

COMMUNITY RESPONSES TO ENVIRONMENTAL EDUCATION INITIATIVES

by

DELISILE ZINHLE SIMELANE

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SUPERVISOR: PROFESSOR C.S. LE ROUX

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DECLARATION

"I declare that *Community responses to environmental education initiatives* is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references."

.....*D. Le*.....

DZ Simelane

.....*11.07.2007*.....

Date

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ABSTRACT

This qualitative case study concerns the educational processes undertaken in an environmental programme of Timeleni Bomake group at Nsingweni, a rural community in Swaziland. At the time of the research most of the group members were elderly women with about four men among whom is the facilitator, a teacher at Nsingweni Primary School.

The inquiry occurred through fieldwork involving interviews, observation and photography. Data analysis followed an inductive process that builds concepts.

Formed in 1990, the group saw dramatic economic gain in the 1990's through a gardening project supported by Yonge Nawe environmental action group and the facilitator.

At the beginning of the new millennium the participants' intrinsic abilities to sustain the group were put to test. Challenges emerged that reduced the enthusiasm of some group members such that the study found the group at the edge of collapse. This report concludes with recommendations on ways to sustain community programmes.

Key terms:

Nsingweni community; Timeleni Bomake; Gardening project; Initiatives; Daughters-in-law; Yonge Nawe; Sustainability of projects; Facilitator; Outsiders; Swazi Nation Land; Non-formal education

ABBREVIATIONS AND ACRONYMS

CANGO	Co-ordinating Assembly of Non-Governmental Organisations
CARP	Centre for Advanced Research in Phenomenology
EE	Environmental Education
ESD	Education for Sustainable Development
FDI	Foreign Direct Investment
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IEEP	International Environmental Education Programme
MDG's	Millenium Development Goals
NEPAD	New Partnership for Africa's Development
NERCHA	National Emergency Response Committee for HIV/AIDS
NGO's	Non-Governmental Organisations
SADC	Southern African Development Community
SARPN	Southern African Regional Poverty Network
SD	Sustainable Development
SNL	Swazi Nation Land
SWOT	Strenghts, Opportunities, Weaknesses, Threats
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Programme
WSSP	World Summit on Sustainable Development

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2	Water tank – always full
3	Soil erosion
4	Garden – consolidated
5	Part of a steep-sided valley
6	Waterfall
7	Basket-making
8	Analysed newsletter – front page
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CHAPTER ONE

CONTEXTUALISING AND CONCEPTUALISING THE STUDY

1.1 THE CONTEXT OF THE STUDY

The focus of the study, is at Nsingweni a rural community situated in the north - western part of Swaziland. This area is predominantly characterised by hills, gorges and streams. Vegetation is scanty and composed of indigenous trees with clusters of wattle here and there. Homesteads are scattered with maize fields in between. There are stretches of uncultivated land, which serve as grazing fields for cattle and goats. The area lacks good roads, potable water and efficient medical services. Both primary and high schools available cannot accommodate all the children of the area because they are not enough. Electricity and telephone facilities are available only to a few residents of Nsingweni. Subsistence farming is the general practice and maize is the main product and a staple food for the people.

Most of the women in the area are housewives and rank low in literacy. Most of the men are migrant workers in South Africa while others are employed in local towns. The unemployed men stay home. Those who drink alcohol search for the traditional beer brewed in this area each morning. Consequently, the women find themselves bearing the responsibility of providing for their families' livelihood.

Such a situation puts a majority of the women in a demanding position because the well being of their households depends almost entirely on their labour. The efforts of an individual cannot satisfy the needs of a whole family, considering the family sizes at the Nsingweni community. The smallest family has about seven members while families can be as large as twenty members. Furthermore, HIV/AIDS worsen the situation by dividing the attention of the women between fending for the family and caring for terminally ill relatives. These factors collectively bring about poverty.

The poverty situation of Nsingweni is not unique. A similar trend runs through most rural communities in Swaziland, which accounts for about 70% of the population of the country (UNICEF 2005:1). This observation is made by the World Bank (2000:2) that "Poverty in Swaziland is characterized by a strong rural dimension...", while

UNDP (2002), notes “women are the worst affected in Swaziland...”. The indigenous customary law is another contributory factor to women’s vulnerability (World Bank 2000:5). According to this law, women do not control or own major assets such as land, and cannot acquire bank loans. Although the constitution of Swaziland adopted late in 2005 allows women to own communal land, there is an implementation gap because these beliefs are deeply entrenched in the minds of traditionalists. The poor therefore, only have their labour as a major asset hence poverty is worst in households with a higher ratio of dependents to productive members (Ibid). As a result, 66 % of the population of Swaziland lives below the poverty line (UNICEF 2005:1), which is R 71.00 per month (CANGO 2005:1).

Poverty is one of the main causes and consequences of environmental degradation (SADC 1997). The lives of the poor need to be improved to avoid the degradation of the environment and conserve the resource base needed for future development (Ibid). Education is one important process that empowers the disadvantaged and improves the quality of their living circumstances and their existence. Thus UNEP (2003:2), explains that:

Formal and non-formal education are indispensable to changing people’s attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making.

In the same view, the Times of Swaziland (February 16, 2005:14), suggests that sustainable development (SD) in the context of Swaziland should focus on poverty reduction, promote self-reliance at national and community levels and facilitate the participation and involvement of local communities in devising and implementing SD strategies. A similar suggestion by SADC (1997) states that in the SADC region SD should shift the focus to people’s initiatives rather than projects. Such initiatives can come through environmental education (EE), which is a process that supports people to take charge of their situation by engaging the government, their local authorities and the private sector in addressing their needs (CANGO 2005:1). EE leads to focused and well co-coordinated initiatives whereby citizens take responsibility for

their own lives and their relationships within the family, the community and society (Ibid).

The principles of authentic EE, established as outcomes of the Tbilisi conference, enable people to understand the impact of their actions on the environment so that they shift and engage in positive environmental actions. EE follows an interdisciplinary approach to address environmental problems at the community level by linking educational processes and real life (UNESCO 1978:70). In addition to formal education, UNEP (2003:6) encourages non-formal education at local, regional and national levels, with Non– Governmental Organisations (NGO's) and educational authorities giving all possible support in pursuing EE initiatives. This report further states that people develop awareness and an understanding of the relationship between human activities and the environment (Ibid:8). Involvement in EE promotes the development of action competence, co-operative and participatory skills.

The principles and criteria noted by the Times of Swaziland, SADC, CANGO, UNEP and UNESCO cited in the preceding sections, justify the initiative taken by some women at Nsingweni to implement activities that link education and real life with the aim of changing their lives for the better. It is the projects and activities of this women's group, Timeleni Bomake, around which the research for this dissertation revolves.

The group, Timeleni Bomake together with an environmental club at the local primary school were provided with both financial and specialist support by an NGO called Yonge Nawe Environmental Action group to carry out donga reclamation, construction of a bridge and permaculture as joint projects. Through the help of Yonge Nawe the group further established a pre-school and planted indigenous trees and fruit trees as a means to alleviate poverty.

The research problem/question arises from the programme implemented by the women, the circumstances under which the programme was initiated and how it progressed in time.

1.2 FORMULATION OF PROBLEM

The research question arises from the researcher's interest in the EE programme initiated by the women of Nsingweni and the extent to which it helps them understand and improve their life situation. To gain a better understanding of the issue, the researcher therefore formulated the research problem below:

How does an environmental education programme impact on the lives of members of Nsingweni community in relation to their life situation?

The research problem has been divided into the following sub-problems all of which are elements that require in-depth research in order to explain and answer the above research question.

Sub problems

- What circumstances gave rise to some women from Nsingweni community becoming involved in an EE programme?
- What environmental issues are experienced in the community that affect the life situations of community members?
- What theories and principles underpin the practice of effectual EE?
- What EE initiatives were participants exposed to during the programme?
- Which of the theories and principles of effectual EE were manifested in the programme?
- What evidence of change is there to the life situation of community members in Nsingweni after having participated in the EE programme?

The problem statement and the sub-problems form the foundation of the aim and objectives of the study, respectively.

1.3 AIM AND OBJECTIVES OF THE STUDY

This section explains the research intentions. The aim expresses the overall purpose of the study. It is a statement of what the researcher expects to attain in undertaking the research.

Aim

The study focuses on examining and discussing how involvement in EE learning experiences impacted on the lives and life situations of people at the Nsingweni community.

Since the aim is broad, it has been broken down to more specific objectives that help in measuring the progress of the steps taken to achieve the aim.

Objectives

The aim will be addressed by:

- interviewing programme members to establish how and why the programme was initiated
- conducting an environmental photo audit to record environmental issues that affect the life situations of the Nsingweni community
- reviewing the literature on theories and principles that underpin the practice of effectual EE amongst adults
- describing the EE activities dealt with during the programme and relating them to the environmental issues experienced in the community
- observing and interviewing participants to establish which principles and theories of effectual EE they experienced during the programme
- establishing through interviews and observation any manifestations of changes in thinking, attitudes and skills in relation to the environment since involvement in the programme and
- identifying through observation and discussion, evidence of change in life situations in the community since participation in the programme.

The intentions of the research inform the research methods and design.

1.4 RESEARCH APPROACH, METHODS AND DESIGN

Research is a systematic and controlled means by which we set out to discover truth (Cohen & Manion 1989:4). There are two main paradigmatic approaches to research, that is, the qualitative approach and quantitative approach. Specific views regarding the process and products of the research underpin these approaches and need to be taken into account when selecting a particular research approach.

The researcher's interest in understanding the intentions behind the actions of the participants, the reflections that accompany those actions, the context within which those actions take place and the meanings made by the actors within that structure, determined the choice of the research approach. This study follows a qualitative research approach. This approach was chosen because of the following characteristics: the researcher is interested in understanding how the people make sense of their world and the experiences they have in the world; data collection and analysis is done by the human instrument; the research involves fieldwork; it is inductive, that is, it builds concepts and/or theories rather than testing existing ones; and words rather than numbers are used to convey the outcomes of the research, making it descriptive (Merriam 2001:7-8). Certain theoretical perspectives, which will be referred to below, inform the qualitative research approach.

The focus on the meanings that people make of their reality according to Kvale (1983:183) is informed by the constructivist research paradigm. He explains that encompassed in this ideology is that people construct meaning as they interact with one another and their environment. He elaborates that culture, language, people we interact with and context, shape the way in which we construct knowledge.

The ownership of the knowledge constructed and the interests it serves depends on who controls the arena of action. This brings us to reflect on the social critical theory as it relates to research of this nature.

The core idea of the social critical research paradigm is that education should be emancipatory, enabling participants to free themselves from constraining social forces (Malone 1999:174). The extent to which the educational activities enable participants to see themselves as capable of producing and defining their own reality (Ibid) becomes the focus of this research. The participants devise consciousness-raising activities so that they understand the social, historical and cultural context, that shapes their life world and understandings, and they become agents of their own change process (Ibid).

The research adopts a case study method because it covers learning actions within a defined context to a defined group (Yin 1993:31), that is, the characteristics and

workings of a specified phenomenon or unit form the focus of the study. Merriam (2001:19) gives the following description of a case study, which concurs with the intentions and strategy used in this study:

A case study design is employed to gain an in-depth understanding of the situation and meaning for those involved. The interest is in process rather than outcomes, in context rather than specific variables, in discovery rather than confirmation. It is an intensive description and analysis of a single unit or bounded system such as an individual, programme, event, group, intervention or community. Insights gleaned from case studies can directly influence policy, practice, and future research.

During the process of collecting data in case study research, the researcher acts as a data collection instrument. Consequently the researcher needs to temporarily bracket all prior beliefs and conceptions about the issue of focus so that these do not interfere with the observations made (Merriam 2001:16). This is the essence of phenomenological research whereby the researcher aims at letting the phenomenon being studied speak for itself (Huysamen 1994:168). The skill enables the researcher to understand the phenomenon under study from the perspective of the actors.

1.5 DATA COLLECTION STRATEGIES, ANALYSIS AND INTERPRETATION

Data is what the researcher notices as useful information for her research purposes (Merriam 2001:70). To obtain such data, the researcher needs to ask questions that guide the discovery and selection of relevant information and to closely observe, reflect on and analyse the data and the sources of the data.

1.5.1 Data collection strategies

The study employed four data collection strategies that are described by Bassey (1991:81). These strategies included:

- reviewing relevant literature on the theories and principles underpinning EE
- photographing the environment to document the environmental issues experienced in the community
- interviewing programme participants and members of the community
- observing events on site noting aspects that will help answer research questions and

- analysing documents that contain information on the programme.

The aspect of asking question was done through interviews, using carefully worded and open-ended questions to guide the interview process. These questions helped the researcher gain an insight into past events, the feelings and opinions of the people and how they interpret their life world (Merriam 2001:72). Interviews were tape recorded with the permission of the respondents and transcribed. Transcripts from interviews were shared with participants for ethical reasons and to establish validity (Cohen & Manion 1989:129). Triangulation was used to crosscheck responses from interviews through comparing the different sets of interview findings with field notes and observation schedule notes (Huysamen 1994:161). Findings were discussed with participants to confirm data and ensure face validity (Lather 1986:270).

For external validity, the phenomenological analysis of interview data and field notes was followed (Ibid:329-333) and findings were related to the underpinning theories and principles of EE. Photographs were used to increase reliability of data (Schurink, Schurink & Poggenpoel in DeVos 1998:328).

1.5.2 Data analysis

The procedure that was followed in analysing the data aims at seeking patterns in the data (Merriam 2001:18). Similar data are grouped together and given a name according to a common idea that appears in the data (Ibid). Relationships between groupings of data are identified and built into themes, which, in turn, build grounded theory – theory that emerges from or is grounded in the data (Ibid). Below is a step-by-step outline of the data analysis procedure:

- coding data into categories and subcategories
- identifying and consolidating categories, building them into themes
- looking at patterns
- finding relationships, similarities and differences and
- drawing conclusions and making recommendations (McMillan & Schumacher 2001:462-463).

1.5.3 Data interpretation

This is in line with the observation of Posch (1993:29) that the building up of knowledge calls for an integration of experience-based judgement with available knowledge. In the process of using available knowledge to produce knowledge (Ibid), the outline below was followed:

- finding a story line of EE methods reflected in the data
- using theoretical frameworks to find meaning and
- making meaning out of categories.

The work plan described in this section makes substantial demands of the researcher. Thus the elements that have sustained the interest of the researcher are given below.

1.6 MOTIVATION FOR AND CONTRIBUTION OF RESEARCH

Many people believe that education is what happens only in the classrooms (Burt 1998:80) where almost everything is structured: the curriculum, the timetable and seating arrangements. As a result, in comparison, very little research has been done in non-formal education. The researcher undertook the study to reveal the value of unstructured non-formal education within a rural context – another under-researched area. The general trend of non-formal education is for the curriculum to be open and designed by the learners themselves, based on criteria that they deem fit and appropriate to their immediate and future lives. The learners are the ones that structure their education and learning experiences (Smith 2001:6).

The researcher was motivated to undertake the study because it has the potential to:

- expose the worth of non-formal education in communities
- encourage teachers to extend their practice to communities by revealing/showcasing the experiences of the teacher who acts as a facilitator
- show the extent to which EE contributes to ecologically SD
- uncover strengths and limitations related to the activities of the group that may be helpful to the group, the organizations that provided funding and to future groups interested in undertaking similar activities and
- serve to set guidelines for establishing similar initiatives in other communities.

The aspects that motivated the researcher, and the outcomes of the research, occurred within a bounded structure. Therefore it is necessary to mark the boundaries of the study.

1.7 DEMARCATION OF THE FIELD OF STUDY

In 1990, a group of women at Nsingweni community, Swaziland decided to form an association with the name “Timeleni Bomake”, translated “Women be self-reliant”. Their purpose was to focus on environmental issues experienced in their community and to develop initiatives that would support sustainable lifestyles. Initially there were 13 members but the group has grown and presently, it has 30 members. The women recruited a male teacher from the local primary school to act as facilitator. The teacher has an interest in EE as he also runs an EE club at the school. The focus of the research is on the educational processes and experiences, together with the responses of the group members to emerging issues.

The function of the group was mainly aimed at poverty alleviation through ensuring food security and generating income. Consequently, the group identified as its purpose to:

- ensure food security by
 - growing vegetables
 - planting fruit trees and
 - rearing indigenous poultry
- improve living circumstances by
 - marketing vegetables and fruits that were produced to generate income for the household and to pay school fees
 - promoting agricultural and social development while conserving nature and reclaiming dongas and
 - planting and protecting indigenous trees.

The activities of the group were overseen by a committee of six members: the chairperson, the vice chairperson, the secretary, the vice secretary, the treasurer and one additional member. Membership was achieved by paying a joining fee of R20.00.

A subscription fee of R5.00 per month is payable. A penalty fee of R1.00 for failure to attend a meeting is levied. Meetings for the whole membership are held once every month.

Details of the group activities, the ideas behind the activities and the outcomes of the activities are given in this report, which is divided into chapters.

1.8 CHAPTER DEMARCATION

The content of this dissertation is organized into chapters in order to logically and sequentially report on the research process and results.

Chapter 1: The context of the study (orientation)

In this chapter the researcher has given background information on the origin of the topic of study and its context.

Chapter 2: Literature review (theory and content)

Theories and perspectives that inform EE practice are highlighted in chapter 2. Relevant principles and criteria arrived at in international conferences such as Belgrade, Tbilisi and Rio that have guided and continue to guide EE practice are discussed. Principles of adult education and concepts of non-formal education are explained and their role in supporting EE practice within the context of this study are outlined.

Chapter 3: Research design and methods

This chapter focuses on the research design and schedule and the methods that were used in the actual process of collecting data. The chapter also examines the ethical issues and strategies that were used to ensure trustworthiness of the data collected and reported.

Chapter 4: Research results and data interpretation

Reports on the outcomes of the research form the focus of this chapter. An analysis of the activities that were included in the programme is made. Participants' experiences of the programme are also recorded in this chapter. Concepts are built up from the data and this includes evidence of changes, if any, in knowledge, attitudes,

values and behaviour in relation to the environment that were determined through the study. Both verbal and photographic evidence of changes in life situations in the community are given to substantiate the reported aspects.

Chapter 5: Summary, conclusions, limitations and recommendations

This chapter provides a summary of the research findings, the conclusions and recommendations of the study. This chapter also includes closing remarks the researcher makes on the whole report. The chapter also describes and deliberates on the experiences of the researcher while collecting data, the opportunities and constraints identified within the context of the research. In ending suggestions on how SD initiatives can be reinforced within the community are described and deliberated.

The credibility of information generated through the research is guaranteed by considering all possible threats and employing means of overcoming those threats.

1.9 RESEARCH LIMITATIONS

A key limitation of the research is anticipated to lie in the choice of the research method. The case study method limitations are seen to be centred on the issues of reliability, validity and generalizability, all linked to the problem of bias due to the subjectivity of the researcher (Merriam 2001:41-42). However, these categories of judging research originate from the positivist orientations to research. Anderson (1998:159), points out that these limitations are overcome by triangulation: a method that uses multiple data sources. The method, he explains, is used to interpret findings, test alternative ideas and identifying negative cases in order to provide stronger findings based on different data sources than just one.

The limitation of generalisability also applies to the understanding of concepts, which is located in time and space. Thus working definitions of key concepts are given for the purpose of the study.

1.10 CONCEPT CLARIFICATION

Core concepts or ideas that are inherent to the study have been identified for clarification. Each concept has more than one definition; therefore, the definition

given here is the one that is relevant to and has been used within the context of the study.

1.10.1 Sustainable Development (SD)

The World Commission on Environment and Development report, Our Common Future (1987 quoted in Fien 1993b:15), defines the concept *sustainable development* as

Development that meets the needs of the present generations without compromising the ability of future generations to meet their needs.

Noting that the long-term survival of communities and economies is dependent on nature, the SADC report (1997), emphasizes that:

Growth strategies that are not economically, socially and environmentally sustainable, no matter how spectacular the short term results maybe, are not and should not be called [sustainable] development.

It can be deduced that, inherent to the concept, is the idea of encouraging wealth creation that conserves the ecological foundation of life while promoting social justice values.

In the context of the study, features of SD entail the following:

- conservation of the diversity of indigenous flora and fauna because these are responsible for renewing the quality of the air, absorbing pollutants and maintaining soil fertility (Fien 1993b:20)
- integration of indigenous and formal knowledge that is compatible with SD and
- improvement of the socio-economic status of the participants and their families and ensuring social justice.

1.10.2 Poverty

The UNDP (2002:1) defines *poverty* as:

The denial of choices and opportunities for a tolerable life, a lack of access to options and entitlements which are social, cultural, political and environmental as well as economic.

The low literacy rate of the participants referred to in the study is one contributory factor to their poverty because they cannot broaden their outlooks and understandings of the world through reading. Furthermore, as women, their decision-making role at family and community level is limited because culture dictates that married women should be subservient to their husbands and in-laws. Coupled with this, according to customary law and much against progressive changes in the country's constitution, women cannot own communal land so the homesteads are owned by the men who are entitled to dismiss their wives as they please. Another set back is that they cannot acquire bank loans without the consent of their husbands.

1.10.3 Environmental education (EE)

A definition by Janse van Rensburg and Lotz (1998:51) is as follows:

Environmental education is a range of diverse educational processes through which we might enable ourselves and future generations to respond to environmental issues in ways which might foster change towards sustainable community life in a healthy environment.

At the heart of this definition lie the following important criteria:

- '...range of diverse educational processes...' shows that environmental issues can be approached from various perspectives to bring about the desired ends.
- '...sustainable community life...' emphasises action taking and participation within local contexts.
- '...enable ourselves and future generations...' highlights the development of appropriate attitudes, values, skills and behaviour that will be passed on to younger generations.

1.10.4 Non-formal education

Smith (2001:1) in the Encyclopaedia of Informal Education, defines non-formal education as:

Any organised educational activity outside the established formal system – whether operating separately or as an important feature of some broader activity – that is intended to serve identifiable learning clienteles and learning objectives.

The programme of focus can be classified as non-formal education since it is not institutionalised, but organised by a particular community group that wishes to derive more outputs from agriculture, which forms the basis of the community's and the country's economy.

1.11 CLOSING COMMENTS

In this chapter, the reader has been oriented to the theme of the study and related concepts, the researcher's motivation for the study, an overview of the theoretical foundations underpinning the study, research methods and design, analysis and interpretation of findings, and how the chapters will be divided.

The next chapter deals with the theoretical foundations and literature that describe and explain principles and processes related to the implementation of EE, non-formal education and adult education, in relation to the context of Nsingweni. In other words, it relates theory to practice.

CHAPTER 2

ENVIRONMENTAL EDUCATION: THE PATH TO SUSTAINABLE COMMUNITY DEVELOPMENT

2.1 INTRODUCTION

Whereas chapter one dealt with an overview of and rationale for the research project, and introduced and familiarized the reader with the key features of the study, this chapter presents the literature findings on principles for implementing EE in general and how they apply in particular to adult learners in a non-formal setting. This chapter also outlines how EE has evolved over the years to its current position where EE is seen as being able to play a pivotal role in embracing education for SD. The chapter further examines reports on the environment and SD issues from the global level, in United Nations (UN) conferences, through the Southern African Development Community (SADC) region, to the national and local level, which in this case is Swaziland.

The chapter also covers issues that go hand in hand with the implementation of EE as appropriate to the context of the study. This entails an inquiry into education paradigms, education classification, and in particular the field of adult education.

2.2 THE ESTABLISHMENT AND EVOLUTION OF THE CONCEPT 'ENVIRONMENTAL EDUCATION'

According to an observation by Robottom & Hart (1993:18), EE as a concept has been grounded on the outcomes of UN conferences. Consistently, the pronouncements/outcomes of UN conferences have revealed that EE is a suitable agent of SD. Because of its holistic nature, EE has been adapted through UN conferences over the years in such a way that it has evolved to match the thinking and meet the needs of the times.

Prominent UN conferences on the environment have included Stockholm (1972), Belgrade (1975), Tbilisi (1977), Rio de Janeiro (1992) and Johannesburg (2002). The basis and orientation towards EE were established during these conferences and the outcomes are well documented in UN reports. For example, in Stockholm, the

International Programme in Environmental Education (IEEP) was established and in 1975, EE was launched as an interdisciplinary programme that encompasses all levels of education (Environmental Learning and Sustainability 1998). The Belgrade Charter and the Tbilisi recommendations contain statements of objectives and aims that are useful as indicators for the implementation, assessment and evaluation of educational programmes whose focus is on the environment. On the basis of these outcomes, it is possible to establish a framework of the objectives and principles of EE.

2.2.1 Objectives and Principles of Environmental Education

The Belgrade Charter published objectives and principles of EE, which were extended and included in the Tbilisi declaration (Fien 1993a:53). There are five categories of EE objectives as documented by UNESCO (1978:71).

- *Awareness: to help social groups and individuals acquire an awareness of and sensitivity to the total environment and its allied problems.*
- *Knowledge: to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of the environment and its associated problems.*
- *Attitudes: to help social groups and individuals acquire a set of values and feelings of concern for the environment, and the motivation for actively participating in environmental improvement and protection.*
- *Skills: to help social groups and individuals acquire the skills for identifying and solving environmental problems.*
- *Participation: to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.*

To support the achievement of the EE objectives, 12 guiding principles for EE were developed and are documented as follows:

Environmental education should:

- *consider the environment in its totality – natural and built, technological and social (economic, political, technological, cultural-historical, moral, aesthetic)*
- *be a continuous lifelong process, beginning at pre-school level and continuing through all formal and non-formal stages*
- *be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective*
- *examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical areas*

- *focus on current and potential environmental situations, while taking into account the historical perspective*
- *promote the value and necessity of local, national and international co-operation in the prevention and solution of environmental problems*
- *explicitly consider environmental aspects in plans for development and growth*
- *enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences*
- *relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years*
- *help learners discover the symptoms and real causes of environmental problems*
- *emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills*
- *utilize diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experience (UNESCO 1978:71).*

The concepts derived from and shaped by UN Conference deliberations and documents form the conceptualisation and implementation criteria for EE and sustainability issues at regional, national and local level.

2.2.2 Adapting Environmental Education to education that will enhance sustainable development

The World Commission on Environment and Development (Brundtland) Report (1987) called “Our Common Future” publicised the concept of SD. The term was formulated after the interwoven nature of ecological, social and economic issues had been realised (UNESCO 2002). SD came to be understood as development that can be sustained without depleting natural resources or harming the ecosystem, thus defined as “Development that meets the needs of the present generations without compromising the ability of future generations to meet their needs” (Information Sphere 1998-2004). According to the report, the environment should be conserved and the resource base enhanced, which would point to the undisputed role that EE would play in achieving SD. The report further identified the three pillars of SD as environmental protection, economic growth, and social equity (Ibid), thus broadening the focus from the ecological component to include social and economic components. The details of SD were deliberated five years later, in 1992, in a UN Conference on Environment and Development held in Rio de Janeiro.

The Rio de Janeiro conference produced a document, called Agenda 21, which serves as a framework that can be adapted for the implementation of sustainable projects at local level (Mutangadura 2005:2). The writer's view is that Agenda 21 aims to aid communities and governments in planning programmes, policies and projects that promote SD through EE. In the 36th chapter it emphasizes the role of education in SD (UNEP 2003). At the conference, principles were formulated that would support the achievement of SD (UN General Assembly 1999).

2.2.2.1 Principles of sustainable development

The Rio Declaration on Environment and Development consists of 27 principles to guide the achievement of SD. A few of them, which are particularly relevant to this study, are given below:

Principle 1

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 3

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5

All states and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 20

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 22

Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 25

Peace, development and environmental protection are interdependent and indivisible.

The above-mentioned principles broaden the deliberations of EE so that there is a balance between social, economic and ecological considerations of environmental issues.

2.2.2.2 Reflecting on the Tbilisi and the Rio Declarations

The Tbilisi principles are open-ended providing for programmes to develop according to context, people's needs and the creativity of facilitators. Hence the principles of SD fit without any difficulty into those of EE. In the Tbilisi principles, these principles are not explicated but can be included through the creativity of facilitators and needs that arise in context. The Rio principles are an extension of the Tbilisi principles but with a strong reorientation to focus on people rather than on nature. To achieve SD, the Rio principles broaden the focus of EE to accommodate the following issues, which are not overt in the Tbilisi declaration:

- emphasis on the value of human beings in development, i.e. human capital, so EE should put humans at the centre of focus
- poverty eradication
- consideration of generations to come
- environmental management and development that draws from the interests, culture and context of local people
- importance of women in environmental management and
- the values of peace and respect as fundamental to SD.

Ten years after Rio, the issue of SD was again pursued and reinforced in Johannesburg, South Africa at the UN World Summit on Sustainable Development (WSSD) held in 2002.

2.2.3 Sustainable development and the United Nations Millennium Declaration

At the WSSD summit, countries were urged to implement Agenda 21 and other internationally agreed indicators (UNESCO 2002). Besides reiterating the Rio recommendations, the summit took a further step by emphasising social justice and

poverty alleviation as key aspects of SD (Ibid). These ideas correspond with and champion the UN General Assembly goals referred to as the Millennium Development Goals (MDG's) suggested in the UN Millennium Declaration (UN General Assembly 2001:1).

Among the MDG's are those that advocate for:

- peace, security and disarmament
- protecting the vulnerable
- SD through poverty eradication
- protecting our common environment (UN General Assembly 2001:2-4).

Worth noting is that all the goals mentioned above are a restatement of those in the Rio Declaration. The UN declaration (UN General Assembly 2001:3) reaffirms Rio by stressing poverty alleviation in any programme aimed at achieving SD. The MDG poverty alleviation goal is articulated as follows:

To halve, by the year 2015, the proportion of the world's population whose income is less than one dollar a day and the proportion of people who suffer from hunger and, by the same date, to halve the proportion of people who are unable to reach or to afford safe drinking water (UN General Assembly 2001:19).

The UN General Assembly (2001:19) notes that the rural areas account for 75 % of the world's hungry and poor and observes that food security is mostly achieved through agriculture. Agriculture is dependent on human labour, and consequently the productivity of individuals needs to be enhanced. This can be achieved through inter alia improved nutrition, that is, improved food security. Not only does improved nutrition sustain the physical strength of individuals enabling them to be more productive, it also reduces their susceptibility to infection which could render them unable to work (Ibid). In view of the imperative to address widespread and intensifying poverty, in a bid to work towards SD, the UN constituted the period from 2005 to 2014 as the Decade of Education for Sustainable Development (UNESCO 2002).

In the same light African leaders are united in their resolve that they have a role to play in the SD of African countries. To work towards this goal, the New Partnership

for Africa's Development, abbreviated NEPAD (NEPAD: 2001:1) was formed. A key issue that is acknowledged by NEPAD based on the GNP model is Africa's poverty situation and the backwardness of Africa as compared to the developed countries. This is illustrated by the fact that 340 million people in Africa live on less than one US dollar per day (Ibid).

In the long-term objectives for the programme of action for SD, NEPAD includes the eradication of poverty and the promotion of the role of women in all activities (NEPAD 2001:14). The poverty reduction objectives give special attention to poverty reduction among women and to the empowerment of the poor (Ibid:28).

Concerning the agriculture sector, NEPAD acknowledges that improved agricultural performance is a prerequisite of economic development in Africa (NEPAD 2001:33), and thus sets the following objectives of agriculture:

- *to improve the productivity of agriculture, with particular attention to small-scale and women farmers*
- *to ensure food security for all people and increase the access of the poor to adequate food and nutrition*
- *to promote measures against natural resource degradation and encourage production methods that are environmentally sustainable and*
- *to integrate the rural poor into the market economy and provide them with better access to export markets (NEPAD 2001:41).*

At the African continent level, NEPAD proposes the following actions for the attainment of the above-stated objectives:

- *increase security of water supply for agriculture by establishing small-scale irrigation facilities and improving local water management*
- *improve land tenure security under traditional and modern forms of tenure, and promote the necessary land reform*
- *foster regional, sub-regional, national and household food security through the development and management of increased production, transport, storage and marketing of food crops, livestock and fisheries and*
- *enhance agricultural credit and financing schemes, and improve access to credit by small-scale and women farmers (NEPAD 2001:41).*

The section above indicates that SD is an emerging response to current environmental problems such as poverty. Moreover, it presents strategies devised at international level to support the SD response at regional, national and local levels. Hence it is understandable why heads of states for the southern African countries particularly Swaziland have ratified NEPAD.

2.3 SUSTAINABLE DEVELOPMENT ENDEAVOURS IN THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY REGION (SADC)

According to a SADC Review (2005), SADC has the following member states: Angola, Botswana, the Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe. In the SADC Review (2005) the vision for SADC is given as follows:

...a common future, a future within a regional community that will ensure economic well-being, improvements of the standards of living and quality of life, freedom and social justice and peace and security for the peoples of Southern Africa. This shared vision is anchored in the common values and principles and the historical and cultural affinity that exists between the peoples of Southern Africa.

SADC Review (2005) states that SADC states have a common agenda whose components are as follows:

- *the promotion of sustainable and equitable growth and socio-economic development that will ensure poverty eradication*
- *the promotion of common political values, systems and other shared values, which are transmitted through institutions, which are democratic, legitimate and effective and*
- *the consolidation and maintenance of democracy, peace and security.*

A reflection on the SADC common agenda shows that it has a lot in common with the Rio principles and this illustrates the commitment of SADC member states to working towards SD.

In most Southern African countries attempts at instituting structures that open the path to SD are already in place (Mutangadura 2005:1). This is evidenced by the development and implementation of poverty reduction policies; the institution of

Environmental Impact Assessment procedures for all development projects (Ibid); and the ratification of international conventions such as the Convention on Biodiversity, Convention to Combat Desertification, Framework Convention on Climate Change, Convention on International Trade and Endangered Species and the SADC Protocol on Shared Watercourse Systems (Ibid:2).

Most of the SADC countries are on the alert to meet challenges in the path to sustainability. Common challenges that have been identified include insufficient financial, human and material resources, lack of supporting legislation, poor coordination and institutional capacity, and inadequate understanding of SD issues (Mutangadura 2005:1). There is hope though that these problems will be overcome since leaders in southern African countries are being enabled to support SD initiatives through funding from donors and legal provisions (Ibid:6). Some of the major funding bodies are the Global Environmental Fund, the World Bank, and the United Nations Development Programme (UNDP) (Ibid:7).

The preceding paragraph hints on another role played by the UN and other international organisations, namely, funding. Financial backup is one of the means by which the UN helps economically under-resourced countries engage in programmes that overcome some threats to SD. However, a reflection on the issue of donor support shows that much as it is true that funding is necessary at the beginning of projects to kickstart SD initiatives, people tend to over-depend on donor support which turns to work against SD.

In the following section an overview of the vicious cycle created by poverty as a threat to SD in Swaziland where the study was undertaken, is provided.

2.3.1 Poverty: the main threat to sustainable development in Swaziland

Poverty is undoubtedly the major threat to SD in Swaziland. However, poverty is not merely the lack of money, it is a social issue that is determined and intensified by various factors. According to Dlamini (2003:94), poverty is a social phenomenon that is determined by social convention and subjective judgement. In the context of Swaziland, he explains that a poor household is one that can not afford to send

children to school; obtains low crop yields due to lack of arable land and inputs; and has insufficient utility services such as water, sanitation, public transport, health services, information and fuel. Most of the poor estimated at 84% live in rural areas and are female (Kanduza 2003:39,43). Matthew (2003:128) found in his study that women are less educated than men and are generally unskilled.

According to a report edited by Kanduza & Du Pont-Mkhonza (2003) the poverty situation arises from interrelated physical, economic and social factors that include unemployment, decreased agricultural output, HIV/AIDS, the low status of women in customary law and the traditional land tenure system.

2.3.1.1 Unemployment

Kaino (2003:135) explains that unemployment is one of the causes of poverty and is a consequence of high population growth rate due to natural increase accompanied by a low job creation rate and retrenchments. His observation is that unemployment reduces the domestic market for goods and services, frustrates people and pushes them into crime, and reduces the living standards of individuals and families, who then fail to send their children to school and to be able to afford medical care for ailing family members. Everyone ends up being frustrated because even the employed are constrained by the high dependency ratio.

2.3.1.2 Dependency

One feature of sustainability is the need to strive for self-sufficiency. Contrary to this, the economy of Swaziland, as observed by Mushala (2003:105), is linked to – and consequently dependent on that of South Africa. Zwane (2003:167) asserts that Swaziland as a landlocked country uses South Africa for about 80% of her imports and 60% of her exports. He further notes that Swaziland imports most products from South Africa including food, clothing, bedding, petroleum products and automobiles, because she is still far from self-reliance in food and household sustenance or job creation. Due to a low job creation rate within the country, most Swazi males prefer to migrate and seek jobs in South Africa – especially on the mines (Zwane 2003:166).

The high rate of population growth due to natural increase also contributes to the high dependency ratio in Swaziland (Kaino 2003:140). The government bears a heavy

burden of promoting and supporting education, and health. As a result, the efficiency of public services has been greatly reduced – a situation that worsens poverty (Ibid). Compounding the situation outlined above is the reduced agricultural harvests which lead to food shortages (Sikhondze 2003:85) to the extent that some communities are obliged to survive and depend on food aid from the World Food Programme (Zwane 2003:172).

What makes the dependency situation cyclical is that entrepreneurial skills are lacking amongst most Swazi citizens.

2.3.1.3 Low job creation

The economy of Swaziland, as observed by Mushala (2003:105), is built up of a traditional subsistence sector which is mainly controlled by rural dwellers; and the capital-intensive sector, whose main component is foreign direct investment (FDI).

Beginning from the mid-1980's to the early 1990's, there was high FDI and the economy was growing at that time (Kaino 2003:140; Mushala 2003:105). However, from 1992, there has been an economic recession due to the lifting of sanctions in South Africa and the regional drought. The Gross Domestic Product per capita has continued to decline and poverty is getting worse (Mushala 2003:106).

In the traditional sector, most people employ themselves in agriculture. This opportunity however, is also waning because of late agriculture demands substantial inputs while returns are diminishing.

2.3.1.4 Decreased agricultural output

The traditional social sector is dominated by agriculture practised in rural areas on communal land referred to as Swazi Nation Land (SNL), not only as a source of food but also as a source of income (Zwane 2003:166). A chief heads each community and the settlements are usually scattered with each homestead having a farming plot of about 2.5 hectares where crops are grown (Mushala 2003:109). There are communal grazing areas where households graze their livestock, and the quantity per homestead is not regulated or controlled (Ibid). Poor management of both cropland and grazing land leads to decreased agricultural output.

Factors that contribute to decreased agricultural output are poor resource management which includes overgrazing, deforestation, uncontrolled veldt fires and over cultivation (Mushala 2003:108). Overgrazing is an outcome of overstocking encouraged by Swazi custom and culture, which bestows great importance to the acquisition and possession of cattle. Swaziland has the highest number of cattle per capita in Africa south of the Sahara (Mushala 2003:109). Government policies also encourage overstocking since livestock inputs and dipping chemicals are subsidised while the costs of land degradation and livestock maintenance are externalised to everyone, especially the taxpayer (Ibid).

The above-mentioned factors accelerate the rate of soil erosion which is a process of land degradation (Mushala 2003:109). Soil erosion has reduced soil productivity thus reducing arable land with the consequence of reduction in crop yields (Sikhondze 2003:85). To curb soil erosion, farmers need to be motivated to properly manage and conserve the land resource.

Chiefs have the authority over land rights and can withdraw them from the landholder – a situation that creates insecurity of land ownership (Kaino 2003:138) and decreases the motivation of farmers of SNL to put maximum efforts in making their farm plots more productive and ensuring that these plots are properly managed. Disputes over land among community members and between chiefdoms, and the fact that settlers on SNL do not hold any legal title to land apportioned to them, are other factors that hinder agricultural productivity (Zwane 2003:171). Settlers are reluctant to adopt better skills to improve yields and achieve sustainable agriculture (Ngotiama 2003:76). Subsequently, rural farmers are not motivated to make permanent improvements on the land, instead they opt for those inputs that bring short-term benefits. Furthermore, the land cannot be used as security to acquire loans in order to make long-term investment in agriculture (Ibid) – and consequently the farmer has no incentive to protect or properly manage the land.

Of significance is that agriculture in SNL is family labour intensive. Unfortunately, many productive family members are being lost in the wake of HIV/AIDS.

2.3.1.5 HIV/AIDS

An analysis by Kates and Wilson (2005) reveals that Swaziland has the highest HIV infection rate in the whole world, estimated at 40%. AIDS creates and intensifies poverty because it impacts greatly on household productivity, budget and on agricultural activities.

SARPN (2004:52) reveals that the area under cultivation in SNL has been reduced by 51% in households that experienced AIDS-related deaths as opposed to 15% in those that experienced non-AIDS-related deaths. As a result, overall food production has decreased as illustrated by a 54.2 % drop in maize production in AIDS-affected households. This has a significant impact – leading ultimately to reduced food security (Ibid). AIDS-related illnesses tend to divert family agricultural labour to the task of taking care of ailing individuals. AIDS patients generally require prolonged periods of caregiving compared to individuals suffering from non-AIDS-related illnesses (Ibid). This change in task focus leads to decreased family income, especially in rural areas where about 88% of rural households need to sell farm produce to raise income (Ibid).

According to Save the Children (2002:5), AIDS drastically reduces the family disposable income (income remaining after the household had met its food requirements), because of medical expenses for chronically ill members, funeral costs and loss of economically productive adults. Thus about 11% of the total population of Swaziland is made up of orphans and the increase in the number of orphans increases the dependency ratio because they have to be taken in and cared for by their closest relatives. Already 17% of households in Swaziland care for AIDS orphans (Ibid). Worth noting is that disproportionately affected by the HIV/AIDS scourge are the women.

Women are the ones who nurse the sick. Unfortunately, they also form more than 50% of the infected. Male AIDS victims appear to succumb to the disease at a faster rate than women and currently the ratio of the mortality of men to women is 3:2. A consequence of this fact is that many women are widowed and are left to fend for their children (Sparrow 2003) singlehandedly. Another factor that worsens the vulnerability of women is Swazi customs as discussed below.

2.3.1.6 Low status of women in customary law

Since the traditional Swazi values are strongly entrenched in rural areas (Kanduza 2003:53), rural women are usually marginalized because Swazi customs denigrate the decision-making role of women. Furthermore women have lower social status than men. Ngotiama (2003:76), observes that Swazi women in rural areas are the most dependable producers of fruits, vegetables and crops, but notices that the less committed community members, the men, are very keen to enjoy the produce or the income derived from the sale of the produce.

UNESCO Institute for Education (1999:4), views the problem of disproportionate workload on women as an indirect environmental impact on social life. In many rural families the women find themselves as the sole heads of the family either because they are widowed or the male co-heads are migrant workers usually in South Africa. Many women find themselves in a polygamous situation where the wife(s) that are neglected by the husband end up being sole heads of their households (Dlamini 2003:101). Such families have no able-bodied men to help with tasks that require a great deal of physical strength. Direct consequences of this lack of support include low agricultural yields and the deterioration of buildings (Ibid).

Ngotiama (2003:76) pinpoints limited access to credit facilities as another setback to women because the consent of their husbands is required in such cases (The country's constitution adopted late in 2005 calls for equality in the treatment of men and women). Furthermore, rural women often lack access to the services of government extension officers. This leads to poor and inadequate inputs and a lack of storage facilities. These rural women are the very people who are in desperate need of expert help because their knowledge base is narrow (Sikhondze 2003:92).

2.3.1.7 Government policy

Government adopted a "zero growth" policy few years back (Mushala 2003:113). According to this policy, there is a moratorium on the creation of new government posts, filling of vacant ones takes a long time and consequently there is a shortage of extension officers to help farmers on SNL. Consequently, the implementation of poverty eradication projects and programmes that require government support is slow.

On reflection, the literature seems to suggest that strategies must be put in place to allow SD imperatives to permeate all levels of society with ease.

2.3.2 Breaking the cycle of the poverty threat to sustainable development through education

To address the issue of SD, Matthew (2003:133) makes the following recommendations about social development. There should be:

- policies that empower the poor
- pro-poor projects and programmes and
- improvement to education, training and skills.

In the same view, Mutangira (2003:62) explains that human development is a means of SD and liberation. He understands the purpose of SD as structural transformation of society that ensures greater equity, justice and participation on a long-term basis. To him, such education creates critical awareness of the situation; capacity for decisions on possible solutions; and the ability to act for social change.

The crucial role of EE cannot be overlooked since it constitutes the social critical element aimed at solving environmental and social problems that emanate from poverty, hunger and exploitation (Fien 1993a:51). Bornman (1997:65) clearly explains the role of EE:

Through environmental education better lifestyles could be achieved, respect and responsibility for the environment and for each other could be learned; natural resources for sustainable living could be protected and preserved; and all the people can work together to increase the quality of life for our generation and the generations to come.

The practice of EE and its research is informed by different paradigms discussed in the next section.

2.4 DOMINANT PARADIGMS REGARDING ENVIRONMENTAL EDUCATION AND LEARNING PROCESSES THAT UNDERPIN THE STUDY

Janse van Rensburg (2001:2), points out that a paradigm is a philosophical assumption or theory which is used to explain how people understand the world – in other words how meaning is made – how learning and education takes place. In her opinion, people's understanding of the world influences the way they structure their scientific investigations of the world and the criteria they use to ensure trustworthiness of those investigations. Paradigms therefore are generally accepted models of how ideas relate to one another and form a conceptual framework within which inter alia scientific research is carried out. They are traditions that underpin the methods used in carrying out research including research on learning and education processes.

The interests, perspectives and expertise of the researcher determine the preference for and use of a particular paradigm. For instance, a researcher who chooses to focus on the environment part of EE would possibly prefer to use a behaviouristic approach which would enable the researcher to measure intervention successes in terms of externally observed behavioural change towards the environment (Sterling 2004:312). A different researcher could use the same paradigm to focus on the effects of teaching methods to improve environmental conditions.

2.4.1 Behaviourism

Methods informed by the behaviourist learning theory, as explained by Sterling (2004:312), aim at correcting the behaviour of people perceived to be lacking in knowledge by giving them the appropriate knowledge decided upon by experts. He elaborates that, according to this paradigm, it is assumed that people need to be made aware of the environment through education, so that they understand more about it and acquire skills that will enable them to behave appropriately towards it. Positive behaviour towards the environment is rewarded and reinforced to ensure that positive behaviour is maintained.

Fien (1993a:19), explaining the learning process according to behaviourism, asserts that knowledge transmission occurs in an organised and orderly fashion as designed

by the experts. His understanding is that all learners are treated alike regardless of subjective interest, context or values. Their role is to accept the information and treatments given by the experts.

With regards to the study, because the participants were initially relatively unaware of some environmental or sustainability issues, the researcher chose to impart knowledge, which she perceived to be relevant and crucial for the participants. The underlying thinking was that by giving participants knowledge about the environment and SD issues, their awareness of these issues would be increased, their attitudes would change so that they would respond positively to environmental and sustainability issues. Success in the transmission of knowledge would be measured in terms of observable, external, positive behaviour and responses.

Fien (1993a:19) observes that behaviourist learning is decontextualised. However, in this study, this issue was duly addressed. In most instances and with time, participants constructed and contributed to the meaning and learnings gained from their own perspectives and their own context rendering Fien's criticism debatable.

2.4.2 Constructivism

The core focus of this paradigm is on the meanings made by people of their own reality, with the application of approaches such as case studies and phenomenology (Janse van Rensburg 2001:8). This paradigm calls for facilitators to acknowledge that participants have their own local knowledge and experience, which they bring to bear in meaning making, and each learner is unique and different from the rest (Sterling 2004:331). In this light, constructivism deals pertinently with the education part of EE (Ibid: 312).

Inherent in this paradigm is that people structure their conceptions and create knowledge as they interact with one another and with the environment, and that knowledge – being a human construction – is fluid and ever changing (Robottom & Hart 1993:9;10). From this perspective, EE enables people to create environmental conceptions and conceptualisations through engagement with environmental issues to bring about understanding and meaning making, which in turn improve action taking in the resolution of issues (Ibid:22).

The researcher, guided by this viewpoint used the dialectical method to elicit from participants their understandings of the environment and its issues within their unique contexts. The researcher's role was to seek and elicit the perspective from which the participants viewed their world and the interests served by that perspective (Robottom & Hart 1993:10). The researcher also interrogated the meanings, understanding and feelings of the participants, then interpreted both implied and overt findings to present interactive, value-based and field-based patterns (Ibid). She then constructed accounts of how the participants construct knowledge in their own context. Such accounts reflect the role of culture, time, language and space in the construction of knowledge by the participants (Ibid).

From a constructivism perspective the minds and conceptualisations of participants are transformed by enhancing the development of new conceptions and understandings. Besides emphasis on place and local knowledge, unique context is necessary in research with the aim of emancipation and empowerment – aspects that are addressed in the social critical theory (Sterling 2004:314).

2.4.3 Social critical theory

According to the social critical theory not only the minds of the actors but also the structures in or through which knowledge is created are transformed. Accordingly, the interests are served in action taking (Robottom & Hart 1993:10). The research brings about change by creating knowledge that empowers the researched to be able to overcome oppressive ideologies (Janse van Rensburg 2001:24).

Sterling (2004:316), understands social critical theory as a paradigm that is committed to fighting structural injustice, distorted power relationships and enhancing participation. Knowledge is integrated with purposeful action, using methods that involve collaboration and critical self-reflection within community-based and contextual practice (Robottom & Hart 1993:11,24).

Fien (1993a:5), claims that "...a socially critical approach to EE is known as education *for* the environment", and he strongly believes that authentic EE is 'education for the environment'.

Education *for* the environment empowers people so that they become agents of social change and SD by promoting sustainable and socially just lifestyle choices (Fien 1993a:48). It encourages individuals and groups to take control of their own lives and to direct their own futures (Ibid:43). Learners develop the following capacities as they participate in education for the environment: enhanced self-esteem, clarification of one's personal environmental attitudes and values, development of cognitive skills of analysing alternative viewpoints on environmental issues, recognizing the values that underlie alternative viewpoints and evaluating the consequences of alternative solutions to environmental problems (Ibid:63).

This conscientisation process helps learners realize that environmental conditions are constructed by human decisions and by the same token, they are able to reconstruct their environment to overcome undesirable elements and improve the quality of life. Fien (1993a:60) understands that knowledge in education *for* the environment is constructed with the purpose of it being useful in day-to-day experiences, to be socially relevant and be applicable in the resolution of environmental issues. He elaborates that the development of environmental knowledge, attitudes/values and action competencies contribute towards the establishment of an environmental ethic. Malone (1999:172) suggests that researchers should contribute to environmental knowledge and environmental change.

The role of the researcher in studies as this one, is to support environmental action in communities (Malone 1999:173). EE researchers should engage with participants in the construction of environmental conceptions through interactive dialogues, and reflecting on the nature and purpose of their practice and experiences (Ibid:174). The writer explains that the researcher also reflects on the extent to which the research process contributes to a development of desirable environmental and participatory conceptions among participants and the researcher. Self-reflection on the part of the researcher is crucial to ensure that s/he is critical of every move made with regard to the research and to EE. Research and environmental action practice are integrated in the critical theory because EE researchers do not only observe and document the actions of others but also become involved in community consultations (Ibid:175). The researcher helps the participants by bringing in new information and relevant

educational theories, and is enabled to develop theories that are grounded in practice (Wals & Albles 1997:255).

Education that draws heavily on critical knowledge of the environment and education is referred to as 'education for sustainability' (Fien 1993b:47).

2.5 EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Fien (1993b:47;77;91) observes that EE for sustainability encourages significant shifts in the way people think and value, towards conceptions that integrate human and nature as one inseparable system. He realizes that EE provides knowledge of how nature and society works and how people can become involved in changing structures through individual and collective action. Furthermore ESD is all-inclusive to win more people at the grassroots level.

In the same way Bak (1995:59), asserts that education for sustainability makes people aware of how their actions and decisions impact on resources. So doing, they base their decisions on securing resources by considering both the ecological and economic. Such decision-making and cognitive processes involve thinking in terms of whole systems, awareness of the effects parts can have on each other and avoiding attending solely to selected narrow aspects of the whole (Fien 1993b:39). This approach builds relationships between individuals, groups and their natural environment and ultimately leads to sustainable living (Ibid:14): which means taking good care of and managing the environment leading to proper and better living conditions for humans.

Sustainable living patterns are dynamic because environments keep on changing. Fordham et al (1998) cited in Mutangira (2003:61), clearly explains this as follows:

The conditions for sustainability are dynamic and shifting. Over time the real needs of stakeholders, the mission, the providing agencies, the degree of permissiveness of controlling authorities, the amount of financial support available, the competence and attitudes of available facilitators, and the attractiveness of programmes are bound to change...openness and flexibility...the continuing need to equip people for a continuously changing technological environment and for a role in civil society alike, call for such.

The changing nature of the environment calls for people to attune to these changes through SD. Again, education for sustainability enables people to be effectively involved in SD by developing their awareness, competence, attitudes and values relating to economic, political, social, cultural, technological and ecological forces that shape the social use of nature (Fien 1993b:17-19). UNEP (2003:1) also notes, that “Education is critical for promoting SD and improving the capacity of the people to address environment and development issues” – which is why society needs to be educated in environment as well as development issues.

SD makes economic activity beneficial without damage to the environment (Fien 1993b:32). It respects the laws of ecology and integrates ecological, economic and social sustainability (Ibid:80). Over-consumption, waste and misuse of resources is reduced. At the same time poverty is eliminated in a bid to improve the quality of life for the disadvantaged and to reduce the overexploitation of the natural environment by the poor (Ibid:40). The poor, explains Cornwell (1996:81), only have access to natural resources, yet as they exploit these resources for their own survival, they cause irreversible damage that intensifies the poverty situation. The onus, therefore, lies on them to take control of their situation and maintain the resources to sustain their lives, though it is an onerous task considering their situation. Bak (1995:57) suggests that SD decisions relating to local environmental issues must involve the knowledge and participation of local communities, meaning SD is community-based.

Community-based activities as observed by Cornwell (1996:82), arise as a result of a collective desire by community people to mobilize themselves and available resources in the resolution of issues that have a direct effect on their lives. UNEP (2003:4) contends that due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities. The funding of grassroots organizations is also encouraged, the needs and contributions of specific community groups are recognized, while local responsibility is given preference (Ibid:9;10). This is evident in the following UNEP statement:

...and include, as appropriate, indigenous people in the management, planning and development of their local environment, and should promote dissemination of traditional and socially learned knowledge through means based on local customs,

especially in rural areas, integrating these efforts with the electronic media, whenever appropriate (UNEP 2003:12).

The dissemination of traditional and socially learned knowledge in local contexts usually occurs through non-formal and informal education.

2.6 CLASSIFICATION OF EDUCATION

Education is often defined in terms of formal, non-formal and informal education. Each category is distinguishable on the basis of its education processes. Sterling (2004:328) contends that content and process are not separate. This means that content and process affect and determine each other and therefore evolve together. Predetermined content is delivered through predetermined processes while open content is mediated through open processes.

Although the research focus is on the non-formal setting, informal and formal education will be briefly reviewed since communities are heterogeneous and their members are generally exposed to each of these types of education. Most individuals from the younger generations have been educated in the formal setting and the human potential of most adults – especially those who did not attend schools or who had only limited exposure to formal schooling – is developed through non-formal education. In the community, people educated in the different educational settings interact in ways that may either constrain or enhance community development.

UNEP (2003:6), supports non-formal education activities and community-based organizations, and further encourages informal EE at family level by both men and women (Ibid:12). Smith (2001:2) defines informal education as follows:

Informal education is the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment – from family and neighbours, from work and play, from the market place, the library and the mass media.

With informal education there is no curriculum planning, so the education is conversation-based. Non-formal education is organized and curriculum planning occurs through a negotiation process (Smith 2001:7).

On the other hand, non-formal education occurs outside recognized educational institutions and has the following characteristics:

- it is relevant to the needs of the disadvantaged groups
- it is concerned with specific categories of person
- it focuses on clearly defined purposes and
- it is flexible in organization and method (Smith 2001:1).

The non-formal structure is more suitable for EE in community contexts since it has been developed to match the urgent call for SD. In line with this point Burt (1998:28) argues that the school system is slow in responding to change and that alternative educational approaches need to be used to support SD.

Several factors contribute to the conservative nature of schools.

Chen (1997:234) for instance identifies and lists some of the constraints imposed by schools to EE as follows:

- the school teaching time is chopped into short periods and the school timetable is divided amongst various subjects
- subjects are taught in a manner that does not relate them to each other
- textbooks focus on narrow bodies of content and
- learner achievement is measured by the degree of command of content.

In his argument, Chen (1997:235) states that in nature knowledge does not exist in compartments but it is humans who have divided and compartmentalised knowledge into different subjects. He understands EE as a process that is characterized by interdisciplinary, integrative and problem-solving approaches, that use the environment (or community) as a resource and that deals with issues according to a systems approach. Keiny & Shachak (1987:450) support Chen's concerns by observing that there could be several hurdles in adopting this type of approach in the existing formal education system. The logical question then is what opportunities does non-formal education offer?

The following contrasts between non-formal and formal education given by Smith (2001:6) will help answer the question posed above.

- The purpose of non-formal education is short-term and specific while that of formal education is long-term and general.
- Non-formal education is non-credential based as opposed to formal education, which is credential-based. The former is therefore open to everyone even marginalized people.
- Non-formal education is part-time, of a short cycle and recurrent, while formal education is full-time, of a long cycle and preparatory.
- The content of non-formal education is individualized and output-centred whereas that of formal education is standardized and input-centred.
- Non-formal education is practical and the clientele determine entry requirements while formal education is academic and entry requirements determine clientele.
- Non-formal education is environment-based and community-related (has a high context-relevance) while formal education is institution-based and isolated from the environment (contextually loose).
- Non-formal education is flexible, learner-centred and resource saving while formal education is rigidly structured, teacher-centred and resource intensive.
- Non-formal education is self-governing and democratic while in formal education the control structures are hierarchical and external.
- In non-formal education curriculum formation is bottom-up or negotiated while in formal education top-down curriculum formation is followed.

The contrasts presented highlight that non-formal education has an advantage of reaching out to all peoples regardless of age, socio-economic or academic status and geographical location thus improving human potential which is vital for SD. Learners are able to design a curriculum and tailor it to suit their own defined – and thus also contextually relevant needs. Furthermore, the voices from the margins of society are amplified so that they are audible to policy. Adults with a low literacy rate get an opportunity to improve their lives through non-formal education, rather than resigning themselves to the oppressive forces of ignorance and false consciousness. This is justified by UNEP (2003:7), who proposes that:

Educational authorities, with appropriate assistance of non-governmental organizations, should promote all kinds of adult education programs for continuing education in environment and development basing activities around elementary/secondary schools and local problems.

Adult education initiatives involve voluntary participation (Smith 2001:8) therefore an analysis of the factors that attract and sustain the participation of adults is necessary.

2.7 ADULT EDUCATION

The Dar es Salaam Declaration (1976) quoted in Mutangira (2003:59), identifies the importance of adult education in the following quotation:

Mass poverty, mass ignorance and illiteracy are recognised by most governments and their citizens as amongst the major problems of present day ...and that education, and in particular that part of education involving adults, is an essential factor though not the only one in promoting development processes; adult education can moreover contribute decisively to the full participation of the masses of the people in their own development and to their active control of social, economic, political and cultural change.

Adult education has characteristics that link closely with those of education for SD (discussed in section 2.5).

2.7.1 Characteristics of adult education

The involvement of adults in educational activities is an effort of lifelong education for all, which is an element of sustainability in itself because it is never-ending education whose curriculum is context and needs-based. Adult education is designed to help learners participate effectively in the solution of life issues.

- It promotes social action encouraging people to create their history rather than succumbing to the mercy of events (Mutangira 2003:59).
- It engages participants in projects whereby they use what they have to secure what they do not have (Ibid:62).
- It occurs in context, determined by ideological, socio-economic, political and cultural situations (Ibid).

- It calls for collective social responsibility that develops the human potential of the socially disadvantaged and marginalized (Kanduza 2003:36).
- It opens the minds of society – men and women alike – thus creating mutual understanding that they must equally participate in the production and consumption of wealth (Ngotiana 2003:77).
- It liberates participants from the bonds of prejudice, stereotypes, ignorance, culture, fear and silence (Ibid).
- It involves all participants in planning learning activities, decision-making, implementation, evaluation and reflection on the outcomes of activities (Ibid).

Facilitators of adult education need to base their practice on a framework that will make programmes attractive and promote effective involvement of all participants. The principles of adult education provide useful guidelines for adult educators.

2.7.2 Principles of adult education

The principles of adult education are formulated on the basis of the characteristics of adults and their roles in society (Smith 1999:6). Since adult education is not compulsory, but designed based on the concept of lifelong learning, an environment that will sustain the interest of adults in learning must be established. Such an environment should provide opportunities for:

- freedom, self-direction and responsibility
- active involvement of all participants
- a curriculum dominated by projects that are of interest to the learners
- learning processes that will help meet learners' personal goals
- integration of learning processes with the life experiences and knowledge of participants
- learning activities that are relevant and applicable to the learners' immediate life world
- facilitation that respects all learners, putting value on the experience and knowledge those participants have accumulated over the years and

- sensitivity to learners' needs especially those that directly impact on learning – including physical needs such as food and comfort, and esteem needs (Smith 1999:6).

Adult education characteristics and principles are consonant with the characteristics of non-formal education and those of education for the environment, all of which are important for SD. Thus UNESCO Institute for Education (1999:5), having noticed that adult EE is relevant at addressing learners' concerns, calls for the strengthening of collaboration between environmentalists and adult educators.

2.8 LINKING EDUCATION STRATEGIES THAT AIM TO OVERCOME THREATS TO SUSTAINABLE DEVELOPMENT

Noting that society is heterogeneous, (there is diversity in for instance, professions, qualifications, literacy rates, culture, viewpoints and geographical locations), there is a need for people to acknowledge diversity and use it to advantage in order to live harmoniously. This involves bringing together useful concepts from various formulations so that they have a synergistic effect. Likewise this chapter has seen the convergence of relevant ideas in adult EE.

Strategies discussed in the chapter are the paradigms within which the research was conducted, EE, ESD, adult education and non-formal education. A reflection on these strategies identifies several common features that ensure cohesion and linkages among the strategies.

- They draw on global influences and international ideas that may enhance action on the local level in order to work for autonomy and self-organisation in relation to the greater whole.
- They integrate
 - human, financial and ecological capital
 - social, economic and ecological stability and
 - paradigms that influence behaviour with those that build individual capacity and transform the social structures that influence behaviour.
- They use a diversity of approaches to create synergies.

- They emphasize ethics, respect, recognition, awareness, knowledge, attitudes, values, skills and participation.
- They are holistic and interdisciplinary approaches underpinned by critical thinking, systems thinking and reflection on the self and social structures.
- They seek lifelong education for all involving everyone in curriculum deliberation such that the curriculum is consonant with social transformation goals.
- They are participant centred
 - research elicits ideas from the perspective of the researched
 - curriculum directly relates to the lives of the learners and
 - learning activities draw heavily on the experiences of learners and on locally derived knowledge.
- They are transformatory: research brings about change and learning activities bring about empowerment, conscientisation, social action and emancipation.
- They are flexible and employ open and ever emerging approaches to change and complexity.

The linking aspects mentioned above allow for fluidity, integration, initiative and creativity in research, education approaches and dealing with everyday life issues, in order to face challenges head-on rather than being submissive and ever dependent.

2.9 CLOSING COMMENTS

The chapter highlighted the theories and paradigms that guided the researcher in understanding EE and ESD and in developing additional concepts from the research itself. The role of UN conferences in the development and adapting of EE to education for sustainability was investigated, while the role of education for sustainability as a vehicle for SD was explained. The three structures where education for sustainability can be implemented were mentioned. These are informal, non-formal and formal education – the appropriateness of non-formal education for the context within which the study took place, was discussed.

This was followed by an identification of the barriers to the implementation of education for sustainability in formal education. Contrasts between formal and non-

formal education were given to reveal that the latter is more accommodative to EE than the former. An exploration of the principles of adult education was carried out to indicate that non-formal education is accommodative of and conducive to adult education as well.

Efforts at SADC level to negotiate sustainable lifestyle development were outlined. Threats to SD in Swaziland were elaborated on to highlight the need for widespread non-formal education – aimed at equipping the people with the necessary capacities to sustain themselves in their communities.

The next chapter reports on the actual research process undertaken and ethical issues that relate to it.

CHAPTER THREE

RESEARCH DESIGN AND PROCESS

3.1 INTRODUCTION

In chapter two the theoretical and contextual framework to the study were presented. Chapter three highlights the research approach, methodology and research processes that were followed in the actual study. The study was approached as a qualitative case study. Data that is grounded in context was obtained through qualitative research data collection strategies and this was used to build hypotheses and theory (grounded theory). Throughout the study, measures were taken to ensure trustworthiness of the data and ethical research principles were applied. These issues are discussed in this chapter.

3.2 RESEARCH APPROACH AND METHOD

3.2.1 Research approach

The study was approached qualitatively as a case study. Qualitative studies are characteristically descriptive, interpretive, value bound and grounded in context while giving rise to inductively built theory (McMillan & Schumacher 2001:399-400).

The research was descriptive on the grounds that it gives complete accounts of what the researcher observed regarding physical and behavioural events (Maxwell 1992:289). Hence interacting variables relating to the people in their location and the research field are identified and included (Merriam 2001:30).

Furthermore, the study was interpretive because the researcher sought to probe and understand the experiences of the research participants from their unique perspective and nature of involvement in the process being researched (Maxwell 1992:289). That is, the meanings they made of their experiences as participants were integral to the study. The researcher's interest was on participants' insight, discovery and interpretation as determined by the context within which the research took place (Merriam 2001:29).

Apart from the characteristics mentioned above, a further characteristic of the study that qualified it as qualitative research was that the research was value-bound (Borg & Gall 1989:385). The values of the researcher and those of the researched orientated the process of inquiry, that is, the choice of the research methods employed and the values and opinions of the researched were integral to the research process, the data collected and the outcomes (Ibid).

In striving to derive meaning from the data, the researcher assumed an inductive stance (Merriam 2001:17). She began reflecting on the data from the very first day of fieldwork (Woods 1992:387) assimilating the elements she uncovered to understand how they interact in the life world of the participants. This understanding was expressed in the form of a theory. The building blocks of a theory are concepts or categories derived from the data and the researcher put together these blocks in relation to each other to build a model that applies to the context being studied (Maxwell 1992:291). The model is called grounded theory and is substantive because it emerges from the situation being studied (Woods 1992:383). Consequently it is useful to site-specific or localised concerns, such as in case studies (Merriam 2001:17).

3.2.2 Research method

The case study research method was followed which provides the opportunity for the investigation and analysis of a group in a particular community. It is a study that occurs within a bounded system (Merriam 2001:20). Case study research enables the researcher to discover the uniqueness of people's experiences within a particular context (Huysamen 1994:168).

In this case, a single unit was examined intensively and holistically under natural circumstances through fieldwork. The unit was a rural community group comprising mainly elderly women who decided to work together to improve their life world through engaging in a project to grow foodstuffs in a sustainable way. The direct linkages between context and the experiences cannot be separated in a case study (Yin 1993:31). Context in case study research offers numerous and rich variables. Experimental design which deliberately controls context by isolating one or two variables and controls the remainder is unsuitable to this type of research (Yin

2003:13). The case study undertaken considered the descriptions and interpretations of the participants regarding their practice in context and relayed those multiple views in the outcomes of the research (Stake 1995:64).

The researcher tried to avoid exerting any influence, control or manipulation on the behaviour of the group being studied to ensure that the responses elicited were reflective of context, honest and reliable (Borg & Gall 1989:382). Consideration of all contextual factors enabled the researcher to gather rich data to create valid and reliable interpretations of the findings (Bassey 1999:65). A phenomenological approach that holds that description of an object or occurrence as it exists precedes explanation by means of causes, purposes or grounds (CARP 1997–2002), guided the researcher in deriving accurate data and interpretations.

3.2.3 Measures to ensure research accuracy

As the researcher sought to explain what the phenomena meant to the participants (McMillan & Schumacher 2001:474), a phenomenological stance featured prominently in the study. Huysamen (1994:167) explains that phenomenologists are concerned with understanding social and psychological phenomena from the perspectives of the persons involved.

During the inquiry process, the researcher developed the perspectives of the community group, adopting an insider's viewpoint (Borg & Gall 1989:289). However, the researcher had to acknowledge her own preconstructions/presumptions and was obliged to suspend them so that the collected data was not distorted or misconstrued.

Janse van Rensburg (2001:8) is of the view that researchers have an ethical responsibility to society to ensure that they produce trustworthy research outcomes. Her concern is that research outcomes affect the world – they inform policy, programmes and projects. Measures have to be put in place as a safeguard against deception. She identifies four criteria used to judge research integrity in qualitative research namely, credibility (truth value), transferability (applicability), dependability, (consistency) and confirmability (neutrality).

Credibility is an attempt to provide authentic accounts of events. To meet this criterion, the researcher was sensitive to any personal biases that might distort data collection, analysis and interpretation (Gall & Borg 1989:406). The following measures were put in place to reduce subjective distortions: reflexivity, prolonged and varied field experience, member checking and triangulation (Janse van Rensburg 2001:9).

Triangulation involves the use of at least three approaches to collect the data. In this research data was collected through observation, interviews, document analysis and photos. Woods (1992:394) supports the use of multiple techniques because each has its own strengths and weaknesses. This enables the researcher to note counter patterns and convergence in the data (Lather 1986:270). Data that contradicts a pattern of meaning is useful because it makes the main pattern more distinctive and yields insights to modify it (McMillan & Schumacher 2001:478).

Applicability refers to the extent to which research outcomes can be extended to other similar cases (Maxwell 1992:293). In this study theories and hypotheses were developed that can be applied to situations similar to the one studied. Purposeful sampling was done to enable the researcher to gain an in-depth understanding of sustainability issues at the community level from which generalizations were then made (Yin 1993:40).

Dependability is the extent to which the same research accounts can be obtained given the same context and population at different times (Bassey 1999:75). To increase the dependability of the data, the researcher asked interviewees to study the interview transcripts and reports to ensure that whatever was included in the report was supported by the interviewees (Ibid:69). The facilitator helped in translating the information for those who could not read.

To ensure confirmability, the researcher applied triangulation and reflexivity (Janse van Rensburg 2001:9).

Exploration of the participants' experiences was done with much scrutiny and rigour to give accounts that accurately represent the perspectives of the participants on which the accounts were based (Maxwell 1992:289) and to facilitate the process, various data collection methods were applied in the inquiry process.

3.3 RESEARCH DESIGN AND PROCESS: METHODOLOGICAL STRATEGY

The research was conducted with Timeleni Bomake group of Nsingweni community in the Hhohho district of Swaziland (Some publications put Nsingweni under Manzini district because it is situated at the margin of Hhohho and Manzini districts – such as the article analysed shown in chapter 5).

The process of collecting data relied mainly on the human qualities of interaction, observation and interpretation to gather and document holistic information (Borg & Gall 1989:379). The human being, as the instrument for data collection and analysis (Merriam 2001:7), was the most appropriate for this particular study.

Humans are flexible and are able to adapt and respond to a research situation that is always emerging and value laden with multiple variables to put to consideration (Borg & Gall 1989:385). In this study, data was collected by means of observation, interviews, photographs and document analysis. The intention was to gain an in-depth understanding of the whole setting where the group activities were taking place (Ibid). Fieldwork dominated the inquiry and the data collection process as it enabled the researcher to get to understand the social, cultural and biophysical aspects of the researched as they unfolded under a natural setting (Ibid).

3.3.1 Research design

The research was conducted between January 2005 and October 2006. The research activities are summarised in table 1.

Table 1: Schedule of data collection methods

Activity	Date	Data sources	Data collection Methods	Research questions	Research objectives
Fieldwork Interviews	01.03.05	Group Members	Unstructured Interview	What circumstances gave rise to some people from Nsingweni community becoming involved in an EE programme?	Interviewing programme members to establish how and why the programme was initiated.
	10.05.05	Group Members	Focus group Interview	What EE initiatives were participants exposed to during the programme?	Describing the EE activities dealt with during the programme and relating them to the environmental issues experienced in the community.
	10.08.05	Some members and daughters in law	Unstructured individual interviews	What evidence is there of change to the life situation of people in Nsingweni after having participated in the programme?	Establishing through interviews any manifestation of change in thinking, attitudes and skills in relation to the environment since involvement in the programme.
	08.11.05	Group members and two young men	Unstructured group interview	<p>1. Which of the theories and principles of effectual EE were manifested in the programme?</p> <p>2. What evidence is there of change to the life situation of people in Nsingweni after having participated in the EE programme?</p>	<p>1. Interviewing participants to discover which principles and theories of effectual EE they experienced during the programme.</p> <p>2. Establishing through interviews and discussion evidence of change in thinking, attitudes, skills and life situations in relation to the environment since participating in the programme.</p>

Activity	Date	Data sources	Data collection Methods	Research questions	Research objectives
Fieldwork Observation	Every other Tuesday from 01.02.05 to 06.12.05	Group members and the biophysical environment	Observation and photography	<p>1. Which of the theories and principles of effectual EE were manifested during the programme?</p> <p>2. What evidence is there of change to the life situation of people in Nsingweni after having participated in the EE programme?</p> <p>3. What environmental issues are experienced in the community that affect the life situations of community members?</p>	<p>1. Observing participants to discover which principles of effectual EE they experienced during the programme.</p> <p>2. Establishment through observation any manifestation of change in thinking, attitudes, skills and life situations in the community since participation in the programme.</p> <p>3. Conducting an environmental photo audit to record environmental issues that affect the life situations of the Nsingweni community.</p>
Literature review	02.01.05 to 20.10.06	Textbooks, journal articles and online sources.	Reading intensively, extensively and critically then making notes.	What theories underpin the practice of effectual EE?	Reviewing literature on theories and principles that underpin the practice of effectual EE.
Document analysis	11.01.05 to 22.07.05	Group's constitution, facilitator's notes and a 1999 publication by Yonge Nawe Environmental action group.	Reading intensively and critically then making notes.	What EE initiatives were participants exposed to during the programme?	Describing the EE activities dealt with during the programme and relating them to the environmental issues experienced in the community.

The next section gives details of the data collection tools

3.3.2 Data collection tools

The researcher used observation, interviews, photographing and document analysis to collect data pertinent to the study.

3.3.2.1 Observation

Observation provided data on the physical setting, the participants, activities and their verbal and non-verbal interactions (Merriam 2001:97). Ethical guidelines or requirements are given which the researcher adhered to during observations.

- She dressed and acted as expected of women within the setting (Merriam 2001:99).
- She obtained permission from the chief of the area to enter the community. The teacher who is the local facilitator of the group introduced the researcher to group members, to the head teacher of the school and to the chief of the community, who received her with open arms.
- She provided participants with honest information about her visit, her qualifications and experiences and explained that the purpose of the research was to develop generalizations for groups similar to theirs rather than concentrating on individual performances within the group (Huysamen 1994:180).

Observing the above-mentioned ethical issues enabled the researcher to establish rapport and put participants at ease, making her presence as unobtrusive and acceptable as possible (Merriam 2001:99). The researcher's role as an investigator was known and group members selected to use her as a resource person as well during workshops. Observations were done on an ongoing basis throughout the study and were recorded in a field notebook.

From the field observations records were developed and these were used to build up a database which formed the basis for critical analysis, reflection and interpretation (Merriam 2001:111). In the records the researcher described the setting, the people and their activities. Direct quotations and the core ideas of conversations were also noted while the researcher's comments and observations were put in the margins

(Woods 1992:387). Strict measures were applied to check against variable data (Bassey 1999:74).

The researcher visited the research site every two weeks till the end of the research process. This has assured prolonged field experience, catering for repeated data collection sessions that allowed trends and regularities of the setting to unveil naturally (Yin 1993:46). The researcher also took account of her personal conceptions towards the research through reflection to identify views and feelings that could pose a potential threat and influence data analysis and interpretation (Woods 1992:373).

Observation provided first hand information of the context studied, but because an individual cannot observe everything and information on historical events cannot be obtained through observation, interviews were carried out to gain information on what others had observed and on events of the past (Stake 1995:64).

3.3.2.2 Interviews with participants

Interviews do not only provide data that cannot be obtained through observation but also complement observation data (Merriam 2001:91). A summary of the interviews that were conducted is shown in table 2.

Table 2: Interview schedule

Date	Type of interview	Interviewer	Interviewees	Purpose of interview
01.03.05	Unstructured group	Researcher and colleague	Eight group Members	To get background information about project and history.
10.05.05	Focus group	Researcher and colleague	Eight group Members	To find out the current state of the project and future plans.
10.08.05	Unstructured individual	Two teachers from the local primary school	13 reluctant members and 12 daughters in law	To probe sensitive issues that seem to be a threat to the success of group activities.
08.11.05	Unstructured group	Researcher and colleague	10 group members and two young men.	To evaluate the impact of the research on the group.
7.12.05	Semi-structured individual	Researcher	Group facilitator	To establish his role in the project and evaluate research impact on facilitator.

Noting that interviews offer the perceptions of the informant, the researcher employed measures to respect the interviewees as persons and the truth-value of the information provided (Bassey 1999:74). To elicit credible and dependable responses from the interviewees and respecting them as persons and information sources, the interviewer was careful to:

- be sensitive and empathetic to their health state, physical well-being and mood (Merriam 2001:91)
- be non-threatening, avoiding an atmosphere of interrogation, and to create a relaxed conversational mode of interaction (Borg & Gall 1989:397)
- phrase questions using the vernacular, so that questions were clear and meaningful to the respondents (Ibid:401)
- seek the consent of the respondents prior to recording interview data on tape and on paper
- be non-judgmental, maintaining a neutral stance to the information provided (Merriam 2001:84)
- listen actively showing respondents that she followed by reacting both verbally by infilling where material was unclear, and nonverbally by nodding and using paralinguistics (Woods 1992:372)
- talk less than the respondents (Borg & Gall 1989:401)
- reflect on the impact of the interview on both the interviewer and the interviewees (Woods 1992:373)
- account for any biases, predispositions, attitudes and physical state of both the interviewer and interviewees that could distort the data collected (Merriam 2001:87)
- ask local teachers to be research assistants
- take note of non-verbal responses such as body movements, intonation and paralinguistic, because they punctuate verbal communication and give emphasis to meaning while expressing an emotive overtone.

The above-mentioned measures called for the interviewer to be sociable and develop friendly interactions with the participants. Both at the start of the research, and at the end of the research the interviewer opted for the unstructured interview, which further enabled her to explore and gain an insight into the group's experiences. After the first

unstructured interview, she was able to formulate questions for a further interview (Merriam 2001:75). In the first unstructured interview the researcher asked one open-ended question:

<i>How was the group established?</i>

Responses to this question sparked off ideas that helped in the formulation of an interview guide for a focus group interview (Woods 1992:374).

A focus group interview is a semi-structured group interview that focuses the discussion and the responses elicited (Merriam 2001:74). A list of questions was prepared to guide the interview. These were pilot-tested to refine them, to identify possible probes and to sequence them in a manner that makes sense and sustains respondents' interest (Borg & Gall 1989:401).

The pilot interview was conducted with a group of teachers who have formed a small-scale savings co-operative at the school where the researcher works. Of the twelve teachers, seven took part in the interview. The pilot exercise enabled the researcher to eliminate unnecessary questions, rephrase confusing ones, and include questions that elicited more qualitative responses. The pilot process also enabled the researcher to establish when and how to infuse probes. Probes cannot be included in the interview guide because they are generated by the interview itself (Merriam 2001:80). The interviewer fits them in as questions or comments after noting that the respondent is reserving some ideas and needs to be prompted to fill in or expand on the details (Ibid).

The focus group interview was conducted at the group's usual meeting place on the primary school premises. The researcher and her colleague conducted the interview. She facilitated the discussion while her colleague took notes verbatim and recorded responses on tape (Patton 2002:386). There were seven respondents who sat comfortably while enjoying the discussion. The list of the questions that guided the interview is shown on the next page.

- *As members of the group, could you please state the benefits that you derive from your activities?*
- *How is the progress of the group influenced?*
- *To what extent is the project capable of lasting for a long time?*
- *What are you doing to encourage younger members of the community to follow in your steps?*
- *What are younger community members' perspectives of the value of traditional crops and traditional food?*
- *What role has your facilitator played in your group?*
- *Please list the educational activities you've involved yourselves in during the lifespan of the project.*

Each question sparked probes and discussion and the interview lasted for an hour.

From the focus group interview, sensitive issues emerged and the researcher decided to use an unstructured interview to probe those issues. Two teachers from the local primary school were requested to conduct these interviews by visiting respondents at their homes. They recorded the interviews on tape for the researcher to transcribe. The rationale behind this was the belief that the residents would more freely divulge sensitive information to familiar people than to the researcher who is an outsider. The facilitator was the one who suggested that two teachers who were not involved in the group carry out the interview because the interviewees would perhaps not communicate freely with him because of his involvement in the project. The information sought was related to the following aspects:

- *how the people define their poverty situation*
- *why some members are less committed to project work (only the less committed were interviewed)*
- *why most of them – both young and old – object to traditional food while they grew up being nourished on it*
- *why the participants' daughters-in-law are reluctant to join their mothers-in-law in the agriculture project although agriculture is the backbone of the Swazi economy (only the daughters-in-law were interviewed).*

Immediately after the interviews, the researcher compiled post interview reflections regarding the whole event, interactions among respondents, interactions among respondents and researcher, and the physical and social settings (Merriam 2001:88). The researcher noted that the interview was an extension of the observation method.

At the end of the research the interviewer conducted another unstructured interview with the participants while they were busy working at their garden. She asked one question:

How has the research process impacted on your project?

Also present among the group members were two young men. The researcher tried to find out from them why the young people of the area lack interest in agriculture. So she posed the question:

Is the belief by the group members that youngsters are not interested in food production true?

This question sparked a long discussion that enabled the young men to express what they intend establishing in their community.

The researcher also interviewed the facilitator.

3.3.2.3 Interview with facilitator

The interview with the facilitator featured a mix of open-ended and structured questions. The list of the questions posed is given below.

- *When did you get involved with the group?*
- *How did you join the group?*
- *What motivates you to commit yourself to the group on an ongoing basis?*
- *What familiarized you with informal education groups?*
- *What is it that you actually do for the group?*
- *Please list the educational activities that the group has been engaged in.*

- *Why are most men reluctant to join the group?*
- *Why are you bold enough to engage yourself with women?*
- *Are there any changes in the viewpoints of the men with time?*
- *Why are some group members reluctant of late?*
- *How has my research impacted on the group?*
- *List any benefits that you've derived since you started working with the group?*
- *When did you enrol for adult education?*

The facilitator was a keen respondent and gave detailed responses to each of the questions.

The researcher also used photography for data collection. This method further served to increase the trustworthiness of the data collected.

3.3.2.4 Photography

With the help of some residents, the researcher took photographs of most areas in the community to help complement observation data. Photographic evidence was taken during interview and workshop sessions to increase the dependability of the data. The researcher sought permission before taking the photographs. In all instances, the participants supported this data collection process and as an expression of her appreciation she gave participants copies of all the photographs.

3.3.2.5 Document analysis

The researcher used several documents to learn more about the situation. These include magazine articles about the group, previous photographs, facilitator's personal documents that reflect on the activities and issues related to the group and the Constitution of the group.

3.4 DATA ANALYSIS

Data analysis was done on a continuous basis after every observation and interview session. The outcomes of the analysis in turn guided further investigations (Woods

1992:374). To organise the data, the researcher used the research questions, which guided the data collection process and the data itself, which informed further investigations to validate emerging patterns (McMillan & Schumacher 2001:462;467). The cycle of data gathering and data analysis continued until the researcher had satisfied herself that all research questions have been answered and no new data was to be generated.

The data collected using the different methods were constantly compared with the purpose of identifying trends and categories. Similar data were grouped into categories and patterns emerged from the data, which the researcher used to build grounded theory (Merriam 2001:18). Field notes and interview data were first analysed separately.

3.4.1 Analysis of textual data

Textual data included field notes and the texts presented in the documents that were studied. In accordance with Woods (1992:387), the field notes and information gathered from documents were first coded into categories suggested by the data itself. Within each category further questions emerged that required the researcher to do more investigations as determined by the analysis. The cycle continued until no further questions emerged.

3.4.2 Phenomenological analysis of interview data

The theory of phenomenology has been stated in section 3.1, and according to the theory, explain Cohen & Manion (1989:329), the phenomena of experience determine human actions rather than external, objective and physically described reality. They observe that phenomenological analysis of interview data provides guidelines that ensure truthfulness to the phenomenon of interview data. Below are the guidelines as highlighted in Cohen & Manion (1989:329-333) that formed the basis for the way in which the analysis of data was approached in this study:

1. *Transcription: having the interview tape transcribed, noting not only the literal statements but also non-verbal and paralinguistic communication.*
2. *Bracketing and phenomenological reduction: suspending as much as possible the researcher's meaning and interpretations and entering into the world of the unique individual who was interviewed. The researcher sets out to*

understand what the interviewee is saying rather than what he expects that person to say.

3. *Listening to the interview for a sense of the whole: this involves listening to the entire tape several times and reading the transcription a number of times in order to provide a context for the emergence of specific units of meaning and themes later on.*
4. *Delineating units of general meaning: this entails a thorough scrutiny of both verbal and non-verbal gestures to elicit the participant's meaning. It is crystallization and condensation of what the participant has said, still using as much as possible the literal words of the participant.*
5. *Delineating units of meaning relevant to the research: once the units of general meaning have been noted, they are then reduced to units of meaning relevant to the research question.*
6. *Training independent judges to verify the units of relevant meaning: findings can be verified by using other researchers to carry out the above procedures.*
7. *Eliminating redundancies: at this stage, the researcher checks the list of relevant meaning and eliminates those clearly redundant to others previously listed.*
8. *Clustering units of relevant meaning: the researcher now tries to determine if any of the units of relevant meaning naturally cluster together; whether there seems to be some common theme or essence that unites several discrete units of relevant meaning.*
9. *Determining themes from clusters of meaning: the researcher examines all the clusters of meaning to determine if there is one or more central themes which expresses the essence of these clusters.*
10. *Writing a summary of each individual interview: going back to the interview transcription and writing up a summary of the interview incorporating the themes that have been elicited from the data.*
11. *Returning to the participant with the summary and themes, conducting a second interview: This is a check to see whether the essence of the first interview has been accurately and fully captured.*
12. *Modifying themes and summary: with the new data from the second interview, the researcher looks at all the data as a whole and modifies or adds themes as necessary.*
13. *Identifying general and unique themes for all the interviews: the researcher now looks for the themes common to most or all of the interviews as well as the individual variations. The first step is to note if there are themes that are unique to a single interview or a minority of interviews.*
14. *Contextualisation of themes: at this point it is helpful to place these themes back within the overall contexts or horizons from which these themes emerged.*
15. *Composite summary: the author considers it useful to write up a composite summary of all the interviews, which would accurately capture the essence of the phenomenon being investigated. Such a composite summary describes the world in general, as experienced by the participants. At the end of such a summary the researcher might want to note significant individual differences.*

3.4.3 Analysis of visual data

Visual data that was collected included photographs that were taken during fieldwork and those that complemented articles in the documents analysed.

Analysis of visual data was done by identifying the clearly visible in the picture, describing it in detail then moving on to the implied (Le Roux 2005). The ability to uncover a wide scope of covert information depended much on theory.

Techniques, articulated by Le Roux (2005), were applied to ensure consistency and reduce errors so that the correct information is drawn from the pictures. The error reducing techniques are stated below.

- Several analysts were used and their interpretations were used to expand conceptual understanding and clarification. The analysts included colleagues at work and the facilitator of Timeleni Bomake with some of his colleagues.
- The pictures were examined in a systematic and analytical fashion.
- Photo interviews were conducted by asking those individuals who are portrayed in the photograph to describe the photograph and discuss the event or circumstance it depicts.
- A content analysis schedule was used which served the purpose of the context and the analysis required.

The researcher used a sequential process to identify what is visibly presented in the pictures. Below is the content analysis schedule followed:

- first glance observations – these are the features that made the first impression to the eye
- depth/level analysis – analysis of both complex and simple elements
- foreground elements – what is in front of the main feature
- background elements – what is behind the main feature
- context – this includes the physical circumstances of the portrayed situation and
- focus – the main feature of attention (Le Roux 2005).

After describing the visible content, invisible content was determined with the help of theoretical background. The content analysis process followed is shown below:

- relationships between visible elements were sought

- causes behind identified effects were deduced and
- representations of persons: age, gender, race, facial expression, posture, activity, props, setting and dress code and their relevance to the context were established (Le Roux 2005).

Theoretical background did not only inform observation and assumptions, but also the conclusions arrived at.

The different components uncovered in the process of analysing obvious and implicit data from pictures were then synthesised into the whole picture to arrive at how the different variables interact to form the construct presented in the picture. Finally conclusions were drawn based on observations, assumptions and theory.

3.5 CONCLUSION

This chapter explained the qualitative nature of the research undertaken with a particular focus on the case study approach. The research design and schedule were explained. Information pertaining to the data collection methods applied and their relevance to the study were outlined. The chapter further indicated the influence of the theory of phenomenology in data collection and analysis.

Chapter four provides the results of the research by presenting an analysis and synopsis of the data that was collected.

CHAPTER FOUR

A PRESENTATION AND ANALYSIS OF THE RESEARCH RESULTS

4.1 INTRODUCTION

Chapter three discussed the research approaches that underpinned the study and explained the rationale behind those approaches. The qualitative nature of the study was explained and the methods followed in collecting data were presented together with measures related to trustworthiness and research ethics. Furthermore, the chapter explained how the data would be analysed.

The researcher attempted to understand the interplay between the social and contextual variables in the case study of Nsingweni community group by employing observation, interviews, document analysis and photography while integrating all these with reflexivity, logic and analysis.

This chapter therefore, presents the outcomes of all the processes followed in the previous chapter. In this chapter, the themes that emerged from the data are presented and then discussed.

4.2 FACTORS THAT INFLUENCE THE SUSTAINABILITY OF ENVIRONMENTAL EDUCATION INITIATIVES

Most of the research focused on Timeleni Bomake group. At the time of the research, the group was composed of women with one older man, the facilitator and two young men who had just joined the group after completing their schooling. According to the members, the group was established in 1990 in response to poverty. The women wanted to establish and run a market to generate income, so they decided to grow vegetables and fruits for their own use as well as to produce surplus, which they would sell. Factors that impacted on the group activities were identified in the research.

From a review and analysis of the data (see section 3.4.1), relating to the activities of Timeleni Bomake group – as well as other EE initiatives undertaken within the

community which the researcher became aware of during her research – the following major themes in relation to environmental and educational initiatives (both individually and jointly) were identified:

- leadership
- support from outsiders
- support from within the community
- constraints
- education processes
- benefits
- research impact and
- initiatives.

These topics or issues emerged as themes because they featured prominently in the data collected as aspects that were of significance to the participants. The themes are not independent of each other. They are interrelated and these inter-linkages are revealed in the discussions that arose during data collection.

4.2.1 Leadership

The data revealed that leadership is very important to sustaining community projects. In the case of Timeleni Bomake, the identified leaders were the facilitator, the project chairperson and the vice-chairperson.

At the time of the researcher's visit, the Timeleni Bomake project was on the brink of collapse. Much of the project's initial energy had been drawn from the efforts of a dynamic and active facilitator who had joined the group shortly after its establishment. His role as the group facilitator was to educate the group on matters related to the project, organize resource persons from outside to support the group's initiatives and to organise sponsorship. However, when this person decided to further his studies in 1997, he was unable to devote as much time and effort to the project as he had done previously and the project lost momentum between 1997 and 2005. It was only the dedication of the project chairperson and vice chairperson that prevented

the project's complete collapse. They continued to work hard even though the efforts and interest of most of the project members waned.

The facilitator explained that he joined the group in 1992 when he arrived as a teacher at Nsingweni Primary School. Nsingweni is his home area as well. Most of the respondents greatly acknowledged the efforts of the facilitator, for instance one of them had this to say about the facilitator:

He is a great asset to the group and is talented in working with people. He organized officers from Yonge Nawe environmental action group who taught us that we must conserve grass because it is a protective cover of the soil, something that we previously took for granted

When interviewed, the facilitator referred to his ability to work with the community.

When I volunteered to join and help the group my commitment was not because my mother was chairperson of the group, even in my previous school I was actively involved with the school and community groups. I am used to this kind of involvement. My wife, an extension officer, familiarized me with informal education groups.

Through the efforts of the facilitator, the group was recognised by people from outside the community.

4.2.2 Support from outsiders

The facilitator and group members mentioned that outsiders made important contributions that boosted the project. Firstly, donations towards the project were made. Yonge Nawe environmental action group, an NGO, donated fencing material, gardening tools and water pipes. Yonge Nawe further networked with the British Council who donated material for constructing ferro-cement water tanks at the primary school and in the garden owned by Timeleni Bomake. The British Council also donated sewing machines for the women to engage in needlework for commercial gain.

Secondly, outsiders provided expert advice and skills. The Yonge Nawe officers provided expert help and supervised activities such as the construction of the ferro-cement tanks and fencing. They visited the group regularly and their support

sustained participation. Three separate groups of university students with their lecturers visited the group and provided education sessions that are explained in section 4.3.5. The researcher and her colleagues contributed similarly by rekindling the spirit of participation within the group. They also made recommendations regarding the sustainability of the project and contributed scientific information about the value of the indigenous foods to the community.

4.2.3 Support from within the community

The group was not only supported by outsiders, the community chief himself is proud that Timeleni Bomake functions in his area and he strongly supports the group.

4.2.3.1 Social support

The local chief gave the group the use of a plot of land about the size of a soccer field in 1990 on which to grow crops. As mentioned previously, a dynamic primary school teacher joined the group in 1992 and subsequently became the group facilitator. His inputs strengthened the group immeasurably. He managed to organise help from interested parties through networking with individuals and groups from outside and within the community.

Of late, the chief and the community messenger have begun to help fight the problem of theft in the group's garden. This has arisen through the advice of the researcher and her colleagues that the group should seek the help of community leaders in overcoming the issue of theft.

The facilitator had this to say regarding steps against theft:

The chief has promised to call a community meeting where the issue of theft will be addressed. Moreover, residents have started patrolling at night to control theft.

4.2.3.2 Material and ecological support

The group did not have to pay for the land because the chief granted the communal land to them. The area is mountainous with hills and valleys, so there is an abundance of water from the mountains (see Picture 1). Within the garden, there is a large ferro-cement tank that stores the water from the mountains. The water flows by gravity so

there is no need for a pump. The tank has always been full of water (see Picture 2). The soils are productive while the humid temperate climate is suited to cultivation.



Picture 1: water source



Picture 2: water tank – always full.

Considering both the ecological and social support outlined, there is a great potential for development in the area through agriculture. However, there are some constraints that were identified.

4.2.4 Constraints

Problems faced by the group include theft, shortage of extension officers, land disputes, unpaid loans, lack of commitment on the part of members, lack of capacity and lack of family support.

4.2.4.1 Theft

The participants complained that some youngsters of the area steal from the garden. They create holes in the fence and skip through to gain entry to the garden. During her research, the researcher was shown an example of a hole that had been created through the fence. One participant stated that:

The most recent thefts are that of a sprinkler and a hose pipe. They also steal the produce once ready.

In addition to the thieves, the participants complained of moles and lamented their unfortunate situation of not having the services of extension officers to help them overcome such problems.

4.2.4.2 Shortage of government extension officers

Participants explained that the shortage of government extension officers leads to a lack of advice on how to deal with the problems that are experienced. In this area there is a major problem of moles that disturb the soil and destroy crops.

Apart from providing knowledge and skills, it was believed that the presence and support of extension officers would also increase members' enthusiasm for and participation in the project. Regarding the issue of motivation, the chairperson and her vice mentioned that since some members lack commitment, the management team decided to fragment the land into smaller portions. The reasoning was that individuals were to work on their own plots and in this way lazy individuals would not benefit from the work of the diligent. However, this led to small-scale production

with no surplus produce being produced for sale. This tactic would not have been necessary, it was believed, had there been extension officers to motivate and support the group.

4.2.4.3 Land disputes

In 2004 one of the community members raised a dispute concerning the land apportioned to the group for crop growing. According to the participants and the facilitator, the man argued that the ground that has been allocated to the group was his ancestral land. So serious was the case that it had to be resolved in court. The decision was in favour of the group and they won the case. During that period, group activities were halted, as the focus had been on the resolution of the case.

4.2.4.4 Unpaid loans

There is also a tendency within the group for members to borrow money from the organisation's coffers and then fail to repay it. The facilitator and the participants revealed this during the interviews. According to the respondents, the money is not even used for project-related needs but for the personal needs of the borrower. The unfortunate situation is that as yet, they have not formulated any strategy to ensure that debtors repay their loans. The chairperson of the group lamented:

Another problem is that people borrow money from the organization and fail to repay it and there is no way to ensure that they bring back the money.

The facilitator put it thus:

Some members owe the organization and because of guilt and reluctance [embarrassment], they no longer attend activities. The organization did not stipulate in the constitution the aspect of management of funds. So members come and borrow and when it comes to repayment, they are reluctant.

The non-payment of money owed to the group, is one of the factors that has reduced the level of participation in the group.

4.2.4.5 Lack of commitment

The members and the facilitator explained that of late, some of the members are losing their commitment to the project. They are unfaithful in fulfilling their allotted

tasks such as watering the crops when it is their turn. As a result, the few dedicated members are left to do all the work. These people include the chairperson and her vice. During the researcher's visits, the participants would state that not all of the members had attended the workshops and project activities. It is evident that the less committed members tended to abscond on a regular basis.

The facilitator observed that:

Some members are doubtful of the success of the project so they keep a distance, that is risk avoidance, yet when its time to enjoy the benefits they want to appear as full participants. They expect others to take risks on their behalf.

The less committed members mentioned the following reasons for their lack of involvement in and commitment to the project:

- they were discouraged by theft and
- community activities for orphaned and vulnerable children which require the building of community-feeding centres for these children, distract them from their project duties.

The fact that some members are less dedicated is also related to the problem of lack of capacity.

4.2.4.6 Lack of capacity and power

The facilitator mentioned dependence of the women of the community on outsiders as another drawback to the group's progress. The researcher and her colleagues made the same observation. They observed that participants lacked conflict management and resolution skills because they lack access to direct, free and open interactions and consequently had never had the opportunity to learn to capacitate or empower themselves. As a result issues that could be resolved by the members themselves such as enforcing the re-payment of loans and insisting on commitment to the project, were not dealt with. Eventually, these issues ended up threatening the sustainability of the project itself. In this dependent state, the group leadership looked upon visitors like the research team as people who would help sort out their issues on their behalf.

The group needs constant encouragement and follow-up. This observation is supported by the fact that the project faced collapse when funders no longer visited the project and their facilitator's involvement was restricted while he was occupied with his studies. The continued existence of the group depends on the enthusiasm and diligent work of the chairperson and her vice who continue to work industriously irrespective of the level of participation of the members.

Group members attribute the non-participation of the younger women in the project to the fact that they receive financial support from their husbands who are employed in the South African mines and do not rely on the income that could be generated by the project.

The young men, when asked about the non-involvement of young women from the community, responded by saying:

Girls are reluctant to involve themselves in such community activities because they believe that they will get married and depend on their husbands; therefore they feel such involvements are unnecessary for them.

Project participants also complained that members of their families are non-supportive.

4.2.4.7 Lack of support from family members

Family members show little interest in the project yet they always look forward to the harvest. According to the participants, the younger family members, in this case they were referring to their daughters-in-law, do not want to learn from them. They alleged that their daughters-in-law feel that they are more educated than the group members, most of whom are illiterate. The group members expressed their concerns as follows:

We do not nurse any hopes that the project will last long. It will survive as long as we live [only] because the younger ones are not interested. They say they are more educated so they are not fit to work on the soil.

Group members are worried that the project will collapse when they pass away. They feel exploited by their daughters-in-law who enjoy the produce from the garden yet

they do not participate in the cultivation process. One of the participants asserted that:

Our attempts to persuade the younger family members have failed because they undermine what we are doing. We request that you come and convince them, maybe they will understand you because you are of the same age group and are more educated than they are.

The men of the area are also reluctant to participate in the project. The facilitator stated that he had conducted a survey to establish the reasons men give for their non-participation. One of his findings was that:

The men claim that it is taboo to work with women because they are other men's wives. As for me, I'm used to working in partnership with married women at school and even at the university when undertaking studies I worked in co-operation with married women, without engaging in any funny things with them.

When asked if the men's viewpoint could change with time, the facilitator observed that some of the men are just hiding behind this excuse to conceal their laziness. He noted, however, that a few of the men are beginning to realize that the group means business and there is no mischief. He even quoted an instance of two young men whom the researcher met during her visits who had just joined the group.

The daughters-in-law concurred with their mothers-in-law by saying that one of the factors that led them to discount the value of agriculture is the attitude towards agriculture that was entrenched during their schooling. One of them summed it up thus:

Agriculture was undermined and practiced after school. White-collar jobs are most esteemed thus we feel literate people are unfit for [working] the soil. We hated agriculture at school.

They said they preferred being hawkers because there is less manual work involved and it gives them an opportunity to travel to Johannesburg and Durban, towns out of the country, and they are able to dress up and look their best. If they were involved in agriculture they would be involved in working the soil which is heavy work. In addition, this type of work would cause them to lose social status. Having said this they conceded that these excuses were being made to conceal their laziness.

Another factor that was mentioned by the daughters-in-law is the scarcity of continuous education campaigns run by educated and informed individuals to support agricultural activities. They gave an example of the Dream for Africa team which consisted of educated people from the United States of America that was active in the country between 2004 and 2005. Their activities gave rise to a campaign called Never Ending Gardens. The team established gardens in rural schools and communities as a means of generating food for AIDS patients. This project succeeded in generating support for agricultural projects providing participants with know-how and emphasising the significance of projects of this nature.

As one respondent acknowledged:

The Dream for Africa team has motivated most people to engage in agriculture. We need awareness campaigns.

On the same issue, the facilitator indicated that the community needs influential people from outside the community to encourage them to participate. “Someone from within the community has less influence compared to a university student or a white person”. He supported his statement by citing the following instances:

When we were constructing the school tank, the attendance was about ten parents when working with me alone. However, the day a white man from Yonge Nawe came, there were about 100 parents, carrying their working tools and working excitedly. Even with you as a researcher, together with your colleagues, they marvel that high school teachers can humble themselves and visit the community.

Although the daughters-in-law mentioned the need for education campaigns to motivate them to become active in the project, the members of the group have in actual fact been exposed to several educational activities.

4.2.5 Education activities and processes

According to the participants and the facilitator, the participants have been engaged in several educational activities that developed essential skills among group members.

In 1997 the British Council that bought sewing machines (section 4.2.2) for the group sponsored a course on record keeping and the management of funds. The resource

persons were invited from Imbita Women's Finance Trust. Methods that were used were group-work and practical activity.

In 1999 the project group visited a farmer who had successfully controlled soil erosion. The excursion aimed to provide insight on controlling soil erosion. Knowledge of this nature is essential because the area is highly susceptible to gully erosion and mass wasting as it is mountainous with deep cutting valleys (see Picture 3). The group's garden is itself on a sloping area. After gaining the skills of soil erosion control three dongas within the community were reclaimed by a collective effort involving local school children and the group.



Picture 3: soil erosion

An educative tour was also taken to a poultry farmer's home. This farmer has achieved great success in farming with indigenous chickens. He was able to provide advice on this topic to those who were present.

In 2001 permaculture resource persons from Malolotja Nature Reserve facilitated a weeklong workshop on permaculture. Permaculture lessons included context-based farming methods that improve soil structure, reduce pests, conserve soil water and fertility and increase the yield. Methods used were lecture, group work and practical activities. The resource persons further provided seedlings and garden threads to enable those who were interested in following this type of gardening to start their own permaculture project.

Between 2003 and 2004, groups of adult education students from the University of Swaziland facilitated the learning of several skills. Topics that were dealt with included nutrition, farming with indigenous poultry and procedures related to planting vegetables. On another occasion, agro-forestry and permaculture were taught. A group of Home Economics students taught the group practical skills relating to the canning of fruits.

One of the participants told the researcher that:

You are not the first person to visit us, many people have worked with us and taught us several ideas and skills.

In response to a request by the participants, which appears in section 4.2.4.7, where they pleaded with the research team to persuade their daughters-in-law to participate in the gardening project, the researcher and her colleagues conducted two workshops during her fieldwork in 2005. Concepts that were covered in the workshops are as follows:

- Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis: analysis and reflection through group work
- nutrition in the context of the community: group discussion and
- encouraging participation and sustaining the group: group discussion.

The intention of the research team was to help the people realise and explore alternatives in their community; identify shortcomings and devise strategies of overcoming them; gain confidence in themselves and their way of life; and take

charge in shaping their lives. This was done in such a way that imposing any ideas on the people was avoided.

Both the group members and their facilitator listed several benefits derived through participating in the non-formal education activities.

4.2.6 Benefits

Study support to facilitator and agricultural and social support to members were identified as benefits.

4.2.6.1 Study support to facilitator

The facilitator noted that his involvement with the group was time well spent. He stated that while studying adult education at the university, he did the practical component of his studies with the group and scored high marks in the instructional design course.

My lecturers enjoyed my lessons because this is a real case. Thus other students asked to do their practice with the group as well.

He also got sponsorship for the adult education course due to his facilitation of the group.

I enrolled for adult education after joining the group. I wanted to further my studies and adult education seemed most relevant because I have a passion for community development. I enrolled in 1997 as a part-time student and have graduated this year (2005) with a Bachelors degree.

4.2.6.2 Agricultural and social support

The participants listed the following benefits from their membership:

- they were able to grow vegetables, something they cannot do at their family plots, which are neither fenced nor have irrigation facilities
- teamwork was fostered – even rivals found themselves working together towards a common goal and their longstanding distaste for each other gradually dissipated as they worked together
- a forum for sharing ideas related to social, household and community issues was provided

- members were able to share costs in project work
- since people have different strengths and abilities, these complemented each other during project work
- it was easier to get assistance such as sponsorship and education as a group and
- by coming together as a group they attracted recognition from outsiders which had contributed to their experiencing a feeling of self worth.

The researcher's interaction with and observation or study of the group also had an effect on the group.

4.2.7 Research impact

The section shows how the participants perceived themselves before the research, what the researcher and colleagues did to bring a shift in thinking and the changes that came about in participants' perceptions after the research.

4.2.7.1 Self-esteem

The participants viewed themselves as poverty-stricken people. They defined their poverty in terms of their unpretentious lifestyle, which they held in low esteem in comparison to the western lifestyle. They quoted the following aspects as evidence of their poverty.

- *Our well-off neighbours feed on meat regularly while we rely on beans and indigenous vegetables such as pumpkin, blackjack and amaranthus.*
- *Our well-off neighbours feed on rice, we feed on home-milled porridge.*
- *Our well-off neighbours feed on chicken portions from supermarkets, we feed on indigenous chicken and not on a regular basis.*
- *Our well-off neighbours use cheese and polony for sandwiches and cornflakes for breakfast while we eat thin sour porridge or thin porridge.*
- *We send our children to Nsingweni primary school while our affluent neighbours afford to send their children to schools in towns.*
- *The clothes we wear are either handouts from friends and relatives or bought from second-hand shops. We do not wear trendy and fashionable clothes.*
- *We survive on only one pair of shoes for a very long time yet we need several pairs to change.*
- *Our well-off neighbours snack on Simba chips and Simba salted peanuts while we snack on locally produced grains such as jugo beans and groundnuts.*

- *When preparing leafy vegetables our affluent neighbours add cooking oil while we use only groundnuts as a lipid source.*

It puzzled the participants that the researcher and her colleagues, educated as they are, encouraged them to engage in sustainable agriculture which their daughters-in-law – who have also received an education – opposed.

One of the probes elicited the following response from the facilitator:

The group members have a low self-esteem because they think of themselves as poor people. At community meetings they do not even make contributions but look forward to those with more economic power to voice out opinions and concerns.

The researcher then decided to engage the participants in activities that would raise their self-esteem and increase their assertiveness. One of the activities was an analysis of and reflection on Strengths, Weaknesses, Opportunities and Threats within the community (SWOT analysis and reflection).

4.2.7.2 SWOT analysis and reflection

The group members, the daughters-in-law, three community men (chief, community messenger with another man) and the two young men participated in this activity.

The analysis highlighted the following strengths, weaknesses, opportunities and threats.

Group members

- They maintained that they would continue with their gardening project because of the following strengths: availability of water, land and the implements that had been acquired through donations.
- They noted the following threats to the project: the group's lack of motivation and encouragement, a lack of expert advice due to the absence of agricultural extension officers, and by the prevailing practice of fragmenting the plot into smaller portions for individuals, less viable plots were created.
- The need for seedlings, skills in dealing with moles, stimulation and maintaining participation were identified as weaknesses.

- It was decided to use the opportunity to merge the plots to establish economic and agricultural viability.

Daughters-in-law

Having established that the Imbita Women's Finance Trust lends money to women's groups, the daughters-in-law preferred to explore that opportunity and to rather engage themselves in the following activities listed below than in pursuing agriculture.

- Making traditional skirts for the reed dance. As a strength, they stated that they have the skills to make the garments, and would use joining fees as capital. However, they acknowledged that there is no market for their products and that this fact was a weakness.
- Sewing local school uniforms. This possibility was seen as a strength based on the fact that machines donated by the British Council (see section 4.2.2) were available and a sewing room had been constructed. They realised though that they lacked the necessary skills and capital, which is a weakness.
- Making jam using locally available fruits. The strength identified was that they had already been taught the required skills by the university students who presented a workshop on the topic (section 4.2.5).
- Keeping indigenous chicken. Indigenous poultry are easy to feed using locally available food. However, they realised that the lack of material for constructing chicken shelters was a drawback to embarking on the envisaged project.

The daughters-in-law concluded by commending their mothers-in-law for their efforts in the gardening project.

The young men

The gentlemen who have just completed school identified the opportunities listed below.

- The establishment of a dance and drama group for entertainment and to educate others about HIV/AIDS and the threats of drug abuse. They felt that this would attract youth to engage in development activities which would stop them stealing produce from the garden.
- Establishment of community tourism which would, as an offshoot, expand the market for garden produce.

They mentioned the underlisted weaknesses.

- Girls from the community cannot participate in the dance and drama group because of the community's negative attitude towards a girl who is a dancer.
- Young people are reluctant to engage in agriculture. This is attributed to the education they receive at school, which has led them to believe that agriculture is demeaning. Nonetheless, they mentioned that they, as participants in the SWOT analysis activity, were interested in taking part in the group's activities provided the elders show them respect for their ideas. They pointed out that they could contribute ideas learnt from school agriculture. An example they cited related to the practice of crop rotation.
- There is a serious intergenerational gap. They noted that in their community people of different generations generally did not combine forces or collaborate. The elders hold in low self-esteem and fail to appreciate the ideas of the youth. For example, it was pointed out that at community meetings the younger generation are not taken seriously.

They summed up by making the comments stated below.

- Adults should elicit ideas from their children, communicate with and support them.
- Youth tend to misapply their school education and their physical strength to become a threat to the adults if they are not respected. As an illustration, they stated that it is easy for a young person who is bored and feels undervalued to look at a car and instantly decide what to do with the four wheels and how to get them off the car.
- The adults should draw the youth closer and take advantage of the education and physical strength they possess.

- Talents should be developed and reinforced beginning from childhood throughout all ages.

The older men

The three elderly men identified the following opportunities:

- that a dairy project could be initiated as the climate is conducive to farming with dairy cattle and
- community meetings could be used to discuss and market ideas.

As leaders of the community they asserted that the existence of the women's project is their pride and it is their wish that more community members should engage themselves in development activities. They consequently expressed their wish to call back the researcher and her colleagues to mediate discussions on the involvement of community members in community development initiatives.

The men identified the following weaknesses in their community:

- the laxity of the youth in participating in community activities and functions and
- the negative attitude of most men towards physical work and agriculture.

They realised that they are partly responsible for the near collapse of the women's group by not engaging members in dialogue to sustain membership. Consequently they promised that they would conduct a survey using the same method (SWOT analysis and reflection), which they have learnt from the research team to establish the reasons behind the slump of the women's group.

At the end all participants acknowledged that the SWOT analysis and reflection exercise had significantly broadened their perception.

4.2.7.3 Shifts in perceptions

The data collected revealed that several changes in the attitudes and perceptions of those who participated in the two workshops took place.

- They were able to identify the reason why they valued western food over indigenous food.

It is food that we do not eat frequently but only on special occasions such as Christmas, weddings and parties thus we consider it as special food. The well off eat western food more regularly so it is food for the elite or upper class people. Since we cannot afford to provide ourselves with this type of food it means that we are of low class.

- Participants began to acknowledge the nutritional value of fresh self-produced produce. They put their understanding thus:

The western foods that we crave for seem tastier than the natural produce but less nutritious. We no longer consider taste only when cooking food but also with a purpose of balancing the diet.

- After the SWOT analysis the researcher found that the plot had been consolidated and ploughed as a whole (see Picture 4).
- The researcher further observed that the group were cultivating more indigenous crops in their garden. The facilitator validated this observation by saying:

You motivated them to value their indigenous food and their way of life. They are now confident with what they do.



Picture 4: garden – consolidated

- The facilitator felt that the researcher had played part of his role when he stated that:

Your research helped me because it had a great impact in reviving the participatory spirit of the members. They feel greatly honoured to have visitors from outside, especially someone like you who is educated.

- The facilitator's determination to support the group has been increased.

Your research has made me realise that I have neglected the group for a considerable length of time. I will begin to commit more time to the group again.

- The facilitator, one of the teachers who helped in conducting the interviews and the two young men expressed an interest in EE.

We have developed a liking for your course – it is quite interesting. Please advise us on how we can take studies in EE.

Although the researcher was drawn to the community by the group's project, the research uncovered more initiatives in the community.

4.2.8 Initiatives

In addition to Timeleni Bomake group other initiatives uncovered by the research in the community include, community kitchens, community tourism, basket making and the making of brooms and mats.

4.2.8.1 Community kitchens

As hinted at in section 4.2.4.5, the National Emergency Response Committee on HIV/AIDS (NERCHA), funded and co-ordinated the construction of community kitchens to act as feeding centres for orphans. NERCHA provided the construction material while members of communities provided the labour. As a result, some group members failed to carry out their responsibilities towards Timeleni Bomake group because of the construction of community kitchens. The facilitator's opinion was that NERCHA attracted more attendance because there were full time officers who monitored the whole process. He added that some members used NERCHA's activities as an excuse for not meeting their obligations to the Timeleni Bomake project because they claimed to be occupied with NERCHA's activities even if that had not been the case. The construction of community kitchens was a national activity implemented through higher authorities of the country done in all communities.

Apart from this project, three young men from the community were struggling to promote the idea of community tourism.

4.2.8.2 Community tourism

Three young men from the community have developed an idea to promote community tourism. At the time they were already in a process of marketing the idea and one of them had taken a course in tourism. They mentioned that they were working with an official at the tourism ministry as their contact person.

They showed the researcher photographs of areas that they perceived to be of interest to tourists, and which were being used to market the idea (see Pictures 5 and 6). Their problem is that community authorities are not familiar with the concept of community tourism. They have had to meet the challenge of popularising the idea among community leaders who are the ones who are responsible for and take decisions

regarding land rights and the use of the land. This is in line with Kaino's observation (2003:138) in section 2.3.1.4 that chiefs have sole authority on land rights and can withdraw them at anytime.



Picture 5: part of a steep-sided valley



Picture 6: waterfall

These young men were sceptical of whether their voices would be heard because of the generation gap. The older generation view them as inexperienced young boys. They planned to use contact persons from the ministry of tourism to help convince local authorities of the feasibility of tourism at the community. They remarked that in their community, adults tend to marginalize young people and do not even address them with respect. They were fearful that if their idea is not pursued, people of influence and with the financial muscle could hijack the idea and start their own tourism industry in the region. If this were to happen, the local community people would be robbed of their heritage and would not benefit. The young men commented that they had seen unfamiliar people visiting the photographed sites and spending a long time there.

It is clear that the community has tourism potential because of its unique features. It has very high peaks and very low valleys with watersheds and water falls. Some of the photographs show awe-inspiring natural sights and the region definitely has the potential to draw tourists to the area.

According to the young men, community tourism could create employment opportunities for local youth, enhance the conservation of areas with aesthetic value

and indigenous flora and fauna, generate income that could be used to fund community projects, promote local arts and crafts, and local food could be sold to tourists thus increasing the market for local products.

They concluded by stating that they have heard of a tourism fund granted by the European Union and would like to take advantage of it. Moreover, they requested the researcher and her colleagues to visit them again because they needed people who would encourage them and give guidance as those within the community did seemingly not understand nor support the concept.

While community tourism appeared to be an emerging concept in the community, basket making on the other hand is a common activity in the community. When the researcher conducted an interview with the facilitator, one of the probes elicited the activity of basket making. The facilitator gave details of the practice.

4.2.8.3 Basket making

Basket making as an informal industry was begun in the early 1970's by a pastor of the local Nazarene Church who settled in the community. Basket making provided him with an income and in time he was able to purchase a car from the funds he had derived. Local people subsequently developed an interest when they noted that basket making was profitable. Several interested persons visited the pastor for lessons. The skill then spread throughout the community with those who had learnt from the pastor teaching others. Basket making skills are now passed on from parent to offspring within families. The trade has continued to survive even after the pastor has long left the community.

Many families engage in this trade and in most instances, all family members participate because it brings immediate income since many baskets can be produced in a short while. The market for the baskets is steady because people from Manzini town and Johannesburg in South Africa come to the community in their cars to stock up baskets from the local basket makers. The problem however, is that the buyers buy the baskets at give-away prices, especially from those addicted to alcohol who just want fast cash to buy alcohol. They buy the baskets at prices ranging from R4.00 to R8.00 each, depending on negotiations, and sell them at an unjustifiable profit. In

Johannesburg the same baskets sell at R50.00 to R100.00 each while in Manzini they sell at R25 each.

Another problem is that the plants used for basket making are gradually becoming scarce in the community and basket makers need to travel long distances by bus or car to get the plants from other communities. For the frames they use material from the tree, *Acacia ataxacantha* (lugagane), while for weaving they use, *Rhoicissus rhomboidea* (umbovu), a creeping plant and *Canthium gueinzii* (sinwati) – see Picture 7.



Picture 7: basket making

The interview with the facilitator further elicited that locally available plants are also used for making brooms and mats.

4.2.8.4 Making brooms and mats

According to the facilitator, the making of brooms and mats is an indigenous skill that is passed on from parent to offspring and is also practised in most homesteads within the community. The market for brooms and mats is slower than that for baskets because people usually buy brooms and mats for personal use not for resale and these items do not attract people from far away cities.

The grasses *Lasiosiphon caffer* (umtsanyelo) and *L. splendens* (umtsanyelo), are used for making brooms. The grass *Coleochlea setifera* (lutindzi) is used for making mats together with the sedges *Cyperus articulatus* and *C. immensus*.

The grasses are not showing signs of becoming depleted because they grow faster than trees which take longer to recover after being cut.

4.3 CONCLUSION

Results of how the community people respond to EE initiatives are presented in this chapter. Initially the focus of the researcher was on Timeleni Bomake group but when the research took off it needed to be extended to include other people in the community if a reasonable portrayal of EE initiative was to be provided. This confirms that society is heterogeneous and interlinked thus, to achieve better lifestyles; people should learn respect and responsibility for each other and for the environment, advises Bornman (1997:65 in section 2.3.2).

The next chapter, chapter five, gives recommendations, conclusions and a summary of the whole research process.

CHAPTER FIVE

SUMMARY, RESEARCH CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter four presented the results of the research and revealed that eight themes related to how EE programmes impacted on the lives of the Nsingweni community had emerged from the data collected.

The focus of this research was to establish how EE programmes have influenced the lives of the people of Nsingweni community (see sections 1.2, 1.3 and 1.7). The study investigated the circumstances and issues that gave rise to the establishment of Timeleni Bomake group – an environmental group established within Nsingweni community to address issues relating to the community. While investigating the way in which the group functioned, attention was paid to the theory and principles that underpin effectual EE in an attempt to establish which of these principles and theories informed the processes in which the group was engaged. Initiatives relating to EE were examined to establish any changes that had emerged to the community life. In the following section, a summary and conclusion of the research is provided. The themes that emerged during the research which addressed the research question and sub-questions are commented on. Recommendations relating to the study are put forward. In closing, research limitations and areas for further research are noted.

5.2 SUMMARY OF RESEARCH FINDINGS

The data describing the eight themes relating to community responses to EE initiatives that emerged from the research are summarised in the next section.

5.2.1 Leadership

The results indicate the importance of leadership in EE practice and also the required qualities of those in leadership. The qualities include an inherent desire to participate and work towards the improvement of the lives of the disadvantaged, action competence and a desire for establishing lifelong learning opportunities to improve knowledge and skills. The facilitator who volunteered to help the group and the

chairperson and the vice-chairperson who worked hard against all odds to sustain the project demonstrated these qualities.

An important leadership role is to organise support for EE activities.

5.2.2 Support from outsiders

The research indicated that outsiders provided the group with funding and learning opportunities in an attempt to promote social and economic development. Mutangadura (2005:1) in section 2.3 emphasises that funding from donors is essential to enable the economically under-sourced to kick-start SD initiatives. In the same vein, UNEP (2003:1;9) in section 2.5 encourages the funding of grassroots organisations while Matthew (2003:133) in section 2.3.2, recommends that education, training and skills should be improved to promote social development. Principle 1 of the Rio Declaration as outlined in section 2.2.2.1 puts the aspect of social development at the centre of SD. The principle states that “Human beings are at the centre of concerns for SD. They are entitled to a healthy and productive life in harmony with nature”.

The results show that support was also forthcoming from within the community.

5.2.3 Support from within the community

The group activities were enhanced by favourable ecological conditions and supportive social arrangements within the community. These conditions enabled the group to generate income from the sale of a surplus in agricultural products produced through the running of the project. The Brundtland Report (1987) in section 2.2.2 goes along with such an arrangement as it integrates three components of SD – the ecological, social and economic components.

All the same, the community group had to operate within a network of forces that constrained activities as indicated by the results.

5.2.4 Constraints

Several constraints were highlighted by the results. A discussion of each of them is summarised.

5.2.4.1 Theft

The theft of produce by the youth of the community discouraged participation and caused members to lose confidence in co-operative work. Consequently, continued involvement tended to be an individually based decision and members were less reliable in collective actions. Members felt that their efforts were wasted because the benefits of their labour were diminished. Others who have not invested any inputs gained the benefits. This is contrary to what Mutangira (2003:62) in section 2.3.2 believes to be the purpose of SD, which is, greater equity, justice and participation on a long-term basis. Kaino (2003:135) in section 2.3.1.1 notes that unemployment pushes people into crime, and, as in this case, threatens and destabilizes SD.

5.2.4.2 Shortage of government extension officers

Due to the “zero growth” policy adopted by government in a few years back as described by Mushala (2003:113) in section 2.3.1.7, new government posts cannot be created or vacant ones filled. The shortage of extension officers whose task it is to advise farmers working on SNL is a consequence of this policy. In reality, farmers are obliged to work without expert help. The Tbilisi objectives of creating awareness, knowledge and skills related to the environment (UNESCO 1978:71) as outlined in section 2.2.1, cannot be promoted under such circumstances.

5.2.4.3 Land disputes

The problem of land disputes at Nsingweni, as evidenced by the research, is not an isolated case. Zwane (2003:171) in section 2.3.1.4 makes a similar observation that disputes over land among community members hinder agricultural productivity. As a result, no surplus agricultural produce is available for sale to meet the economic pillar of SD.

5.2.4.4 Unpaid loans

Loans are not repaid due to financial constraints. School and funeral expenses appear to dominate current expenditures. These problems are common in most homesteads, which are affected by the high level of dependency and illness – predominantly HIV/AIDS. The situation is a threat to SD because the results show that due to members’ sense of guilt at not honouring their loans, those who owe the organisation

are less likely to be involved in the activities thereby jeopardising the sustainability of the group as a whole.

5.2.4.5 Lack of commitment

According to the results the issue of reluctant participation can be attributed to exposure to theft, a guilt complex and risk avoidance. The lack of enthusiasm of some members counters what Kanduza (2003:36) in section 2.7.1 and Smith (1999:6) in section 2.7.2 say about adult education – that it calls for collective social responsibility that develops the human potential of the socially disadvantaged and marginalized. Furthermore, the factors of exposure to theft and risk avoidance counter the principle that calls for learners to be assured that the learning processes will meet their personal goals. The factor of guilt conscience counters the principle of freedom.

The less committed members are spoilt because others take risks on their behalf and in the end they still benefit. This aspect intensifies the problem of dependency.

5.2.4.6 Dependency

This problem is manifest at community level although it is an issue of national proportions. In section 2.3.1.2, Zwane (2003:166) explains that most Swazi males depend on South Africa for employment. In the research community this is manifest by the daughters-in-law who depend on their husbands working in the South African mines for financial support and who are consequently reluctant to join the group.

5.2.4.7 Lack of support from family members

Section 2.3.1.6 relates the issue of lack of support from family members to the low status of women in customary law. Ngotiamia (2003:76) observes that women are the ones who produce fruits, vegetables and crops but benefit less from the produce as compared to those who do not contribute to the cultivation of the produce usually the men, and in the case of Nsingweni, the daughters-in-law and some of the youth who steal the produce. UNESCO Institute for Education (1999:4) in section 2.3.1.6 makes the same observation and views it as a disproportionate workload on women that has an indirect impact on social life and status.

5.2.5 Education processes

During the project lifetime, group members have engaged in the following:

- Educational tours to several areas that served as learning opportunities of relevance to the group. Such activities are supported by the Tbilisi principle (UNESCO 1978:71) in section 2.2.1 that EE should

utilise diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first hand experience.

- Lectures, which were informed by the behaviouristic learning theory and were in support of the Tbilisi objective of awareness raising as outlined in section 2.2.1.
- Practical activities that supported skills development and active participation. This is in accordance with the aims of EE as advocated by the Tbilisi declaration outlined in section 2.2.1.
- Group discussions, which are supportive of a constructivist approach to learning as outlined in section 2.4.2.
- SWOT analysis and reflection, which were informed by the social critical learning theory as outlined in section 2.4.3.
- Demonstrations on permaculture, soil erosion control, record keeping and management of funds, keeping of indigenous chicken, nutrition, vegetable planting, fruit canning, and sustaining participation. The diversity of topics is justified by the Tbilisi principle in section 2.2.1 that EE should

be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective.

Furthermore, the lessons on permaculture and soil erosion control are in accordance with the idea expressed in the Brundtland Report (1987) in section 2.2.2 that development should be sustained without depleting natural resources or harming ecosystems.

The research indicates that both the facilitator and the participants benefited from their involvement in the EE learning processes.

5.2.6 Benefits

The results pinpointed that both the facilitator and the participants benefited from their involvement with the project. The facilitator used the group's activities for the practical aspect of his studies. On the other hand, the group benefited from the expertise, skills and knowledge of the facilitator and his colleagues from the university.

According to the results, participants also improved their interpersonal relationships through their engagement in group activities. Fien (1993b:14) in section 2.5 similarly observes that education for sustainability builds relationships between individuals, groups and their natural environment.

The group members and the facilitator listed several benefits, which have ensured the group's continued existence amid numerous constraints. The learning activities are relevant and applicable to the participants' immediate life world – an issue of considerable importance as a principle of adult learning (see section 2.7.2).

5.2.7 Research impact

The research impacted on the researcher, the facilitator, the participants and other community members.

5.2.7.1 SWOT analysis and reflection

The exercise not only involved some of the group members but also their daughters-in-law, three community leaders and two young men.

The researcher learnt much about community interaction from the way in which the facilitator from Imbita Women's Finance Trust interacted with the participants. She was polite and used language that indicated equality between all parties concerned. During reflective dialogue about this issue, it was noted that the facilitator regularly works with communities and has learnt how to deal with grassroots people unlike the researcher who deals primarily with school learners.

Participants learnt that there is an organisation, the Imbita Women's Finance Trust that empowers women's groups financially by lending them investment money, which

enables them to start up projects, without the consent of their husbands. In this way the organisation is overcoming the limitation stated by Ngotiamama (2003:76 in section 2.3.1.6) that women, according to custom, have limited access to credit facilities.

The different groups of participants also reflected on how each group impacted on the other and by extension, on development in the community. Robottom & Hart (1993:11;24) in section 2.4.3 support the whole notion indicating that social critical methods in EE involve collaboration and critical self-reflection within community-based and contextual practice. Ngotiamama (2003:77) in section 2.7.1 on the other hand states that adult education involves all participants in the planning of learning activities, decision-making, implementation, evaluation and reflection on the outcomes of the activities.

The activity helped participants to identify and integrate human, financial and ecological capital and to plan how these could be used sustainably as is stipulated in section 2.8.

The research brought about some transformations in the thinking of the participants. Through the questions posed during the interviews, the participants were challenged to reflect on their practice while the workshops stimulated participation and initiative.

5.2.7.2 Shifts in perceptions

The data collected revealed that several changes in the attitudes and perceptions of those who participated in the two workshops took place.

- They were able to identify the reason why they valued western food over indigenous food. The results indicated that one of the criteria they used to define their economic status which they described as impoverished was the composition of their diet that is dominated by indigenous foods. They were able to understand that although they had valued western food over their own, the indigenous foods were indeed nutritionally superior. The shift occurred according to the explanation by Fien (1993b:21;24) in section 2.4.3 that EE guided by the social critical theory enhances self-esteem, and the

development of cognitive skills of analysing alternative viewpoints on environmental issues, recognising the values that underlie them.

- The importance of consolidating efforts and working collectively on a piece of land large enough to be sustainable was realised.
- An interest in EE and the pursuit of further education was stimulated amongst members of the group. The facilitator and one of the primary school teachers who helped in conducting interviews and the two young men expressed interest in furthering their studies in EE – a shift that fits in well with the concept of lifelong learning mentioned in section 2.8.

The results indicated that the gardening project by the group was not the only initiative in the community.

5.2.8 Ancillary initiatives

Various community projects were also identified during the course of the study. The following is a summary of these initiatives, beginning with the gardening project, then the others and how they supported the project.

5.2.8.1 Timeleni Bomake

The coming together of women in a project aimed at sustainable agriculture is supported by principle 20 of the Rio Declaration (UNEP 1992) in section 2.2.2.1, which states that

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

The group has enjoyed years of sustainability since its inception in 1990 until in the late 1990's (see Pictures 8 and 9). Factors that had a negative impact on the sustainability included the fact that the facilitator, due to other commitments, had difficulty in maintaining the initial extent of the support provided to the group; the NGO that supported the group with expertise and finance shifted focus from communities to industries; and HIV/AIDS started to take its toll in the community. Concerning the latter, section 2.3.1.5 gives a nationwide picture of the impact of the scourge.

Fordham et al (1988) cited by Mutangira (2003:61) in section 2.5, reflect the changes that challenged the sustainability of the group:

The conditions for sustainability are dynamic and shifting. Over time the real needs of stakeholders, the mission, the providing agencies, the degree of permissiveness of controlling authorities, the amount of financial support available, the competence and attitudes of available facilitators, and the attractiveness of programmes are bound to change...openness and flexibility...the continuing need to equip people for a continuously changing technological environment and for a role in civil society alike, call for such.

Another threat to the sustainability of the project is that members of the younger generation are not interested in taking part in agriculture. If the knowledge and associated skills cannot be passed on to the next generation, its sustainability is compromised. Contrary to agricultural skills, craft skills such as basket-making skills are passed down to the young generation by parents and elders in the community.

5.2.8.2 Traditional Basket making

Revenue generated from basket making enables individual group members to donate towards a common fund in order to buy agricultural inputs.

Although this skill and trade of basket making is passed on from parent to offspring, its sustainability is threatened because the plants used to make the baskets are at risk of depletion. This is a marked contrast with the call for education for sustainability that people should reduce the overexploitation of the environment (Fien 1993b:40 in section 2.5).

The main cause of the overexploitation of the plants is the mass production of the baskets which are even under-priced. To generate a substantial income, the weavers need to increase their production and sales. Fortunately, the facilitator has realized this problem and has encouraged the people to organize themselves, manage production and regulate the prices. In a free market, when the demand goes up the prices also go up. Similarly when a resource becomes scarce its price goes up. The same thing should be happening with the sale of the baskets – the plants should be given monetary value.

In overall the buyers sell the baskets at far higher prices in big cities and are thus exploiting the producers. The producers are driven to exploit the plants in an attempt to meet the demand of the purchasers. Those involved need to be exposed to learning about sustainability. Such learning experiences would make them aware of how their actions and decisions impact on resources and would ensure that they base their decisions on securing those resources by integrating ecological and economic decision making (Bak 1995:59 in section 2.5). One industry that aims to generate money while conserving the natural heritage is tourism.

5.2.8.3 Community tourism

Community tourism is sustainable because tourists are attracted to the community by the natural scenery and the indigenous lifestyle of the people that includes artistic skills, culture and a traditional diet. In that way people in the community are encouraged to conserve their natural environment and maintain social justice, peace and respect. Features that generate income by attracting tourists include safety, relaxation, recreation and refreshment. The Rio Declaration principles 3 and 4 in section 2.2.2.1 support this move:

Principle 3

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

The research indicated that a group of young men from the community are in the process of planning for community tourism. They foresee the initiative creating job opportunities for many of their peers and marketing opportunities for local foods, arts and crafts. What prompts them to consider community tourism is the fact that they have identified several local sites that they believe could attract tourists due to their aesthetic properties.

However, these young people are afraid that influential people from outside their community could hijack their idea and introduce private tourism. Should this happen,

the benefit to the community will be diminished. They believe that the community is not taking their ideas on tourism or their fears of usurpation seriously. They cite the tendency of elders to underrate the ideas or contributions of the youth. Their lack of esteem in the community is similar to that experienced by women.

5.3 INFERENCES

Inferences include reflections on the research, the research process and what was derived from the data.

At the culmination of the research, it became clear that throughout the project, the following underlying assumptions and researcher predispositions influenced the way the research was undertaken and interpreted. The research:

- acknowledged and endorsed global influences and international ideas that may enhance action in the local context as stated in section 2.8.
- involved and promoted co-operation between an environmental educator and an adult educator. This is in accordance with the observation of UNESCO Institute for Education (1999:5 in section 2.7.2), where it is noted that adult EE is most relevant to addressing learners' concerns, and calls for the strengthening of collaboration between environmentalists and adult educators.
- followed a holistic approach, involving representatives of most groups of the community and employed an interdisciplinary approach as stated in section 2.8.
- framework – the principles of EE, principles of ESD, non-formal education and adult education were all appropriate for dealing with the complex and uncertain nature of the environment and society.
- was people-centred and not project-centred as the objective was to empower the participants as the first principle of SD suggests in section 2.2.2.1.
- drew from the cultural context. The researcher examined and reflected on the culture and values of the people that impacted on their practice as section 2.7.1 reveals.
- established that the validation of data was of paramount importance to ensure accuracy and trustworthiness of the research findings. Data from different sets

of interviews with different groups of people at different instances were compared and juxtaposed to test and increase the validity of the data.

From further reflection, inferences were arrived at concerning the activities and impact of Timeleni Bomake group and other community members. The following section captures the conclusions drawn from the research findings discussed in the previous chapter.

5.4 RESEARCH CONCLUSIONS

Although the initial focus of the study was on Timeleni Bomake group, it called for the researcher to draw on the insights and responses of others in the community because community people interrelate and impact on each other's activities either by enhancing or impinging on each other's efforts. As such, the complex nature of qualitative research was revealed. This aspect echoes what has been stated in section 3.2.

The following conclusions regarding the research emerged from the analysis of data gathered from Timeleni Bomake group members, their daughters-in-law, the three older men and the two young men. The conclusions are not limited to the Timeleni Bomake group's activities but are a reflection of EE programmes to which the community have been exposed in general.

1. Initiating and sustaining EE groups and programmes

- Factors that led to the initiation of EE groups and programmes are:
 - poverty
 - HIV/AIDS issues (see section 4.2.8.1)
 - dependence on others for income and
 - need to improve socio-economic status.
- The following gave legitimacy to Timeleni Bomake group:
 - need to become self-sufficient and generate income and
 - facilities that are available only to groups.
- Sustainability of Timeleni Bomake depends on:
 - leadership

- community interest
- support/interest from outsiders which enhances members' self-worth and gives recognition to the importance of the programme and
- perceived benefits to participants.
- Operation and performance of the group is constrained by:
 - theft
 - participants' personal traits of lack of sense of self-worth, perception of inadequacy, lack of social standing and perception of poverty and
 - resource constraints such as lack of financial support and expertise.

2. Planning, presenting and sustaining EE programmes

The research revealed that in this particular study, the following factors were significant in supporting the planning, presenting and sustaining EE programmes.

- Supporting participation. Enhancing optimum participation among members – as the research did – it rekindled the spirit of participation among group members including the facilitator (see sections 2.2.1 and 2.7.2).
- Boosting the confidence of participants in their projects. Doubts and insecurities began to creep in among Timeleni Bomake group members when they were left to cope on their own (see section 2.7.2).
- Crediting and acknowledging efforts. By showing recognition and approval of programme by outsiders and the community (see section 2.4.1) group members' efforts and commitment were enhanced.
- Engaging in reflexivity sessions. Such sessions guided by the socio-critical approach are especially effective in empowering participants to respond to ever-changing and ever-emerging challenges (see sections 2.4.3 and 2.7.1).
- Resolving tension. Formulating a credible system of addressing misunderstandings and clashes that is subject to constant review (see section 2.4.2) is imperative to sustaining a project and ensuring maximum participation. In the case of Timeleni Bomake, outsiders were by default such a system.

3. Evidence of impact and contribution of EE programmes

- Enhanced food security (see section 2.2.4).
- Increased understanding of the nutritional value of foods and the importance of growing these foods.
- Cultivating a positive attitude towards indigenous foods.
- Income generation (see section 2.2.4).
- Skills development (see section 2.2.1).
- Personal empowerment (see section 2.2.2.1).
- Appraisal of one's lifestyle. This was fostered in the SWOT analysis and reflection session in section 4.2.7.2.

The conclusions drawn above enabled the researcher to formulate recommendations that may enhance the sustainability of the projects at Nsingweni community and projects in contexts similar to that of Nsingweni.

5.5 RECOMMENDATIONS

Wals & Ables (1997:255) in section 2.4.3 note that researchers help participants by bringing in new information and relevant education theories, and are enabled to develop theories that are grounded in practice. Accordingly the research proposes the following recommendations:

1. Grounds for the establishment of EE initiatives

Projects that draw guidelines from MDG's and NEPAD objectives (section 2.2.2) by:

- Alleviating poverty: contributing to the economic development and general economic and social upliftment of members and the community.
- Lessening dependence on environmental resources and their consequent overexploitation.
- Preserving available ecological resource.
- Introducing and encouraging SD practices.
- Ensuring food security: providing balanced and nutritious diets to members while limiting the use of agric-chemicals.
- Empowering communities and enabling people to take pride in their achievements thereby increasing their perceptions of dignity and selfworth.

- Mitigating the impacts of HIV/AIDS.

2. Structuring community-based sustainable development programmes

Participants should:

- seek recognition, approval and assistance from community leaders in order to gain protection and support whenever necessary
- devise strategies to overcome problems that emanate within group members amicably
- devise action plans that will engage all participants in group projects
- put in place disaster and emergency plans
- identify individuals and organisations that may offer assistance
- open up lateral communication routes to all community members – young and old and
- emphasise respect, equality and social justice.

3. Theories and principles that support environmental education

- Behaviourism: appropriate for bringing in new concepts so that group members have a variety of alternatives.
- Constructivism: engages participants in dialogue as they plan their actions.
- Social critical approach: engages participants in reflection as they evaluate the outcomes of their actions and consider alternatives.
- Non-formal education: establishes a range of short-term projects that may be appropriate in particular seasons, contexts or situations. Such projects provide incentives as participants progressively address issues of immediate importance to their lives.
- Formal education: links communities with the global world and bring about knowledge and resources that will enhance and reinforce context-based action and at the same time, promote the involvement of the youngsters in community programmes.
- Adult education: empowers the disadvantaged and enhance lifelong learning where new concepts are generated to address emerging challenges.
- Tbilisi and Rio principles: guide the planning, implementation and evaluation of community programmes.

4. Improving impact of environmental education and sustainable development programmes

Community projects should be seen to be worthwhile by all participants as individuals and collectively. This can be achieved through:

- Structuring a system that ensures participants derive benefits that are directly related to their efforts.
- Engaging participants in progressive cycles of action research that involve planning their actions, implementing their plans and evaluation.

Besides arriving at conclusions and recommendations, the researcher encountered some limitations in the course of the research.

5.6 LIMITATIONS OF THE RESEARCH

The researcher identified the following as limitations of the research:

- All of the interviews were conducted in Siswati and the actual meaning might be slightly changed during direct translation.
- As this is a case study, the findings are not universally applicable but only in similar contexts.

5.7 SUGGESTIONS FOR FURTHER RESEARCH

The researcher's curiosity at this stage relates to whether the recommendations made to the group will be implemented. If so, how, and what impact will that have on the group?

5.8 IN CLOSING

The study was an investigation of how EE initiatives impact on community life. What drew the researcher to the community was a woman's group Timeleni Bomake, which runs a gardening project. Initially the researcher thought that the study would be a straightforward investigation. However, from the start, the researcher encountered the complexities inherent to qualitative research. It was not an issue that began and ended with the women's group. Understanding the dynamics of a group necessitates understanding the way it functions within its unique context. Consequently, the researcher had to touch on the other groups and community

members that interacted with the women in their daily lives. Apart from investigating the impact of the group's EE initiatives on their community life, the researcher also evaluated the sustainability of it and other initiatives in the community.

At the time of the research the sustainability of the women's project was in doubt and the causal factors were identified. Nonetheless, the project enjoyed years of sustainability in the 1990's. It was found that the problems among group members were masked by the full support of the sponsors and the involvement of the facilitator. The sustainability of the project was put to the test at the beginning of the new millennium when the support was withdrawn due to circumstances beyond the control of the group and the full impact of HIV/AIDS was experienced in the community.

The threats that had been masked all along began to unveil themselves and threatened the stability of the project. These threats included among others incapacity, theft, lack of commitment among members and the indifference of other family members towards the project. The education processes that the participants were engaged in in the 1990's were not directed at overcoming these problems because they were not evident then. As such no shifts in perceptions were realized because the project was established only with the idea of economic empowerment. Its foundation was technocratic and did not respond to the emerging human development and environmental needs. It lacked a holistic approach.

Lifelong, ongoing education for all that is flexible and responsive to emerging challenges is key to sustaining community projects and initiatives. The objectives and principles of EE, the principles of ESD, the principles of adult education and non-formal education must underpin such education programmes. Furthermore, a social critical approach to education that empowers participants to become agents of their own change is a core organising principle. Without doubt the need to devote the decade from 2005 to 2014 to ESD, as the UN (section 2.2.4) proposes, is justified by the case of Nsingweni community.



YongeNawe

NEWSLETTER - July to September 1999

Vol. 3 Issue 3

Are you doing your bit?

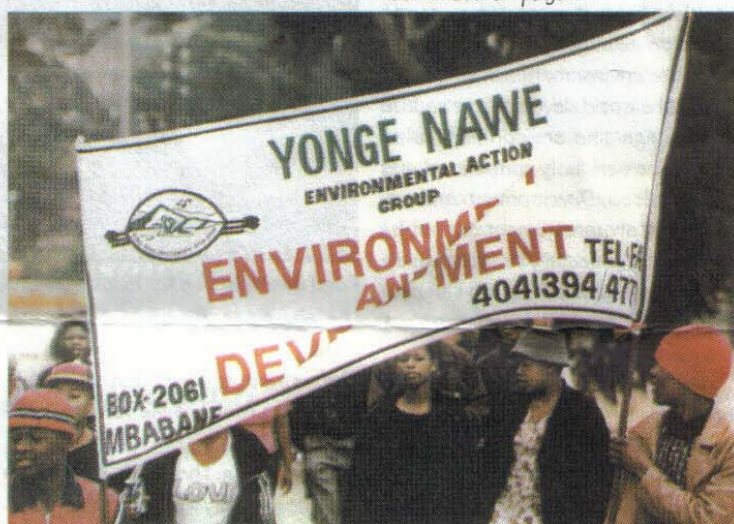
Editorial

Are you doing your bit... to conserve our environment? Runs a slogan in some far away land. I saw this and thought how catchy! It actually forced me to stop and think about whether I am doing my bit or not. If not, why not? If I am doing my bit, could I not do more? For instance could I not persuade others to do their bit, and may be persuade them to do more than just their bit as well. But yes, at the very lowest level of environmental commitment you and I should be doing our bit. And thinking about this further I wondered whether the slogan would have had the same effect on me if I had been back here at home as it did in London. The major difference being that whilst here some people may feel that we sometimes go out our way to find environmental problems, in other places such as parts of Europe pollution is a physical presence. Air pollution for instance, you can touch, feel and see it. In a place like that a slogan like "Are you doing your bit" will have you thinking the whole day.

I really should have started by apologising once again to members on my absence from the

Annual General Meeting (AGM) I had an unreschedulable trip abroad. The AGM is a very important forum for the organisation and we should accord it the reverence it deserves. We should attend in our greatest numbers

Continued on page 7



A section of the group, before Leaving Mbabane to Lobamba



Women from Nsinqweni "doing their bit!"

Picture 8: analysed newsletter – front page

COMMUNITY GROUP PROFILE

Name: Timeleni Bornake
Location: Nsingweni in the Manzini Region
Year when Group was started: 1995
No. Of members: 50 (46 women and 4 men)
Contact Person(s): Make Dlamini (Gogo Shongwe) and Frank Dlamini.
Total Financial Assistance: About E80 000.00
Donors: Yonge Nawe and Swaziland Environment Authority
Types of projects: The group is engaged in various projects which include the following:



Produce from one of their projects



Donation by the group in 1996 for drought relief through Red Cross

- a. Gardening - a variety of vegetables are grown
- b. Orchard - They grow Oranges, Naartjies, Mangos, Litchies, and Bananas
- c. Dry Crops- The group concentrate mainly on maize and beans

Causes Held: Besides the usual educational lessons which are conducted during the project implementation, the group has had long courses:

- a) Permaculture one - week course
- b) Record keeping

Achievements: The group has received the following inputs for project material: fence, garden tools, fruit trees, water pump, piping and constructed a water tank. They are currently working on protecting a spring in order to supplement the existing water system.

The group has also made two donations, using their produce, to the drought stricken communities. The first was in 1995 which was presented through the Red Cross and the second was in 1998. This one was received by the Chairman of the National Disaster Relief Task Force, Dr. Ben Nsibande.



Second Donation for Drought Relief Through National task Force

Blue Moon Printing Co.

Picture 9: analysed document – back page

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