendix 1 Lesson Observation 1.....123

Appendix 2 Lesson Observation 2.....125

Appendix 3 INTERVIEW SCHEDULE FOR SCHOOL IN – SERVICE PROVIDER/GRADE 5 TEACHER 126

Appendix 4 Example of interview transcription (with Grade 5 teacher).....127

Appendix 5 Consent Form.....130

Appendix 6 INTERVIEW SCHEDULE FOR GRADE FIVE TEACHER OF KEEMBA LOCLISED CURRICULUM COMMITTEE (LCC).....131

Appendix 7 Interview schedule (Grade 5 Learners).....133

Appendix 8: Analytical Memo showing the data from Documents, Observation, Interviews, including the colour codes used.....134

Appendix 9 Authorisation Letter from Ministry of Education 137

LIST OF FIGURES

Figure 1.1 Location of Lochnivar National Park.....2

Figure 1.2 Location of Monze district in southern province of Zambia.....3

Figure 3.1 School INSET coordinator translating questions to the learners 50

Figure 3.2 An interview with a teacher at Keemba Basic School.....52

Figure 3.3 Process of reflexive analysis 61

Figure 4.1 Grade 5 teacher lesson plan showing planned activities.....72

Fig. 4.2 Learners engaged in a practical activity.....78

Fig. 4.3 Learners engaged in mixing compost. Lesson observation 3.....79

Fig 4.4 Learner explaining to class.....79

Fig. 4.5 Group activity in Lesson 2.....86

Fig 5.1 Curriculum development process.....102

Fig 5.2 Concentric circles representing the motion of context.....107

LIST OF TABLES

Table 3.1 Documents analysed.....44

Table 3.2 Observations and the purpose of the observations.....46

Table 3.3 Analytical framework drawn from Wals (2007), Hogan (2007) & Namafe (2008)..53

Table 3.4 Analytical matrix.....55

Table 3.5 Data index odes.....59

Table 3.6 Indexed summary of all data.....60

Table 5.1 Strengthening orientation to environment and NRM.....103

CHAPTER ONE

INTRODUCTION AND ORIENTATION TO THE STUDY

1.1. INTRODUCTION

This study, set in a school in the Monze district in Zambia, focuses on how the localised curriculum enables social learning in response to environmental issues. Environmental education is often place based and focussed on local concerns. In Zambia, the government introduced a localised component of the curriculum into educational policy (described in more detail in Chapter 2). The WWF Children and Environment in Zambia Project (CEZ) developed a project in 2006 to support children and parents in primary schools to develop knowledge and capacity to respond to local community based natural resource management issues and sustainable development issues out of their long-standing environmental education programme (see Section 2.4).

At the time this study was conducted, I worked for the WWF CEZ as an environmental education officer responsible for supporting the development of localised curriculum in schools. I therefore undertook this research, which is a case study, in one of the schools in the CEZ project, in Keemba in the Monze district (see Section 1.2 below). My interest was to develop a deeper understanding of the learning assumptions and processes that inform and emerge from the implementation of the localised curriculum (see Section 1.3 below where the full goals of the study are stated). This study therefore explores how this curriculum works in practice when the focus is on environmental issues.

This chapter describes the context of the research. It starts with a description of the study site providing historical and contextual insight into the local environmental issues, which form a focus of this study's interest in localised curriculum. Localised curriculum is discussed in more detail in Chapter 2.

The chapter further includes an overview of the research questions and it provides a summary of the chapters of the thesis. I set the background of the thesis.

1.2 THE STUDY SITE

1.2.1 Geographical and demographic co-ordinates

Keemba is located on the edge of Lochnivar National Park, about 32km west of Monze district, in chief Choongo's area of the Southern Province in Zambia (see Figure 1.1 below). Monze is a small farming town 180 kilometres south of Lusaka, Zambia's Capital City.

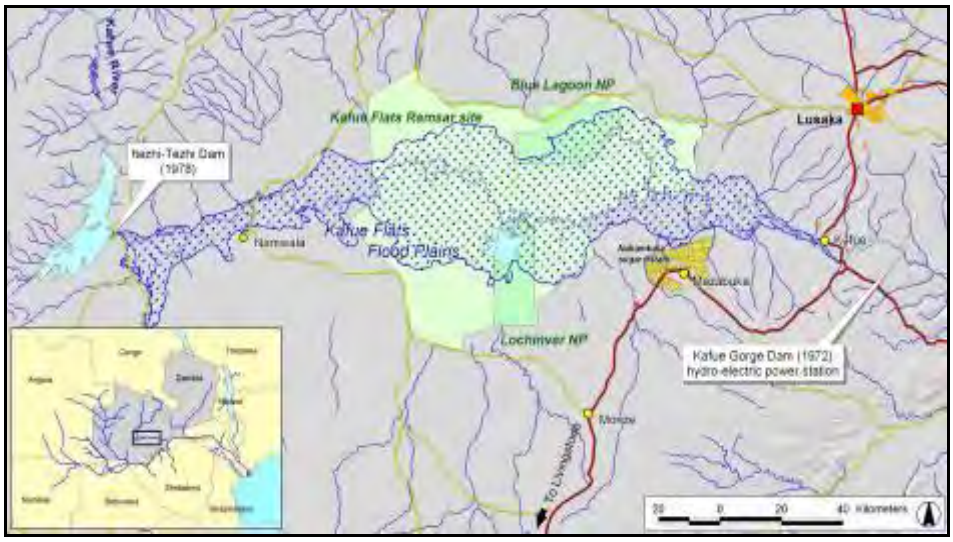


Figure 1.1 Location of Lochnivar National Park in Kafue Flats (Source: Marco Gylstra – WWF Zambia, 2009)

The area population of Keemba is about 9,315 people (WWF- Zambia, 2007). Most of the population are cattle farmers. Keemba has a total of 1,315 households *(Ibid.).* A headman oversees a cluster of households.

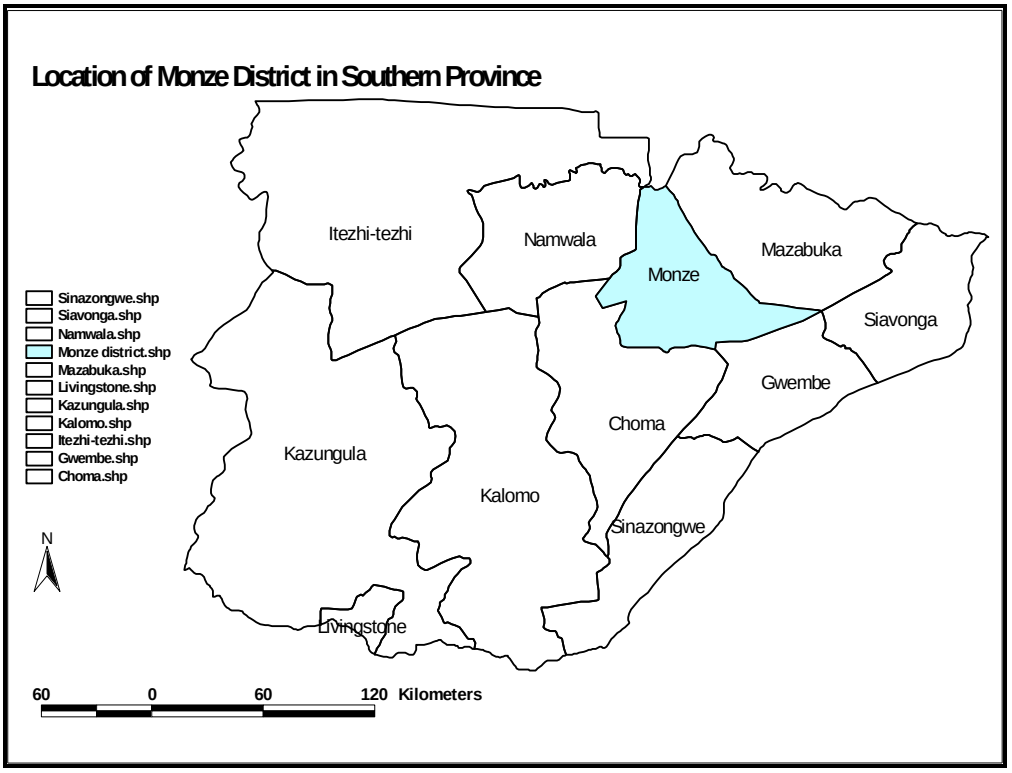


Fig. 1.2 Location of Monze district in southern province of Zambia (Monze District Planning office)

1.2.2 Environmental issues and challenges

The Kafue Flats is one of the country's most commercially important and agriculturally productive areas. The area is important for fishing, cattle grazing, sugarcane farming, and production of hydroelectric power. The Kafue Gorge hydroelectric power plant situated at the eastern end of the Kafue Flats provides around 50% of Zambia's electricity needs and also exports electricity to neighbouring countries, such as Zimbabwe and South Africa (WWF, 2006). Major commercial farms and industry are centred in this region famed for its sugar estates. On the south-eastern side of Kafue Flats, near the town of Mazabuka, there are several sugarcane farms, each of which cultivates huge areas of land. These farms produce the majority of Zambia's sugar for local use and export. Beck would describe the processes that have led to this development as processes of 'industrialisation' and 'modernisation' which, while having benefits, also generate various threats to the environment (Mythen, 2004).

Beck (Mythen, 2004) believes that the historically assumed boundary between the natural and the social has been eroded by technological advances, scientific applications and economic development. In previous epochs, the realms of culture and nature were discrete. In modern society, nature has become thoroughly humanised and 'the risk society begins were nature ends' (*ibid.*, p. 32). Each farm relies heavily on water from the Kafue River for irrigation. Close to 700,000 people live in this region. Most earn a living directly from the environment through fishing, cattle herding and small-scale farming or are employed in the sugar industry. Traditionally, the people of Kafue Flats have made a living by fishing and grazing livestock. Until recently, the area was sparsely populated but with more and more people coming from outside in search of work on the sugar estates, the problems of illegal hunting of animals and over-fishing are increasing (WWF-Zambia, 2007). However, most damage is caused by organised hunting and commercial poaching. As a result, certain parts of the Flats are suffering from increasing human pressure. Environmental issues and challenges are identified, observed and monitored while detecting and taking effective strategies and actions.

The major threats to this region's wetland habitats comprise: habitat loss and degradation including hydrographical changes, reclamation and encroachment; over-fishing; agricultural and industrial chemical contamination; poverty and weakness of community awareness and participation. The forest habitats and wildlife are threatened by deforestation from logging and agricultural encroachment, as well as over-hunting (*ibid*). The main services provided by the wetlands to the communities are food security and water, as well as cultural and spiritual values.

The main environmental challenges faced in Keemba area are outlined below (as summarised from a contextual profile I produced on the area (Sinyama, 2009, pp. 19 - 21) :

Deforestation: Due to charcoal production and unsustainable timber manufacturing, deforestation is a serious environmental issue in Keemba. The most important cause of deforestation is clearing for agriculture and over-grazing of cattle. Encroachment of forest reserves by human settlements and cultivation has also greatly contributed to the depletion

of forest resources. The ultimate reasons for people to engage in these unsustainable uses of forest resources is the lack of alternative sources of livelihoods since agriculture and charcoal production seem to provide the only source of livelihoods for many people who are subjected to poverty conditions.

Poaching: Illegal hunting - commonly known as poaching - or the illegal depletion of wildlife resources involves indiscriminate killing of wild animals. The reduction in numbers of wildlife is also due to the destruction or modification of animal habitats through deforestation, cultivation and late burning. As indicated above in the case of deforestation, lack of alternative sources of livelihood seems to be a major driver for illegal hunting as well. This is compounded with the reduced agricultural production due to persistent droughts, or in other cases floods.

Overfishing: Overfishing occurs through the use of unsustainable methods like the use of poisonous plants, chemicals and explosives. Such methods kill fish indiscriminately and on a large scale ultimately leading to the depletion of fishing grounds**.**

1.2.3 An historical perspective of the area

In the 1960's, the World Wide Fund for Nature (WWF) bought up two farm estates in the central region of Kafue Flats and established Lochnivar National Park and Blue Lagoon National Park (see Figure 1.2 above). Recently, both these two parks have been declared Ramsar sites – and are thus internationally recognised as extremely important wetlands. On the western side, the Kafue River cuts into the Kafue National Park.

With only an eight-metre drop in elevation as the Kafue River flows through this region, the natural ecosystem has been heavily influenced by cycles of floods and droughts. This unique wetland landscape of grasslands, lagoons and reed beds supports diverse wildlife (WWF - Zambia, 2006). Some of the species of wildlife found on the Kafue Flats include Zebra, Sitatunga, and Buffalo. The Kafue Lechwe is the region's most famous animal and is endemic to the flats; it is one of the three different species of lechwes or marsh antelope adapted specifically to living on the flats. The population of many species that occur in the flats have

declined due to increased poaching and alteration in the water flow. More than 450 bird species occur on a regular basis in the Flats. Kafue is one of the most important sites in Africa for Wattled Crane, a bird species that is ranked as vulnerable by the World Conservation Union (IUCN) (*ibid*, p. 4).

During the dry season residents rely on the Kafue Wetlands for pasture and water for their livestock. There are threats both to wildlife and livestock posed by cattle grazing in the national parks. There is evidence suggesting disease transmission between wildlife and livestock when land for wildlife is used as rangeland for livestock (WWF-Zambia, 2006). The Zambia Wildlife Authority (ZAWA), in 2000, documented outbreaks of anthrax associated with livestock-to-wildlife transmission. ZAWA has also documented transmission of rabies, foot and mouth disease, heart-water and tuberculosis from wildlife to livestock. The WWF-Zambia baseline report (2007) argues that inequitable and socially insensitive legislation and approaches to land use planning and management impede amicable resolution of these issues, unless substantial resources and opportunities are generated to provide alternative water and pasture for the local community's use.

Fishing on the Kafue River and particularly on the Chuunga Lagoon in Lochnivar National Park provides livelihoods to residents of chief Choongo and Chief Hamusonde of Keemba's area. The Kafue wetland is a major source of industrial, municipal supplies (Kafue Town and Lusaka), agriculture, livestock and wildlife. It is also a sink for industrial and agricultural waste. In addition, the Kafue Wetland is rich in minerals such as gypsum and magnetites, which are important inputs in cement and coal production respectively. These mining activities are a threat to wildlife and the Kafue Wetlands ecosystem. Population growth is expected to exert more pressure on land for agriculture and settlement in future and is expected to reduce the size and quality of wildlife corridors if left unchecked (WWF- Zambia, 2006).

1.2.4 Keemba community's dependency on natural resources

Agriculture is the major source of livelihood for most people living in the project site (WWF-Zambia, 2006). Most of the agricultural activities are pursued at small to medium scale level

with maize and cotton being the major food and cash crops, respectively. Agricultural mechanization is relatively low, with most farmers using hand tools and oxen for ploughing. Use of chemical fertilizer and improved seeds is becoming increasingly common, especially among relatively affluent residents. Seed inputs for cotton farming are distributed to farmers participating in the Lonrho and Donavan cotton out-growers schemes. They also grow peanuts and other legumes mainly for their own consumption. Most farmers use high proportions of their yield to meet household food requirements. Only part of the total maize produced is sold, the rest forms part of household food reserve (WWF-Zambia, 2006; WWF-Zambia, 2007).

The residents, especially around Chuunga Lagoon and Kafue Flats Game Management Area are traditionally cattle herders and grazing land is an important asset to them. They use cattle to plough farms, and as a means of transporting people and goods to and from the local markets and fishing camps. Cattle are an important source of proteins (milk and meat) and cash. Residents also use cow dung as fertilizer and as a source of household energy. Despite its livelihood importance, there are synergies between livestock production and wildlife management.

In Keemba, during interviews that I had with them, teachers indicated that wetlands of the Lochnivar National Park (Chuunga Lagoon) are an important source of water and pasture for livestock especially in the dry season (TI-1). The demand for water and grazing lands for livestock need critical consideration in designing and implementing wildlife conservation strategies in the area. Of great importance in this regard is how to minimize or eliminate the risk of disease transmission between wildlife and livestock. These and other related human/livestock and wildlife interactions and risks need the serious attention of resource managers (government), local community members and tourist operators in the area.

Most of the communities in the area move from one fishing camp to another depending on the flood regime. The major fish species harvested includes the Kafue Bream (Tilapia) and Catfish (barbel). The fish they catch is smoked or sun-dried and packaged in bundles ready for sale to fish traders (WWF- Zambia, 2006).

1.3 LOCALISED CURRICULUM AND ENVIRONMENTAL EDUCATION

The introduction of the Localised Curriculum has seen a shift in the teaching process in the classroom (see Section 2.4 for a more in-depth discussion on localised curriculum). The recognition of localised curriculum as a learning area aims at developing knowledge, skills, positive attitudes and values amongst learners within a locality for individual and community sustainable development (MoE, 2005). Community Studies, as the named learning area that focuses on the localised curriculum, appreciates the fact that communities around schools have their own way of life and ways of imparting knowledge, positive attitudes, values and skills in the children, according to their cultures and traditions. Many of the local skills, particularly those related to behaviour and livelihoods, are passed on from generation to generation as part of the socialization process. Therefore, it's an approach to learning that responds to local needs, allowing learners to learn more about, and build capacity related to those natural resource and environmental issues that directly affect them.

The localised curriculum comprises 20% of the total school curriculum in Zambian schools. The content of the localized curriculum is decided in a consultative process between the local communities, represented by Localized Curriculum Committees (LCC), the local schools and the District Education Board Secretary (DEBS) and can include any subject that the local community see as important in the education of their children (MoE, 2007). The school allows participatory approaches and flexibility for the parents to use the familiar language and practices suitable to them and the learners. They may also include traditional methods of teaching (*ibid*, see Section 2.4).

Learning about environmental education entails the development of practical skills as well as theoretical knowledge. Wals (2007) argues that:

> a basic aim of sustainability education is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic and cultural aspects, and acquire the knowledge, values, attitudes and practical skills to participate in the management of the quality of the environment (p. 35).

My research focuses on educational quality and relevance, in relation to localised curriculum, a component of the Community Studies Learning Area in the Zambia Primary School Curriculum (see Section 2.4). Kelly (1999) argues that for basic education to be viable in practice, it must effectively address three major facets or dimensions of economic, social, and cultural lives of all people and its society. It must seek to develop conscious concern for the quality of life and contribute to an understanding of the vital importance of sustainable development (see Chapter 2). The teaching of localised curriculum is meant to bring about social change in community living in areas affected by a number of socio–ecological risks. In teaching localised curriculum, the teaching methods used by the teachers are meant to involve the learners in creating and finding solution to the sustainability issues faced in their locality (MoE, *Teaching Community Studies*, 2007).

The introduction of the localised curriculum is aimed at improving the quality of education in line with the National Policy of Education, "*Educating Our Future"* (MoE, 1996, p. 45), whose vision is *"To provide quality and relevant basic education to all Zambian children'* as discussed further in Chapter 2.

By focusing on localised curriculum, this research engages critically with dominant tendencies influencing education, as articulated by Jickling and Wals and captured well in this statement:

> These tensions, and ultimately contesting views about the nature of education can be characterized as being essentially *transmissive* – that is, the transmission of facts, skills and values to students. Hence the content and learning outcomes are predetermined and prescribed by a small group of experts. Learning is, by and large a closed process, an unidirectional transmission of information from teacher to student. Education is about social reproduction and social efficiency" (Jickling & Wals., 2003, p. 5).

Jickling and Wals are writing from the field of environmental education, and by referring to tensions they are proposing a more open-ended, participatory and reflexive learning process for environmental education curriculum, which they see as being in tension with the dominant curriculum mode of the 20th century, as outlined in the quotation above.

By focussing on localised curriculum I aim to look at the methods of teaching used, and the shift from content based transmission forms of education which dominate in Zambian schools, to a more participatory localised curriculum. Theorists such as Jickling and Wals understand education to be more transformative, "Here, knowledge and understanding are co–constructed within a social context – new learning is shaped by prior knowledge and diverging cultural perspectives" (*Ibid*, p. 5), which is the alternative that they propose. Need for such change has also been identified in the Zambian educational context, and WWF pupils book (2008) states that learning about environmental education entails the development of practical skills and as well as theoretical knowledge (WWF Pupils book 1, 2008), which in turn involves engagement with local context, perspectives and issues which are often the context of practice.

As a practical example, a WWF Pupils book 1 (WWF, 2008) illustrates some of the uses of water under the caption "water is good". This drawing from the pupil's book shows cattle and wild animals drinking from the river. This scenario is not different from the children's immediate environment (see Figure 1.3 below).

Figure 1.3 Drawing from the children's book and photograph taken in the area

1.4 THE RESEARCH QUESTIONS

I have challenged myself to research the learning interactions that take place during teaching of localized curriculum. The focus on the learning interactions is guided by an understanding of social learning processes as described by Wals (2007, see Chapter 2).

My research question therefore is: *How does localised curriculum enable social learning in response to environmental issues in Zambian schools?* In discussing this question, I have set out research goals to guide me, which are:

1. *To find out how environmental issues and/or natural resource management practices are being included in the localised curriculum*
2. *To find out if teaching of localised curriculum enables social learning, involving processes of orientation, de-framing, co- creating, and reviewing in environmental discourse*
3. *To identify what role parents, teachers and learners play in the localised curriculum learning and teaching processes.*
4. *To identify factors influencing the learning interactions in selected localised curriculum activities.*

Working with social learning theory, mainly the social learning theory of Wals (2007), I developed an analytical framework to help me answer my question and goals (see Chapter 3). The study is set up as a case study of localized curriculum practice which I observed. During the field work I observed four Grade 5 lessons in Community Studies (Localised Curriculum). I was able to observe the social learning processes taking place at various levels (see Chapter 4 and 5).

1.5 OVERVIEW OF THE STUDY

I organised this research report into six (6) chapters. Each chapter focused on a particular stage of the entire research process. Briefly the chapters were organised as follows;

Chapter One: Introduction: As already pointed out in Section 1.1 this chapter provides an orientation to the entire research project. It outlined the purpose, and objective of this research. It also briefly introduces the reader to the context of the research and key

concepts used. The chapter served to help the reader get a good sense of the overall research project conceptualisation and purpose.

Chapter Two: Literature review: Chapter 2 discusses relevant theoretical frameworks relating to social learning and localised curriculum in the context of environment and sustainability education[1]. The chapter covers an historical perspective and understanding of social learning processes. The chapter also provides insights of contextualisation of the curriculum from environmental education research undertaken in southern Africa and elsewhere around the globe. Within the literature review chapter, I also attempt to justify why this research needed to be done.

Chapter Three: Methodological Decisions: In Chapter 3 I discuss how I conducted the research. I also discuss how I worked with methodology and methods. The chapter provides the reader with information regarding data collection, management, and analysis processes.

Chapter Four: Data presentation: In this chapter I provide a thick description of the data, showing how I analysed the data in relation to my research questions. The chapter presents the findings using a series of categories that shed light on the social learning processes, and the four goals of the study outlined above.

Chapter Five: Data Analysis: In this chapter I discuss the findings presented in Chapter 4 in more detail using a set of analytical statements, which make the main findings of the study clear. I draw on theory presented in Chapter 2 to provide further interpretation and perspective on the data

Chapter Six: Conclusion and Recommendations: In this chapter I summarise the study and present recommendations. I also provide recommendations for further research to inform other researchers who may be interested in undertaking similar research on contextualised curricula.

[1]As in other southern African contexts, environment and sustainability education are often used interchangeably in this study.

1.6 CONCLUSION

This chapter provided a detailed overview of the research topic, and the rationale of this research. I was able to provide contextual information to locate the study site, and to make the context of this research more explicit. I also provided an overview of the structure of the study.

In the next chapter I build on this introduction, and I consider the issues introduced in this chapter in more depth, drawing on theory and previous research on localized curriculum and social learning in the field of environment and sustainability education. This helps to strengthen the rationale for the study.

CHAPTER TWO

LITERATURE REVIEW: CONTEXTUAL AND THEORETICAL PERSPECTIVES

2.1 INTRODUCTION

This chapter begins with a discussion on localized curriculum and educational policy in Zambia, and provides further insight into the context of the study; particularly its links and relationship to the WWF Zambia Education Programme which was working in the Keemba district with schools on localized curriculum (see Chapter 1 for more information on the Keemba district). The discussion includes a focus on how current policy shifts in education in Zambia have an influence on educational quality and relevance.

The chapter then proceeds with a review of different definitions and aspects of social learning to come up with a working definition relevant to my research. As I am an Environmental Education practitioner working in Southern Africa, trying to understand how education can best address environmental issues and risks while also improving the quality and relevance of education, I draw on some of the environmental education research conducted on social learning and educational quality and relevance within the region. I also draw on insights and research produced outside the region, and I take a keen interest in the findings and recommendations presented by the various researchers. Working with other environmental education practitioners from within and outside the region creates a platform for a community of practice to exist and thrive (Wenger, 1998). My research is located within a broader network of Southern African Development Community (SADC) researchers who have an interest in the role of environmental education in improving educational quality and relevance (Lotz-Sisitka, 2008, see Section 2.4 below), and hence I see this project as being located within this wider network of scholarly activities, and hope that it will contribute knowledge to this research network.

2.2 THE ZAMBIAN EDUCATIONAL CONTEXT

2.2.1 An overview of policy change

The Ministry of Education has changed its educational policy framework three times since the country's independence in 1964. Some of these earlier changes were triggered by major reform in Europe and the West. In the United Kingdom, the new society introduced after World War II, the American 'space race' with Russia following Russia's launch of the first space craft in the 1950's, and the post-1960 drive to end colonialism in Africa and Asia all influenced changes in education policy (Kelly, 1999). Zambia was one of the first African countries to gain independence in the 1960's, and was also one of the first countries to pioneer educational reforms within the post-independence period in Africa. Education in the colonial period was exclusive, and served only a small elite group, and most education was run by missionaries in which the content was largely defined by "… their work of evangelization" (Hailey, 1938, p. 1220). The curriculum was also ideologically defined as an instrument of change towards European modernization, and it was particularly structured for maintaining 'native's' [sic] in subordinate roles in the colonial economies. Writing in 1938, one colonial text (Hailey, 1938, p. 1208) had the following to say about education in the British African colonies (of which Zambia was one) at the time:

> … the African child will be introduced to a world of thought, of achievement, and of conduct outside the experience of his [sic] parents; this access to new ideas is bound to make a break in his [sic] life, however, much the educationist may wish to respect native [sic] tradition. What is to be the content of instruction offered? … a policy of education has in truth been only the expression of a political determination, or an effort to implement the view of the place which the African should occupy in the social economy [of colonialism].

It was this history of discrimination and ideological manipulation through education under colonialism that gave rise to the first major post-independence educational policy reform in Zambia, represented at the time by a document named *Educational Reform of 1977*. Educational Reform during this period emphasized education as an instrument for personal and national development (MoE, 1996). Some of the contributing factors to the 1970s educational reforms for countries such as Zambia that had just gained independence in the 1960's as cited by Kelly (1999, p. 111) were:

- Stress was placed on quantity and expansion,
- National desire to create radically different programmes and institutions,
- Economic self sufficiency; which seemed to require massive changes in the school curriculum and out of school schooling/ training work,
- Need to give expression to new school ideologies, and
- Misgivings about the education system which was highly selective, promoting individualism, and elitism; credentialism, with paper qualifications appearing more important that knowledge/skills; too academic and irrelevant to needs of many; promoting inequalities and alienation, and undermining self-reliance.

However, this form of education did not last very long as it had its own challenges. Some of the challenges that this type of education posed in the country included issues such as lack of participation from the stakeholders including the teachers. Kelly (1999) argues that this education reform failed because it concentrated on individual elements of a reform instead of a total package.

> Many reform exercises ended with production of a plan - process important, led to understanding of forces at work; but need for further implementation plan often overlooked; hence the piecemeal implementation; ever recurring tendency to stress numerical, quantitative aspects, at the expense of qualitative. Inadequate attention to currently important issues such as population growth, health, girls' education (sic) (*ibid*, p. 111).

The early reforms did not include anything specific about girl's education or environmental problems.

The Educational reform of 1977 grew out of an increasing awareness within the Ministry of Education of the contradictions within existing policy. Since independence education policy in Zambia was driven by the popular demand for universal education and the need for provision of skilled manpower needed for the expanding 'Zambianized' economy (Clarke, 1979). These two different ideologies contradicted each other because as Clarke (1979, p.147) explains:

> The rationale underlying the expansion of the secondary and tertiary levels was manpower planning, which meant that graduates from this part of the system could expect to find wage employment and relative wealth in a poor country; but this

> rationale sadly contradicted the primary sector; where primary school leavers could not expect to find wage employment, not even productive employment of any kind in most cases.

At the time, Julius Nyerere was writing on education in neighbouring Tanzania. His ideas were influential in the region. In his seminal paper on *Education for Self Reliance,* he suggested that primary school leavers were unfit for productive work in the rural economy by virtue of the content and ethos of the primary school curriculum which was conceived as a preparation for secondary school, and which, in practice, alienates students from the their local community (*ibid.,*). Thus early educational reforms raised tensions between the formal school curriculum and its purpose, and the need for localized curriculum, although it was not discussed in this way at the time.

The second reform was known as *Focus on Learning*. This came on board in 1992. The main focus of this reform was the mobilization of resources for development of school education (MoE, 1996). This reform came at a point in history where Zambia had just had a major political shift from a One Party State to a Multi Party Democracy.

The third and current reform in education is *Educating our Future,* released in 1996. This most recent education reform policy document addresses the entire field of formal institutional education, paying particular attention to democratization, decentralization and productivity on the one hand, and curriculum relevance and diversification, efficient and cost – effective management, capacity building, cost sharing, and revitalized partnerships on the other hand. It also emphasizes flexibility, pluralism, responsiveness to needs, and the protection of quality, all of which are recurrent themes in the policy framework (MoE, 1996). Being a liberal democratic state society, the country's educational policy was guided by the following principles; liberalization, decentralization, equality and equity, quality, partnership and accountability (*ibid.*).

Both the earlier and most recent needs for educational change in Zambia can still be attributed to issues such as growth in unemployment with growing problems existing especially amongst primary school leavers who are inadequately prepared for employment

or for life in the rural areas while poverty is getting worse, especially in rural areas. The latest Human Development Index (HDI) Report (UNDP, 2010) reports that

> The world's average HDI has increased 18 percent since 1990 (and 41 percent since 1970), reflecting large aggregate improvements in life expectancy, school enrolment, literacy and income. ...Almost all countries have benefited from this progress. Of 135 countries in our sample for 1970–2010, with 92 percent of the world's people, only 3—the Democratic Republic of the Congo, ***Zambia*** and Zimbabwe— have a lower HDI today than in 1970. (pg. 3, my emphasis)

The report further explains the conditions in Zambia as follows:

> Zambia experienced declines in life expectancy, gross enrolment and income—for many reasons. The collapse of copper prices in 1980 sparked a protracted depression that shrank the economy by a third. Incomes have yet to return to previous levels. It also suffered from waves of refugees fleeing civil wars in neighbouring Angola and Mozambique and from the HIV epidemic, which gave the country the fifth highest HIV prevalence in the world. The lack of resources and the HIV epidemic hurt the provision of public services ... 63 percent of Zambians suffer poverty in multiple dimensions, similar to the share living below $1.25 a day. (UNDP, 2010, pg. 29)

2.2.2 Global and regional perspectives

The government of Zambia has participated in a number of regional and international forums whose main goal is to improve the education service delivery in an effective and equitable manner. Among the regional initiatives the country has participated in, include the Southern Africa Development Community (SADC) Protocol on Education and Training, and the African Girls' Education Initiative (AGEI). At global level the most important ones include the Educational for All (EFA) initiative and the Millennium development Goals (MDGs) (National Implementation Framework, 2008). The National Implementation Framework (2008, p. 16) states that:

> EFA is essentially a global effort to make a giant step forward in improving basic education, based on the understanding that education is a fundamental human right. The Zambian government maintains that the EFA goals and targets agreed upon at the World Education Conference in Jomtien in 1990 are strategic in the provision of basic education and continue to guide the national policy.

Currently, according to the UN Global Action Plan for EFA, one of the most 'urgent challenges for EFA [is] improving educational quality' (UNESCO, 2007, pg. 14). This has been identified as being essential for achieving universal primary education, and to ensure that other issues such as completion rates in primary education improve. Wade and Parker (2008, pg. 23) state further that "one of the key links between quality education and poverty reduction is appropriateness and relevance". They argue for greater alignment between EFA and Education for Sustainable Development (ESD) (known in southern Africa also as environment and sustainability education). They note that there is considerable overlap and synergy between the EFA and ESD agenda's as both see education as a human right, both seek to improve the quality of education, and both are committed to improving the quality of life of people, reducing poverty and improving health and well-being. They note, however, that there is still inadequate clarity on the relationship that ESD has to quality education which is a focus of this research project, and others in southern Africa (discussed in more detail below).

Education for Sustainable Development (ESD) has its roots in the history of two distinct areas of core interest for the United Nations: (1) quality basic education; and (2) sustainable development, which in turn links to a concern with human – environment – development relations. Building on a 30 year history of environment and development education, the United Nations Decade of Education for Sustainable Development (UNDESD) (2005 -2014) was proposed and endorsed at the WSSD in 2002. In December of the same year, the UNDESD was adopted by the UN General Assembly through resolution 57/254 with the UNESCO designated as the lead agency (Lotz-Sisitka *et al.*, 2006).

In Africa, the UNESD is seen as an opportunity to streghten the 2nd Decade of Education in Africa (2006–2015), the Millenium Development Goals and the human resource development requirement of NEPAD and its Environmental Action Plan (*ibid*). In southern Africa, UNESCO supports the implementation of the environment and sustainability, human and resource developmnet goals of the SADC Regional Indicative Strategic Development Plan. Furthermore, and of specific interest to this study, the Sub – Saharan Africa Strategy

for the UNDESD emphasises the importance of situating the UNDESD goals and objectives in African cultures, knowledge, systems and experience (*ibid*).

2.2.3 National perspectives

The national education policy entitled *Educating Our Future* was launched in May 1996, focusing on decentralisation, partnership, equity, efficiency, quality, democratisation and effectiveness. Under this policy, the Government aims to give every child access to nine years of basic education by 2015, which is in line with the Millennium Development Goal (MDG) goal on education. One of the aspects of this policy stance was the stress on a Sector Wide Approach (SWAp) in the development of basic education. This was operationalised through Basic Education Sub–Sector Investment Programme (BESSIP). Actual implementation of this policy has been a key focus of the Ministry of Education Strategic Plan (MoESP) for 2003 – 2007. In order to achieve the goal of providing *access* to education, in 2002, the President of Zambia announced that education would be free from Grade 1- 7. It is encouraging to note that these reforms are having some impact. The latest MDG report for Africa states that Zambia has made progress of between 5-13% in increasing primary completion rates over the past ten years, and that Zambia has achieved near parity for providing girl child education (UN, 2010).

The broader policy principle of the Ministry of Education as guided by the MDGs and EFA is that basic education is an integral part of social and economic development and that it is a fundamental human right. In light of the above, the government education policy is committed to providing "quality lifelong education for all, which is accessible, inclusive, equitable and relevant to individual, national and global needs and value systems" (Ministry of Education, *National Implementation Framework*, 2008, p. 19).

The Zambian Government developed the Fifth National Development Plan (FNDP) to provide a more holistic perspective to sector development policies under the general thrust of economic growth and poverty reduction (Ministry of Education, *National Implementation Framework*, 2008, p. 20). The FNDP embraces formal education and technical and vocational education with the broad objective being to develop, revise and improve the overall

framework for quality educational planning, human resource, financial management, and administration of technical and vocational education delivery (*Ibid*). The Basic School Curriculum Framework (BSCF) of 2000 emphasises the government's need to improve the quality of education in Zambia. It highlights the following principles as key to improving education quality:

- The teachers should, as much as possible use methods which promote active pupil participation and class interaction, in particular methods which encourage children to reflect, think and do rather than produce from memory.
- The school management should encourage active parent involvement in issues of teaching, learning and management.
- *The teacher should as much as possible use methods, materials and examples adapted from local conditions, using the immediate environment as a resource for teaching*. [my emphasis]
- Children will always be different, yet all need the same opportunity to learn. Within constraints imposed by numbers of pupils and availability of books, teachers must endeavour to make provisions for different interests and abilities. Slow learners and quick learners need different approaches.
- Teaching and learning activities must not be limited to strict subject boundaries. Reality and life are more diversified and complicated than simplified and compartmentalised subject areas. The subjects are tools to develop certain skills, competences, areas of knowledge and attitudes - subjects are never an end in themselves. The purpose of schooling is not merely for pupils to master the subject knowledge offered; rather the purpose is to develop certain skills and attitudes. Teachers must work together to combine subjects and subject areas, working with themes and cross cutting issues (BSCF, 2000, pp.16 - 17).

The mission of the Ministry of Education during 2006 – 2010 of the FNDP is "providing equitably accessible education and skills training opportunities for sustainable livelihood and development" (Ministry of Education, *National Implementation Plan*, 2008, p. 18). This statement shows the government's commitment to principles of Education for Sustainable Development.

Recently, the Curriculum Development Centre carried out a review of the Grades 1-9 curriculum with the view of identifying ways of incorporating Education for Sustainable Development concepts and practice. The UNDESD Zambia Report (2006, p. 18) comments on this process as follows:

lessons learned from this exercise are that curriculum should not be static, but dynamically moving to integrate global experiences and also emerging societal issues related to poverty alleviation. There is also need to integrate issues that affect the majority of the people in the region i.e. poverty alleviation, if learning is to be meaningful to the community. Curriculum must meet needs of the people and the community. It must be end-user curricula which should be constantly reviewed to meet the needs of the students/industry/customer. In short curricular should be tailor made to satisfy different audiences.

2.3 WWF ZAMBIA EDUCATION PROJECTS AND THE CURRICULUM

Integration of Education for Sustainable Development concepts and principles into the education system of Zambia has long been championed by members of the NGO community amongst others (Lupele, 2002). WWF as an NGO in Zambia (which I worked for at the time of conducting this study), has championed the development and implementation of a number of environmental education and sustainability projects. It has worked with a number of stakeholders among them the Ministry of Education in capacity building, materials development and other policy initiatives. WWF Zambia's work with the Ministry of Education on these issues started early on, when there was a need to respond to the Government of Zambia's need for a comprehensive environmental education programme as identified in the National Conservation Strategy of 1985 (Lupele, 2002). This gave birth to the WWF-Zambia Environmental Education Programme, which later changed its name to WWF-Zambia Education Project. The Project's main activities were production of materials for primary schools in Zambia. The NCS for Zambia was influenced by the World Conservation strategy of 1980. As mentioned above the main focus on the education project at the time was education *about* the environment, as was seen in the ZEEP's main activities of publishing materials such as posters. Fien (1993) talks about the ideological bases of three approaches to environmental education, and in his description of the education *about* the environment; he mentions that this was the most common form of environmental education. Its objective emphasises the knowledge about natural systems and processes and the ecological, political and economic factors that influence decision about how people use the environment (Fien, 1993).

WWF-ZEP later re-orientated its focus on environmental education in Zambia. Since its inception in 1990, WWF-ZEP's focus was also influenced by the paradigm shift in

environmental education at the international arena. Like environmental education in the broader SADC region, the field has been influenced by amongst others the 1991 WWF/IUCN publication called '*Caring for the Earth: A Strategy for Sustainable Living',* which promoted the notion of sustainable development and which was later taken up at the Rio Earth Summit in 1992, and into Agenda 21's Chapter 36 on Education, Training and Public Awareness which argued for a stronger focus on sustainable development in education, and in environmental education (Irwin & Lotz-Sisitka, 2004). As such, WWF-ZEP's projects became more centred in the participatory methods which also focussed on engaging local people and their perspectives in development of environmental education ideas, concepts and materials.

The WWF Children and the Environment in Zambia Project (CEZ) came into existence immediately after the WWF-ZEP project in 2006. Most of the activities of the project are orientated towards Education for Sustainable Development. As is with the two other projects before it (WWF- ZEEP and the WWF- ZEP), the CEZ project still maintains the role of WWF in responding to the current trends in environment and sustainability education, and in working with the Ministry of Education to strengthen environment and sustainability education in Zambia.

The project responds to the *UN Decade of Education for Sustainable Development* call to develop concrete plans and projects for the Decade. The UN General Assembly invited governments to include necessary measures to implement the DESD starting from 2005 (IUCN Commission on Education and Communication, 2002). The project activities are centred on these ideologies and schools are supported through a participatory process in coming up with their own local curriculum that responds to local environment and sustainable development issues. The focus is on using the localised curriculum to address poverty issues, develop skills and competences amongst students to respond to these issues.

When the CEZ was started in 2006, building on the ZEP, the Ministry of Education was, at the time, also in the process of reforming the school curriculum to one which prepares and

develops skills and knowledge in the pupils to address poverty related issues (MoE, 2005, p. VI). The goal of the project or its development objective is to "... improve the capacity of the rural communities to manage their natural resources through education and capacity building for poverty alleviation and sustainable livelihoods at household level" (WWF-CEZ Project document, 2005, p. 2). Its immediate objective is to "... increase the knowledge and skills on sustainable development and Community Based Natural Resources Management (CBNRM) among children between seven (7) to fifteen (15) years in selected communities in Mumbwa and Monze districts" (*ibid.*, p. 2). As indicated in Chapter 1, the project school that forms part of this research is located in the Monze district.

This project's primary beneficiaries were approximately 16,600 school going children between the ages of seven (7) and fifteen (15) years (36 schools) in two districts of Zambia, namely Mumbwa and Monze (see Figure 1.2). The project also worked with Orphans and Vulnerable Children (OVCs), who due to the circumstances they find themselves in, do not attend formal schools. Other groups of people likely to benefit from the project include parents of the school going children and other adults in the project sites (WWF-CEZ Project document, 2005).

The project worked with the following groups within the community:

- 18 schools - reaching a total of approximately 8000 children in each of the project areas. The project enabled equal participation of boys and girls and included both PAGE (Programme for the Advancement of Girls Education) and non PAGE schools.
- Children that do not attend formal school because their families are too poor, HIV/AIDS affected and/or the children have to work (herding, fetching water and fire wood etc or take care of sick family members). These children – the so called *orphans and vulnerable children* (OVC) – belong to the poorest and most vulnerable section of the Zambian society today. The OVCs may be subdivided into two sub-categories: those that attend community schools and those that do not get any form of schooling.

- Parents of the school going children and other adults in the project sites. The overall population in the two districts is estimated at 50 000**.** Of these the project has trained approximately 1350 adults in three selected zones**.** The targeted adults have been trained at the schools. In this way the schools serve as local resource centres where local community members participate in and benefit from CBNRM training thereby contributing to effective management of natural resources.

The project also worked with government departments and ministries such as the Ministry Of Education, Ministry of Tourism Environment and Natural Resources, Department of Fisheries, Department of Forestry and the Zambia Wildlife Authority. Most of these institutions and organizations have mandates in education, awareness raising and conservation and hence they are important partners for the project. They provide an important link in articulating policy requirements, training and materials development and in replication and use of the developed models and lessons learned.

As noted above, the project activities are located at two sites: Mumbwa district (Nalusanga zone) and Monze District (Keemba and Beengwa zones). Both sites are located in rural areas where the majority of the poor live. They are adjacent to several areas of environmental importance (Kafue National Park, Lochnivar National Park, Kafue South Bank game management area and Mumbwa game management area) as noted in Chapter 1 where a more detailed profile of the actual study site (Keemba zone in Monze District) is provided, since this is where the school that was engaged in this study was located. WWF Zambia has a presence in all these sites.

Through working with the school system and other relevant institutions in the local communities, the project's key aim was to contribute to more sustainable resource use by applying a combined strategy of awareness raising and capacity building on sustainable resource utilization. The project, while having an interest in working within the framework of the localised curriculum, as mentioned above, did not have a clear learning theory to support its work on the localised curriculum, and very little depth of engagement with what it means to work with a localised curriculum existed at the time of undertaking this study. It

is in this context that this study focussing on social learning in the localised curriculum was situated.

2.4 LOCALISED CURRICULUM

As mentioned above, it is in the sphere of the localised curriculum that WWF-CEZ Project sought to make an impact on the education system in Zambia by engaging children and parents in activities linked to CBNRM and sustainable development issues and priorities. As described in Section 2.2, this trajectory is part of the most recent educational reform in Zambia, and aims to improve the relevance of primary education.

In 2005 the Zambian Curriculum was reviewed and a key shift was made from a content driven curriculum to a curriculum that was more oriented towards an outcomes based curriculum. In this change, a new curriculum of six learning areas has been formulated. One of the learning areas is Community Studies (MoE, 2005). Community Studies is a new learning area which is meant to accommodate the teaching and learning of various activities that take place in the communities. Such teaching and learning is intended to include environmental based activities related to the social, cultural, economic, political and biophysical background and experiences of people in each area (*ibid.*).

The introduction of the Localised Curriculum signifies a shift in the development and delivery of education in Zambian schools. In her paper "Curriculum Patterning in Environmental Education: A review of developments in Formal Education in South Africa", Lotz-Sisitka (2002) discusses how curriculum scholars such as Grundy (1987), Cornbleth (1991) and Doll (1993) have formulated critiques of instrumentalist discourses of curriculum such as those proposed by Tyler (1949). Lotz-Sisitka (2002) proposes that curriculum is a *process* of deliberating what counts in society that is worth including in formal education systems, and a *process* of teaching and learning that is influenced by many factors including local conditions, children's and teachers' cultures and histories and other socio-cultural, socio-contextual and socio-ecological factors. She cites Cornbleth (1991) who argues that curriculum is best seen, not as a blueprint to be followed, but as a *contextualised social process* (Lotz-Sisitka, 2002). This is given new meaning in the case of the Localised

Curriculum, where the community surrounding a school are to be part of the process of deciding what areas of concern need to be addressed within the Localised Curriculum and its learning area – Community Studies.

The purpose of introducing a localised curriculum as a component of the core national curriculum is to enhance the relevance of the curriculum (MoE, 1996). The intention is that parents, pupils and the local community in general, shall feel that formal education is strongly linked to their day-to-day life. Localized curriculum is an important vehicle for training children in life skills and practices in environmental management and sustainable natural resource use (WWF-Zambia, 2005). Additionally, localisation of the curriculum is about developing the kind of teaching and learning that will bring about benefits to the local community, by developing knowledge, skills, values, positive attitudes and competences in the learners that contribute to the social, cultural and economic development of that community. Smith (1994) writing about what he calls 'local education' explains that localised learning most often involves development of praxis or 'informed, committed action' (*ibid.*, p. 166), and drawing on Dewey (1966, p. 7) he argues that the "'chief business' of educators is to enable people to 'share in a common life'' (*ibid.*, p. 167). He states that local education involves grounding practice and knowledge in local life, and that it also involves forms of reasoning that can be described as 'practical reasoning'. Practical reasoning, he explains (p. 164-165) does not have a pre-determined end worked out in advance, but rather starts with a situation or a question which people consider in relation to what they think matters or is needed to improve the situation or their quality of life. The end point of practical reasoning comes through deliberations with others in which knowledge of a situation is considered, revised, re-developed and new solutions are sought.

Bauman (2001), in his consideration of political, social, and epistemological influences on education, describes the social function of institutions of learning as being crucial sites for developing values that are necessary for human well-being and social integration, but he does not explain how this is to be done. In this study I hope to understand how the localised curriculum may contribute to such processes. The new learning area, Community Studies, seems to offer a potential site for understanding some of the local epistemological,

political, social and socio-ecological influences on education, as it aims to develop knowledge, skills, positive attitudes and values of learners within a locality for individual and community sustainable development. It also aims at strengthening the bond of partnership between the community, the school and the Ministry of Education, and seeks to empower the beneficiaries (learners and community members) with skills to enable them contribute to sustainable development in their communities (MoE, 2006).

From this it is possible to see that localised curriculum is an approach to learning that responds to local needs, allowing pupils to learn more about, and build capacity for responding to natural resource and environmental issues that directly affect them. It comprises twenty percent (20%) of the total school curriculum in Zambian schools. As mentioned above, the content of the localized curriculum is decided in a consultative process between local communities, represented by Localized Curriculum Committees, the local schools and the District Education Board Secretary (DEBS) and can include any subject that the local community see as important in the education of their children.

Community Studies, as a learning area, appreciates the fact that communities around schools have their own way of life and imparting knowledge, positive attitudes, values and skills in the children, according to their cultures and traditions (National Policy on Education, 1996). In discussing quality as relevant, Hawes and Stephen (1990, p. 259) mention that:

> Education must be rooted in a society and a culture which learners can comprehend. An alien education is both unproductive and psychologically disturbing, often leading to a dangerous form of half learning where children can answer questions on the content yet do not fully understand what they are being asked or why they are answering, because it has little connection with their daily lives and experiences.

Vygotsky also addressed this question in his work on learning when he argued for educational approaches that facilitate meaning making through building links between school knowledge (abstract concepts) and everyday knowledge (references and experiences from the life world and experience of children) (Daniels, Cole & Wertsch, 2007). This is also supported by the guidelines for developing localised curriculum in Zambia, a Ministry of Education document which states that “The purpose in introducing a localised curriculum as

a component of the core national curriculum is to enhance the relevance of the curriculum" (MoE, 2005).

Many of the local skills, particularly those related to behaviour and survival, are passed on from generation to generation as part of a cultural socialization (social learning) process. Community Studies involves developing locally relevant skills *that complements and extends* those aspects of traditional education that a child acquires from the parents. It is therefore not to be confused with traditional education that children receive at home. O'Donoghue and Neluvhalani (2002), in discussing methodological and pedagogical aspects of indigenous knowledge work in curriculum contexts, report on various case studies of mobilising indigenous knowledge in curriculum settings in southern Africa. They write that 're-appropriating indigenous knowledge' is possible through 'processes of open deliberation that critically interact with existing knowing in context and knowledge that has come to be held outside everyday life' (p. 126). Their point is that localised curriculum, or working with indigenous knowledge in curriculum contexts is not the same as drawing on indigenous knowledge in the everyday, and that these two processes should not be conflated. They argue instead for "inter–epistemological dialogue between traditional or everyday – and scientific or institutional knowledge" (O' Donoghue & Neluvhalani, 2002, p. 126). Drawing on these perspectives, it could be said that localisation of the curriculum is about developing the kind of teaching and learning that will bring about benefits to the local community, by developing knowledge, skills and competences in the learners that will contribute to economic and social development of that community through engaging different types of knowledge *in relation to each other* – indigenous knowledge (as practiced in communities) and scientific knowledge (as represented in school textbooks); local knowledge and broader perspectives that can shed new light on the local knowledge and experience.

By involving parents and community members in the education of children in this way, the school allows participatory approaches and flexibility for the parents to use the familiar language and practices suitable to them and the learners, while teachers can draw on broader educational concepts and knowledge available in and through the school system.

The localised curriculum may also include both traditional and other methods of teaching used in everyday teaching in schools.

UNESCO (1991, p. 5) argues that:

> a third facet [significant to educational reform] concerns issues affecting the quality of life and education for sustainable development. There is now a heighten awareness of the environmental crisis through which the world is passing. Education has a vital role to play in helping human beings to improve their relationships with their environment and, and indeed, in contributing to the ultimate sustainability of the planet. Since the early 1970s there has been a growing concern that development aimed at improving the quality of life is seriously handicapped by the imbalances in the human environment which are often caused or reinforced by human behaviour.

This too is seen in the rural areas as communities strive for food and income by clearing land and using unsustainable farming methods as explained in Chapter 1. The communities also use poisons in catching fish, polluting the rivers in the process. These present as a range of learning opportunities for children and communities in schools in Zambia, as envisaged by the WWF ZEP.

2.5 SOCIAL LEARNING

2.5.1 Introduction

As mentioned above, there is no clear statement of learning theory underpinning the localised curriculum, although it seems to be based on a number of assumptions about learning, as described above. In this section I discuss social learning theory, as it seems to reflect many of the assumptions alluded to above in the discussion on the introduction of localised curriculum into the Zambian education system in the latest phase of educational reform.

Woodhill (2002 cited in Glasser, 2007, p. 47) describes social learning as a "process by which society democratically adapts its core institutions to cope with social and ecological change in ways that will optimise the collective well-being of the current and future generations." Social learning, understood as a collaborative reframing process involving multiple interest

groups or stakeholders, is located in the multitude of actions, experiences, interactions and social situations of everyday life (Vandenabeele & Wildermeresrch, 1998, as cited in Wals, 2004, p. 9). Wals (2004, p. 9) writes that "... social learning theory recognises the existence of collective learning goals and the need for creating the right conditions for stimulating the learning of individuals". In other words, social and individual learning are intricately linked. Hence, social learning can be viewed as an initially created purposeful learning process that hinges on the presence of the 'other' or others. Social learning can, however, also take place in everyday life where intention and purpose may be less clear, as explained by Smith (1994) in his studies of local learning. The life-world of those involved in a social learning process can be both prohibitive and conducive to the learning that takes place (Wals, 2004). Life world here refers to the conglomerate of experiences, contexts and interpretations people live by, of which they are part of and to which they contribute.

Wals (2004) argues that:

> in social learning the interactions between people are viewed as possibilities or opportunities for meaningful learning. The motivation to participate in a social learning process is not always naturally present, but does play a critical role. Much depends on the collective goals shared by those engaged in the process" (p. 9).

Wenger (1998), in discussing what matters in learning and as to the nature of knowledge and knowing, mentions four premises that summarise learning, each of which I discuss in a little more detail below:

1. *We are social beings. Far from being trivially true, this fact is the central aspect of learning*. Wals (2007, in citing Keen *et al*., 2005, p. 38) states that "social learning is often referred to as a way of organising individuals, organisations, communities and networks, that is particularly fruitful in creating a more reflexive, resilient, flexible, adaptive and indeed, ultimately more sustainable world". Teaching localised curriculum is based on the notion that learners learn better through interactive activities, such as group work, project activities undertaken/ given to pairs and contextualised in engagement with everyday issues or questions.

2. *Knowledge is a matter of competence with respect to valued enterprises; such as, singing, discovering scientific facts, fixing machines, writing poetry, being convivial, and growing up as a boy or girl, and so forth.* Localised curriculum assumes that learning will be centred on such 'valued enterprises' as valued by the local community.

3. *Knowing is a matter of participating in the pursuit of such enterprises, that is, of active engagement in the world.* In the quest to providing education that is relevant to the local community and addressing socio–ecological issues of interest to communities, the school develops a curriculum in close collaboration with the community members, giving the community a voice on what they would like to be taught within the school. This process as put by Wals (2007, p. 39), "through facilitated social learning, knowledge, values, and actions competence can be developed in harmony to increase an individual's, group's or a networks' possibilities to participate more fully and effectively in the resolution of emerging personal, organisational and/ societal issues."

4. *Meaning – our ability to experience the world and our engagement with it as meaningful – is ultimately what learning is to produce.* Hogan (2008) calls this 'contextualization' and she explains how a process of contextualising a curriculum brought local socio-political environmental issues into the classroom so that children could experience their engagement with these issues as meaningful. She explains that penetration of such issues into formal education "...provides openings for students to get insights and knowledge and social skills needed for their engagement in concrete actions with their communities for the environment" (Hogan, 2008, p.55).

As in the Zambian context, the work of Hogan (2008) undertaken in Tanzania, shows that engagement with local curriculum or 'contextualisation' as Hogan calls it is a new practice in many southern African countries. In Zambia, much of the teaching is still framed by the Basic Education Curriculum Framework which is subject based, and which largely uses traditional transmission approaches to learning. However, as explained in Section 2.2 above,

educational reforms have recently introduced the Learning Area framework and new assumptions for curriculum which require different methods of teaching.

As mentioned in Chapter 1, environmental education approaches that favour social and situated approaches to learning (or contextualisation as Hogan calls it) are often in tension with the more dominant transmissive approaches to teaching, or what Freire called 'banking approaches'. As mentioned by Jickling and Wals (2003) cited in Chapter 1, new approaches to education within the contextualised, social and situated learning framework involve processes where knowledge and understanding are co–constructed within a social context, and "... new learning is shaped by prior knowledge and diverging cultural perspectives" (Jickling & Wals, 2003, p 5). Along the same lines, Hogan (2008, pg. 52) states that "contextualisation necessitated a change in pedagogy to more learner-centred, discovery methods".

As much as the Government of the Republic of Zambia has proclaimed the use of the new syllabus, much of the country is still using the Subject Area older basic education curriculum for examination purposes. This is because the central government has not established a data base for storing continuous assessment results for the children to be culminated at the end of the year, when they write their National Examinations. As a result, teachers are, as yet, not as concerned about how the localized curriculum contributes to the final examinations as they may be. This situation is, therefore likely to create the kind of tension referred to by Jickling and Wals in Chapter 1.

A number of southern African researchers have been engaged in trying to understand the meaning of contextualising curriculum through social and situated approaches to learning. All report on how they have engaged with similar tensions to those described above, but few provide a framework for observing social learning processes within localised curriculum contexts. I discuss their findings before proposing a framework that may be useful to gain further insight into how such pedagogical processes take place in the kinds of transforming curriculum environments that have been discussed in this chapter.

2.5.2 Social learning research in southern African curriculum contexts

In an introduction to the 2008 edition of the *Southern African Journal of Environmental Education,* Lotz-Sisitka [journal editor] states that the journal tackles a "critical issue being debated across the world today, namely the question of educational quality and relevance". She describes how the Southern African Development Community's Regional Environmental Education Programme (SADC REEP) commissioned a research programme to explore the relationship between environment and sustainability education and educational quality and relevance. In this section I draw on some of the studies that have been undertaken in this research programme, as they focus on social and situated approaches to learning such as those explained by Wals (2007; Jickling & Wals, 2003; Glasser, 2007) in Southern African curriculum contexts. What makes them more relevant to this study is that they are engaged with processes of localising curriculum.

The first study that I discuss is a study undertaken by Namafe (2008), whose research is located in Zambia, and which seeks to institutionalise increased participation of Zambian Basic Schools and their local communities in sustainable development of the country in order to alleviate poverty and achieve equitable development. 'Our research approach to engaging basic schools in sustainable development was premised on the fundamental idea that such schools were often surrounded by friendly opportunities of all types and such schools merely need to identify and access innovatively through their identified strength' (*Ibid.,* p. 64*)*. He adopts a 'strengths model' in supporting schools to 'actually develop themselves under the agency of their strength' (p.65). Working through a participatory approach, and involving teachers, parents and learners, Namafe and his research colleagues encouraged communities to identify a number of strengths that they as community wanted to develop, and then to turn these into strategic implementation plans for the school, which formed the basis of the localised curriculum activities. One such example included a learning and development programme on indigenous *Lozi* herbs and foods which included a range of activities such as all teachers contributing knowledge on indigenous herbs and foods from their learning areas or subjects, developing a display of *Lozi* food and herbs and developing a curio shop selling these foods and herbs at the school, inviting researchers to help the school develop additional uses of traditional herbs and foods etc. (Namafe, 2008). This

study provided useful insight on *how to engage communities, parents and learners* to begin and work together on a process of localised curriculum development.

In another SADC REEP linked study on localised (or contextualised curriculum) - Hogan (2008) refers to a similar process of bringing local socio- political environmental issues into the classroom. She not unlike Namafe (2008) consulted with parents, learners, villagers and teachers to identify ways of contextualising and localising a module of the formal curriculum. Her research found that allowing local issues such as the control of forest logging, or the marketing of mushrooms into formal education curriculum provided openings for students to "... get the 'insight and knowledge' and 'social skills' needed for their engagement in 'concrete action' with their communities for the environment...." (*Ibid., p. 55*). Hogan's study provides useful findings on *what happens when curriculum is localised or contextualised*. The main findings from her study are that contextualisation improved relevance of education and thus quality by:

- Breaking through traditional frames/barriers between teachers and students, students and elders and community and teachers,
- Allowing formal education to take place outside the classroom,
- Necessitating a change in pedagogy to more learner- centred discovery methods,
- Allowing indigenous knowledge to come into the classroom,
- Stimulating creativity and increased confidence, and
- Bringing local socio-political environmental issues into the classroom.

Other researchers such as Ramsarup (2005) have undertaken case study research on contextualising environmental discourse within the national curriculum statement context in the South African context. This study focused more on the way in which teachers' contextualise national curricula, rather than on the process of localising curriculum as such. An interesting finding of the study, however, was that teachers and environmental education NGOs, *tended to localise the curriculum differently according to their interpretations* of environmental aspects of the curriculum. The teacher in the case study localised the curriculum to focus on the poverty related issues of the learners, while the

environmental NGO tended to focus more on the social-ecological or environmental aspects of the local context.

These studies, while providing useful insight into some of the processes involved with localising curriculum, do not address *how the learning takes place* in a localised curriculum process, although Hogan's (2008) study, and Ramsarup's (2005) study both indicate that active learning approaches are important, and also that there is a need to engage different voices and perspectives (different epistemologies or forms of knowledge) on issues in the localised curriculum process.

In this study, I focussed mainly on *how the learning takes place,* using a social learning research framework to guide my observations (see below), but I also tried to go further in finding out how the introduction of localised curriculum could provide communities with a source of livelihoods. As explained in Chapter 1, Keemba Basic School is situated on the outskirts of the Kafue wetland, a RAMSAR site, and the area is prone to heavy flooding. Due to the above-mentioned issue, food is scarce and most of the members of the community live on handouts provided by charity organisations (such as churches and relief agencies).

With this in mind, I looked at how teaching localised curriculum through Community Studies provided a platform to address these socio-ecological challenges through social learning processes. In Zambia, the issue of how fostering ESD is enhancing quality and relevance with the education system is currently the subject of research, as indicated above in the brief summary of Namafe's (2008) research. In his paper, Namafe (2008) notes that basic schools in Zambia remain largely untouched by cutting–edge developments in the field of Environmental Education and Education for Sustainable Development, a point also made in the SADC ESD consultations reported on by Lotz-Sisitka *et al.,* in 2006 when they state that "there has been inadequate research done in ESD in Zambia. . ." (Lotz- Sisitka *et al*, 2006c, p. 60).

This research, different to these broader studies, was more concerned with the teaching process (pedagogy) that took place in the classroom with regards to the social learning

assumptions that underlie much of the localised curriculum. To investigate this I drew on a social learning framework described by Wals (2007). Previous social learning research has shown that community involvement in children's education is seen by educationalists as a valuable contribution to the relevance of education in the lives of the learners (Hogan, 2008).

As indicated above in Section 2.3, the WWF CEZ project has been supporting the development and approval process of the Localised Curriculum for both Mumbwa and Monze sites and its implementation has commenced in a number of schools. Teachers have started to design lesson plans as well as to offer actual lessons in class. Examinations in Localised Curriculum have been conducted. Parallel to this is the design and implementation of associated activities for community schools, out of school children as well as adults and youth in the community. Most of these activities have been decided and agreed upon using participatory methods (workshops), and training frameworks have been designed and implemented at the schools which also act as local resource centres linking the local stakeholders to the school and the Localised Curriculum processes. Meanwhile actual natural resources management projects have been implemented in selected sites in the communities and are accessed by schools as a site of learning, and as a resource for the localised curriculum. Various training activities on environmental awareness and sustainable natural resource use have been implemented in collaboration with the relevant institutions such as ZAWA, Agriculture and the Wildlife & Environmental Conservation Society of Zambia. This setting provided an ideal platform for investigating social learning processes associated with the localised curriculum as explained here.

However, I found that while a lot is being said about social learning and what it is and intends to achieve (as discussed above), it was necessary to find an appropriate guiding framework that could *guide observations of social learning* in a localised curriculum context. This was to provide me with a starting point and more rigorous observation tools for actually observing what took place in the learning process (see also Chapter 3). I present the theoretical framework that I used as a starting point for observing the social learning processes in the localised curriculum context described above next.

2.5.3 A framework for observing social learning processes

As indicated above, I have reviewed a number of studies that describe and explain social learning. I, however, found Wals's (2007) description of *social learning processes* most useful as a potential framework for observing social learning processes, particularly because it provides a detailed observational framework that can also help to identify changes in knowledge and practice, which is also one of the objectives of the WWF CEZ. I therefore chose to use this as a starting point for understanding social learning processes in my research site (Wals, 2007). Wals (2007) explains the process of social learning as consisting of various inter-linked processes: orientation, (self) awareness raising, deframing or deconstruction, co-creating, applying/experimenting and finally reviewing. I describe each of these briefly below:

- ***Orientation*:**

  This involves finding out key issues of concern or challenges that were being addressed. This could have been during the development of the Localised Curriculum by teachers and community members, or during classroom teaching. These are issues that connect with their prior experiences and backgrounds.

- ***(Self)Awareness raising:***

  I observed the teacher's interaction with the learners and how he/she drew on their prior knowledge in relation to the topic of the day to see what their (self) awareness was. Wals (2007, p. 41) describes this as "eliciting one's own frames relevant to the issues or challenges."

- ***Deframing or deconstructing:***

  This involves articulating and challenging one's own and each other's frames through a process of clarification and exposure of conflicting or alternative frames. Here I looked to see if the Localised Curriculum interactions between the teachers, parents and the learners allowed for any deframing /deconstruction to take place.

- ***Co – creating*:**

  Here, my focus was to see if any new ideas emerged through joint (re) constructing of ideas, prompted by the discomfort with one's own deconstructed frames and inspired by alternative ideas provided by others (Wals, 2007).

- ***Applying/ experimenting*:**

  This involves translating emergent ideas into collaborative actions based on the newly co–created frames and inspired by alternative ideas provided by others. Here I was seeking to find out if and how application/ experimentation took place amongst the participants in my research site (teachers, parents and learners)

- ***Reviewing*:**

  This involved reviewing the changes that had occurred in the way the issues/challenges were originally framed. In this way it was possible to see if the localised curriculum had contributed to changed practices or ideas in the local context. This helped also to understand the full outcome of the learning.

Glasser (2007) discusses how co-learning supports the penetration of existing knowledge, supports the generation of new knowledge and novel strategies for addressing real–world problems. As the government of Zambia, through the Ministry of Education, strives to address issues related to poverty and lifelong learning, the introduction of the local curriculum presents an opportunity for the school/communities to address these issues (Namafe, 2008). In discussing the 'strengths model' within ESD, Namafe (2008) mentions that in this approach (strength model), every discipline and every teacher can contribute to sustainability education. He explains a methodological process that is similar in some ways to the social learning process described by Wals (2007), but his approach differs to Wals's in that he emphasises focusing on community strengths in the orientation phase of the social learning process. Hogan's (2008) research on the other hand, points to the importance of learner centred approaches, and engagement with different types of knowledge (including indigenous knowledge) in processes of de-framing and re-framing (although she does not use Wals's 2007 categories) to explain this.

2.6 CONCLUSION

This chapter provided a more in-depth contextualisation of the study. It opened with a discussion on educational reforms in Zambia, providing insight into the most recent educational reforms that include a focus on localised curriculum. The chapter also discussed the role of WWF Zambia and its educational projects, including its most recent educational project the Children and Environment in Zambia project, and its work in supporting the development of ESD and the localised curriculum in Zambia. Following this, the chapter reviewed the literature on social and situated learning, as it appears that the assumptions underlying the localised curriculum are informed by similar concepts and ideas to those being proposed in the localised curriculum, which are also becoming increasingly popular in environmental education. I also reviewed some research related research initiatives in the Southern African context, to find out what they offer in terms of insights into social and situated learning in a southern African environmental education curriculum context. I also opened up with reviewing literature related to the research topic.

Through further analysis, I was able to identify that these studies do not provide in-depth perspectives on *how social learning processes occur in localised curriculum contexts,* and I was able to identify a potentially useful framework for observing social learning processes as provided by Wals (2007). In the next chapter, I discuss the research methodology and methods, and provide further insight into the analytical framework developed, that drew on Wals' (2007) work, as discussed above.

CHAPTER THREE

METHODOLOGY AND METHODS

3.1 INTRODUCTION

This research involved one school that was participating in the WWF-Zambia Education funded project in Keemba (the CEZ project described in Chapter 2). It focused on documenting the learning processes that took place in selected lessons observed at Keemba Basic School and how the learning processes in the local curriculum were (or were not) oriented towards environmental issues and/or natural resource management practices. This was the unit of analysis. The focus was to interpret what was happening in Keemba school localised curriculum activities. I selected a series of four localised curriculum lessons (with guidance from teachers and parents) which formed the basis of my observations, and thus the case study.

In this chapter I describe the research methodology and processes in more detail. I explain the data generation methods, and the analytical framework that I developed from a review of social learning theory and research (as explained in Chapter 2). I also discuss validity and ethical issues and how they were addressed in the research.

3.2 THE RESEARCH METHODOLOGY AND STUDY DESIGN

This research was conducted using a qualitative interpretive research framework and a case study research design. As indicated above, the unit of analysis was a series of three localised curriculum lessons in Keemba School. I selected two Grade 5 and one Grade 3 classes for the purpose of this research. I selected the Grade 3 and Grade 5 classes because they are almost in the middle of the basic education (from Grade 1 – 9). The other reason is that these grades happen to be deeply involved in the localised curriculum pilot project. The Grade 3 class I selected because I wanted to capture the learning activities and understanding of how the lower classes were involved in localised curriculum activities. A number of reasons can be forwarded for the selection criterion, however, as Cohen, Manion

and Morrison (2007) argue that “convenient sampling saves time and money and spares the researcher the effort of finding less amenable participants” (p. 176).

I also selected to conduct my observation with the three grades as discussed above where the participants were selected for their ability to contribute to the developing theory (*Ibid.*, p. 176). The three lessons were conducted by different teachers (including the local community teacher), who had received initial training in the implementation of the localised curriculum.

This involved a three phase data collection framework which guided the development of the interpretive case study. Using this orientation to research was motivated by the need to explain particular instances in terms of broad principles, but it also represents what is distinctive and unique about particular social phenomena (Terre Blanche & Durrheim, 1999). Blanche and Durrheim (1999, p. 123) explain interpretive research as follows:

> An interpretive research assumes that people’s subjective experiences are real and should be taken seriously (ontology) that we can understand others’ experiences by interacting with them and listening to what they tell us (epistemology) and that qualitative research techniques are best suited to this task (methodology).

They state further that a central axiom of interpretive research is to work with data in context (*ibid.*). Because of the nature of my research question which focussed on understanding learning processes in the localised curriculum (see Section 1.4), I needed a research design and methodology that would allow me to interact with the research participants in a natural and unobtrusive manner in order to get in-depth data. Case studies are well suited to interpretive research as they allow for in-depth data gathering and analysis (Stake, 2000). Stake says that “each case study is a concentrated enquiry into a single case”.

Patton (2002, p. 447) states that “well constructed case studies are holistic and context sensitive” and that “cases are units of analysis”. He goes on to say that what counts as a case is usually determined at the design stage of a research project, and the boundaries of the case together with the research question, become the basis for deciding on data

collection methods and the research process. Case study also presents a challenge for researchers as it requires collection of "comprehensive, systematic and in-depth information" on the particular case (*ibid.*, p. 447).

I followed a phased process to understand the broader context of the case, generate data within the case, and analyse the case data using an interpretive approach. These three phases reflect the study design:

Scoping phase:

- Document analysis to establish the broader policy context in more detail
- Contextual profiling (including parent interviews, interviews with teachers and learners)
- Scoping of the content and types of activities that have been used (using teachers planning documents, textbooks and learners workbooks)

Observation phase

- Lesson observations (three lesson observations)
- Observations of different roles played by teachers, learners, and parents
- Focus group interviews
- In-depth interviews

Analytical phase

- Identify purposes of activities
- Identify social learning processes
- Identify different roles
- Identify environment and Natural Resource Management practices content, values, and skills

3.3 METHODS OF DATA GENERATION:

To answer to the research question, I used a number of methods to generate data for the case study. These methods helped me gather data in the field and analyse it for purposes of responding to my research question and goals.

3.3.1 Document analysis:

Documents are traditionally referred to as paper records but increasingly, the term has incorporated electronic records of various kinds (Irwin, 2001). I reviewed and analysed eight different documents that had a close relationship to my topic under study. The role of this data was to give me background information, a historical perspective to the issues of concern. The documents included the National Policy on Environment (NPE) and the Ministry of Education Policy on Education (*Educating our Future*), Teachers Curriculum Manual, Basic Education Curriculum Framework, Keemba Basic School Localised Curriculum syllabus (see Table 3.1 below for a full list of the documents analysed). As discussed by Cohen, Manion and Morrison (2007), these documents enabled me to reach inaccessible person or subjects. I worked with these documents as they were written by skilled professionals and contained more useful information and insights than those written by relatively uniformed amateurs (*ibid.*, p. 201).

Other documents that were analysed included teachers planning documents (e.g. lesson plans); materials used by the learners; and learner workbooks or other forms of learners work. In these I looked for evidence of environmental discourse in the documents and social learning processes. These documents were written 'live' and '*in situ'*, catching the dynamic situation at the time of writing (*Ibid.*). Table 3.1 below provides a comprehensive list of the documents that were analysed:

Table 3.1 Documents analysed

Document Analysed	Reason for analysis
Teaching Community Studies	To identify the steps followed in the development of a localised curriculum
"Educating our Future" National Policy on Education	identify policy statements on Localised Curriculum and how teachers and parents are interpreting this policy in practice
Teachers Curriculum Manual	Find out the roles teachers, learners and parents play in the localised curriculum learning and teaching processes
Basic School Curriculum Framework	To find out factors influencing the learning interactions in selected localised curriculum activities
Localised Curriculum Basic Education Course	To identify environmental and sustainability practices included in the Local Curriculum
Teachers Schemes of Work	To identify the methods used in teaching, and what plans teachers have prepared regarding Localised curriculum. To find out whether there are any social learning processes planned that can be seen in the schemes of work.
Learners workbooks	Pupils work; To find out what role children play in the teaching and learning processes in Localised Curriculum
WWF – Zambia Children and the environment Project document	Indentify the role played by an NGO in providing expertise in its area of concern, in the environment and natural resource management of the research site (see research goal 2)

For the purposes of easy data management, the analysed documents were later index coded (see Table 3.6 below). The document analysis provided insights into the various analytical themes (see Table 3.3 below). They also gave me useful starting points for developing questions for my interviews and observation schedules.

3.3.2 Observation:

Observation offers a researcher the opportunity to gather 'live' data from a naturally occurring situation (Cohen, Manion & Morrison, 2007, p. 396). The use of the immediate awareness, or direct cognition, as a principal mode of research thus has the potential to yield more valid or authentic data than would otherwise be the case with mediated or inferential methods (*ibid.*). In order to allow me to track the different learning interactions as explained by Wals's social learning framework, I conducted four classroom observations, where I was a non-participant observer (*ibid.*). Patton (2002) describes a continuum of

different roles in an observation process which can range from full participant in a setting, to a 'non-participant observer' who observes the practices of others without being involved in them at all.

I also observed a Localised Curriculum Committee meeting at the school. During observation, I also used a camera to take photos. This was used as a supplementary data collection method to illustrate points made in the narrative (Hogan, 2008). Observational data allowed me to understand the context of the programmes, to be open minded and inductive, to see things that might otherwise be unconsciously missed, and to discover things that participants might not freely talk about in interview situations. This research strategy allowed me "to move beyond perceptions based data and access personal knowledge" (Cohen, Manion & Morrison, 2007, p. 396).

Through observation I was able to gather data on:

- *The physical setting:* (e.g. the physical environment and its organisation)

- *The human setting*: during and after conducting a contextual profile of the area, I was able to gather data on the organisation of the people, the characteristics and make up of the groups or individuals being observed, for instance, gender, class.

- *Interactional setting*: I was also able to observe the learning interactions amongst the selected subjects. This was important in relation to my second research goal which seeks to identify the factors influencing the learning interactions in the selected localised curriculum activities (see Section 1.4). Cohen, Manion and Morrison (2007) state that such interactions can be formal, informal, planned, unplanned, verbal, or non- verbal.

- *Programme setting*: This allowed me to look at the teaching/learning resources in Localised Curriculum and how these were organised. I could also observe how the localised curriculum activities were implemented and how the Localised Curriculum was organised (Cohen, Manion & Morrison, 2007).

Table 3.2 below summarises the observations that I undertook, with further information provided on the observations below.

Table 3.2 Observations and the purpose of the observations

Type of observation	Purpose of observation
Two Grade 5 Lesson Observations with activities in each lesson	To investigate the learning interactions during the teaching
One Localised Curriculum Committee meeting	This provided insight into the planning behind the implementation of the localised curriculum lessons. It also provided insight into the different roles played by the parents and the teachers during these meetings

Observing the first lesson and its activities:

I observed the first lesson (Grade 5) on 24th March 2010. It was conducted by Mr. Mukanga. The lesson lasted forty (40) minutes, and the topic was Animal Husbandry. Its sub topic was cattle rearing. The lesson was broken down into three major activities; Introduction, development, exercise, and conclusion. The other part of the lesson which is filled in by the teacher after the lesson is the evaluation (TLP2).

The lesson was well conducted by the teacher and the learners seemed to be engaged in the process. During the lesson observation, I also focused on; teachers' intentionality, learners' experience and materials used. The teacher started the lesson with a game. The game helped the learners to settle down especially with a stranger (me!) sitting at the back of the class with a camera. During the lesson, the teacher tried to elicit learners' experience by asking them who among them looked after animals at home, and how they looked after them. Later the teacher broke the class into groups and asked the learners to discuss what animals they kept at home, and they later reported back to the entire class. I also noted that the lesson objective was "by the end of the learning experience learners should: identify the types of animals kept in their environment" (TLP2). See observation schedule in Appendix 1.

Observing the second lesson and its activities:

The other Grade 5 lessons I observed was taught by Mr. Imusho. This was a more practical lesson that the other Grade 5 one in the sense that the learners were involved in a real life castration of a bull. The lessons' topic was Animal Husbandry, whilst the sub–topic was cattle management (castration). The lesson outcomes included: by the end of the learning experience, learners should:

- Identify animal management skills
- Observe a demonstration on castration as one of the management practices.

The lesson was broken down into six different activities. The teacher introduced the lesson by asking the learners revision questions from the previous lesson. During the development stage, the teacher asked the learners to list management practices that they used at home on their animals. They discussed in groups and later reported back to the class. The teacher was also seen to move around the groups providing support and clarification where necessary. After the report backs, the teacher put up a picture of a cow in its environment. He explained the role that animals played in the environment and how to avoid environmental practices such as overgrazing. The teacher then asked the learners to move to the community cattle kraal for the demonstration. See example of observation schedule used in Appendix 2.

Observing the third lesson and its activities:

The Grade 3 lesson was also observed on the same day as the rest of the lessons. It lasted 30 minutes as it is a lower primary class. In the Zambia education system, normal lesson durations vary between lower Grade 1 - 4 (30 minutes) and middle/upper Grade 5 - 9 (40 minutes). The sequence of the activities captured in the Grade 3 lesson plan showed the level of interactions that were taking place between the teacher and the learners. The local community teacher, Mrs. Mbewe used the class as one group to discuss the topic of the day which was '*Impwa*' growing (growing indigenous vegetables). The learners here brought their own experiences from home about growing '*Impwa*'. The idea of co- learning was

evident in the sequence of the activities. Glasser (2007), in his paper, *Minding the gap,* discusses how co-learning supports the penetration of existing knowledge, supports the generation of new knowledge and novel strategies for addressing the real–world problems. After the classroom discussions, the teacher took the learners into the garden for a demonstration of transplanting of *Impwa* into the main bed, moving from theory to practice.

3.3.3 Interviews

There are four main kinds of interviews that may be used specifically as research tools. They include (a) the structured interview; (b) the unstructured interview; (c) the non directive or semi-structured interview; and (d) the focused interview (*Ibid.*). Cohen, Manion and Morrison (2007) describe the semi-structured interview as an open situation with guidance provided by key questions, but with greater flexibility and freedom than a structured interview. I used semi-structured interviews in this research.

My research participants included women and children who might not be able to read and write (see description of interviews below), therefore using semi-structured interviews provided more room for flexibility. I had developed an interview schedule beforehand which provided me with a list of key topics and subtopics that I intended to ask (see Appendix 3). Using the semi-structured interview as my choice of interview allowed me to be able to probe and prompt (Cohen, Manion & Morrison, 2007; Patton, 2002) my interviewees.

I recorded the interviews using a voice recorder and then later transcribed them (see example of an interview transcription in Appendix 4). I used a voice recorder because this allowed me to keep a full record of the interview without being distracted by detailed note-keeping (Blanche & Durrheim, 1999). I made sure that the interviews were not too long, as I was interviewing young learners; I needed to be aware of their concentration limits, and I was reminded by Cohen, Manion and Morrison (2007, citing Arksey & Knight (1999) that:

> It is important to understand the world of children through their own eyes rather than the lens of the adult. Children differ from adults in cognitive and linguistic development, attention and concentration span, ability to recall, life experiences, what they consider to be important, status and power.

For this reason, during the interview with the learners I invited a teacher to help in translating, and 'toning' down my English language to the one they are familiar with (see Figure 3.1 below). I interviewed the learners as a group, as it "... encouraged interaction between the groups" rather than simply responding to an adult's question (Cohen, Manion & Morrison, 2007, p. 374). This interview was therefore a **focus group interview**. Patton (2002, pg. 385) explains that a focus group interview "is an interview with a small group of people on a specific topic. Groups are typically 6 to 10 people with similar backgrounds who participate in the interview for one to two hours".

In total, I interviewed six people who included the School Inset Coordinator, two Grade 5 class teachers, three Grade 5 learners (in the focus group) and one parent involved in teaching localised curriculum.

Figure 3.1 Mr. Imusho, School INSET Coordinator, translating a question asked for the learners during the interview.

These participants were selected on the basis of them having been part of the school localised curriculum committee. They were all involved in the development and implementation of the Keemba Basic School Localised Curriculum. A consent form was drawn up and each of the participants interviewed accepted to take part in the research (see Appendix 5). As for the children, consent was sought from the parents through the teachers and the response was affirmative. I provide more detail on the interviews below:

Interviewee 1: Mr. Crispin Imusho: He is the localised curriculum focal point person and also the school Inset (In-Service Training) Coordinator. He has been involved with the localised curriculum since its introduction and has received training that was supported by WWF –Zambia in 2007. Since then he has been appointed as the localised curriculum focal point person. This means that he is in charge of all training activities related to the development and implementation of the school's localised curriculum. Currently he is supervising a cattle rearing project being undertaken in collaboration with the community. He is also a Grade 5 teacher (and as mentioned above, the research was undertaken with the Grade 5 class at the school). I interviewed him on 25th March 2010, and the interview took about 30 – 45 minutes. The interview was recorded and transcribed (see Appendix 6).

Interviewee 2: Mr. Stanley Mukanga: A teacher at Keemba Basic School and a member of the Localised Curriculum Committee (LCC). He was interviewed mainly as a follow up to the earlier lesson observation I conducted in his class. Though he joined the committee later in 2008, he received training through the school based training workshops conducted at the school. He is also interested in nature conservation especially as the school is located right at the edge of a National Park. I interviewed him on 25th March 2010 and the interview took about 30 - 45 minutes. The interview was recorded and transcribed (see Appendix 7).

Focus Group interviewees: Hamupi Muleza (age: 11, sex: Male), Mike Chilumbi (age: 13, sex: Male), Melissa Kanyemba (age 12; sex Female): Grade 5 children who have also been involved in the implementation of the Localised Curriculum through different projects at the school. They also shared some insights about the realities that they face outside the school.

The children also explained their role in the implementation of localised curriculum. Melissa, is a double orphan (both parents deceased), and was brought up in town until her parents died. She was then sent to live with her grandmother in the village in Keemba. She was later sent to Keemba Basic School to continue with her studies. Her grandmother struggles to pay for her school fees and provide for her and her other siblings who she looks after. The other two boys were born and brought up in Keemba area. I interviewed them in the afternoon of the 25th March 2010 for about 25 - 30minutes. The interview was recorded and transcribed (see Appendix 8).

Interviewee 4: Mrs. Mbewe: a middle-aged lady who lives in the community. She is a member of the Localised Curriculum Committee and is involved in teaching local skills to the children during localised curriculum. She is a retired teacher and has a passion for her work. She has been part of the LCC since its inception in 2006 where she was involved in the development of the schools' Localised Curriculum. She also has support from WWF to undertake Enterprise and Entrepreneurship Training.

Figure 3.2 An interview with a Teacher of Keemba Basic School

The use of the three selected methods allowed me to focus on the research question and goal by approaching it from different angles. The use of these different methods also allowed me to triangulate my data (Terre Blanche & Durrheim 1999).

3.4 ANALYTICAL FRAMEWORK AND DATA ANALYSIS

As indicated in Chapter 2, to observe the social learning processes in the school, I drew on a framework for social learning as described by Wals (2007), see Section 2.6. This provided a 'start up' framework for observing the learning processes, in order to identify the types of learning processes that were reflected in the activities proposed by parents and teachers for the localised curriculum component, and to see how the situated social learning processes played out. As such I did not use pure inductive analysis, but rather a mode of inference which Danermark *et al*., (2002) refer to as 'abductive'. An abductive mode of inference is a process where data is recontextualised using theory. I used theoretical lenses (represented in the analytical framework below and explained in Chapter 2) to 'interpret' or recontextualise the data.

I extended the Wals framework with insights into social learning proposed by Hogan (working in a southern African context) who proposed that indigenous knowledge is an important aspect of social learning, and Namafe (2008) who proposed that building on community strengths is an important aspect of social learning. Shava *et al.* (2008) proposed that local knowledge strengthens community resilience, and I therefore asked parents and teachers *why* they choose certain localised curriculum topics. Items analysed included are indicated in Table 3.3 below:

Table 3.3 Analytical Framework drawn from Wals (2007) but adapted drawing on Hogan (2007); Namafe (2008) and the research questions

• Orientation
• Self awareness raising
• Deframing or deconstructing
• Co – creating

• Applying
• Reviewing
• Purpose of the localised curriculum: use and selection of topics
• Community strengths: Based on the Modes approach (Namafe, 2008)
• Indigenous knowledge: draw on research by Hogan (2008) on contextualising the curriculum
• Roles of parents
• Roles of learners
• Roles of teachers
• How environmental issues are dealt with and why
• How natural resource management practices are dealt with and why

I used this framework to help me interpret what was happening in Keemba school localised curriculum activities. As indicated in Chapter 2, Wals (1998) describes social learning as learning that takes place when divergent interests, norms, values and construction of reality meet in an environment that is conducive to meaningful interaction. As indicated earlier in the research questions, and as shown in Table 3.3. above, the teaching and learning process was of interest to this research, and the roles of the teachers, learners and community members, as well as how the lessons dealt with environmental and NRM issues.

After developing the analytical framework, as described above, I developed it into a matrix (see Table 3.4 below) which allowed me to develop a strategy for triangulating the data. I used this as a basis for developing **analytical memo's** which eventually became the framework and structure for reporting on the data in Chapter 4. Analytical Memo's are a useful strategy for reducing the data during analysis so that findings become more visible as data is coded and categorised. Chapter 4 draws on these categories of analysis, and triangulates the data to provide a thick description of what occurred in the localised curriculum activities, and also what roles were taken up, and how environmental and NRM issues were dealt with (see Chapter 4).

Table 3.4: Analytical matrix allowing for triangulation of data (see Appendix 9) for an example of an analytical memo constructed using this matrix)

Category	Information from documents	Observations	Interviews
Contextual factors			
Orientation to the topic – what is selected and why and how it is introduced			
Self awareness raising in the learning process			
Deframing or deconstructing in the learning process			
Co-creating of knowledge (by teachers, learners and parents)			
Applying / experimenting with new knowledge (parents, teachers, learners)			
Review of what has been learned			
Community strengths, including but not limited to indigenous knowledge			
Roles of parents, learners and teachers			
How environmental issues and NRM practices are dealt with			

The findings, as reported in Chapter 4, are discussed in relation to the research question in Chapter 5, where I used a set of analytical statements to summarise the main findings of the study. These are discussed critically drawing on theory presented in Chapter 2. In this way I was able to develop a deeper understanding of the insights gained in the study in relation to the contextual, policy and theoretical understandings that I developed on localised curriculum in Chapter 2. These analytical statements are used to structure Chapter 5, and also the main recommendations arising from the study. According to Bassey (1999), a useful way of making sense of data is to condense the data into meaningful statements or what he calls analytical statements. These statements provide a way of bringing the data and the theory together, or a way of recontextualsing the data using theory. The analytical statements that represent a summary of the findings of the study are:

- **Analytical Statement 1:** Teaching localised curriculum allowed for orientation to, and contextualisation and integration of environment and natural resource management issues
- **Analytical Statement 2:** Localised curriculum practically addressed dimensions of economic, social, environmental and cultural lives of the community, providing a broader epistemological and pedagogical base for schooling.
- **Analytical Statement 3:** Localising the curriculum contributed to curriculum relevancy: teaching localised curriculum helped learners, teachers and community to develop concern for the quality of life and contributed to an understanding of sustainable development, but this also requires introduction of new knowledge
- **Analytical Statement 4:** Localised curriculum allowed for frame awareness, frame deconstruction and reframing to take place: this allowed teachers to use methods which promoted active pupil participation and interaction, encouraging learners to be reflexive thinkers rather than just using rote memory. To facilitate more critical approaches to deframing, teachers need to ask learners critical questions.
- **Analytical Statement 5:** Participation of teachers, community and learners in the implementation of the localised curriculum: The involvement of community members to teach topics of the localised curriculum was useful and articulated processes of inter–epistemological dialogue between traditional or everyday – and scientific or institutional knowledge.

3.5 RESEARCH ETHICS

When undertaking the research I had to be aware of the ethical concerns in conducting social research at every stage of the research sequence (Cohen, Manion & Morrison, 2007). Since this research was being conducted in an area where I previously worked, it was quite easy for me to gain access to the research sites. However, due to the fact that this research was being undertaken in a school and surrounding community, I had to be aware that in order for me to gain access to the school and its materials, I had to acquire authority from the Ministry of Education, Monze District office. Below are the ethical considerations I addressed when I conducted this study:

- ***Access and acceptance*:** This involves gaining official permission to undertake one's research in the target community (Cohen, Manion & Morrison, 2007). Before

undertaking the data collection process, I sent a letter to the District Education Board Secretary of Monze requesting permission to conduct the data collection in Keemba Basic School. Permission was granted by the District Education Authority (see Appendix 10). As indicated above, Keemba Basic School was taking part in the WWF CEZ project, and having worked on the project it made it easier for the school authority to trust me. I also provided the head teacher of the school, Mrs. Chilumbi, with a copy of my research proposal to give her full access to the scope, focus and purpose of the research.

- ***Informed Consent**:* The principle of informed consent arises from the participant's right to freedom and self-determination (Cohen, Manion & Morrison, 2007, p. 52). Informed consent has been defined as 'the procedure in which individuals choose whether to participate in an investigation after being informed of the facts that would be likely to influence their decisions' (Diener &Crandall (1978), cited by Cohen, Manion & Morrison, 2007, p. 52). I was also careful to make sure that other aspects such as competence, volunteerism, full information and comprehension (*ibid.*) were adhered to during the data collection process. I did this by making sure that the participants were not psychologically impaired or were not capable of making correct decisions. In the case of the learners, I was able to seek consent from the head teacher as she is the one "responsible for the prospective subjects" (Cohen, Manion & Morrison, 2007, p. 54). After informing them clearly of the purpose of the research, I asked all interviewees to sign a consent form (see also Appendix 4 showing the consent form used). They were assured of the right to withdraw at any point should they not be comfortable with the research process or questions.

- ***Anonymity and confidentiality**:* I explained to the participants that they had the choice of remaining anonymous and keeping their names confidential when writing the findings from the research process. They did not feel that this would be necessary, so I have used original names in this report, with their permission and consent.

3.6 DATA MANAGEMENT, RIGOUR AND TRUSTWORTHINESS

To ensure trustworthiness I had to begin with careful and systematic recording of the data. I needed to ensure that my descriptions were factual, accurate and that there was a full record of what was said and observed, and that there was a data trail and well managed data records. To ensure credibility, I kept all records of the data generated, samples of which are presented in the Appendix of this thesis.

After the data was collected, I coded my data with different colours to identify emerging themes and sub-themes in relation to the analytical framework outlined earlier in this chapter. Because I needed ten different colour codes for my data analysis (as shown in my Analytical framework), I had to use crayons and underlined my data as it was being analysed (see also analytical process in Appendix 9 showing the colour codes used). Terre Blanche and Durrheim (1999) state that

> in coding, we break down a body of data (text domain) in labelled, meaningful pieces, with a view to later clustering the 'bits' of coded material altogether under the code heading and further analysing them both as a cluster and in relation to other clusters.

Doing this systematically is an essential part of research rigour, and adds to the trustworthiness of the study. As indicated above, I used triangulation as a strategy to add rigour and trustworthiness to the interpretations of this study. This process is reflected in Chapter 4.

I transcribed the interviews conducted with the participants. This allowed me to have a more reflexive, reactive interaction with the decontextualized data (Cohen, Manion & Morrison, 2007). I also member checked with the participants to verify the data collected. In analysing my interview data, I made sure that I took into consideration the following stages such as generating natural units of meaning, classifying, categorising and ordering these units of meaning, structuring narratives to describe the interview contents and interpreting the interview and other forms of data.

To provide a data trail, I produced index codes for each set of data as indicated in Table 3.5 below:

Table 3.5 Data index codes (for each type of data)

Index Code	Key
TLP	Teachers Lesson Plan
LW	Learners Workbook
TSW	Teachers' Scheme of Work
LCBEC	Localised Curriculum Basic Education Course
BSCF	Basic School Curriculum Framework
TCM	Teachers Curriculum Manual
NPE	National Policy on Education
TCS	Teaching Community Studies
NPEnv	National Policy on Environment
CEZPD	Children and the Environment Project Document
LO	Lesson Observation
TI	Teacher Interview
LI	Learner Interview
ZBES	Zambia Basic Education Syllabus
LCTI	Local Community Teacher Interview

This was then applied specifically to the different data objects, as shown in Table 3.6 below, which allowed me to keep track of the data and to reference the data sources as I drew on them to provide a thick description in Chapter 4.

Table 3.6: Indexed summary of all data

Data Generation Technique	Specific Index Code	Explanation
1: Document Analysis	TLP1, TLP2, TLP3	Teachers Lesson Plan 1, 2, 3
	LW1, LW2, LW3	Learners Work 1, 2, 3
	TSW1,TSW2,TSW3	Teachers' Scheme of Work 1, 2, 3
	KLCBEC	Keemba Localised Curriculum Basic Education Course
	BSCF	Basic School Curriculum Framework
	TCM	Teachers Curriculum Manual
	NPE	National Policy on Education
	TCS	Teaching Community Studies
	ZBES	Zambia Basic Education Syllabus

	CEZPD	Children and the Environment Project Document
	NPEnv	National Policy on Environment
2: Lesson Observation	LO1, LO2, LO3	Lesson Observation 1, 2, 3
3: Interviews	T1, T2	Teacher Interview 1,2
	L1, L2,L3	Learner Interview 1,2,3
	LCT1	Local Community Teacher Interview 1

As indicated above, there were various measures that I put in place to ensure that my study would be trustworthy. A key strategy used was data triangulation, as already mentioned above. Cohen, Manion and Morrison (2007) define triangulation as the use of two or more methods of data collection in the study of some aspect of human behaviour.

I also drew on O'Leary (2004) in my data management and analysis process, who advises researchers to keep a 'sense of their overall project and think their way through analysis' practising research reflexivity. As shown in the diagram below, I keep as close to the data as possible, that is from the initial collection right through to the conclusions (*Ibid.*).

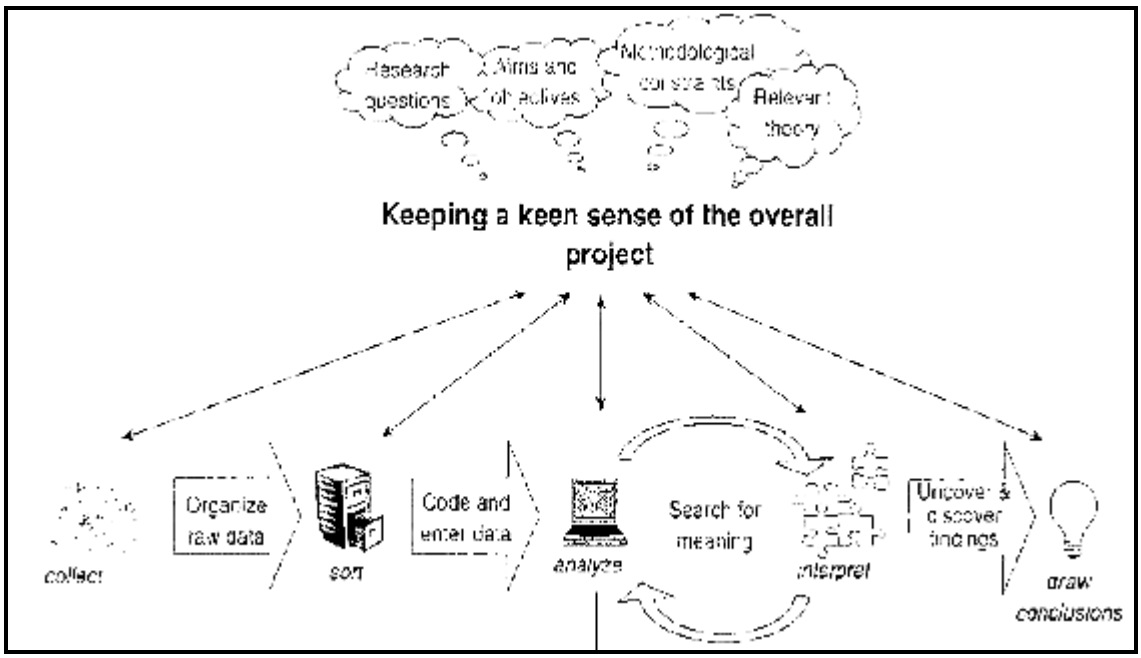


Fig 3.3. Process of reflexive analysis (Adapted from O'Leary 2004)

Patton (2002, p. 564) explains that interpretive and case study research designs are explicitly informed by reflexivity and praxis, that is "understanding how one's own experiences and background affects what one understands and how one acts in the world, including acts of inquiry". As mentioned in Chapter 1 and 2, I worked for the Zambia CEZ

project and had a good relationship with the school where this research took place. My interest was to develop in-depth understanding of the learning processes in the localised curriculum, and how environmental issues and NRM issues are addressed through this new curriculum policy process in Zambia. Throughout the research I was conscious of this interest, and towards the end of the thesis I reflect briefly on my role in the research, and how I would conduct it differently if I had the chance again, to show some of the reflexivity recommended by Patton (2002).

Another important aspect of credibility in case study research is not to make generalisable claims outside of the case, but rather to seek internal validity or contextual coherence within the case. Terre Blanche and Durrheim (1999) argue that generalizability – also called external validity – is not relevant to case study research. However, it is possible to seek to make case study research transferable that is so that others can draw on the findings in other different case contexts in diverse ways. The research findings on localised curriculum teaching in Keemba Basic School and its surroundings should be able to be transferred to new contexts, at least to some extent. Bassey (1999) proposes what he calls 'fuzzy generalisations' for case study research by which he means recommendations or generalisations need to retain an element of uncertainty as they may not be easily 'transferred' to another context. Thus, while the research findings *may* be useful to other localised curriculum initiatives, this may also not be the case as social realities are different in different places and contexts.

And finally, in order to ensure credibility of my research findings, I drew on Maxwell's (1992) idea of interpretive validity (as cited in Cohen, Manion & Morrison, 2007). I ensured that I was able to capture the meaning, interpretations, terms, intentions and situations and events; namely, the data, I have for the participants/subjects themselves in their terms (*Ibid.*). This is demonstrated in Chapter 4 where I used thick descriptions.

3.7 CONCLUSION

This chapter presented the methodology and methods employed in the field and why they were used. These methods used as explained above, were selected on the basis of the

research context and question and the scope of the case study was defined by the scope of this thesis, a half thesis.

As this was conceptualised as a small scale study, I chose to focus on one school only, using multiple methods. In a larger study I could have focussed on a larger number of schools. Even though the time of my data collection overlapped with the rainy season in Zambia, I was able to gather quite a rich amount of data. Research is always subject to contextual realities, and one of the experiences I had to deal with was when one of my respondent's children sadly got struck by lightning. I consequently had to postpone the fieldwork out of respect for the deceased. In the local cultures in Keemba, a funeral in the village will affect the entire running of the school and most other everyday activities. On my return to the village after the funeral, I was able to continue with my research as planned. The community appreciated the respect I showed them in this situation.

In the next chapter I share the findings of the study.

CHAPTER FOUR

ENVIRONMENTAL DISCOURSE, SOCIAL LEARNING PROCESSES AND FACTORS INFLUENCING SOCIAL LEARNING PROCESSES

4.1 INTRODUCTION

This chapter presents the data that was gathered during the field process. As explained in my previous chapter, I used three different methods of gathering data to generate information on the social learning processes taking place in the localised curriculum lessons and to explain the environmental discourse. I examined the data using the analytical framework introduced in Chapter 2, and presented in Chapter 3.

The research design was guided by social learning as described by Wals's (2007) description of social learning processes which he identifies as being processes of orientation, (self) awareness raising, deframing or deconstructing, co–creating, experimenting/applying, and reviewing (see Section 2.5.3). I also kept in mind the complexity of what counts as social learning. Here I borrowed Wals 's (2007, p.39) definition of social learning as "learning that takes plans when divergent interests, norms, values and constructions of reality meet in an environment that is conducive to meaningful interaction". In the presentation of my data, I am drawn to my research question and goals, which are as follows:

Research Question: *How does localised curriculum enable social learning in response to environmental issues in Zambia?*

Research goals:

- To find out how environmental issues and / or natural resources management practices are being included in the localised curriculum (see section 4.3 below)
- To find out if teaching localised curriculum enables social learning, involving processes of orientation, de-framing, co–creating, and reviewing in environmental discourse (see Section 4.4 below).
- To identify what role parents, teachers and learners play in the localised curriculum learning and teaching processes (see Section 4.5 below).

- To identify factors influencing the learning interactions in selected localised curriculum activities (see Section 4.5 below).

I have structured the data presentation to address each of the research goals in turn, as indicated above. I begin the chapter with a short synthesis overview of the three lessons that I observed, to facilitate understanding of the subsequent analysis (Section 4.2). I then present the data showing how each of the different data generation methods provided insight into the research goals (Sections 4.3, 4.4 and 4.5). This makes data triangulation more visible. As mentioned in Chapter 3, this is then synthesised in Chapter 5.

4.2 BRIEF SYNTHESIS OF LESSONS OBSERVED

As will be indicated below, the analysis draws on a number of data sources, all of which are related to the three lessons that I observed. To assist the reader to follow the analysis below, I briefly summarise the contents of each of the lessons that I observed. More detail is provided in the analysis below.

Lesson Observation 1: This lesson was with a Grade 5 teacher, Mr Imusho. The teacher planned to teach the lesson under the topic Animal Husbandry, sub topic cattle management (TLP1). During the lessons the learners were asked to list animal management practices in groups and report back to class, and evidence of their work is captured in the observation schedule, as well as with photographs. They were taken outside to do a practical activity which involved castrating one of the schools own bulls. As part of the class exercise, the teacher wrote down some questions for learners to answer in their note books (LW1). The teacher produced a lesson plan (TLP1) with clear aims and objectives. The objectives of the lesson were "by the end of the learning experience, learners should identify animal management skills" and "by the end of the learning experience, learners should observe a demonstration on castration as one of the management practices" (TLP1). This was related to the Teachers Work Plan (TSW1) as it formed part of the schemes of work for the term and stated that learners should be able to practice simple management skills on animals. It was also linked to the Teaching Community Studies document because as a community based curriculum, learners should be involved in practical activities (MoE, Teaching Community Studies, 2007). It states that "through their active participation they learn more effectively than they would through teacher– lead learning" (*Ibid.*, p. 28).

Lesson Observation 2: This lesson was with a Grade 5 teacher, Mr Mukanga. The teacher planned to teach the topic Animal Husbandry, sub topic cattle rearing. During the lesson the learners were asked to identify the types of animals kept in their environment and list them. They were taken outside to observe the areas where the animals feed from. The teacher wanted the learner to understand that bad grazing methods can lead to adverse effects such as soil erosion and loss of fertile soil. The learners were asked to discuss and list the names of the animals kept at their homes. They were later asked to present their lists to the class for discussion. The teacher produced a lesson plan (TLP2) whose clear aims were: by the end of the learning experience, learners should be able to identify the types of animals kept in their environment, and this was related to the Teachers Work Plan (TSW2) in that its main objectives were that learners should be able to "identify the types of animals that can be kept in their environment" (TSW2). It was also linked to the Teaching Community Studies document because "it allows the learners to discover things for themselves and engage in solving problems" (MoE, Teaching Community Studies, 2007, p. 33).

Lesson Observation 3: This lesson was with a Grade 3 local community teacher, Mrs Mbewe. The teacher planned to teach the topic Gardening (sub topic- growing *Impwa*) (TLP3). During the lesson the learners were asked to mention the importance of *Impwa* in their bodies and how it is grown, and evidence of their work was captured in the teachers plan and, as well as photographs. They were taken outside into the school garden for a demonstration. The teacher demonstrated how to apply kraal manure and water the vegetables. The learners then took turns to apply manure in their as instructed. The teacher produced a lesson plan (TLP3) with clear aims and objectives "by the end of the lesson, pupils should be able to discuss the importance of *Impwa* (vegetable) to their bodies, and to apply water and water in right quantities to the *Impwa* without problems" (TLP3) and this was related to the Teachers Work Plan (TSW3) under the topic 'growing *Impwa*'. It was also linked to the Teaching Community Studies document because it was a lesson which demonstrates the immediate usefulness of the localised curriculum.

> Learners are more likely to be motivated if they see that what they are learning is useful now and may help them solve their immediate problems. Whenever possible you need to make them aware of the value of their lesson (MoE, Teaching Community Studies, 2007, p. 19).

This is true in the sense that Keemba has a lot of issues regarding food security and learners are happy to be able to grow vegetables that they take home for their parents to cook for them.

Localised Curriculum Committee (LCC) Meeting: As part of my field work, I was supposed to observe a localised curriculum committee meeting. The purpose of the observation was to provide me with insights into the planning behind the implementation of the localsied curriculum lesson. It was also going to allow me to analyse/ observe the different roles played by the parents and the teachers during these meeting. However, I could not observe the meeting because the day that the meeting was supposed to take place (25th March, 2010), a student was killed by lightning bringing the whole school and all other activities in the community to a complete stop. As a researcher, this issue brought me to Strike's (1990, as cited in Cohen, Manion & Morrison, 2007, p. 64) view of 'humaneness' in research stating that "consideration is shown to the feelings and sensitiveness of those involved in the evaluative process".

I set a later date for the meeting but unfortunately most of the parents did not attend and the information gathered from the few was not rich enough to be used as data in this particular research.

4.3. EVIDENCE OF ENVIRONMENTAL / NATURAL RESOURCE MANAGEMENT DISCOURSE

As noted above, in this section I present evidence of environmental / natural resource management discourse as it existed in the orientating documents on localised curriculum, and as it emerged in the discourse of the lessons that I observed. This section addresses goal 1 of the research.

4.3.1. Document analysis

In this section I share the findings of the document analysis. I provide insight into how different documents that are used to guide education in the Zambian system reflect an interest in the localised curriculum, with specific reference to discourse on environmental issues or natural resource management practices. Some of these documents are policies, and others provide guidance for teachers.

As already mentioned in Chapter 2, education policy and guidelines emphasise local curriculum. The Teachers Curriculum Manual (2001) indicates that the Localised Curriculum should provide an opportunity for a child to be fully aware of what exists in his/her local environment. It states that the history of the environment will enable the learners understand the present environmental problems and find possible solutions. The document states that "the localised curriculum should form a basis for self–identification, questioning, exploration, and building a firm foundation for one to deal with

future challenges" (MoE, Teachers Curriculum Manual, 2001, p. 25).

A similar interest in localised curriculum is found in the syllabus, a curriculum policy document. This is expressed in one of the outcomes of the Localised Curriculum as outlined in the Zambia Basic Education Syllabus (ZBES) which states that "learners should be able to acquire/ demonstrate knowledge and skills in sustainable management of the local environment" (ZBES, p. 125). It aims to promote the appreciation of the economic, social and cultural values of the local environment (*ibid.*). Another policy document, the Basic School Curriculum Framework (BSCF), clarifies the three priorities at lower and middle basic levels as:

1. Essential literacy and numeracy skills.
2. Life skills, values and attitudes for personal, family, community and national development, and
3. Forming essential life protecting values, skills and behaviour patterns which enable learners to lead a healthy life and sustain their environment. (BSCF, 2000, p. 13 - 14)

The focus on the third priority area is the 'degradation and conservation of the natural environment' (BSCF, 2000, p. 14).

The National Policy on Environment (NPEnv), a policy document produced by the environmental sector makes policy statements that relate to this educational policy document. The National Policy on Environment states that whilst the eight (8) Millennium Development Goals (MDGs) define the main areas of global concern that affect development objectives and related activities, the two that are of greatest importance to the National Policy on Environment are Goal No 1 which aims to "Eradicate extreme poverty and hunger' and Goal No 7 'Ensure environmental sustainability" (NPEnv, 2007, p. 11). The Policy (NPEnv) further lists socio–economic and environmental issues that affect ecosystems across the country, among them are:

- Introduction of cross-sectoral approaches for co–management with communities,
- Introduction of effective environmental information, education and communication nationwide,
- Organising projects on cross–curriculum themes around local problems, and
- Describe how community has changed over the years (NPEnv, 2007, p. 11).

The National Policy on Environment also states as one of its guiding principles that it:

> ... will catalyse the implementation of sustainable environmental, social and economic

> development tenets bringing together in an holistic strategy all aspects of preventive and precautionary actions, equitable benefit sharing, community participation, information dissemination, environmental education and awareness-raising and gender equality in order to fully harness the Nation's latent capacity in this regard. (NPEnv, 2007, p. 14)

This strategy is also pursued by the Ministry of Education Policy on Education '*Education our future'*, which strives to ensure that education will help individuals to "contribute to the socio – cultural, economic, political and environmental needs of themselves and that of their immediate environment" (TCS, 2007, p. V).

Another document, the Teachers Curriculum Manual recognises the need for integration of environmental education in the school curriculum. It states that

> ... the Ministry of Education recognises the need to teach environmental education at basic level. The CFD (Curriculum Framework Document) points out that the focus of environmental education is not only to provide basic facts and understanding of the processes that lead to environmental problems but also to bring about a positive change in the pupils' attitudes and behaviour. The inculcation of positive attitudes and behaviour will enable pupils to share the responsibility for protecting nature and conserving the environment (TCM, 2001, p. 43).

In the quest to achieve quality education, the Keemba Localised Curriculum Basic Education Course (KLCBES) states in its general outcome that learners should acquire skills, knowledge and positive attitudes in HIV/AIDS, environmental conservation, farming, crafts, building and entrepreneurship. This is supported by the Basic School Curriculum Framework (BSCF, 2000, p. 15) which states that

> Environmental issues are vital in basic school education in order to halt the ongoing environmental degradation. Education aims not only at providing the basic facts and understanding the processes that lead to environmental problems but also to bring about a positive change in the pupils' attitudes and behaviour. The aim is to inculcate in the pupils the attitudes that every individual shares the responsibility for protecting nature and conserving the environment, as well as enjoying the resources that the environment provides when intelligently exploited.

Summary: *As indicated by the data above, there is a strong support for environmental education and learning at a local level in all policy documents, and associated education documents, from national policy level, through to the school-based local curriculum documents that guide planning and practice of teachers. Environmental discourse across these documents includes reference to history, the present and the future; holistic approaches; co-management and conservation;*

sustainable management of local environments; and economic, social and cultural values of environments; attitude and behaviour change as well as knowledge and information.

In teachers work plans and lesson plans, the following environmental discourse was observed; the teachers lesson plans and work plans included aspects that dealt with the socio–ecological issues such as overgrazing (TSW1,TSW2), which leads to soil erosion and bad crop yields. Other issues include poverty due to drought and floods that were experienced in Keemba, thereby allowing the learners an opportunity to learn about growing and using natural fertilizers such as compost and cow dung to grow traditional vegetables such as Impwa (TSW3). The teachers' work shows evidence of environmental discourse, by dealing with issues of deforestation (TSW & TSW2). The teachers work plans have topics lined up such as 'practise afforestation to conserve water for animals'.

In learners' work, the following environmental discourse was observed as learners were able to respond to questions regarding the rearing of animals such as cattle. The learners also wrote about the need to look after and keep their water sources clean to avoid diseases. This can be seen in the policy document such as the BSCF which emphasises maintaining a sustainable environment through traditional conservation practices. However the localised curriculum also emphasises the provision of learning life skills. This is evident in the TCM. This policy document states that "localising the curriculum is about developing the kind of teaching and learning that will bring about benefits to the local community, by developing skills and competencies that will contribute to social and economic development of that community" (TCM, 2001, p. 24). This is evident in the way the teachers structure their lessons, such as the cattle project, involving learners in practical activities such as Impwa growing and cattle management lessons through mentorship by the community teachers.
The CEZPD, a project under WWF is mandated to address environmental concerns in line with the WWF's mission statement which is;

> *to stop the degradation of the planets' natural environment and to build a future in which humans live in harmony with nature by:*
> - *Conserving the world's biological diversity;*
> - *Ensuring that the use of renewable natural resources is sustainable and*
> - *Reducing pollution and wasteful consumption (WWF- Zambia country strategy, 2009, p. 11).*

This is similar to the CEZPD environmental discourse as it aims to develop models for increasing environmental knowledge and sustainable natural resource management skills among children and adults to combat overexploitation of natural resources and biodiversity loss, and to improve

livelihoods at community level. This will be done according the project document;

> *a major entry point will be the development of localised curricula in formal schools based on the needs and problems identified by the communities. It is expected that the sustainable natural resource use and development of alternative income generation skills will be important in the upcoming localised curriculum in the rural areas. As such the localised curriculum will have a very practical dimension (WWF-Zambia, p.10).*

But it also differs from the WWF-Zambia environmental discourse in the sense that most of the activities undertaken during the period of the field visit seem to weigh more on developing life skills with very little or no environmental discourse. This is evident from the objectives of the lessons observed. There is no evidence of any statements in line with any environmental discourse.

4.3.2 Lesson Observation

I was able to observe how teachers and learners were using environment and natural resources management discourses and practices during my site visits.

In Lesson Observation 3, a community lesson I observed which involved the use of traditional methods of growing vegetables. The lesson involved learners in discussing the nutritional values of vegetables (LO3). The lesson also looked at the use of compost as opposed to artificial fertilisers. Due to the fact that the school does not have an adequate water supply, the learners were able to grow their vegetables and were shown how to retain the moisture content by mulching (LO3).

In Lesson Observation 2, in asking the learners about the animals they keep at their homes (LO2), the teacher's intentionality was to make the learners identify the different types of animals in their environment and their importance.

In Lesson Observation 1, the teacher presented the class with a diagram of the carbon cycle with a cow at the centre. It seems the teacher wanted to bring to the learners' attention to the role animals for example; cattle play in the environment (LO1).

The teacher of the other Grade 5 class discussed the effects of overgrazing with the learners (LO1; LO2). In Keemba, the cattle are taken into the Kafue flats during the dry season. This is an annual cultural activity dating back many years. The Kafue flats are an important natural resource for the community as it depends on its water and pasture for survival (LO1; LO2; LO3) – see also Section 1.2.

Summary: *In the three lessons the environmental discourse was focussed on local interests such as vegetable growing using sustainable agriculture / permarculture techniques which are less harmful to the environment than mainstream crop production methods that use fertilisers, and livestock management approaches and understandings of the relationships between good livestock management and environmental management. There is a socio–ecological aspect of the relations between the community and its environment.*

4.3.3 Interviews

I noted that the participants in the interviews were aware of the environmental and sustainability issues in their area. According to data from the interviews, the Grade 5 learners interviewed mentioned that they were taught about what was good and bad for the environment (L1), as stated in this extract from their interview:

> We are taught about trees as well, that we are not supposed to cut down trees, because some trees have edible fruits. Others cut down trees for charcoal we are taught not to cut down trees because it is illegal.

Teachers stated how they taught cross-cutting issues such as deforestation and poaching and how human beings need trees to reduce the green house gases (T1, T2), reflected in the data extracts below:

During the interview with the Grade 5 teacher and the local community teacher, economical problems such as poverty were identified as the reason people cut down trees for fuel-wood or selling as charcoal (T1). She indicated that people cut down trees without the permission of the chief's agents due to poverty (LCT1); this is also supported by the Grade 5 teacher who was interviewed as indicated below:

> When teaching localised curriculum, we also bring cross-cutting issues such as environmental issues e.g. In teaching carving activities we teach the children that we cut a branch for carving and not the whole tree and by so doing you are helping the tree by pruning so that they flourish well. In the case of animal husbandry we deal with issue of overgrazing and its impact on the environment (T1).

The other environmental and sustainability issues in the area mentioned included droughts and floods (L1). The learners mentioned that the area had recently been affected by drought (2004/5) which destroyed the crops, and the animals died due to stress because of the lack of pasture and water. This was confirmed by another learner who mentioned that whereas the floods of 2006/2007

farming season submerged the fields and their homes were destroyed (L1 & L2), as indicated in the data extracts below and supported by their teacher (T2):

> L1: drought... maize dried
> L2: Floods...houses destroyed.
> The other one is climate change; climate change in the sense that we have long dry spells which is affecting the drying of some dams and dambos, where some creatures and other animals survive from. Even water for animals people keep and wild animals, drought is affecting them. Some past years we experienced a different whether pattern. The rains were too much and we experienced floods, which submerged the field for the local people and their homes were destroyed and the same floods disturbed the animals (T2).

Data collected from the interviews also revealed the dangers of poaching (L2), when the learners (L2) said "animals are hunted due to lack of food to feed the family". This is attributed to the close proximity of the community to Lochnivar National Park. Due to the effects of the drought and floods, the community was prone to poaching as a source of food (see Section 1.2.1).

Apart from teaching localised curriculum, the school uses its drama club to teach fellow learners better environmental practices through dramatising and role playing. The learners have been able to grasp information concerning the environment and the importance of nature conservation (T1) as reflected by T1 "Apart from that, the school has organised drama, through dramatising and role playing the pupils have been able to grasp some information concerning the environment and the important of nature".

The environmental and sustainability issues in the area are being addressed through teaching localised curriculum. In a interview with the Grade 5 teacher, he gave an example of the Keemba Localised Curriculum Syllabus, stating that they teach topics such as animal husbandry which deals with the environment issues "... because there is no way people can take care of animals without looking at the environment, and how it is affected, therefore it is trying to help the learners realise how to protect and take care of the environment as much as they are benefiting from it" (T1). The surrounding village depends on herding cattle and farming for its survival, therefore the Kafue flats provides for the survival of their animals (T1), as reflected in his discourse when he said:

> Localised curriculum has come at the right time and its relevancy is fundamental because this environment of our school and the surrounding village normally depend on herding cattle and farming, therefore it is part of their lives, it is part of their day to day living, therefore even as we teach them, we just add on to what they already know cause (sic) it is part of their living (T1).

The environmental discourse is also reflected in the interview with the other Grade 5 teacher (T2) who agrees that environmental and sustainability issues were being addressed in the localised curriculum, he said:

> Yes definitely, they are being addressed in teaching localised curriculum. we teach skills already mentioned, carving, farming and animal husbandry, then when teaching these, we also bring in cross cutting issues like e.g. avoid over grazing, when we talk of carving, we teach children that we cut a log for carving, you don't cut the whole tree, you cut the branches, by so doing you are helping pruning the tree (T2).

Summary: *Interview data reflects engagement with the reality of local environmental issues and their impacts. Learners are learning about a variety of local issues such as deforestation, poaching, animal husbandry and its relationship to environmental management practices, and improved environmental management and natural resource management practices. Learners are also learning about impacts of environmental conditions such as drought, and what might be done under such conditions. The localised curriculum therefore seems to be an important vehicle for teaching about local issues and natural resource management practices.*

4.4 EVIDENCE OF SOCIAL LEARNING PROCESSES/ LEARNING INTERACTIONS

In this section I analyse evidence of social learning processes and associated learning interactions drawing on the Wals (2007) framework as discussed earlier. Not all dimensions of the social learning process were evident in all data sources, but together the different data sources provide insight into the social learning processes, which are synthesised in Chapter 5. This section addresses goal 2 of the research.

4.4.1 Document Analysis

- ***Orientation***

During the document analysis (AM1), I noted that the school invited ideas and suggestions on relevant local elements to be included in the curriculum, thus seeking orientation from a range of local stakeholders. The localised curriculum guides states that consultations should be made with the Parents Teachers Association (PTA), Education Board members and other members of the local community in particular, parents, employers, business people and farms when deciding what to include in the curriculum (TCS).

The Teachers' Curriculum Manual, in giving guidance to planning a localised curriculum, cautions the teachers on the aspects to consider when planning a localised curriculum program. It states that the teachers should consider activities that are appropriate to the learners' ability levels and relevant to real life situations in their community (TCM). This is supported in the Teaching Community Studies guidelines of 2007. This document states that the use of authentic and relevant real life situations which are locally based is critical, and that teaching should include the integration of the theory with learners past individual and community experiences (TCS).

Data from the analysis of a Grade 5 lesson plan indicated that the teacher planned to ask learners revision questions on management practices of cattle management as a way of introducing the new topic for discussion (TLP1). In another lesson of a similar grade the teacher planned to ask the learners to list animals they kept at their homes (TLP2), while the community teacher, who was teaching a lower grade, planned to start her lesson by discussing with the learners the nutritional value of '*Impwa*' [a traditional, locally grown vegetable] to their bodies (TLP3). This shows that teachers tend to use questions that link up with learners' past experience and/or their local environment to provide orientation to the localised curriculum lesson. They appear to be following the recommendations in the Teachers Curriculum Manual and the Teaching Community Studies documents (discussed above).

There was no evidence of orientation in the learner's written work, as it was produced later on in the lesson (LW1, LW2, and LW3).

- ***(Self) Awareness raising***

The Teachers Curriculum Manual recommends the use of a sufficient range of activities to encourage learners to use creativity, innovation and analysis in their approach to problems (TCM). Similar advice was provided in other documents, such as the Zambian Basic Education Syllabus (ZBES), and the Teaching Community Studies document (TCS).

As indicated above, teachers chose to use questions that link to learners' past experiences and/or their home and/or community experiences to generate awareness raising of the topics that they plan to introduce (TLP1, TLP2 and TLP3).

- ***Deframing or deconstructing***

Teachers Work Plans (TLP1, TLP2, and TLP3) show that the teachers had planned to use a variety of

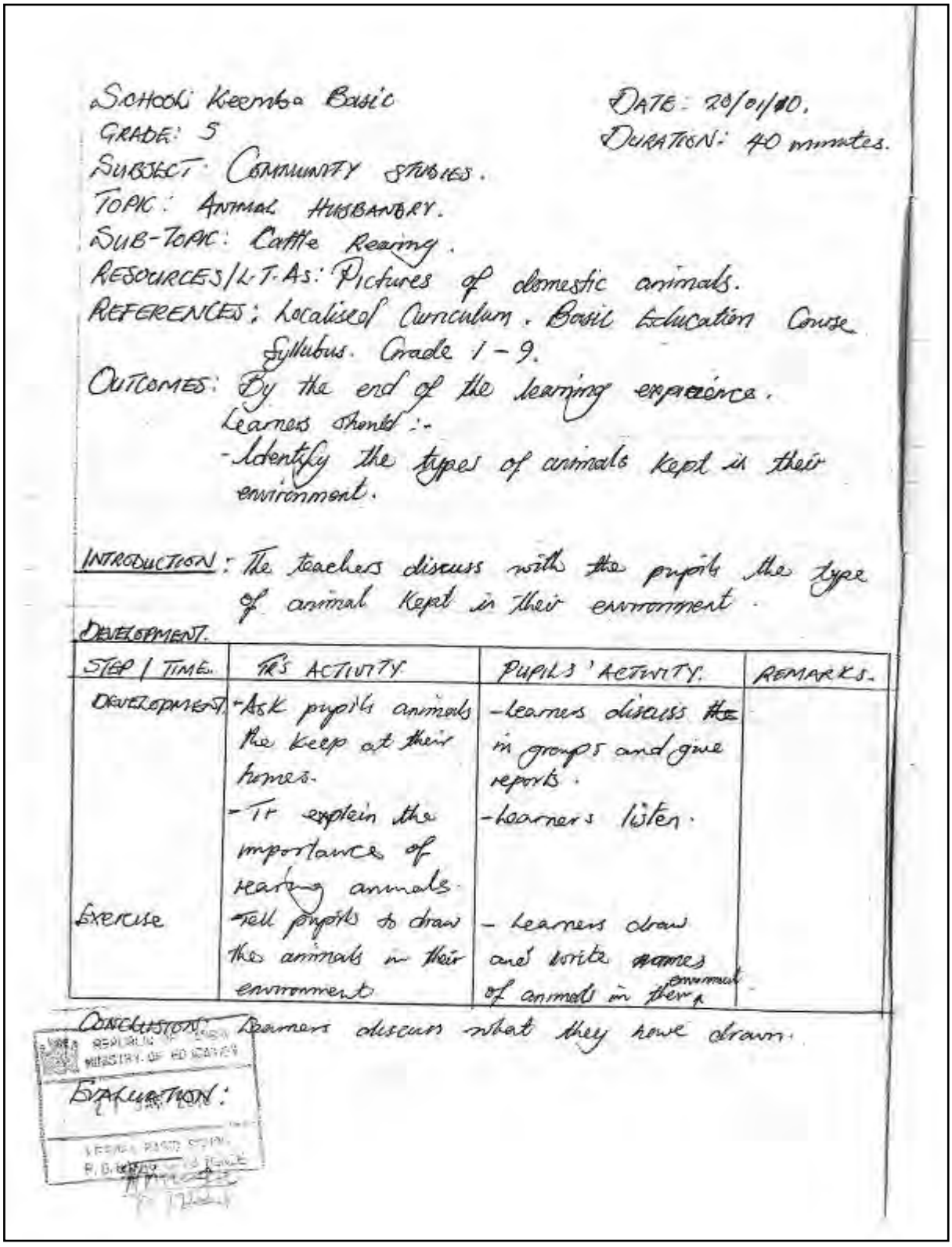
group or individual activities to engage the learners.

> Example from TLP1: the Grade 5 teacher asks learners in their groups to list down management practices by answering the question; what do we do to see to it that our animals are healthy?
> Example from TLP2: the other Grade 5 teacher asks the learners (in their groups) to explain the importance of rearing animals.
> Example from TLP3: starts the lesson with a song and asks the learner to move to the front of the class, where they all sit near her, using the question and answer method she asks the learners a series of questions about the uses of *Impwa.*

This strategy is mentioned in the Teacher's Curriculum Manual (2001) which states that "Through group work or individually, the teachers contribute ideas on how the curriculum can acquire local elements" (TCM, p. 26). It states further that "All ideas and views should be collected and organised in report form for further discussion" (TCS, p. 26), a strategy that can potentially allow for deframing or deconstruction.

The teachers' lesson plans analysed indicated that after conducting group activities, teachers were expecting learners to discuss the lists they were to draw up (TLP2), while in other lessons learners were given work to take home (homework). It is not clear from these documents whether these strategies will actually lead to deframing or deconstructing or not, but there is some potential that they could, depending on how they were practiced.

During the lesson observation, learners were involved in discussions as groups. The group discussions (TLP1, TLP2) allowed for deframing/ deconstruction to take place. The learners were asked in their groups to 'discuss and list the management practices' (TLP1) and 'list the animals kept at their homes' (TLP2). These discussions show that learners were made to 'articulate and challenge one's own and each other other's frames' (Wals, 2007, p. 41). However learners documented work shows learners being challenged to articulate their own frames through the class exercises give to them and practical activities undertaken.



SCHOOL: Keemba Basic
DATE: 28/01/20.
GRADE: 5
DURATION: 40 minutes.
SUBJECT: COMMUNITY STUDIES.
TOPIC: ANIMAL HUSBANDRY.
SUB-TOPIC: Cattle Rearing.
RESOURCES/L.T.As: Pictures of domestic animals.
REFERENCES: Localised Curriculum. Basic Education Course Syllabus. Grade 1-9.
OUTCOMES: By the end of the learning experience. Learners should:-
-Identify the types of animals kept in their environment.

INTRODUCTION: The teacher discuss with the pupils the type of animal kept in their environment.

DEVELOPMENT.

STEP / TIME.	TR'S ACTIVITY	PUPILS' ACTIVITY.	REMARKS.
DEVELOPMENT	-Ask pupils animals the keep at their homes. -Tr explain the importance of rearing animals.	-learners discuss the in groups and give reports. -learners listen.	
Exercise	-Tell pupils to draw the animals in their environment	- learners draw and write names of animals in their environment.	

CONCLUSION: Learners discuss what they have drawn.

EVALUATION:

Fig. 4.1 Grade Five Teachers Lesson Plan showing planned activities

The other lesson plan (TLP1) states that "in groups, learners discuss animal diseases" (TLP1).

From the above, it is clear that teachers plan to give learners opportunities to co-construct knowledge, through organising the learners into groups. However, as it is not clear whether the learners are encouraged to deconstruct their own frames first (at least from the teachers' plans) it is

not possible to tell if the planned group work would in fact lead to co-construction as talking together in groups does not necessarily mean co-construction of new knowledge. Wals talks about co-construction as being related to the learners' ability to bring to the group their own deconstructed frames and be inspired by alternative ideas provided by others (Wals, 2007).
Learners during lessons were asked a series of questions by the teachers to respond to regarding the topic of the day. In the case of learners work (LW1), it was noted that learners' response was prompted by either what was taught during the lesson in the case of the exercise (LW1) or how the community teacher demonstrated the cattle management lesson (TLP1) and growing of *Impwa* (TLP3). The learners are seen as documented by the sequence of photographs captured to be working together in castrating a bull.

- ***Applying/ experimenting***

Evidence from the lesson plans also shows that teaching localised curriculum employs the use of locally trained personnel to pass on life skills and responsibilities to learners (TCS). This is also evident in data from the Teachers' Curriculum Manual (TCM, p. 27) which states that "The curriculum can be localised by inviting parents and other local representatives with skills to the school to give presentations and demonstrations on relevant topics".

Data from localised curriculum lesson plans analysed on animal husbandry (TLP2) and gardening (TLP3), indicated that the community teachers demonstrated how to castrate a bull (TLP1) and how to grow tradition vegetables such as '*Impwa*' (TLP3). This clearly allowed the use of improved local methods and integrated cultural activities and traditions within the lesson plans.

The lesson plans indicated the use of practical activities. The use of the community member (local community teacher) to demonstrate how to castrate a bull (TLP1), and how to grow traditional vegetables shows the importance of these activities to the community. As discussed in the interview section, these activities are transferred to the learners homes where they are implemented (LCT1). The Teachers Curriculum Manual notes that there is an essential element of practical application that is based on real–life problems that need a solution (TCM). This approach to implementing small projects such as gardening and cattle rearing should involve learners' use of improved local methods. The use of localised curriculum activities to solve real life problems is supported in the data presented in the teachers' manual which states that the localised curriculum "can be localised by organising projects on cross-curricular themes around local problems, their causes, cures and prevention, this can be linked to environmental science or home economics" (TCM, p. 27).

The other source of documented data is learners work, and evidence of application was noted in the following examples of learners' work:

> LW1: water pollution: animals need water for drinking; water is really important resource for people, animals and plants. It is important that we look after our water sources. Water pollution is when our dams become dirty because of careless actions of people bathing and washing clothes in rivers can make water dirty and unsafe.

I also used photographs as a source of documented evidence. The photographs below show learners engaged in application activities:

Fig. 4.2 Learners engaged in a practical activity where they are castrating a bull with the guidance of a community teacher (Lesson Observation 2)

Fig. 4.3 Learners engaged in mixing compost in readiness for application in their garden (Lesson Observation 3).

4.4 Learner explaining to the class, while the rest listen attentively (Lesson Observation 3).

- ***Review***

At the micro–level the teachers in all the lessons observed were able to review/ evaluate throughout the lesson. As indicated in the policy documents, "you will sometimes have to wait weeks or possibly months until the whole activity has been completed" (TCS, p. 66), In the case of the gardening lesson activity (*Impwa*), from sowing to harvest. The teachers also assessed through observation (observation notes) how well the learners learnt new skills (in the case of the practical lesson on castration). The localised curriculum is reviewed in order to recognise the learners' area of weakness and to help them improve.

Though the lessons or activities in localised curriculum are reviewed like any other lesson, it was noted from the lesson plans that the teachers mostly asked questions on the issues or challenges that had been addressed. This seemed to be a key strategy used to stimulate reflection and review on what had been learned. In one lesson plan, the teacher asked the learners questions on the practice of cattle management (TLP1) that is after the lesson. The questions asked were:

> *Animals need a lot of..... For drinking. ..... Is caused by animals grazing on one place every day. Animals are given ..... by the veterinary office to prevent them from diseases (LW1).*

Another strategy used by teachers to stimulate learners review work, was by asking them to draw and write as a reflection / review strategy, which enabled learners to review and reflect on what they had learned and/or what occurred in the lesson. In one case they were asked to draw and write the names of animals in their environment (TLP2).

The learners work also contained evidence of review and/or reflection. LW1 contained an exercise that the learners were asked to complete after the lesson, while in LW2, the teacher asked the learners as part of their homework to go and write the list of animals kept at their homes. LW3 was an entirely practically oriented lesson, being a Grade 3 lesson, most of the review of the lesson included questions and answers from the learners on what they learnt.

It was also observed that the lessons were carefully planned in that they were to provide sufficient organisational space available for engaging the learners in a participatory processes characterised by high levels of self determination and autonomy (Wals, 2007), this showed reflective capacity at a pedagogical level.

In the case of the Grade 5 teachers, the teachers' work plans and lesson plans showed one of the teachers was able to integrate sustainability issues that affect the area such as overgrazing (TLP2), and another was able to integrate issues of deforestation (TSW2), which showed reflective review capacity at a contextual level.

Summary: *Drawing on Wals's process framework outlining social learning, it is possible to see that the localised curriculum documentation studied (teacher guideline and curriculum documents; teachers' work plans and lesson plans; and learners' work), shows various forms of evidence of intended and actualised social learning processes. From the evidence above it seems that orientation, self awareness raising using questions, and practical application experiences, and reflection using questions seemed to be the strongest social learning processes reflected in the documents. What was difficult to observe through documentary evidence were processes of deframing / deconstructing, and processes of co-constructing, although there was some evidence of the latter in learners work.*

The documentary evidence shows a strong commitment to engaging learners with local concerns of relevance to their lives and their experience, which is consistent with the localised curriculum intentions. There is also some evidence that teachers are relating the localised activities such as cattle management, and vegetable planting, to broader environmental issues such as deforestation and overgrazing, although the practical activities and involvement of learners did not extend this far.

4.4.2 Lesson Observation

- ***Orientation***

'Orientation and exploration involves identifying key actors and, with them, key issues of concern or key challenges to address in a way that connects with their own prior experiences and background, thereby increasing their motivation and sense of purpose' (Wals, 2007, p 41).

With this as background, it was possible to see that in Lesson Observation 1, the Grade 5 lessons observed, the teacher asked the learners the importance of rearing animals (TLP2). This was because the community in Keemba rear animals as a source of livelihood (see explanation below).

In Lesson Observation 2, the Grade 5 lesson observed, the teacher's intention was to look at the learner's experiences and bring these into to the lesson. At the start of the lesson the teacher asked the learners to talk about the animals they keep at their homes (LO2). The learners gave examples of livestock such as goats, cows, and chickens.

In Lesson Observation 3 which was with a grade 3 class, I observed the teacher and the pupils discuss the importance of the vegetable '*Impwa*' to their bodies (LO3) at the start of the lesson. The start up discussion in the class was based on the vegetables that are traditionally grown in the learners' homesteads. The discussion went like this:

Teacher: What are the uses of *Impwa*?
Learner1: Protects us from diseases
Teacher: Why do we apply manure in the garden?
Learner2: To improve the soil texture
Class: (claps and shouts) well done!

- ***(Self) Awareness raising***

'(Self) - awareness raising entails eliciting one's own frames relevant to the issues or challenges identified' (Wals, 2007, p. 41). This process was evident in the lessons observed.

In Lesson Observation 1, with the Grade 5 learners, the teacher asked the learners what they get from the livestock they keep. The responses included milk for selling and drinking from cows, manure from the kraal for gardening, meat from goats and cattle and stools made from goat and cow's skin (LO1).

In Lesson Observation 2, also with Grade 5 learners, which focussed on cattle management, the teacher, using the question and answer method, asked the learners why they keep animals at home. Responses from the learners included; cattle are used for ploughing their field, for selling (in times of need), for milk production. Here the learners explained that they sell milk at the local market at 1000ZMK/Litre (LO2).

In Lesson Observation 3 the focus was on growing indigenous vegetables (*Impwa*). During the lesson the teacher was able to get the learners to respond to questions based on what they knew regarding vegetables and their uses. She also wanted to find out from the learners whether they knew the difference between using organic or chemical fertilisers in the garden.

- ***Deframing/ deconstruction***

Wals (2007) explains deframing as 'articulating and challenging one's own and each other's frames through a process of clarification to conflicting or alternative frames. I cite here from my observation notes, from observations in Lesson Observation 1 to illustrate the process of deframing / deconstruction that took place with the Grade 5 learners:

> The teacher asks learners to give examples of livestock in their area. Individually, Learners give a list of livestock to the teacher, such as goats, cows, chicken, and lion. The teacher accepts all answers from the learners both right and wrong and writes them on the chalkboard. He then asks the class to identify which of the answers are not right and why. One of the learners picks out lion and explains to the class why it is not livestock as it is a wild animal. The lion is finally excluded from the list after learners explain that livestock refers to animals that are reared at their homes (observation notes, 23.03.10, LO1).

From the vignette above it is possible to see a situation where the teacher allows processes of deframing to take place in the classroom. The teacher was able to allow space for alternative views that lead to various levels of dissonance and triggered learning at both the individual and the collective level (Wals, 2007).

In Lesson Observation 2 it was also possible to see how, in a lesson on 'animal husbandry' (TLP1 & TLP2) the teachers' lesson plan highlights the need to address environmental and sustainability issues in the area. During the lesson I observed the teacher put up a picture showing the carbon cycle with a cow grazing. The picture also had images of maize and sunlight. In the discussion based on the picture, the teacher explains the relationships, such as that the cow produces manure for the maize (plants), plants give us oxygen, and that too much carbon dioxide in the atmosphere is not good for the environment and that plants (trees) help in reducing the amount of carbon dioxide in the atmosphere (LO2). The teachers' discourse involves questioning mainstream discourse on the economic value of cattle farming, to raising issues about environmental impacts and issues associated with cattle farming. The teacher also offers a more environmental choice through this re-framing, but the teacher does not explain the way in which cattle farming contributes to the production of greenhouse gasses, and the link to the carbon cycle is therefore not that clear. Learners are not questioned on this aspect, which is a 'missed opportunity' for deframing and deconstructing.

A number of questions about what is happening in social learning situations such as this are raised by Wals (2007) as he argues that the point of social learning is not so much what people should

know, do or be able to do, but which could be an embodiment of authoritative thinking and prescriptive management. Among the questions raised is 'How can social learning build upon people's knowledge, skills and often alternative ways of looking at the world?' (p. 39). Thus it is possible that the teacher is exposing learners to an alternative way of looking at the world – not seeing cattle management as economic gain only, but also seeing cattle management within a more holistic inter-related way with the environment and environmental management. This is further seen in the lesson observations, where the teacher explained to the learners that it is important to avoid overgrazing as it causes soil degradation (LO2). If the class is able to reach this conclusion, it may be possible to see transformative social learning taking place. Evidence of this transformative social learning can be seen from the discussion in the class relating to overgrazing, the teacher was able to draw from local examples (LO2). The teacher asked questions such as; 'who amongst the learners looks after cattle, and how?' (LO2). Learners responded by saying they take the animals to feed and drink water (LO2). Wals and Heymann (2004) emphasise this by stating that:

> the process of determining how to live sustainably undertaken by a group is viewed as a particular manifestation of social learning, i.e. *of* deriving insights on what sustainable living will entail in a specific situation.

Though there is not much evidence of deframing in Lesson Observation 3, the teacher tried during the introduction of the lesson by asking the learners a series of questions thus prompting them to expose their frames, e.g. *Why do we apply manure in the garden?* (LO3).

- ***Co-creation of Knowledge***

Data from the lesson observations indicate that the most teachers used group work in their lessons (LO1, LO2, LO3).

In Lesson Observation 1, the group work activities included a practical activity that involved learners in real life cattle management exercise. The use of a real life activity was able to build learners' environmental awareness and interest, as well as allowing them to gain firsthand experience and become familiar with features of their local environment (TCS, p. 35). The teacher wrote a question on the board (What do we do to see to it that our animals are healthy). He then asked the learners to discuss the statement in their groups; here we saw learners engaged in dialogue. Wals and Heymann (2004) describe this dialogue as;

> A dialogue here requires that stakeholders involved can and want to negotiate as equals in an open communication process which celebrates diversity and conflict as thriving forces for development and social learning (Kunneman, 1996 as cited in Wals & Heymann, (2004, p. 10).

The learners then reported back to the rest of the class. Each group made its presentation, which was mostly similar and the final list was then compiled with the guidance of the teacher. Wals & Heymann (2004) emphasised the facilitator's role assumed by the teacher in the learning process. These roles include "helping people confront the normative underpinnings and limitations of their own frames and helping them to reconstruct alternative frames" (p. 18). Here the class came up with one final list of things they would do to see that their animals are healthy, the list included; castrating, dosing, vaccination, herding and spraying (LO1).

In Lesson Observation 2, the teacher asked learners to discuss what was required to ensure that cattle are healthy. Teacher asked questions such as:

- *Who looks after cattle at home?*
- *How do they look after their cattle?*

The learners (individually) explained that they take the animals to feed (grazing in the fields) in the morning and drink water at midday. The teacher asked the learners to discuss in their groups what is required to keep cattle healthy. Reports from the groups included answers such as dipping - two girls in the class explained dipping to the rest (to prevent cattle from getting ticks and fleas); spraying (also another method of preventing ticks). Learners also mentioned giving cattle injections to prevent cattle from getting internal diseases (LO1). Following this, the teacher divided the class into groups and asked the learners to write down where livestock gets water and food. During the report back, answers from the different groups included: Water from wells, and the dam (Hakunkula Dam) and food from good pasture for grazing. From this evidence, the teacher requested learners to work in groups to co-share the knowledge that they collectively have on cattle and to share it with each other. The group work was not focussed on deframing or deconstructing existing knowledge or challenging learners to solve problems such as those that were opened up through the Carbon Dioxide and overgrazing issues mentioned by the teacher. Wals (2007) explains that the use of group work (collaborative setting where dissonance is properly managed) allows for the learners to be able to untangle relationships, becoming aware of their own hidden assumptions. While there was evidence of learners' having to recall what they know and share it with others, and listen to what others had to say on the same topic, there was no evidence that teachers' were challenging

learners to change their frames, or to become aware of their own 'hidden assumptions'. The lessons appear to have lacked a critical analytical challenge to learners. Using group work allowed for the learners to become exposed to the views of others, but not necessarily to a process of deconstructing old ways of seeing things, and creating new ways of seeing things. While some new knowledge was gained, it was not clear if learners had to rethink their old ideas. It would seem that more could have been done to challenge learners to be more critical, and through this they could have been challenged to jointly create new frames (*ibid.*). For example, if the teacher had pursued the comments made by them about water, to discuss availability of water and what to do in drought conditions, or their idea of 'good grazing' and if the teacher were to link it to a problem solving activity associated with cattle management in a degraded area, the learners would have been more challenged to re-construct or co-construct new knowledge. Other learning theorists such as Ian Moll (2001) have pointed out that group work is often mis-interpreted as co-construction of meaning. A critical element of co-construction of new meaning involves adequate levels of challenge to learners' in their zones of proximal development (Vygotsky, 1978 cited in Daniels, 2004, p. 56).

Fig 4.5: Group activity In Lesson 2, learners were asked to list cattle management practices (Lesson observation 2).

In Lesson Observation 3, the group work activities the learners were practical. The lesson was on centred on gardening, *Impwa* growing. This was a Grade 3 lesson; most of the learners could not read or write English. This lesson was conducted mostly in Tonga, the local language spoken in

Keemba. Teaching using the local language can be one way in which the curriculum can be localsied (TCS, p. 5). During the introduction stage of the lesson, the local community teacher called the learners to the front of the class in the order of their group colours. This allowed the learners to relax. Most of the theoretical part of the lesson was conducted using the question and answer method. The teachers' guide to teaching community studies (TCS) explains that:

> ...Question and answer is the most commonly used method in most teaching, learning and assessment situations. As an outcomes based curriculum like that of community studies views the learner as someone who brings prior knowledge and experiences to the teaching and learning situation (p. 31).

The teacher asked questions such as; what are some of the uses of vegetables such as *Impwa* to our bodies. Learners were able to respond by giving answers such as; 'vegetables protect us against diseases' (LO3). By using the question and answer method, the teacher was able to develop adequate relationships and assess the learners' comfort zones, allowing her to obtain sufficient insights into the world of those involved in the change process (Wals & Heymann, 2004, p.18).

- ***Applying/Experimenting***

As part of the topics in the localised curriculum syllabus, Keemba Basic School has embarked on a number of projects among them the cattle project, chicken rearing project and a permarculture garden. The projects sites are used for learning purposes. The projects are used to create a link with learners' everyday life.

In Lesson Observation 1, in the case of the Grade 5 lesson on animal husbandry, the teacher asked the class why castration is a management practice in cattle rearing. A number of reasons were given by the learners; among them some were that castration is normally carried out to fatten bulls. The other reason was that it is used to prevent undesired breeds to continue producing (LO1). The teachers and the learners then moved to a nearby homestead to take part in a castration exercise (see Figure 4.2 above). The teacher asked the learners what methods are used to castrate animals: Answers include *buddizo* and the rubber methods. The community teacher demonstrated the process, and it was evident that the pupils were excited about observing the whole process (LO2).

In Lesson Observation 3, the Grade 3 lesson I observed, after introducing the topic, the teacher and the learners proceeded to the garden for a practical lesson which involved applying compost to the vegetable *Impwa (*LO3). As this is a long process, the learners will look after the *Impwa* until it is

harvested. Money that is raised from the sale of the vegetable is used to assist some of the learners who cannot afford to pay school fees, whereas the rest is given to the families of the learners who were taking care of the garden (Mrs. Chilumbi *Pers. Comm., 23.03.10*).

In Lesson Observation 2, evidence of co–creation included the group activities that were given to the learners to undertake. The teacher asked the learners to split into various groups and gave the class two columns to fill in, for example. Where do we get water for animals (Groups 1&2), then asked Groups 3 and 4 to tell the class what types of food are required by animals in order for them to be healthy.

Wals and Heymann (2004) argue that in working together 'through dialogical deconstructions, a negotiation process can gradually be transformed into a process of dialogue which puts the creation of collective frames as central' (p. 17).

- ***Review and reflection on what has been learnt***

It is evident from the lessons observed that the teachers reviewed and evaluated their lessons using different approaches. The teachers asked the learners revision questions as a way of reviewing what had been learnt.

In Lesson Observation 1, which was based on cattle management practices, the teacher used questions (LO1) which included:

> Why do we keep animals?
> Where do we keep animals? (LO1)

In Lesson Observation 2, learners were asked to draw and write down names of animals in their environment (LO2). In other lessons, learners were asked to get their notebooks and copy down notes from the board.

In Lesson Observation 3, the teacher asked learners questions such as what is the importance of vegetables *(Impwa*) to their bodies (LO3), which engaged them in reflecting on what they were doing in relation to their practices at home and in the community.

Though the idea here seems as though the teacher is assessing the lesson to assess content knowledge gained, the shift is that the lesson here addresses issues that the learners are used to and

live in, hence the review of the processes allows for the learners to question and reflect on their own practices at home (LO3). This is a cardinal part of social learning as it looks at the skills that the learners gain not as abstracted but as part of their growth towards mature participation in social communities and development of their identities as responsible, self–directed learners (Hart, 2007).

Reflection could, however, have been enhanced further if the reflection questions had been more directed towards the deframing and reframing processes, and if they were more oriented to assessing the *new knowledge* that learners had gained (e.g. what would have happened if there was a problem with hygiene during the cattle castration process? How do we know if the compost is properly prepared? Are examples of more challenging reflection questions that teachers could ask pupils).

Summary: *From the above it is clear that observations are an important instrument in understanding social learning processes. From the observations it was possible to gain more insight into the social learning processes, particularly the processes of orientation, self-awareness raising, deframing and deconstruction, co-creation of knowledge and reflection. From the above analysis, it is also clear that* ***what the teacher does*** *influences much of what happens. The kinds of orientation questions, the type of knowledge included and presented, and the opportunities teachers give learners for deframing and co-creating of new knowledge appear to be very important to realising the full potential of the localised curriculum. As observed in the lessons, teachers did not appear to challenge learners to deframe or deconstruct at a wider level, or to co-create new knowledge beyond group work processes in which learners were expected to share their existing knowledge with each other. While the teachers' lessons showed potential for wider deconstruction engagement (i.e. they raised the broader issues), this was not followed through with problem solving activities for the learners where they could have investigated or probed the environmental dimensions of the issues more carefully.*

A potential problem with localised curriculum, as shown in the analysis above, and as argued by writers who are critical of superficial interpretations of constructivist learning (Moll, 2001), is that if the learners prior knowledge and experience is not complemented or extended with challenging activities to deconstruct existing knowledge and taken for granted assumptions, it could simply be self referential, and learners, while being comfortable with the learning because they are learning about something familiar, may in fact not be learning much that is new. Environmental questions such as overgrazing, carbon dioxide production from cattle raising, land management strategies, and permaculture production processes such as making compost instead of using pesticides and

herbicides represents an opportunity for learners to re-construct and co-construct new knowledge through deconstructing existing practise, and reconstructing new practices, knowledge and experiences in local contexts. This, however, requires teachers to focus more on these issues and practices in their questions and in the reflection activities that they set for learners.

4.4.3 Interviews

- ***Orientation***

The interviewees mentioned that the school chose animal husbandry because the environment of their school and surrounding villages depended on cattle herding and farming. During the interviews, teachers explained that the lessons taught in the localised curriculum had a connection with the learners experience and background (Wals, 2007). Teachers also explained that Keemba experienced changing weather patterns in the past years, such that in the first year there were floods and then in the following year there was drought. 'People's fields were submerged by the floods and their homes destroyed' (T1). With this experience and background the community used the opportunity availed by the localised curriculum to bring issues of food security and sustainable livelihoods through the cattle and gardening projects to the fore in their curriculum decisions. Data from the interviews indicates that the parents picked topics which had a role in their lives, as indicated in the data extract below:

> Parents have a major role to play in selecting the topics, in the first place before the teachers and the staff came up with the topics, the community was invited, because we were targeting the community, they picked topics which had a role in their lives, topics that will change the way of living, so it is actually the parents and the community who gave us the topics (T1) .

In an earlier interview conducted during the contextual profiling of the area, I encountered a similar perspective given by the head teacher of Keemba Basic School, as drawn from interview data during an earlier visit to the school.

> This syllabus is based on the needs of the community and being a farming area, the most cardinal subject area that came out of the localised curriculum was farming. So they spelt out what they want their children to learn farming in all areas (crop farming, animal husbandry). The teachers sat down and came up with the syllabus for the subject area that the community had identified. The localised curriculum is time tabled, just like any other subject. So when it is time for that to be taught, the pupils are taught first in the theory, then they do practice what they are taught. In the process of implementing the localised curriculum, we had the opportunity of being joined by WWF who are promoting environmental protection and working on the lines of the localised curriculum. The teachers

> were inducted on how to market their produce and how the learners should be involved, how they should be keeping track of the records of what they sell. For the pupils, they enjoy localised curriculum because they are involved in practical, the skills some of these pupils have acquired here they have been able to transfer these skills home. (**Head Teacher, Keemba Basic School, pers comm. 23.03.10)**

- ***(Self) Awareness raising***

Teachers indicated that they used approaches that 'link up' with or draw on learners' prior knowledge, as this helps learners to be explicit about what they know, as reflected in this statement by Teacher 1: 'It is part of their day to day living therefore as we teach them, we just add on to what they already know' (T1). Data from the interviews also indicates that the teachers used question and answers as a way of 'eliciting learners' frames' (Wals, 2007) relevant to the topic of the day, as indicated in this data extract:

> Localised curriculum has come at the right time and its relevancy is fundamental because this environment of our school and the surrounding village normally depends on herding cattle and farming, therefore it is part of their lives, it is part of their day to day living therefore as we teach them, we just add on to what they already know because it is part of their living (T1)

- ***Co–creating***

Teachers' interviews revealed that teachers too were involved in co-creating knowledge, about the localised curriculum and how to engage it. In the interviews, it was stated that teachers have met on certain occasions such as during school based workshops, as reflected in this statement by (T1) that "It is during such workshops that a thorough understanding of the localised curriculum is shared. On certain occasions the workshops are meant 'to sensitise pupils on the importance of the curriculum" (T1), which reflects that learners are also engaged in this co-creation of meaning about the localised curriculum.

One of the interviewees said that the localised curriculum was developed at the schools as it is a 'local thing '(T2). Wals (2007) notes that "through discursive dialogue and cooperation between people positioned with different configurations of frames with regards to the key issues involved, such learning can be intensified and lead to change" (Wals, 2007). The school localised curriculum focal point person pointed to the role of teachers in this process of co-creating meaning, when she stated that:

> the parents are the ones who selected the topics, because they are the people who know

what their children want to learn, we as teachers, our role was to gather them, facilitate, so that we come up with the curriculum for pupils (T2).

The interviews did not contain any data on the de-framing or review processes.

Summary: *The interview data confirmed the role of the parents in establishing the original orientation for the social learning processes, namely the localised issues and practices that are of concern to them. In this case it was the local livelihood practices that dominated. As indicated in the interview with the school head, the NGO (WWF) also had some role to play, but it did not dominate over the parents views. Teachers interestingly saw themselves as facilitators, playing a mediating role between parents' interests and learners, shifting the traditional teacher-learner role in schools. A key process, noted through the document analysis and the interview process was teachers roles in mobilising learners' prior knowledge and experience as the orientating starting point for social learning in the context of the localised curriculum.*

4.5 FACTORS INFLUENCING THE LEARNING AND ROLES OF LEARNERS AND PARENTS

In this section I discuss various factors that appeared to be significant to the localised curriculum processes. In particular, I focus on the role of the parents (Section 4.5.1), the role of the learners (Section 4.5.2) and community strengths (Section 4.5.3). This section addresses Goals 3 and 4 of the research.

4.5.1 Roles of Parents

As reflected in the discussions above, through the localised curriculum the local community is given the opportunity to participate in curriculum planning, development and implementation (TCS). Data shows that the localised curriculum was developed in collaboration with the parents and teachers (T1). It is for this reason that parents became actively involved in the teaching process of the curriculum. Throughout their involvement in the process, parents played different roles, as identified below.

- ***Curriculum planners, developers and implementers, evaluators*:**

Teacher 1 stated that "We see the role of parents as *curriculum developers* because they picked the topics that are being implemented in the localised curriculum" (T1). Interviews confirmed that it is actually the parents and the community who gave the school the topics (T2, T1). During the development of the Localised Curriculum the teachers facilitated the processes while the parents

selected topics to be taught, like carving, animal husbandry and gardening. The learners were consulted. Through the teaching of localised curriculum, learners get local knowledge from parents. It was not clear from the data what role parents played in evaluating the localised curriculum, but the documents state that the local community, school managers and teachers will also monitor the achievement of the learning outcomes by the learners (TCS). The document further outlines some of the roles of parents at various stages of the curriculum process, such as;

- Planning and making decisions about localised curriculum
- Being part of the implementation team, using their expertise, knowledge and skills
- Evaluating the school's programmes and the learning programmes of its learners (TCS, p. 3).

Parents, head teachers, teachers and community leaders will participate in developing the localised curriculum, from the initial planning stage right through to the implementation and evaluation (TCS).

- ***Parents as observers***

Not all parents are, however, directly involved in the teaching mentioned above. One local community teacher mentioned that "parents do come to see what the learners are learning" (LCT1) as she indicated that "The parents accompany teachers and learners on school visits where they may be able to make a useful contribution" (TCS). During the observations I noticed parents observing the lessons. During lesson observation of a Grade 5 lesson on cattle management (LO1), after having demonstrated to the learner how to castrate an animal, they observed the learners conduct the castration on their own.

- ***Parents as facilitators and mentors***:

Teacher 2 noted in the interview that "The community is happy to teach the children local skills" (T2). As shown in the data above in Section 4.4, they give life skills to the children such as looking after animals in a rural area, and children develop knowledge such as "when to take animals to the fields for feeding and to drink water" (T1). They also provide learners with animal management skills such as demonstrating how to castrate cattle (LO1), and food growing skills that make use of local plant varieties and resources (LO3). Data from the documents also mentions that parents can also participate by helping with project work. "Learners might be given projects ranging from basket making to, weaving, and carving a boat, to making mortar" (TCS). The documents also mention that parents bring special expertise to the school and that they can use this for example by demonstrating activities like pottery making, basket weaving or carpentry. What is significant in this role is that parents can also teach the learners local cultural values and traditions.

Summary: *From the discussion above, it seems that the role of the parents is a significant factor that influences the localised curriculum. Parents define the scope and focus of the 'curriculum content', and this, combined with teachers knowledge and experience and the way teachers see their roles, largely determines what is learned, and what learners can learn. Teachers appear to be allowing parents to take up this role, and even go so far as to describe parents as 'curriculum developers', although teachers remain in a key role of structuring the learning through the kinds of questions they ask, and through the way the lessons are structured. Teachers also bring in 'new knowledge' particularly the environmental issues / environmental management knowledge but as shown in Section 4.4 above, this was not fully developed in the lessons as pointed out above.*

4.5.2 Roles of learners

The curriculum development process does involve learners in planning their own curriculum, making them contribute positively to community development and thus creating a sense of belonging through interactions between the children, their parents, local leaders and experts. Learners acquire lifelong skills, and as one learner stated:

> ...when we learn from the school and when our parents teach us, in case we fail to make it to secondary school, college or university, I will be able to apply the skills I have learnt and use it to earn a living. I would also know what is good and bad for the environment (L 1).

All learners come to school equipped with numerous skills acquired outside, and the process of learning informally continues on a daily basis. Some of the teachers involved in the implementation of the localised curriculum said that "involving learners in planning their own curriculum makes them contribute positively to community development" (T2). While another teacher said that:

> Learners have a major role to play because they actually share their experiences like they way they take care of the animals and the way they interact with the environment at home as they are involved in farming (T1).

Summary*: What is interesting to note from the above data is that learner participation is seen to be linked to motivation to learn, and to learners becoming more socially engaged.*

What was interesting to note, however, was that no-one, teachers or parents or learners were concerned that learners would only be learning things that they might already know, or that they might already have learned in the home environment, which is one of the potential critiques of

localised curriculum, as noted above. No-one conceptualised the role of learners as 'problem solvers' in the local context, but rather the emphasis was on learners sharing experiences of existing knowledge, and being exposed to existing knowledge in the community. Only the teachers and the NGO (WWF) seemed to be concerned that learners should develop additional 'new knowledge' linked to the environmental management aspects of the local practices, but as illustrated in Section 4.4 this was not fully maximised due to the types of questions that teachers asked learners in the deframing / deconstructing and re-framing / reconstructing social learning process phases, and in the review process.

4.5.3 Community strength including but not limited to indigenous knowledge

As indicated in Chapter 2, Namafe (2008) and Hogan (2008) identified community strengths and indigenous knowledge as important elements or factors influencing localised curriculum.

As shown in the data generated for this study, the local community has its own way of life and imparts knowledge, values, attitudes and skills to children according to the own culture, based on customs, beliefs and traditions. Community members know about the local conditions and what possibilities there are for change, although the focus of the localised curriculum in these observations was not so much on possibilities for change, but rather on transfer and development of existing cultural practices and knowledge. As indicated above, the localised curriculum is developed based on activities that are practised in the local community, related to cultural traditions and survival strategies, with an emphasis on livelihood strategies. Existing cultural knowledge and practices of communities are therefore a strength influencing localised curriculum development.

Localisation of the curriculum is about developing a kind of teaching and learning that will bring benefits to the local community, by developing skills and competences that contribute to the social and economic development of that community (TCM). In the teaching of localised curriculum community members contribute expertise to the teaching and learning process (TCM). Communities provide resources (learning environment) such as was the case in the cattle management project in Keemba Basic School. The school's cattle are kept in the community. This kind of school community partnership creates a successful partnership that includes shared knowledge, mutual dependency and organisational linkages that provides information integration through outreach activities (MoE, School community partnerships, 2007). The primary objective of the school community partnerships linkages is to narrow the gap between the school and its community (*Ibid.*).

The Teachers Curriculum Manual indicates that the localised curriculum is meant to provide a sense of belonging to both the school and the community (TCM). In this regard, the school plays a greater role in the life of the community and vice versa. The school should prepare its learners to live a rewarding and satisfying life in the community (TCM).

As shown in this study, using locally trained personnel or skilled persons in the community to pass on lifelong skills and responsibilities to learner complements what the child can acquire from their parents alone, as was shown by the role played by the local community teacher. The local community teacher, when interviewed, mentioned that they teach the children to make cooking sticks, yokes and ropes, showing the emphasis on practical community oriented life skills. Other things they teach the learners include skills like carving and animal husbandry, showing the emphasis on livelihood practices. What was not evident in the discourse was a strong focus on environmental management practices even though these were to some extent included in the lessons. This shows that knowledge of such practices is yet to be fully integrated into community life. Thus, the role of NGOs such as WWF, with the requisite knowledge and experience in these areas becomes more critical for enriching the localised curriculum so that the life skills and practices that learners learn can be oriented towards more sustainable livelihood practices and sustainable development of the local community activities.

***Summary**: It is evident from the data that the curriculum at Keemba has been localised by integrating cultural activities and traditions, improving local methods, conducting field visits, studying the local environment and producing teaching and learning aids locally (TCM). The data shows a focus on community strengths i.e. their existing knowledge of life skills and livelihood strategies. The National Environmental Policy's guiding principle states that 'traditional knowledge and time tested practices will be represented in the development of ownership and environmental management systems, whenever possible to underpin community commitment to conservation.' What is indicated in this analysis of localised curriculum in Keemba Basic School is that while community strengths are an important focus for localised curriculum, and their indigenous knowledge of the local practices is important, it is also important to extend this with new knowledge of environmental management practices and problem solving skills. The localised curriculum could for example be oriented to focus more on 'possibilities for change' and this would significantly shift the localised curriculum practices from a focus on transferring what communities know, towards mobilising community strengths and knowledge towards problem solving in the local community. The role of the CEZ project, and the work of NGOs like WWF that wish to support the development of*

localised curriculum could support teachers, parents, learners and community members to further build on their strengths, not only the strengths of their existing indigenous knowledge and expertise, but also on local community capacity for problem solving in the context of new environmental challenges and risks, such as how to manage the land to avoid overgrazing, and how to harvest wood for carving sustainably. WWF Zambia, through the CEZ project used the strength of the localised curriculum to advocate for environmental sustainability by bringing support to environmental related projects in Keemba. The CEZ supported activities had a strong environmental education component but also addressed relationships between the human well-being and environmental sustainability, thereby developing skills, values and knowledge needed to achieve environmental sustainability (Lotz – Sisitka et al, 2006).

CHAPTER FIVE:

SOCIAL LEARNING, LOCALISED CURRICULUM AND ENVIRONMENTAL EDUCATION

5.1 INTRODUCTION

In discussing the research findings reported on in Chapter 4 in more detail in this chapter, I draw on Wals (2007, p. 40), who argues that

> ... learning in the context of sustainability is not only open-minded and transformative, but also it is rooted in the life worlds of people and the encounters they have with each one another. It is these 'encounters' that provide possibilities or opportunities for meaningful learning as they can – however, not automatically – lead to both (constructive) dissonance and increased social cohesion.

As mentioned in Chapter 3, I discuss the findings using a number of analytical statements which broadly 'speak to' the research question which is "*How does localised curriculum enable social learning in response to environmental issues in Zambian schools*?"(See Chapter 1). I draw from field experiences and literature. As mentioned in Chapter 2, localisation of the curriculum is quite new in Zambia, it is known by different names and applied using different methods, but normally the underlying principles are the same. Its purpose is to improve the quality of education and quality of life, making learners self-reliant and aware of their space and value in society while at and after leaving school (KLCS). The localised curriculum also addresses several concepts of national and international concern that cannot be taught as separate subjects. These include gender issues, environmental education, health education, HIV/AIDS education.

In this chapter I discuss the following aspects of localised curriculum and social learning, as they pertain to environmental issues and natural resource management education.

- Localised curriculum, orientation and contextualisation of environment and natural resource management concerns (see Section 5.2)
- Localised curriculum, practice encounters and environmental issues (see Section 5.3)
- Localised curriculum, relevance and new knowledge (see Section 5.4)
- Localised curriculum, deframing, reframing, review and teacher-learner interactions (see Section 5.5)

- Localised curriculum and inter-epistemological dialogue (see Section 5.6)
- Roles and strengths in enabling social learning in a localised curriculum context (Section 5.7)

Through this discussion I summarise the main findings of the case study conducted at Keemba school, and I make recommendations using Bassey's (1999) advice that one cannot generalise from a case study, but one can make 'fuzzy generalisations' which may point to wider applicability. Fuzzy generalisations retain an element of uncertainty, and do not presume applicability to all other cases or contexts. I conclude the study with some reflections on the research, and I make recommendations for further research (see Section 5.8).

5.2. LOCALISED CURRICULUM, ORIENTATION AND CONTEXTUALISATION OF ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT CONCERNS

As noted in the Wals (2007) framework, and also by other authors such as O'Donoghue (2007) orientation or contextualisation is an important aspect of social learning. It is also a critical aspect of environmental education, as environmental issues and risks are often contextually determined, even though they also have a global dimension (Lotz-Sisitka *et al*., 2006). The following analytical statement can be made in the light of the localised curriculum, orientation and contextualisation, as observed in the Keemba school localised curriculum context.

Analytical statement 1: Teaching localised curriculum allowed for orientation to, and contextualisation and integration of environment and natural resource management issues

Evidence reported on in Chapter 4 shows that localised curriculum allowed the teachers to involve the community in engaging with environment and sustainability issues faced in the locality. As indicated in the interview data, environmental issues are addressed in the localised curriculum (TI-1, TI-2, TI-3 and LI-1,) with emphasis on contextually found issues such as poaching, deforestation, overgrazing and climate change related issues such as drought and floods. The local and contextual nature of these issues is indicated in this interview extract:

> Environmental problems ... the first one are deforestation, this is due to economic problems, and people tend to cut down trees anyhow. The other is poaching, I think in the olden days from the stories told by the local people, they say that a long time ago when you moved around in the nearby bushes one could easily come across some small animals like duikers, the other one is climate change, in the sense that we now have long dry seasons which are affecting the drying off of some dams which animals survive on. Even water for the animals people keep is an issue. Some past years we experienced a different weather pattern and it

> was because the rains were too much and we experienced floods, which submerged the fields for the local people, and their homes were destroyed and the floods disturbed some animals (TI-2).

Erratic rainfall patterns in the past few years in the Keemba area have caused a failure in crop yields. Crops provide the biggest source of livelihood in the area. Crop failure has an effect on the environment and natural resources because failure in the agricultural system compels people to resort to unsustainable utilisation of natural resources like wildlife and forestry as they lack alternative sources of livelihoods. As reported in Chapter 1, one of the most important causes of deforestation is clearing of land for agriculture and overgrazing of cattle (WWF-Zambia, 2007). As reported in Chapter 4, teachers sought to include issues such as overgrazing in lessons on animal husbandry, and compositing methods in food production; and lesson observations showed that teachers were placing emphasis on better methods of rearing cattle and growing food (LO2 & LO3). What was clear from the lessons observed, however, was that the environmental or natural resource management issues being taught are situated *within* the community and are thus a priority for teaching learners about livelihood options and locally relevant life skills. Environment and natural resource management issues were therefore not *the* main focus of the localised curriculum activities that were observed, but were *integrated into* the livelihood / life skills focussed lessons. This shows that the localised curriculum does allow for engagement with environmental / natural resource management concerns, and as shown in Chapter 4 (Section 4.3) policy documents encourage integration of these issues into the localised curriculum, and teachers and parents have knowledge of such issues, and are also willing to include them.

As shown in Chapter 4, orientation to the lessons was a very important process for localising the curriculum for learners. The focus was on eliciting learners' experiences of animal husbandry and experiences of food production. Orientation questions did not focus much on learners' prior knowledge and experience of environmental issues and risks in the local environment. As indicated in Section 4.4, the main strategy for orientation used in the lessons was questions.

Recommendation: *Based on the above observations, in order to strengthen orientation to environmental issues and natural resource management issues in the localised curriculum, teachers could consciously integrate more questions on these issues during orientation of localised curriculum lessons. Some examples might be:*

- *Have you observed any examples of overgrazing in the local area? OR*
- *Does your family use pesticides or herbicides when growing foods?*

Teachers and parents can also be asked to consider whether the local environmental issues could form a key focus of localised curriculum activities, in addition to the current approach of integrating them into livelihood/life skills activities.

It was observed that the school has existing environmental clubs that are involved in raising environmental awareness. These could be brought into the localised curriculum development process. Sustainable livelihood options such as permaculture could also be further developed in the localised curriculum contexts. Through the localised curriculum, teaching learners about alternative sources of income generation such as gardening projects by the school can provide practical, rather than cosmetic benefits to the households as shown in the Keemba case study. As reported on in Chapter 1, there are many other issues that can also be dealt with in the localised curriculum. As the WWF Zambia baseline report (2007) noted

> Due to charcoal production, unsustainable timber manufacturing is a serious environmental issue in Keemba. The most important cause for deforestation is clearing for agriculture and over-grazing of cattle. Encroachment of forest reserves by human settlements and cultivation has also greatly contributed to the depletion of forest resources. The ultimate reasons for people to engage in these unsustainable use of forest resources is the lack of alternative sources of livelihoods since agriculture and charcoal production seem to provide the only source of livelihoods to them (p. 20).

This shows that the current approach to dealing with environmental issues and natural resource management issues within a focus on sustainable livelihoods in the localised curriculum, as observed in the Keemba School, would seem to be an appropriate way of integrating environmental issues into the localised curriculum context. The links between environmental issues and the livelihood issues needs to be constantly borne in mind, however.

As noted in Chapter 4, the community is involved in the development and implementation process of the localised curriculum. The Ministry of Education guidelines (TCS) provide a full description of the seven steps to be taken to develop a localised curriculum. Figure 5.1 below gives an overview of the stages that need to be worked through in developing and implementing a localised curriculum. For the orientation phase of social learning, it would seem to be important to consider how environment and natural resource management issues can be integrated into the 'raising awareness', ' needs assessment' and planning phases so that local environmental issues and risks can be identified with stakeholders, discussed, and planned into the localised curriculum framework. Further orientation planning is needed for the implementation phase, particularly, as noted above,

regarding the kinds of questions teachers could ask learners during the orientation phase of the social learning process. This research project (see Chapter 4) has also shown that it is useful to monitor and understand more fully what actually happens in the learning processes associated with the localised curriculum.

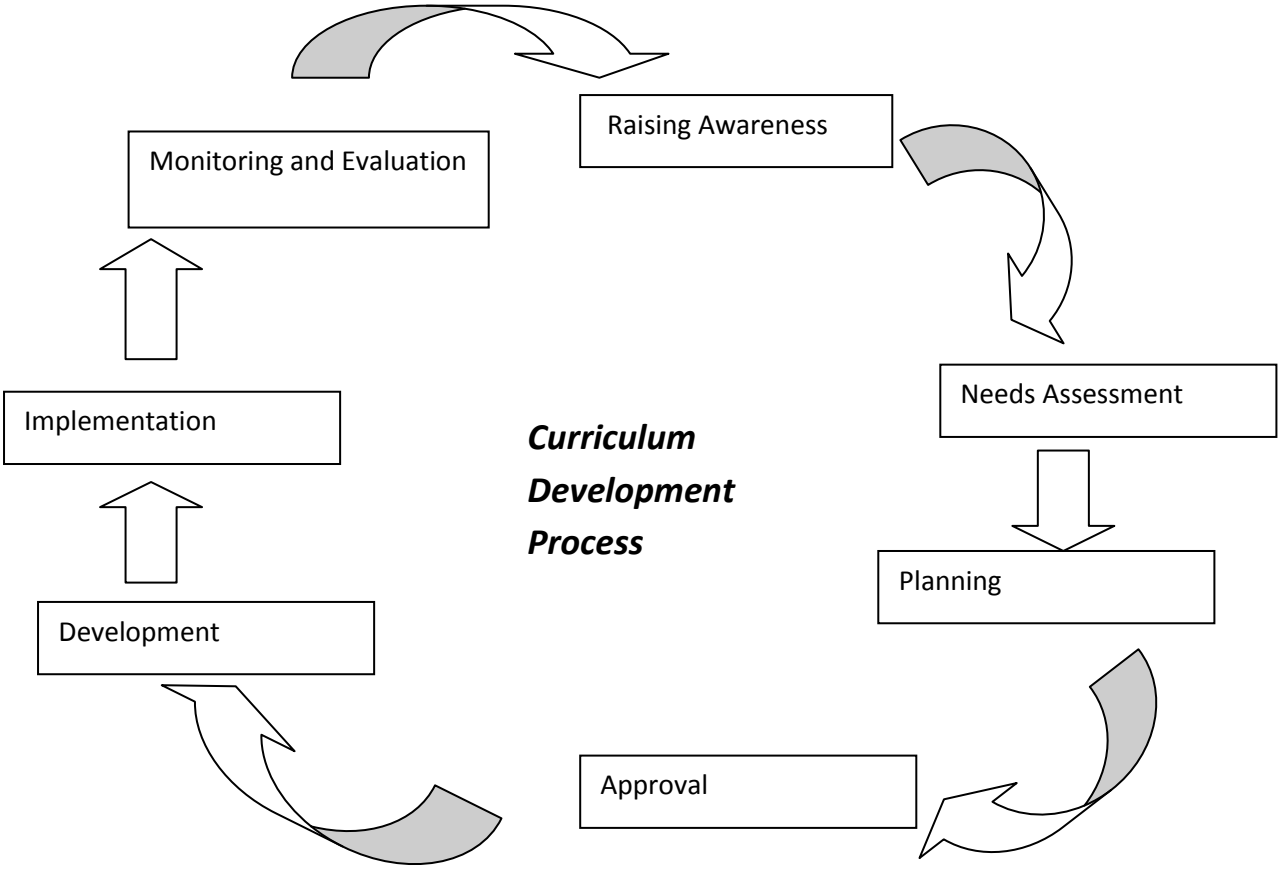


Fig. 5.1 Curriculum Development Process

Table 5.1 below, summarises and analyses the localised curriculum development process for possible ways of strengthening orientation to environmental issues and natural resource management issues (based on findings reported in Chapter 4).

Table 5.1 Strengthening orientation to environment and natural resource management issues in the localised curriculum development cycle

DESCRIPTION OF THE CURRICULUM DEVELOPMENT PROCESS (TCS, pp 11- 18)	STRENGTHENING ORIENTATION TO ENVIRONMENTAL ISSUES AND NATURAL RESOURCE MANAGEMENT ISSUES
An explanation of the process - the different steps are given bellow; **1. Raising Awareness** The first stage in developing the localised curriculum is to make sure that everyone involved (these are sometimes called stakeholders) understands the need for the localised curriculum and why it is important. The more they understand its importance, the easier it will be to gain their support and commitment (MoE, 2007). **2. Needs Assessment** This process allows you to find out what activities should be included in the localised curriculum. Activities will be related to the various common economic, social, and environmental, health and cultural activities that take place in your local community, as well as to the community needs (*Ibid.*). **3. Planning** The planning stage involves: ➢ Carefully selecting and putting together activities and assessment to form the community studies curriculum ➢ Formulating specific learning outcomes for each activity you choose ➢ Arranging activities in logical order of teachable expected outcomes **4. Approval** The planned curriculum will need to be approved by the head teachers, other teachers, parents/guardians, learners and community leaders. This can only be done once you are sure that the activities are suitable, feasible and relevant to the needs of the learners and the local community. **5. Development** At this stage, comments and views collected at the approval stage will need to be integrated into the finalised plans for the curriculum. Human, financial and material resources for teaching community studies will also need to be organised. **6. Implementation** Head teachers, teachers, learners, parents/guardians and local community leaders should all be involved in implementing the localised curriculum. **7. Monitoring and Assessment**	**1**. This is an important stage in the process of developing the Localised Curriculum. It allows the schools to raise awareness of the environmental and NRM issues in the area. 2. Provides an opportunity for the school/ community to discuss what environmental issues can be included into the school curriculum. 3. At this stage the school/ community would be able to select topics and plan the teaching and learning outcomes. 4. Choosing topics that are relevant to the community is important in order to be approved. 5. At this stage, NGOs such as WWF provide expertise in terms of materials development, integrating environmental issues into the curriculum. 6. The implementation process will involve turning planned actives in practical problem solving action. Allowing for the learning to take place both in class and outside.

Monitoring will be carried out by the curriculum development centre (CDC) and standards officials at both district and national levels. Monitoring and evaluation involves observing the learning process to see whether the planned activities are effective. The local community, school managers and teachers will also monitor this achievement of learning outcomes by the learners in their local areas.	7. Reflexive monitoring will allow for the community to be engaged in collaborative reflection and change oriented actions.

Table 5.1 above shows that if orientation in the social learning process is to be thoroughly developed for environment and natural resources management, broader orientation and integration of the issues are needed throughout the localised curriculum development cycle.

Recommendation: Integration of environmental concerns needs to take place throughout the localised curriculum development cycle.

5.3 LOCAL CURRICULUM, PRACTICE ENCOUNTERS AND ENVIRONMENTAL ISSUES

Analytical Statement 2: Localised curriculum practically addressed dimensions of economic, social, environmental and cultural lives of the community, providing a broader epistemological and pedagogical base for schooling.

A second aspect which emerged as being significant in the relationship between localised curriculum, social learning and environmental issues was the manner in which the localised curriculum enabled schools to practically address dimensions of the economic, social, environmental and cultural lives of the community.

In this regard, UNEP (2006, p. 27) states that:

> In environmental and sustainability education, there is a recognition that learning needs to be reflexive, situated and culturally and socially mediated in interaction with others. This is because even the most informed 'experts' do not always know the answers. Resolving environmental and sustainability issues requires social, technical, cultural, economic and political solutions (amongst others) - a co-engagement and deliberation (debate/negotiation) as to what is likely to be the best possible solution in a particular context (UNEP, 2006).

As reported in Chapter 4, there is evidence of social, economic, environmental and cultural issues covered in the localised curriculum. Teachers discussed topics on growing vegetables and animal

husbandry (LO1, LO2, and LO3), which reflect the localised curriculum syllabus developed by the school and community (KLCS). One of the specific learning outcomes in the syllabus under the theme farming states that "learners should identify crops grown in the local community"; the expected outcomes are improved health and nutrition in the homes and poverty alleviation contributions. As reported on in Chapter 4, the localised curriculum provided a link between the cultural lives of the community and its environment. This was achieved through practical activities, which are reflected in the specific outcomes that speak to the above statement:

- Learners should *practice* afforestation to conserve water for animals
- Identify the types of animals that can be kept in that environment
- *Practice* management skills on the animals
- Specify conditions needed for rearing identified animals

Being a community of cattle herders, the community sees the need to look after the environment if it is linked to the well-being of their animals. What is interesting, however, is that communities emphasise practices necessary for the livestock management and food growing. The environmental management practices are only relevant in relation to these practices, as indicated in the first outcome noted above. This points to the need to consider how environmental management practices relate to mainstream community livelihood practices in planning and designing localised curriculum. For example, in the last two outcomes listed above, environmental management practices could have been made more specific. Meyers (2006) points to the significance of this kind of integration when he mentions that:

> ... there appears to be increasing recognition that we not only need to teach ecological knowledge, but also to develop learner understanding of the socio-political systems that affect human beliefs and actions towards the environment, and develop their skills and dispositions for engaging these systems. (Meyers, 2006, p. 467).

Like other research has shown (for example, Ketlhoilwe, 2008; Namafe, 2008; Hogan, 2008), this research found that the implementation of the localised curriculum contributed to curriculum relevance both epistemologically and pedagogically. All the participants interviewed expressed appreciation and hope in the localised curriculum. The most common response was that the localised curriculum was relevant, the pupils and community relate to it as it is about, and focussed on the main livelihoods in their localities. The other point emphasised was the realisation that in the common event that children do not proceed to levels that can qualify them for formal employment,

localised curriculum graduates will "find their feet" in life. This seems to imply that the localised curriculum is providing the necessary practical skills and knowledge for participating in local livelihood systems. As indicated in Chapter 4, knowledge of environmental issues and risks both contributes to localised practices, but also expands localised knowledge and practices into a wider sphere, giving learners a broader life experience and knowledge than that which is only applicable to the local.

UNESCO (2005) notes that local knowledge and languages are repositories of diversity, and key resources in understanding the environment and in using it to the best advantage for current future generations. Local knowledge and languages are also important for fostering and promoting local cultural specificities, customs and values. Indigenous knowledge is also important for social and economic dimensions of sustainability. These aspects are increasingly being seen as an important aspect of other learning (for example, learning abstract scientific concepts and knowledge) (O'Donoghue & Neluvhalani, 2002; Hogan, 2008; UNESCO 2005).

As noted in Chapter 1, and in Chapter 4, it is customary for the people in Keemba to keep cattle. This could be expected to improve their economic status, but traditional practices of keeping these animals for prestige and not translating them into other forms of wealth defeats the purpose for poverty reduction. It is seen that the introduction of localised curriculum provides a component for marketing. Thus the community and learners are able to venture into selling milk to the dairy depots in the nearby town of Monze district, a situation that they were not aware of, providing new avenues for practice in the community.

This begins to show the potential of the localised curriculum to complement or extend traditional empiricist and abstracted or 'encapsulated' forms of learning in schools which tend to focus more on transfer of content or abstract concepts, and less on practice-centred knowledge and experiential development, a dimension of learning that has long been valued in environmental education (O'Donoghue, 2001; Wals; 2007; Lotz-Sisitka *et al.,* 2006; Namafe, 2008). A discussion on this in Daniels (2005, p. 166) makes the point more explicit:

> Davydov's theory [which proposes the need for integration of abstracted, propositional 'school' knowledge and everyday practical and experiential knowledge in pedagogy] suggests that the encapsulation of school learning is due to an empiricist, descriptive and classificatory bias in traditional teaching and curriculum design. Knowledge acquired in the school is usually of such high quality that it fails to become a living instrumentality for making sense of the bewildering multitude of natural and social phenomena encountered by

> students outside school. In other words, school knowledge becomes *inert* (Whitehead, 1929) because it is not taught genetically, because its "kernels" are never discovered by students, and consequently because the students do not get to use those "kernels" to deduce, explain, predict, and master practically concrete phenomena and problems in their environment. (Daniels, 2005, p.166).

The diagram below (Figure 5.2) provides a pictoral image of the context of learning, showing how the tasks provided to learners become contextualised. It shows too how the 'bringing in' of the outer circle (as in the localised curriculum development process in Keemba) has changed the inner circle (the task context) to become more practice centred and experiential, introducing a different kind of pedagogy and relevance value to that offered when the outer circle is not 'brought in' to the learning and curriculum environment. Such a process makes learning less 'encapsulated' to use the phrase of Davydov referred to above. As indicated above, such processes of 'de-encapsulation' are also important for environmental education, making the localised curriculum a good 'vehicle' for supporting learners' engagement with such issues.

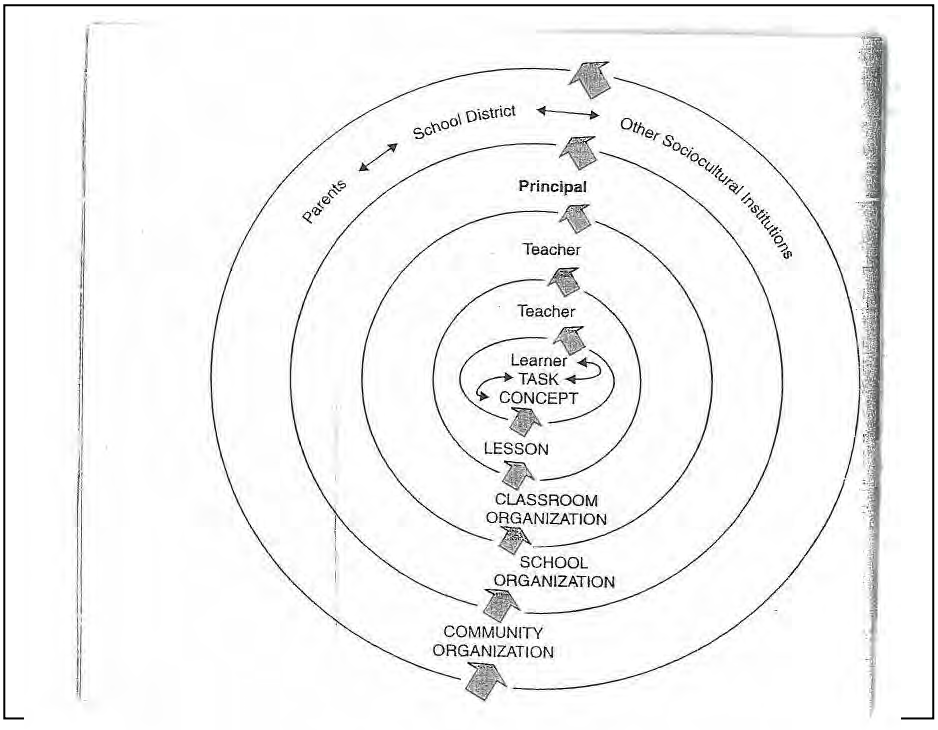


Fig. 5.2 Concentric circles representing the notion of context as "that which surrounds," with a child at its centre. The context here is the one surrounding children's performance in a classroom lesson (Daniels, 2005, pg. 212).

Recommendation: *The potential of localised curriculum for 'de-encapsulating' school knowledge needs to be further explored with specific reference to particular scientific and other abstract*

concepts in the curriculum. In this research it was only possible to identify that the practice orientation shows potential for de-encapsulating curriculum knowledge.

5.4 LOCALISED CURRICULM, RELEVANCE AND NEW KNOWLEDGE

Analytical Statement 3: Localising the curriculum contributed to curriculum relevancy: teaching localised curriculum helped learners, teachers and community to develop concern for the quality of life and contributed to an understanding of sustainable development, but this also requires introduction of new knowledge

By participating in the localized curriculum activities, learners were given opportunities to contribute to the sustainable development of their communities through interactions with local people, livelihood practices and environmental issues. This interaction enhanced a sense of ownership and shared responsibilities among the parents, school and the learners. This was in line with the expectations of the localised curriculum (MoE 2005). Through these interactions (as reported in Chapter 4), the parents and teachers were able to teach the learners relevant skills, positive attitudes and values, as reflected by this statement from a teacher interview:

> ... in the first place, we are in the rural areas, where one cannot find formal employment. Parents have an obligation to teach a child, or rather give skills to a child such as looking after animals, such as caring for animals, boys are involved in taking cattle to the field, girls are involved in at least matters of to take care of animals, maybe feeding them, through that way they are trying to impart skills that can make them survive even without formal employment (TI-1).

Addressing poverty reduction is mentioned in the SADC ESD report (Lotz-Sisitka *et al*., 2006) as being a complex phenomenon. The report states that 'another area that ESD practitioners need to navigate and mediate is the relationship between educational practices and poverty alleviation' (Lotz- Sisitka *et al*., 2006c, p. 24). This is a challenge that was identified in working with the communities in learning and teaching of localised curriculum. It was, however, partly resolved after 'platforms for dialogue and debate' *(Ibid.)* such as the localised curriculum committee were created, where these issues and their relevance for the localised curriculum development process were discussed. One of the issues that became increasingly evident to me through the observations of the framing and deframing processes in the social learning process (reported in Chapter 4) was the importance of introducing learners to new knowledge (e.g. where the teachers could have provided more new knowledge on environmental issues than was the case).

Wals (2007) presents a series of questions relating to quality of life and sustainable livelihoods. He asks, 'What knowledge, skills and competences are needed to cope with new natural, social, political and economic conditions, and to give shape to and meaning to their new lives?" From observations of the social learning process reported in Chapter 4, it would seem that children in the Keemba district require knowledge of livelihood practices and life skills (as identified by their parents), and knowledge of environmental issues and how to resolve these (as identified partly by their parents, but also by their teachers who were supported by WWF CEZ project). They also require knowledge and competence of local economic activities and how to expand these (for example, through selling milk to the dairy). Thus, localised curriculum is not just using the knowledge that already exists in the community, but rather working with this knowledge to situate learning, and then introducing new knowledge to expand learners learning and capacity for understanding and practicing sustainable development. As shown in Chapter 4, the role of teachers and NGO partners is important to facilitate the introduction of new knowledge that complements and extends the existing knowledge of parents and children.

The issue of what constitutes sustainable development in contexts of rural Zambia is significant here. For a long time the assumption was that everyone would gain access to formal jobs and the education system has been geared towards this. However, the realities of poverty have shown that a wider range of options are needed for learners, as reflected in the words of the Grade 5 teacher interviewed. He explained how localised curriculum can improve the quality of life "A long time ago, the syllabus majored much on white collar jobs, but the knowledge we impart in our children [through the localised curriculum] are life skills which when the pupils graduate Grade 7 or 9, they can earn a living" (TI -2). This indicates a passage of knowledge that will allow the learners to survive even without formal employment and at the same time be able to sustain their environment.

During the localised curriculum development process, the topics were arrived at after carefully facilitated and sometimes mediated encounters between different interests, values and world views (Wals & Heyman, 2004). In an ideal social learning process all participants involved jointly arrive at a temporary vision of sustainable living which they share and with which they identify *(Ibid.).* Wals (2007) states that contextual solutions are required that are, at least partly, co–created and co–owned by those who want to live sustainably.

Recommendation: *In planning localised curriculum activities focussing on environmental concerns, teachers and curriculum support organisations such as WWF should not only consciously support*

learners to engage with new knowledge towards sustainable development, but also consider what this means in any local context.

5.5 LOCALISED CURRICULUM, DEFRAMING, REFRAMING AND LEARNER PARTICIPATION

Analytical statement 4: Localised curriculum allowed for frame awareness, frame deconstruction and reframing to take place: this allowed teachers to use methods which promoted active pupil participation and interaction, encouraging learners to be reflexive thinkers rather than just using rote memory. To facilitate more critical approaches to deframing, teachers need to ask learners critical questions.

It is evident in the data presented in Chapter 4 that the use of learner centred methods prompted pupil participation allowing social learning processes of orientation, self awareness raising, deframing, co-creating, applying/experimenting and reviewing to take place at different levels of the learning processes. As noted by Wals (2007), through creating dissonance, new knowledge and alternative values and ways of looking at the world can become a stimulating force for learning creativity and change. As mentioned in Chapter 4, this process can be enhanced through more critical questions, and through introduction of new knowledge.

Social learning is described in much more detail in chapter 2 in relation to the process of learning in the context of the localised curriculum. Wals *et al*., (2009) describe the most important characteristics of social learning as follows:

- It is about learning from each other;
- It is assumed that we can learn more from each other if we do all think or act alike; in other words; we learn more in heterogeneous groups than we do in homogenous groups;
- It is about creating trust and social cohesion, precisely in order to become more accepting and to make use of the different ways in which people view the world;
- It is about creating ownership with respect to both the learning process as well as the solutions that are found, which increase the chance that things will actually take place; and
- It is about collaborative meaning– making and sense making.

Evidence from the data supports the above points raised with regards to the localised curriculum. Observations from the classrooms indicate that teachers engaged the learners in group activities that allowed for processes of clarification and exposure to conflicting alternative frames (Wals &

Heymann, 2004). The use of participatory methods encouraged children to be reflexive thinkers rather than just using rote memory, but as mentioned above, this could have been enhanced through more critical forms of questioning and through introduction of new knowledge about the issues and risks mentioned in the lessons. 'The essence and success of social learning lies in people's ability to transcend their individual frames so that they can reach a plane where they are able to find each other and create enough 'chemistry' to feel empowered to work jointly on the challenges they come to share' (Wals, 2007).

As reported in Chapter 4, the lessons that were taught in the schools under the auspices of the localised curriculum were developed to deal with and encourage learning and change in the local context (Lotz–Sisitka, 2002). Such processes of change, Lotz-Sisitka (2002, citing Janse Van Rensburg, 1995) argues need to incorporate reflexive perspectives or orientations to change, which emphasises process rather than product, and which encourage reflection and action in and on local contexts through using knowledge and experience from own and other contexts. The SADC ESD report (2006) also implores the need to strengthen critical and creative thinking through the use of a variety of strategies such as excursions, hands on activities, farming trials and development of inter-epistemological education processes that expose learners to practical and theoretical forms of knowledge, as was the case in the localised curriculum activities, although it was also observed that teachers could have introduced stronger critical analytical activities.

Observations made in the field during the teaching of the animal husbandry lesson indicate that learner's participation could be seen at various levels. Rogoff *et al*., (2003) call this intent participation. Learners here observe and listen with intent concentration and initiative, and their collaboration participation is expected when they are ready to help in shared endeavours *(ibid.).* Typologies of participation indicate that when diverse social actors engage in environmental management activities, the outcome can range from coercion to co- learning (Dyball, 2007). The lessons observed, and data from the interviews point to the fact that the localised curriculum is implemented to address the socio–ecological around Keemba. Wenger (1998, p. 4) explains that 'participation here refers not just to local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the practices of social communities and identities in relation to these communities.'

'Social learning – albeit as a spontaneously emerging property of people interacting together or as an intentionally introduced and facilitated process of change- not only allows for commonalities and

social cohesion to form, it also provides space for disagreement and 'dissensus'. From this perspective, democracy and participation – much like social learning – depend on this space for difference, dissonance, conflict, and antagonism' (Wals, 2007). As reported in Chapter 4, the localised curriculum development processes encouraged such processes of interaction amongst divergent views, as the localised curriculum was developed through a carefully facilitated process between teacher, community members, and learners to bring different perspectives on the local context and local knowledge and experience together into a learning process (TI -1).

5.6 LOCALISED CURRICULUM AND INTER-EPISTEMOLOGICAL DIALOGUE

Analytical statement 5: Participation of teachers, community and learners in the implementation of the localised curriculum: **The involvement of community members to teach topics of the localised curriculum was useful and articulated processes of inter–epistemological dialogue between traditional or everyday – and scientific or institutional knowledge**.

Chapter4 identified how implementation of the localised curriculum was conducted with the involvement of the community, teachers, and learners. The community's involvement in choosing what they want the learners to learn was noted, and the Localised Curriculum Committee (LCC) did not only comprise local school teachers, but also the parents who are local community teachers and representatives of the learners. This same LCC reviewed and approved the contents of the lessons to be delivered at school. This concurs with the themes as reported in the ESD consultations report that 'participatory approaches were seen to be important in building capacity for action taking, and also for ensuring ownership and longer term sustainability of initiatives' (Lotz – Sisitka *et al.,* 2006c).

As it has been reported in chapter 4, parents took up roles as mentors, giving lifelong learning skills to learners such as looking after animals, orienting them to locally useful practical knowledge such as when to take animals to the fields to graze and drink water, and how to manage and care for the animals. Teachers on the other hand, introduced learners to wider concepts such as overgrazing and permaculture, introducing a different or broader epistemology to the one that parents were engaged with. Teachers were supported by the WWF CEZ programme to understand these wider social-ecological concepts. O'Donoghue (2002) explains the process of inter-epistemological dialogue as a meaning–making struggle between common sense ways of seeing things in everyday life and knowledge differentiated in institutional settings outside everyday life. He explains that

through inter-epistemological dialogue practices in and of the everyday come into contact with or interface with ideas that are often generated in wider institutional scientific processes (such as determining levels of overgrazing). This interface often creates dissonances, and sometimes contested fragments of knowing that become useful for the process of knowledge creation (or learning) (*Ibid.*). As shown in Chapter 4, such inter-epistemological dialogue is important for deframing processes in social learning, and requires teachers to (more) consciously engage these different forms of knowledge in the education and learning process.

Such inter-epistemological dialogues / partnerships between teachers and parents are supported by authors such as Ball (1998) and Dyson and Robson (1999), who say that the involvement of children and their parents in the curriculum development process has positive impacts in that parents wish to be actively involved in supporting their children's learning. Other researchers are also pointing to the significance of these inter-epistemological dialogues. For example Smith (1994) states that place-based education is having positive effects on learning of more abstract scientific concepts presented to learners in schools.

Learners in a localised curriculum lesson learn about scientific reasons surrounding cattle management, but at the same time have observed their parents/guardians using traditional ways of castrating bulls and are therefore exposed to practical knowledge. The lesson I was able to observe during the field work indicated the teacher building the linkages between the institutional knowledge of castrating a bull to the taken for granted practices in the community. A similar process was observed with the teacher who raised issues of overgrazing, which challenged taken for granted cattle keeping practices. The introduction of permaculture gardening approaches represented a similar process.

Other examples of acquisition of life skills learning were also found in the localised curriculum at Keemba Basic School include carving (KLCS), as reported in interview data collected where the parents said that they teach the children to make cooking sticks, stools, yokes and ropes for the animals (LCT1). The mixing of epistemologies in localised curriculum development appears to be providing for the re-appropriation of rich heritage of indigenous knowledge which has 'intrinsic efficiency and efficacy' to complement 'the western framework' and to once again provide 'cultural reference points' in tackling the issue of sustainable development and human poverty (Odora as cited in Hogan, 2008:123).

As indicated in this analysis, inter-epistemological dialogue in this case study created intergenerational influence in the education process. The localised curriculum activities allowed students opportunities to interact with adults within the school environment and with different epistemologies (Ballatyne *et al*., *2006).* This is not just a one-way process; however, as in an interview with one of the teachers, she explained that when the learners got information, they were able to disseminate the information to the parents (T2).

Recommendation: *Based on the insights gained in this case study, the significance of inter-epistemological dialogue for the localised curriculum appears to be an interesting aspect of social learning and environmental education in schools. For this finding to be more fully explored, further research is needed. Of particular interest would be the 'two-way process' alluded to here.*

5.7 ROLES AND FACTORS ENABLING SOCIAL LEARNING IN A LOCALISED CURRICULUM

Analytic Statement 6: Enabling social learning in the localised curriculum involved various roles and factors that appeared to be significant to the social learning processes, but other roles such as critical questioners and problem solvers (significant to social learning and environmental education) were not well developed

As reported on in Chapter 4, at classroom level, the localised curriculum lessons observed (LO1, LO2, and LO3) all indicated some form of social learning aspects in one way or the other.

Chapter 4 also reported on the different factors that influenced the learning, and the roles of learners and parents in the process. These have been touched on in the analytical statements above, particularly the community's role in introducing practical knowledge and experience of local relevance into the school curriculum, thus opening opportunities for inter-epistemological dialogue and framing and deframing opportunities in the learning process.

Teachers, however, have to be open to this form of knowledge work in schools, and they need to have the necessary knowledge and pedagogical skills to enable such social learning to take place. As identified in Chapter 4, teachers need to have knowledge of learning theory and pedagogy to understand the learners' zone of proximal development, and abilities to ask critical questions and use new knowledge in teaching and learning situations that are introduced through participatory approaches to curriculum development.

The curriculum documents show insight into this, as they state that when planning a localised curriculum programme, teachers need to consider among others the following:

> Learners existing skills, knowledge, interests and understanding – in other words, their past experience. The use of authentic and learners' real – life situations, which are locally based. Sufficient range of activities to encourage learners to use creativity, innovation and analysis in their approach to problem solving (TCS, p. 26)

Wals (2007, p. 41), also recognises this in his theory of social learning when he discusses orientation as an aspect of social learning:

> Identifying key actors and, with them, key issues of concern or key challenges to address in a way that connects with their own prior experience and background, thereby increasing their motivation and sense of purpose (Wals, 2007, p 41).

What is interesting is that both the curriculum document and insights into social learning theory of Wals (2007) emphasise the problem solving / dissonance resolving elements of localised curriculum activities. In Chapter 4 I reported that neither the teachers, nor the parents nor the learners saw the localised curriculum as a 'problem solving' opportunity, but rather saw it as an opportunity to induct learners into more 'relevant' local practices of value to the community.

Recommendation: *In the case of Keemba, it would seem to be important to strengthen parents, teachers and learners understandings of the problem solving possibilities in the localised curriculum. NGOs such as WWF CEZ can support such pedagogical activities and approaches, particularly in relation to local environmental issues and risks that are closely linked to the life skills and practical knowledge interests of the parents and community members.*

5.8 CONCLUDING COMMENT

Observing and documenting social learning processes is not an easy task! It has left me with more questions than answers. However, this research has attempted to respond to the research questions outlined in Chapter 1. In attempting to respond to the questions, I was engaged in a process of learning. Differentiating the social learning processes during lesson observations was hard to do through observations alone, as in reality some of the processes interrelate and overlap. Using models to differentiate various social learning processes can create a sense of linearity that is much

more ‘messy’ in real live. As Wals (2007) puts it ‘they also suggest linearity one seldom finds in social learning processes since social learning is more ongoing, cyclical and emergent process.’ As shown in Chapter 4, it was necessary to carefully analyse various sources of data for evidence of aspects of the social learning process, and only through considering all of the data analysis processes together at the end, was I able to see the ‘fuller picture’ of how the localised curriculum can support social learning and what kinds of roles teachers, parents and learners play and can play in this process. I was also able to gain insight into the role of NGOS and others that support localised curriculum activities such as WWF ZEP, and I could see an important role for such organisations in supporting environmental education in schools.

Through the study I was also able to consider the issue of relevance in education, and its relationship to sustainable development in local contexts such as Keemba Basic School. The localised curriculum allows for such considerations. I have found the localised curriculum to be an interesting new innovation in Zambian schools, and as shown in the Keemba school context, it also appears to be popular amongst teachers, learners and community members. This case study, while limited to one aspect has shown that there is some merit in this curriculum, and much potential for this curriculum innovation to be further developed as a vehicle for environmental education, but that this will require careful support of teachers to use more critical questions, and also to understand the potential of social learning processes in local contexts where new knowledge as well as practical knowledge is important. This study, albeit a small scale case study, is contributing to a wider body of research that has an interest in localised curriculum processes in environmental education, and how these contribute to the quality and relevance of education, as discussed in Chapter 2.

REFERENCES

Arksey, H., & Knight, P. (1999). *Interviewing for social scientists*. London Sage publications.

Attfield, R. (2003). *Environmental Ethics: An overview for the twenty- first century.* Cambridge: Polity Press.

Ballantyne, R., Connell, S., & Fien J. (2006). *Students as catalyst of environmental change: a framework for researching intergenerational influence through environmental education.* Environmental Education Research, 12. (3-4), pp. 413 -427).

Barratt, R., Hacking, E. B. & Scott, W. (2007). Children's research into their local environment; Stevenson's gap, possibilities for the curriculum. *Environmental Education Research,* 13(2), 225 -244.

Bassey, M. (1999). *Case study research in educational settings.* Buckingham: Open University Press.

Bauman, Z. (2001). *The individualised Society*. Cambridge. Polity Press.

Clarke, R. (1979). The rise and fall of reform movement. In M. J. Kelly (Ed.), *The Origins and Development of Education in Zambia* (pp. 257 – 261) Lusaka: Image Publishers.

Cohen, L., Manion. & Morrison, K. (2001). *Research methods in education* (5th Ed.) London: Routledge/Falmer.

Danermark, B., Ekstrom, M., Jakobsen, L. & Karlsson, J.C. (2002). Explaining Society: Critical Realism in Social Sciences. Routledge: London.

Daniels, H. (2005). *An introduction to Vygosky* (2nd Ed.) New York: Routledge.

Daniels, H., Cole, M. & Wertsch, J. (2007). *The Cambridge Companion to Vygotsky.* Cambridge. Cambridge University Press.

Fien, J. (1993). *Education for the Environment: Critical Curriculum Theorising and Environmental Education*. Geelong, Australia: Deakin University Press.

Glasser, H. (2007). Minding the gap: the role of social learning in linking our stated desire for a more sustainable world to our everyday actions and policies. In A. Wals (Ed.), *Social Learning towards a sustainable world* (pp. 35-61). The Netherlands. Wageningen Academic Publishers

Hailey, L. (1838). *An African survey. A study of the problems arising in Africa South of the Sahara*. London: Oxford University Press.

Harm. B., Hoeven. v. d. N. & Wals, A. (2009). *The Acoustics of social learning; Designing learning processes contribute to a more sustainable world*. Wageningen academic publishers. The Netherlands.

Hart P, Jickling B. & Kool, R. (1999). Starting Points: Questions of Quality in Environmental Education. *Canadian Journal of Environmental Education*, 4, 104 – 124.

Hart, P. (2007). Social learning as action inquiry: exploring education for sustainable societies. In A. E. J. Wals (Ed.), *Social learning towards a sustainable world (*pp 313 – 329). Wageningen academic publishers. The Netherlands.

Hawes, H. & Stephens, D. (1990). Questions of quality. In M. J. Kelly (Ed.), *The Origins and Development of Education in Zambia* (pp. 146 – 149) Lusaka: Image Publishers.

Hogan, R. (2008). Contextualising Formal Education for Improved Relevance: A case from the Rufiji wetlands, Tanzania. *Southern African Journal of Environmental Education,* 25, 44 – 58.

Irwin, P., & Lotz –Sisitka, H. (2004). A history of environmental education in South Africa. In C. Loubser (Ed.*), Perspectives on environmental education in southern Africa* (pp. 34 – 56). Pretoria: Van schaik.

Irwin, P. (2001). *Document Analysis* (Lecture notes). Rhodes University.

IUCN. (2003*). Supporting the United Nations Decade of Education for Sustainable Development 2005 -2014*. Gland, Switzerland.

Jickling, B., & Wals, A. (May, 2003). *Environmental Education in transition: Looking beyond sustainability and sustainable development*. First World Environmental Education Conference, Espinho, Portugal.

Kelly, M. J. (1999). *The Origins and Development of Education in Zambia*. Lusaka. Image Publishers Limited.

Ketlhoilwe, M. J. & Maila W. M. (2008). *Exploiting issues of relevance and quality in the context of a university programme.* Southern African Journal of Environmental Education, 25, 132 -148.

Lotz–Sisitka, H.B (2008). Editorial. Environmental Education and Education Quality and Relevance. Opening the Debate. *Southern African Journal of Environmental Education.* Vol. 28, 5 – 12.

Lotz- Sisitka, H. (2002*). Curriculum Patterning in Environmental Education*: *A review of developments in formal education in South Africa,* EEASA Monograph (pp. 97 – 120).

Lotz–Sisitka, H., Olvitt, L., Gumede, M., Pesanayi, T. (2006). ESD Practice in Southern Africa: Supporting participation in the UN Decade of Education for Sustainable Development. Howick: SADC –REEP.

Lupele, J. (2002). *Ambivalent Globalising influences in local context: the case of an environmental education practitioner's experience in Zambia,* EEASA Monograph (pp. 147 163).

Meyers, B. R. (2006). Environmental learning: reflections on practice, research and theory. *Environmental Education Research Journal*, 12, 459-470.

Mythen, G. (2004). *Ulrich Beck: A critical introduction to the risk society*. London: Pluto Press.

Namafe, M.C, (2008). What selected Basic Schools in Western Zambia are Best At in Environmental and Sustainability Education. *Southern African Journal of Environmental Education,* 25, 59 – 80.

O' Donoghue, R. (2001*). Environment and active learning in OBE. NEEP guidelines for facilitating and assessing active learning*. Howick: Share –Net.

O'Donoghue, R. & Neluvhalani, E. (2002). *Indigenous Knowledge and School Curriculum: A Review of Development Methods and Methodological Perspectives*. Environmental Education, Ethics and Action in Southern Africa. EEASA Monograph. 121 – 134.

O' Donoghue, R., Lotz – Sisitka, H., Asafo-Adjei, R., Kota, L., & Hansi, N. (2007*). Exploring interactions arising in school –in – community context of socio-ecological risk.* In Wals, A.E.J. (2007). Social learning towards a sustainable world (435 – 447).

O' Leary, Z. (2004). *The essential guide to doing research*. London. SAGE.

Patton, M., (2002). *Qualitative Research and Evaluation Methods*. London: SAGE Publications.

Ramsarup, P. (2005). *Cases of recontextualising environmental discourse in the National Curriculum Statement of South Africa (R-9).* Unpublished Master's thesis, Rhodes University, Grahamstown.

Rogoff, B., Paradise, R., Arauz, R. A., Correa- Chavez, M., Angelillo, C. (2006*). First-hand learning through Intent Participation. Annual Reviews*. University of California.

Sinyama, I. (2009*). Contextual Profiling: Investigating educational responses to socio – ecological issues and risks.* Master's Degree Course Assignment, Rhodes University, Education Department, Grahamstown.

Smith, M.K. (1994). *Local Education. Community, conversation, praxis. Buckingham*. Open University Press.

Terre Blanche, M & Kelly, K. (1999). In Terre Blanche, M. & Durrheim, K. (Eds). *Research in Practice. Applied Methods for the Social Sciences.* Cape Town: University of Cape Town Press.

UNDESD Zambia Report. (2006). *Guidelines for participation in the UN decade of Education for Sustainable Development.* Lusaka, Zambia.

UNDP. (2010). *Human Development Report 2010. 20th Anniversary Edition. The Real Wealth of Nations: Pathways to human Development*. New York. Palgrave Macmillan.

UNESCO. (2007). *Education for All: Global Action Plan 2007.* Paris: UNESCO.

UNESCO. (1991). *Education for All: Purpose and Context*. In M. J. Kelly (Ed), *The Origins and Development of Education in Zambia* (pp 3 – 7) Lusaka: Image Publishers.

United Nations Environment Programme. (2006). *Education for sustainable development innovations – programmes for universities in Africa.* Share – Net. Howick.

UN. (2010). *Assessing Progress in Africa toward the Millennium Development Goals in Africa, 2010*. New York. UNDP/AU/ADB.

Wade, R. & Parker, J. (2008*). EFA – ESD Dialogue: Educating for a sustainable world*. UNESCO ESD Policy Dialogue No. 1. Paris: UNESCO.

Wals, A. (2007). Learning in a Changing World and Changing in a Learning World: Reflexively Fumbling towards sustainability. *Southern Africa Journal of Environmental Education*, 24, 35 – 45.

Wals., A. E. J & Heymann, F. (2004). *Learning on the edge; Exploring the Change Potential of conflict in social learning for sustainable living.* In Wenden, A.L. (Ed.), *Educating for a Culture of Social and Ecological Peace. (pp. 123 – 145),* New York: State University of New York Press

Wals, A. (2007). *Social learning towards a sustainable world*. Wageningen academic publishers. The Netherlands.

Wals, A. (2006). *The end of social learning...the beginning of transformative learning – emphasizing the E in ESD.* Wageningen academic publishers. The Netherlands.

Wals, A., Noor. v. d. H, & Blanken, H. (2009). *The acoustics of social learning: designing learning processes that contribute to a more sustainable world*. The Netherlands. Wageningen Academic Publishers.

Wenger, E. (1998). *Communities of Practice: Learning, meaning and identity*. Cambridge University Press. Cambridge.

WWF-Zambia. (2005). *Children and the Environment in Zambia Project Document*. Lusaka.

WWF- Zambia. (2007). *Baseline report on the socio- economic, environment and natural resources management in and around selected communities in Mumbwa and Kafue South Bank Game Management Areas.* Lusaka.

WWF- Zambia, (2005). *Environmental Education strategy for Zambia*, Unpublished document. Lusaka.

WWF Zambia, (2009). *Country Programme Strategy Report*. Unpublished document.

Zambia. Ministry of Education.(2007). *Localised Curriculum Course, Keemba Basic Scho*ol, *Monze*.

Zambia. Ministry of Education. (2005). *Guidelines to the development of the Localised Curriculum in Zambia.* Lusaka, Curriculum Development Centre.

Zambia. Ministry of Education. (2000). *Basic Education School Curriculum Framework*. Lusaka. Curriculum Development Centre.

Zambia. Ministry of Education. (2007). *Teaching Community Studies.* Lusaka: Macmillan Zambia.

Zambia. Ministry of Education (1996*). National Policy on Education: Educating Our Future.* Lusaka, Zambia Educational Publishing House.

Zambia. Ministry of Education. (2001). *Teacher's Curriculum Manual*. Lusaka, Curriculum Development Centre.

Zambia. Ministry of Education. (2000).*The Basic School Curriculum Framework*. Lusaka. Curriculum Development Centre.

Zambia. Ministry of Education. (2007). *National Implementation Framework 2008 – 2010: Implementing the fifth National Development Plan.* Lusaka.

Zambia. Ministry of Tourism, Environment and Natural Resources. (2000), *State of the Environment Report,* Lusaka.

Zambia. Ministry of Tourism, Environment and Natural Resources. (2007). *National Policy on Environment.* MTENR, Lusaka.

Appendix 1 Lesson Observation 1

Lesson Observation with Mr. Imusho

	Observations
Contextual factors	
Orientation to the topic – what is selected and why and how it is introduced	Teacher asked learners questions regarding the previous topic. The questions asked looked at keeping livestock and where it was kept.
Self awareness raising in the learning process	Cattle Management: using question and answer method, the teacher asked the learners why they keep animals. Answers from the learners included: For ploughing the fields For money (meaning animals are sold in times of need) For milk production (selling at the local market at 1000 /litre) Teacher sums up the discussion by emphasising the need to keep animals in this case cattle.
Deframing or deconstructing in the learning process	Teacher breaks class into groups randomly. He asks them to discuss what is required to be done to ensure that the cattle is healthy. After the group work, the teacher put a picture showing the carbon cycle with the cow in it, grazing, and maize, sunlight. In the discussion, the teacher explains the relationships, such as that the cow produces manure for the maize(plants), plants give us oxygen, and that too much carbon dioxide in the atmosphere is not good for the environment. The plants help in reducing the amount of carbon dioxide in the atmosphere
Co-creating of knowledge (by teachers, learners and parents)	Learners deliberate the topic and come up with answers such as: Castrating Dosing Vaccination Spraying Herding The teacher adds to each and every point brought out by the learners
Applying / experimenting with new knowledge (parents, teachers, learners)	The teacher asks the class why castration is a management practise in cattle rearing. Learners explain that castration is normally carried out to fatten bulls The other reason was that it is used to prevent undesired breeds to continue producing. The teachers and the learners then move to the nearby homestead to take part in a castration exercise. The teacher asks the learners what methods are used to castrate animals: Answers include *buddizo* and the rubber methods The community teacher is ready and the pupils participate and are very excited about the whole process.
Review of what has been learned	The teacher gives the learners questions to take as homework
Community strengths, including but not limited to indigenous knowledge	
Roles of parents, learners and teachers	
How environmental issues and NRM practices are dealt with	

Appendix 2 Lesson Observation 2

Lesson Observation with Mr. Mukanga: *24.03.10*

Lesson introduction: teacher starts the lesson with a game. Children are asked to clap when teacher gives the command. The topic today is on Animal Husbandry. The teacher uses a CTS learner's book as his resource material.

	Observations
Contextual factors	
Orientation to the topic – what is selected and why and how it is introduced	Teacher. Asks learners to give examples of livestock. Learners give a list of livestock to the teacher, such as goats, cows, chicken, and lion. The teacher accepts all the learners answers both right and wrong. He then after all the learners have given their answers, asks the class to identify which of the answers are not right.. and the lion is excluded from the list.
Self awareness raising in the learning process	Teacher asks the learners what they get from the livestock they keep, responses included, milk for selling (and drinking) from cows, manure from the kraal for gardening, meat from goats, make stools from the cow's skin
Deframing or deconstructing in the learning process	Teacher asks the learners who looks after cattle at home. He asks them how they look after their cattle. The learners explain that they take the animals to feed in the morning and drink water at mid day.
Co-creating of knowledge (by teachers, learners and parents)	Teacher divides class in groups asks the learners to write down where livestock gets water and food. The groups report back. The common responses include water; Well, and Dam (Hakunkula Dam), Food; good pasture, for grazing. Teacher here explains that it is important to avoid overgrazing as it causes soil degradation.
Applying / experimenting with new knowledge (parents, teachers, learners)	Teacher asks the learners to discuss in their groups what is required to keep cattle healthy; reports from the groups included answers such as dipping; two girls in the class explain dipping to the rest(to prevent cattle from getting ticks and fleas) spraying: also another method of preventing ticks. Injection: to prevent from diseases (internal)
Review of what has been learned	After revising what was learnt, the learners were asked to get their notebooks and copy down notes from the board.
Community strengths, including but not limited to indigenous knowledge	
Roles of parents, learners and teachers	
How environmental issues and NRM practices are dealt with	

Appendix 3 INTERVIEW SCHEDULE FOR SCHOOL IN–SERVICE PROVIDER/GRADE 5 TEACHER

1. Name of Respondent:
2. Sex:
3. Briefly describe how the Localised Curriculum was developed in Keemba Basic School
4. What is the direct participation of the local people in the Localised Curriculum if so, when and how?
5. What roles are the parents, teachers and learners playing in selecting the topics to include in the Localised Curriculum?
6. What role do the district officers (DESO) have in the Localised Curriculum?
7. What are the current environmental problems experienced in Keemba?
8. Are these problems being addressed through teaching Localised Curriculum, if so how?
9. 1s the introduction of LC improving the quality of education/ quality of life, if so how?
10. Is the Localised Curriculum developed in your school addressing sustainable environmental and Natural Resources Management? How?

Appendix 4 Example of interview transcription (with Grade 5 teacher)

INTERVIEW SCHEDULE FOR GRADE 5/LOCALISED CURRICULUM FOCAL POINT PERSON

11. Name of Respondent: Mr. Imusho Crispin

12. Sex: M

13. Briefly describe how the Localised Curriculum was developed in Keemba Basic School:

The LC was developed here, cos it is a local thing, the following stakeholders were involved in developing this thing, we had the PTA, pupils were involved in developing the curriculum,

14. **What is the direct participation of the local people in the Localised curriculum if so, when and how?** *The direct participation , the local people participate in the teaching of the skills, which we find a little bit tricky more especially the teachers, skills like carving, or maybe other skills like castrating animals cos most of the teachers don't have those skills cos of their background. So these parents, were parents who were identified to come and help in imparting the same skills to the pupils and when, during the lessons and sometimes even at home, these parents continue the teaching of the same Localised curriculum, sometimes we give the pupils the home packages and the parents helps in the teaching of the same, I think in a nutshell that the way parents participate*

15. What roles are the parents, teachers and learners playing in selecting the topics to include in the Localised Curriculum?

I think I will start with parents, parent are the ones who selected the topics, cos they are the people who know what the pupils should learn, we as teachers, our role was to gather them , and facilitate, so that we come up with the curriculum and then for pupils, before coming up with the whole curriculum, we invited the pupils and interviewed them if they were happy with the topics that were selected by the parents and the pupils had a say in the topics they felt they can be learning.

16. What role do the district officers (DESO) have in the Localised Curriculum?

The district Office, especially the office of the standards, their main role in the LCV is monitoring, how the activities are being done, they also source some materials like there is materials we received from CDC (teaching LC).

17. What are the current environmental problems experienced in Keemba?

Environmental problems, the first one is deforestation, this is due to economical problems, people tend to cut trees anyhow, to make charcoal and maybe fuel for firewood for selling and for home use. The other one is poaching, I think in the olden days, from the stories from the local people, they say that a long time ago, when you move around in the nearby bushes at that time one could come across small animals like duikers, but nowadays you can't see that. So poaching is also an environmental. Problem we are facing here. The other one is climate change... climate change in the sense that we have long dry seasons which are affecting the drying off of some dams and dambos, where some creatures and other little animals survive from. Even water for animals people keep and wild animals droughts, which is affecting the same. Some past years we experienced a different weather pattern and it was rains were too much and we experienced floods, which submerged the fields for the local people, and their homes were destroyed and the same floods disturbed some animals.

18. Are these problems being addressed through teaching Localised Curriculum, if so how?

Yes definitely they are being addressed, in our teaching of localised curriculum we teach the skills of the already mentioned, carving, farming and animal husbandry, and then when teaching these, we also bring in cross cutting issues like the same envy. Issues were we teach animal husbandry, e.g. avoiding overgrazing, when we talk of carving, we teach children that we cutting a log for carving, you don't cut the whole tree, you cut the branches, by so doing you are helping the tree by pruning so that it can flourish well. We also bring in issues like avoiding poaching, more especially the cutting of the trees we tell them man animal and trees are interdependent. Trees provide oxygen, and necessary gases for animals and animals produce CO2 for trees, So if one is cut off which means the other one will also be affected.

19. 1s the introduction of LC improving the quality of education/ quality of life, if so how?

Teaching of Localised Curriculum has improved the quality of education; let me start with Education first, a long time ago the syllabus majored much on white collar jobs, but not the knowledge we impart in our children are life skills which we a pupils graduate whether grade 7 or 9 can earn a living. Quality of life; the knowledge we impart in the children, when they go home, they disseminate the information to the

parents, so some parents now have started diverting from petty poaching to making gardens and maybe carving to sustain their living.

20. **Is the Localised Curriculum developed in your school addressing sustainable environmental and Natural Resources Management? How?**

    Yes it is addressing the NRM issues, apart from the syllabus which is taught in class, there are other co curriculum activities which has something directly to do with sustainable NRM for example the Chongololo and the Chipembele, here we call it the environmental care club of Keemba, where children learn at length how to take care of the environment and manage it. Teaching them that this is the world where they live in and they need to take care of it not only that, side by side with that we have the drama club which we use to address the issues of environment.

Thank you

Appendix 5 Consent Form

CONSENT FORM

I hereby agree to participate in an interview with Mr. Imakando Sinyama. I understand that he will be inquiring about the different aspects of learning and the roles of the teachers and parents in implementing the Localized Curriculum.

Name: Date:

Signed: Date:

Appendix 6 INTERVIEW SCHEDULE FOR GRADE FIVE TEACHER OF KEEMBA LOCLISED CURRICULUM COMMITTEE (LCC)

21. Name of Respondent: Mukanga Stanley sex: M
22. What are the current environmental problems experienced in Keemba they can observe in their homesteads? *The current environmental problems we are facing as school and children environments or rather their at homes is deforestation and overgrazing.*
23. Are these problems been addressed through learning activities Localised Curriculum, if so how? *Absolutely yes, these problems are being addressed, especially that the syllabus or the curriculum, as you can see from the schemes of work, there issues to do with the environment even as we teach for e.g. animal husbandry. There is no way you can take care of animals without looking at the environment. How the environment is affected, so it also trying to help pupils to realize on how to protect and take care of the environment as much as we are benefiting from the environment.*
24. Are there any local skills, knowledge or ideas of addressing environmental issues shared by the teachers? When, how? *Yes, teachers at some occasions have met to have a workshop so that a thorough understanding of this curriculum is shared. Apart from that to sensitize pupils on how important Localised curriculum is. The school has organised side drama clubs, and thru dramatizing and role playing the pupils have been able to grasp some information concerning the environment and the importance of nature.*
25. What are the parents/teachers teaching them in Localised Curriculum*? Pertaining LC. In the first place, we are in the rural areas, where one can't find formal employment, Parents have an obligation to teach a child, or rather give skills to a child such as looking after animals, such as caring for animals, boys are involved in taking cattle to the field, girls are involved in at least matters to take care of animals maybe feeding them, through that way they are trying to impart skills that can make them survive even without formal employment.*
26. 1s the introduction of LC of relevance to your life in Keemba area, if so how? *LC has come at the right time and its relevancy is fundamental because, this environment of our school and the surrounding villages normally depends on herding cattle and farming, therefore it is part of their lives, it is part of their day to day living therefore even as we teach them, we just add on to what they already know cause its part of their living.*
27. What roles do you play in the teaching / learning of Localised Curriculum? *Children have a major role, because they actually share the way they take care of the animals, the way they interact*

with environment at home because they are involved in farming, they are involved in deforestation, they interact much to share how much they participate in farming and herding cattle.

28. What role do parents play in selecting the topic to include in the Localised curriculum? *Parents have a major role in selecting the topics, in the first place before the teachers and the staff and the school came up with topics, the community was invited, because we are targeting the community, they picked topics which had a role in their lives, topics that will change their way of living, so it's actually the parents and the community who gave us the topic*

Appendix 7 Interview schedule (Grade 5 Learners)

INTERVIEW SCHEDULE FOR GRADE FIVE LEARNERS OF KEEMBA LOCALISED CURRICULUM COMMITTEE

29. Name of Respondent: sex:
30. What are the current environmental problems experienced in Keemba they can observe in their homesteads?
31. Are these problems being addressed through learning activities of Localised Curriculum, if so how?
32. Are there any local skills, knowledge or ideas of addressing environmental issues shared by the teachers? When, how?
33. What are the parents/teachers teaching them in Localised Curriculum?
34. 1s the introduction of LC of relevance to your life in Keemba area, if so how?
35. What roles do you play in the teaching / learning of Localised Curriculum?

APPENDIX 8: Analytical Memo showing the data from Documents, Observation, Interviews, including the colour codes used.

Summary of the main categories used during data collection at Keemba Basic School.

Category	Colour Code	Information from documents	Observations	Interviews
Contextual factors	Purple	• Community has its own way of life and imparts knowledge, values, attitudes and skills to children according to the own culture, based on customs, beliefs and traditions. (TCS) • Community members know about the local conditions and what possibilities there are for change. • Based on activities that are practised in the local community, related to cultural traditions and survival strategies. (TCS) • Organising projects on cross –curriculum themes around local problems (TCM) • Describe how community has changed over the years • LC should provide an opportunity for a child to be more aware what exists in his/her local environment(P.25) (TCM) • History of the environment will enable the learners understand the present environmental problems and find possible solutions (p,47)- (TCM)	• Identify the types of animals kept in their environment (LO2) • Ask pupils the animals they keep at their homes (LO2)	• Taught how to milk cattle • Due to poverty , people tend to cut down trees for fuel wood or for selling as charcoal • LC imparts life skills in the learners • It's actually the parents and the community who gave us the topics • This environment of our school and the surrounding village normally depend on herding cattle and farming (L1;T2;T1)
Orientation to the topic – what is selected and why and how it is introduced	Green	• School invites ideas and suggestions on relevant local elements to be included in the curriculum (p, 26) • Done through meetings, interviews and research (TCM)	• Teacher asks learners revision questions on management practice of cattle management (LO1) • Ask pupils the animals they keep at their homes (LO2) • Teacher and the pupils discuss the importance of *Impwa* in their bodies (LO3)	• They picked topics which had a role in their lives (T1)
Self awareness raising in the learning process	Blue	• (page25) LC should form a basis for self – identification, questioning, exploration, and building a firm foundation for one to deal with future challenges (TCM)	• Learners listen as listen as teacher explains importance of rearing animals (LO1)	
Deframing or deconstructing in the learning process	Red	• Through group work or individually, all the teachers contribute ideas on how the curriculum can acquire local elements. All ideas and views should be collected and organised in a report for further discussion (TCM)	• Teacher discusses with the pupils the types of animals kept in their environment (LO2)	It is part of their day to day living therefore as we teach them, we just add on to what they already know (T1)

			• Learners discuss what they have drawn (LO2)	
Co-creating of knowledge (by teachers, learners and parents)	Lime Green	• Using locally trained personnel to pass on lifelong skills and responsibilities to learners • Complements what the child can acquire from parents (TCM)	• Learners observe the demonstration by the community teacher and ask questions (LO1) • Learners discuss in groups and give reports (LO1)	
Applying / experimenting with new knowledge (parents, teachers, learners)	Yellow	• Allows for improvement of local methods • Integrating cultural activities and traditions (TCS)	• Community member demonstrates how to castrate cattle using traditional methods(LO1) • Learners draw and write names of animals n their environment (LO2) • Teacher takes the pupils in the garden to practise on what they have learnt about applying manure to the Impwa (LO3)	• Learners get knowledge from parents • Teach skills like carving, and animal husbandry (LCT1; T2)
Review of what has been learned	Black		• Teacher asks learners revision questions on management practice of cattle management (LO1) • Learners draw and write names of animals n their environment (LO2)	
Community strengths, including but not limited to indigenous knowledge	Gray	• Community members contribute expertise to the process • Provide resources (Learning environment) • Provides sense of belonging (TCS)	• Community members demonstrate how to castrate cattle (LO1)	• Teach the children to make cooking sticks, yokes and ropes (LCT1)
Roles of parents, learners and teachers	Orange	• Parents are curriculum planners, developers and implementers evaluators, part of implementing team • Involving learners in planning their own curriculum makes them contribute positively to community development(TCS) • Parents demonstrate their craft or livelihood (e.g. Animal husbandry) (TCS)	• Community members demonstrate how to castrate cattle (LO1) • Teacher explains the importance rearing animals (LO2)	• Community happy to teach the children local skills • Parents selected topics to be taught • Teacher facilitated the processes • Learners were consulted/interviewed (LCT1;T1; T2)

How environmental issues and NRM practices are dealt with	Brown	• NGO give expert advice in their areas of concern (TCS) • Learners interact with the local people and learn more about their environment (p47)(TCM)		• Taught about what is good and bad for the environment • People cut down trees without permission from the chief's agents • Deforestation, poaching, climate change, droughts, floods • Teach cross cutting issues like how to avoid overgrazing, avoiding poaching, and about how man needs trees to reduce greenhouse gases(L1; LCT1;T2)
Open Category		•		• District Education Office (standards) monitoring, quality assurance making sure that what is taught is in line with MoE policy guidelines. • MoE provides LSM for Teaching Localised Curriculum (T2)

Appendix 9 Authorisation Letter from Ministry of Education

REPUBLIC OF ZAMBIA

MINISTRY OF EDUCATION

OFFICE OF THE DISTRICT EDUCATION BOARD SECRETARY
P.O. BOX 660095
MONZE

17th March, 2010.

The Head teacher,
Monze Keemba School,
MONZE

Dear Madam,

RE: MR SINYAMA REQUESTING TO DO RESEARCH AT KEEMBA BASIC

I write to request your office to allow Mr Sinyama to do his research at your School. The District Education Office has no objection.

I will be grateful for any assistance rendered to him.

Yours Faithfully,

Kachabe Seddy
EDUCATION STANDARDS OFFICER – ODL
For/ DISTRICT EDUCATION BOARD SECRETARY
MONZE DISTRICT