INVESTIGATING THE FACTORS WHICH CONTRIBUTE TO SUSTAINABILITY OF A SCHOOL GREENING PROJECT

A CASE STUDY OF THE WEST-END PRIMARY GREENING PROJECT

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DECLARATION

I, the undersigned, hereby declare that this mini-thesis is my own work, that it has not been submitted for any degree or examination in any other University, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

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ACKNOWLEDGEMENTS

ABBREVIATIONS

BP	British Petrolium
EMDC	Education Management and Development Centres
IUCN	International Union for the Conservation of Nature
NBI	National Botanical Institute
NGO	Non- governmental organisation
SANBI	The South African National Botanical Institute
SANBI-EEU	The South African National Botanical Institute's Environmental Education Unit
SEED	School's Environmental Education Development
UNEP	United Nations Environment Programme
USA	The United States of America
WCED	Western Cape Education Department
WESSA	The Wildlife and Environment Society of South Africa
WWF	World Wide Fund for Nature

ABSTRACT

West-End Primary is one of more than 100 public schools in South Africa, which since 1994, has greened large parts of its school grounds with a water-wise indigenous and vegetable garden. The South African National Botanical Institute-Environmental Education Unit (SANBI-EEU) is a government agency that has undertaken responsibility for implementing greening projects in partnership with public schools such as West-End Primary. SANBI-EEU encourages and supports the establishment of indigenous and vegetable gardens to facilitate teaching, to support school nutrition programmes and to make possible the employment of unemployed community members.

Anecdotal evidence points to local cases where the "caretaker inherits" the greening project because other stakeholders (educators, learners) no longer participate in garden maintenance or because projects are started but cannot be sustained. The review of theory suggests that project sustainability is achieved and ensured through adopting a people-centred, participatory and sustainable approach to development. Hence, participation, capacity and capacity building is important to ensure this. Incorporating these development approaches into programme, project and operations management strengthens the process for achieving and ensuring project sustainability.

This study was exploratory and used an empirical research design which combined qualitative and quantitative methods to investigate sustainability factors. The research population comprised Grade 5, 6 and 7 learners, staff and parents/community members at the West-End Primary School.

In general the research findings demonstrated that West-End Primary achieved a degree of sustainability after project implementation. The study found that developmental factors such as participation, capacity, capacity building did in part contribute to achieving and ensuring this degree of sustainability. However a year and several months after project implementation, the degree of sustainability achieved was in a fragile state. This fragility was the result of a mix of weakness and strengths in the factors that have contributed to sustaining the greening project.

CHAPTER ONE

1 INTRODUCTION

1.1 Contextualisation and Rationale

School grounds in publicly funded South African schools are, with few exceptions, generally sandy fields or unmanaged grass spaces. Since 1994, more than 100 public schools nationally (SANBI, 2007:56) have changed their barren landscapes by embarking on projects to green their school grounds with water-wise indigenous and vegetable gardens.

The South African National Biodiversity Institute (SANBI) has been an ardent promoter and supporter of school greening initiatives. This is no accident since the establishment of school gardens is linked to post 1994 South African environmental and educational policies.
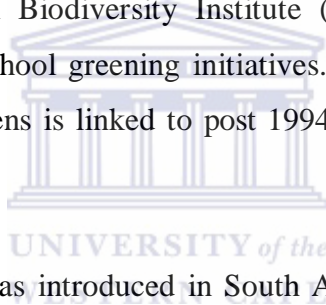
New environmental policy was introduced in South Africa after 1994, when a new democratically elected government took political office. One of the key policies is the White Paper on Environmental Management, issued in 1997. Supporting the environmental component of the latter policy is the White Paper on Education and Training, which is broadly educational in scope and includes environmental education as one of its principles/values.

The White Paper on Environmental Management, issued in 1997, and the legal framework supporting this policy, that is, the National Environmental Management Act (No 107 of 1998) and the National Environmental Management Biodiversity Act (2004), sets a broad environmental framework for environmental management and more particularly makes provision for introducing greening programmes, linked to environmental education, into public schools.

Indigenous gardens at several primary schools and the integration of environmental education into the schools' curricula are amongst the outputs of government's policy on environmental management. These outputs are traceable to government's vision on environmental management. This vision is stated as follows:

> *one of a society in harmony with its environment… where all people have sufficient food, clean air and water … green spaces in their neighbourhoods that will enable them to live in spiritual, cultural and physical harmony with their natural surrounding* (Department of Environment Affairs and Tourism, 1997:9).

The means for achieving this vision include the articulation of seven strategic goals, as outlined in the 1997 White Paper on Environmental Management. Of these goals, Goal 5 refers to empowerment and environmental education and reads as follows:

> *Promote the education and empowerment of South Africa's people. Increase their awareness of, and concern for, environmental issues, and assist in developing the knowledge, skills, values and commitment necessary to achieve sustainable development* (Department of Environment Affairs and Tourism, 1997:26).

Supporting objectives flow from each goal, serving to provide more detail on the means for achieving government's environmental management vision. Thus for example, there are three supporting objectives for Goal 5, namely, education and training, empowerment of citizens through capacity building, and marginalised and special interest groups.

The first supporting objective on education and training has four further points, one of these being "to integrate environmental education in all programmes, levels, curricula and disciplines". The second supporting objective of empowerment of citizens through capacity building, which has two points, makes reference to promoting "capacity building programmes and projects that assist … particularly disadvantaged sectors of society" (Department of Environment Affairs and Tourism, 1997:26). Hence, South African environmental management and education policy, supported by

a legal framework, makes provision for introducing indigenous gardens linked to environmental education at public schools.

1.2   Greening Projects Internationally

Greening projects in schools have been used as part of education curricula in schools in Europe from as early as the 17th century. Referred to as *school gardens*, the concept of greening projects was copied from the European system and implemented in schools in the United States of America (USA) in the late 1800s. The practice and use of school gardens in the USA grew in popularity in the 1900s (De Marco, 1997:1; Barchert, cited in Smith, 2003:3).

In 2001, most school gardens in the USA were located in elementary (primary) schools, with those in upper level schools forming part of the agricultural studies curriculum (Smith, 2003:3). Smith (2003, vii) noted that at schools in the USA, school gardens are used to supplement the education curriculum and ''to educate students in many different subject areas''. The use of school gardens to support curricula is also present in the United Kingdom, Japan and Germany (Smith, 2003:31).

1.3   Greening Projects in South Africa

Environmental education has been included in the new South African Schools Curriculum, and school gardens are increasingly promoted to support environmental teaching and learning in public schools. Fullard (2006:2) noted that "environmental education processes are now integral to all of the eight learning areas in the formal curriculum", namely Arts and Culture, Economic and Management Sciences, Languages, Life Orientation, Mathematics, Natural Sciences, Social Sciences and Technology (Western Cape Education Department, 2002). School gardens also give content to South Africa's support for the United Nations Decade of Education for Sustainable Development, which commenced in 2005 and ends in 2014.
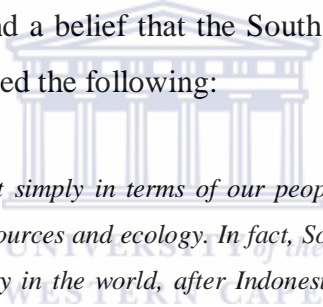
A new outcomes-based South African schools curriculum serves as an impetus for establishing school gardens in South Africa. The approach to teaching and learning is

one which "seeks to link education more closely to the real world, giving students skills to access, criticize, analyze and practically apply knowledge"(University of Michigan, n.d.).

1.4　　Greening Project Motivation and Rationale

The rationale for greening projects at public schools in South Africa derives from a host of factors, ranging from promoting South Africa's plant biodiversity to supporting a new curriculum, which includes an environmental focus, to beautifying barren school grounds and, finally, to contributing to poverty alleviation through establishing food gardens to support school nutrition programmes.

The broader context for greening projects in schools is informed by a concern for South Africa's biodiversity and a belief that the South African population needs this biodiversity. SANBI (n.d.) noted the following:

> *South Africa is diverse not simply in terms of our people and culture, but also in terms of our biological resources and ecology. In fact, South Africa is the third most biologically diverse country in the world, after Indonesia and Brazil. South Africa occupies about 2% of the world's land area. It is home to nearly 10% of the world's plants and 7% of the reptiles, birds and mammals. We have three globally recognised biodiversity hotspots; the Cape Floristic Region, which falls entirely within our boundaries: the Succulent Karoo, shared with our neighbour Namibia, and Maputaland-Pondoland, shared with Mozambique and Swaziland.*

According to SANBI, South Africa's biodiversity is an important basis for economic growth and development. SANBI also believes that biodiversity ensures "ongoing provision of ecosystem services such as production of clean water through good catchment management, prevention of erosion, carbon storage (to counteract global warming), and clean air" (SANBI, n.d.).

Aside from the opportunity to promote biodiversity, Eyssell (in Qwathekwana, 2006:4) stated that SANBI, through its Outreach Greening Programme, also aims to develop "gardening skills and better communication, problem-solving, entrepreneurial

skills and project management skills" within school and community groups. SANBI has stated (Eyssell, cited in Qwathekwana, 2006:4) that its objectives in schools are the following:

- To isolate the conditions that hinder a green, healthy environment in South African townships;
- To introduce environmental awareness, responsibility and sustainability to South Africa's youth;
- To act locally (using indigenous resources, cultures and traditions) while always thinking globally;
- To integrate indigenous gardens into the South African curriculum; and
- To make plant labels to let the gardens speak and to integrate learning.

1.5   Statement of the problem and aims of the study

1.5.1   Problem Statement and research question

Participatory development is seen as the involvement of all stakeholders in development projects, at all stages of the project. The view of many authors (Burkey, 1993; Korten, 1984) is that such participation leads to empowerment, self-reliance, the building of self-esteem and sustainability of the project.

The active participation of learners in greening projects at schools in South Africa has both short-term and long-term benefits. The most immediate benefit is the establishment of indigenous, water-wise school-based community gardens. These gardens serve to beautify a previously barren landscape, or as SANBI (2002:6) claimed, these gardens contribute to "ecological restoration". The participation of learners in the restoration of barren school grounds is a relevant educational exercise. In South Africa, learning outcomes have included the development of horticultural knowledge and skills and project management and administration skills, as well as familiarisation with indigenous plants and the principles of water-wise gardening (SANBI, 2002:6).

Mohrmann (1990, cited in Smith, 2003:17) argued that gardens are "perfect laboratories where scientific concepts literally come to life". Smith (2003:18) confirmed that improved scientific test scores is a consequence of using school gardens in school curricula. She referred to a study conducted in Texas, USA among 3rd, 4th and 5th grade students who participated in school gardening, noting that research results indicated that these students had higher test scores than students who did not participate in school gardening projects.

Improved science test scores is not the only benefit of using school gardens in curricula. Smith (2003:20) has noted that school gardens can also be used to teach all school subjects, from language to arts to mathematics. Furthermore, additional benefits to learners being actively involved in the restoration of school grounds are their empowerment and an increase in their self-esteem. This will also most likely translate to improved school performance and self-discipline in many other spheres.

Currently, the establishment of school gardens in South Africa by government organisations such as the South African National Botanical Institute-Environmental Education Unit (SANBI-EEU) has an environmental education and a development focus. Greening projects are undertaken, premised on developmental principles, which aim to achieve community ownership, empowerment and participation from all project beneficiaries. Organisations such as SANBI-EEU provide project support to schools over a three-year project period, after which schools are required to sustain project outputs on their own. In some local cases, a participatory development approach has resulted in the successful establishment of school gardens as well as the introduction of environmental education into the curricula. Sustaining such project outputs while still maintaining participation by various stakeholders, however, has not been a success. Anecdotal evidence points to cases where the "caretaker inherits" the project (Klein, 2008) because other stakeholders (educators, learners) no longer participate in garden maintenance or because projects are started but cannot be sustained (West-End Primary, 2004).

How to sustain a school greening project in a participatory way requires investigating the factors which contribute to sustaining a school greening project. The **key research question** which this study investigates is the following: What are the factors which

contribute to sustaining a school greening project? Following on the main research question are secondary research questions: What is the status of factors contributing to sustainability of a school greening project? Is participation weak, average or strong? Is capacity for self-reliance weak, average or strong?

1.5.2   Aims of the Study

The overall aim of the study is to investigate and document the different factors which contribute to West-End Primary School sustaining its greening project. Therefore, the specific aims of this study will be to:

- locate this study in its broader theoretical context;
- provide a broad overview of the South African National Botanical Institute (SANBI);
- document the development and importance of greening projects;
- ascertain the factors which contribute to the sustainability of a greening project by focusing on West-End Primary School as the case study area; and
- provide summary findings and recommendations to stakeholders.

1.6   Research Design

Babbie and Mouton (2002:74) stated that a research design is a plan or blueprint of how one intends to conduct research. This study used an empirical research design which incorporated both qualitative and quantitative methods.

1.6.1   Research Methodology

The study's purpose is to understand more fully the factors that contribute to the sustainability of a school greening project. It is therefore an exploratory study. Babbie and Mouton (2002:80) suggested that a research design applicable to such an exploratory study should be considered. They recommend (ibid, 2002:80) that a researcher (i) follow an open and flexible research strategy and (ii) use methods such as literature reviews, interviews, case studies, and informants, which may lead to insight and comprehension.

In this study a case study was used, together with a review of secondary data, participatory observation and interviews with relevant informants to collect both primary and secondary qualitative data. In addition to the latter methods, a structured questionnaire was used to collect both quantitative and qualitative primary data. These qualitative and quantitative methods were used to collect primary and secondary data. The combined use of these methods was necessary to facilitate the collection and corroboration of primary and secondary data.

Babbie and Mouton (2002:76) explained that an empirical research design uses either primary or secondary data. Primary data refers to data which the researcher has collected himself or herself whereas secondary data refers to data which already exists.

1.6.1.1 Literature Review

A review of literature on development and school gardens was completed prior to embarking on field work. Its purpose was to refine the study's conceptual framework and to enhance the researchers understanding of greening programmes and projects.

Important secondary data (annual reports, pamphlets, papers published by SANBI-EEU) and other records (photographs and curriculum links and other eco-files compiled by West End Primary) were scrutinised to source information to explain the study's background as well as to gain insight into and understanding of the factors which contribute to a school greening project. The literature review therefore provides a solid theoretical base from which to launch the empirical fieldwork.

1.6.1.2 The case study approach

Yin (1994:13) defined a case study as an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. A distinction between *case* and *case study* is made. Yin (2004: xiv) defined the *case* as the real-life set of events from which data will be drawn. The *case study*, on the other hand, is defined as the

"substance of (the) research enquiry" and consists of the research question, theoretical perspective, empirical findings, interpretations and conclusions (Yin, 2004:xiv). The case under investigation in this study is the greening project of a public primary school, West-End Primary. The case study will focus on the factors which contribute to sustainability of the West-End Primary greening project.

West-End Primary is situated in Lentegeur, Mitchell's Plain, which is 20kms from the city centre of Cape Town, in the Western Province of South Africa. It was selected as a case for the following reasons: (i) its school greening project is regarded as a success, (ii) its project implementation period ended in 2006 and the project is now operational, (iii) its project was part of SANBI-EEU's greening programmes, namely the Outreach Greening and Greening of the Nation Programme, and (iv) because of the school's willingness to allow the researcher to use its greening project as a case study for this investigation.

The type of research question posed in this study is exploratory (Yin, 1994:5). Hence, through studying the case of the West-End primary greening project, the researcher was able to study factors which contribute to sustainability in its real-life context.

1.6.2 Research population

The research population comprised Grade 5, 6 and 7 learners, staff and parents/ interested community members at the West-End Primary School. Stratified and random sampling methods were used to select a sample of learners. These learners were interviewed using a structured questionnaire to obtain primary data. West-End Primary staff and parents/interested community members were identified during participatory observation, by a review of school records and through interviews. A review of literature, participatory observation and interviews were used to obtain primary and secondary data about and from West-End Primary learners, staff and parents.

1.7   Qualitative Methods

Qualitative tools such as participant observation and interviews are used in order to understand human action, from the perspective of the insider, of the people involved in the greening project (Babbie & Mouton, 2002:53). They (ibid, 2002:270) viewed a qualitative approach as allowing a researcher to describe and understand rather than to explain human behaviour.

1.7.1   Participant observation

Babbie and Mouton (2002:293) stated that participant observation is a type of observation where the researcher is simultaneously a member of the group she or he is studying and a researcher doing the study. Penderis (1996:15) described participant observation as allowing the researcher to "experience the reality of the social world of the participants" and to "observe social interactions in particular contexts through participating in a wide variety of actual day-to-day life activities".

Participant observation was used in order to ascertain the overall successes or failures of the project as well as to observe the active involvement of different role players and their interactions with each other.   Participant observation was active in nature, meaning that the researcher worked alongside temporary ground staff and learners in the indigenous and vegetable garden. This enabled the researcher to interact with various stakeholders (learners, partners, educators and ground staff), who exposed the researcher to pertinent information on the project. Information was recorded in diary and photographic format. Participant observation was conducted on average twice monthly over a period of six months commencing in January 2008 and ending in July 2008.

1.7.2   Interviews

Several authors (Babbie & Mouton, 2002:289; Yin, 1994:84-85; Marshall & Rossman, 1989:82-83) have made a distinction between different types of interviews. A qualitative interview is described as "open", allowing the "object of study to speak for him/herself'' (Babbie & Mouton, 2002:289). Such an interview is not guided by

"predetermined hypothesized-based questions'' (ibid, 2002:289). Marshall and Rossman (1989:82) described an interview as a method of data collection which is based on an interaction between the interviewer and interviewee. They distinguished between interviews that are similar to casual conversations or brief questioning and ones that are more formal and entail more time. Merton, Fiske and Kendall (cited in Yin, 1994:84-85) referred to a focused interview. Such interviews are said to be open-ended and to assume a conversational manner but are guided by a certain set of questions derived from case study protocol. A third type of interview is discussed in section 1.8.2. This study used focused interviews which were lengthy and formal as well as casual interviews.

Prior to conducting interviews, personal contact was established with the SANBI-EEU Director and the West-End Primary Principal to gain their support for the research. Thereafter, focused interviews were planned and conducted with an ex-educator of West-End Primary (now employed by SANBI-EEU), with three staff members from SANBI-EEU and with one staff member from the School's Environmental Education Development (SEED). The qualitative data collected were used to complement and clarify information obtained from a review of literature about the greening project and the role of these organisations.

Casual interviews were conducted with two educators, school management, one ground staff member, and three community members. Information was obtained from them informally. This information was either obtained accidentally, as in the case of the ex-principal who provided useful information at a first meeting where the study was introduced, or it was obtained spontaneously and without prior planning, as in the case of educators and ground staff. Educators and ground staff were often busy or dealing with unplanned emergencies, such as a school break-in, which made planned interviews difficult and required patience and flexibility on the part of the researcher. They shared information best either when the researcher worked alongside them or when interacting with them for short periods during their breaks from teaching. These casual interviews were initially unstructured. This was in the initial days of participant observation when the researcher was establishing a relationship with a community member and educator involved in garden maintenance. These interviews later incorporated a semi-structured format once a rapport and trust had been established

with school staff and once information about the project activities and project role-players had been established. The qualitative data collected were used to clarify and verify information obtained during participatory observation, interviews and the review of school and project documents.

1.8   Quantitative Methods

According to Babbie and Mouton (2002:49), a quantitative approach is one whereby a researcher believes that the best way of measuring the properties of phenomena is through quantitative measurement that is, assigning numbers to the perceived qualities of things. This study used a structured questionnaire (see Annexure 1) to collect data about learner participation, capacity and capacity building.

1.8.1   Sampling method

According to Babbie (2007:189), to make useful estimates about the characteristics of a population, a survey sample "must represent the populations from which they are drawn". He (ibid, 2007:189) further stated that "a sample will be representative of the population from which it is selected, if all members of the population have an equal chance of being selected in the sample". The sampling method used in this study included both stratified and random sampling methods as this allowed for a "greater degree of representivity" (Babbie, 2007:205) and ensured that each learner had a greater chance of selection for the interview process.

A statistical equation informed by stratified and random sampling methods was used to select 30%, that is, 135 respondents from the population of 450 Grade 5, 6 and 7 learners at West-End Primary. The numbers of learners (see column 3 in Table 1) were selected using the following statistical equation:

Step 1:

Class size   x 100   = ___ %
Population size   1

For example:

41 (class size)   *x 100   = 9, 1%*
450(population size)   *1*

Step 2:

$$\frac{\%}{100} \times \frac{135}{1} = x \text{ learners}$$

For example:

$$\underline{9, 1\%} \times 135 = 12, 28 \text{ learners}$$
$$100$$

Step 1 and 2 encompassed a stratified method of sample selection, with the equation calculating the numbers of learners to be selected from each grade.

Step 3 entailed random selections of learners, meaning that once the number of learners was calculated per grade, the specific names of *x* learners were randomly selected from the respective grades. Random selection was done by placing the number for each grade's learners in a box, then selecting *x* numbers. Each of the numbers corresponded to the name of a learner.

Table 1 *Number of learners selected for interviews from Grades 5-7*

Grade	Learners in grade	Learners selected for interviews	Learners interviewed
5A	38	11	9
5B	41	12	9
5C	41	12	11
5D	43	13	5
6A	32	10	6
6B	39	12	8
6C	40	12	7
6D	41	12	5
7A	31	9	1
7B	35	11	9
7C	34	10	5
7D	35	11	2
Total	450	135	77

These sampling methods allowed for the selection of a sample most representative of Grade 5, 6 and 7 learners at the school. Of the 135 respondents selected, only 77 finally consented to being interviewed. The sample included male and female learners with ages ranging from 10 to 15 years and whose home languages were Afrikaans, English or Xhosa. It included learners who actively participated in school garden activities and learners who did not.

1.8.2 Questionnaire

Babbie and Mouton (2002:232) maintained that survey research is probably the best method available to the social scientist interested in collecting original data for describing a population too large to observe directly. This study used a questionnaire survey to collect data to describe the participation, capacity and capacity building of learners.

The questionnaire comprised both closed- and open-ended questions (Babbie & Mouton, 2002:233) and was used to obtain quantitative and qualitative data relating to sustainability factors such as participation in garden planning and maintenance, reasons for participation, consistency of involvement, participation in decision-making, perception of ownership, knowledge and skills transfer, and empowerment. Qualitative data were collected alongside quantitative data because such data better explained quantitative findings.

Babbie and Mouton (2002:238) noted that in a multicultural society, it is important to interview respondents "in a language they feel comfortable in". Although the language of instruction in the classroom is either Afrikaans or English, the home language of the learners was Afrikaans, English or Xhosa. Hence, the questionnaire was translated from English into Afrikaans and Xhosa (see Annexures 2a and 2b) to provide respondents with the option of being interviewed in a language they felt confident to communicate in.

1.8.3 Piloting of the questionnaire

The questionnaire was piloted, that is, pre-tested, on male and female learners at Northwood Primary, Mitchell's Plain. The school is similar to West-End Primary in the sense that it has a similar learner profile to West-End Primary, that is, its learners reside in Mitchell's Plain and speak either English, Afrikaans or Xhosa as their home language. It is also similar to West-End Primary insofar that its indigenous and vegetable garden is a project of the SANBI-EEU School Indigenous Greening Programme.

1.8.4   Interviews with learners

Each of the 135 learners selected for the sample were issued with a letter requesting parental consent (see Annexure 3). Parental consent was acquired for 82 learners. Of the 82 learners, 77 were interviewed and 5 excluded, either due to illness or a change in decision to participate. Of the 77 learners interviewed, 34 were in Grade 5, 26 in Grade 6 and 17 in Grade 7. Interviews were conducted over a period of one week in September 2008. These were conducted by a team of five student enumerators, four female and one male, of whom two were fluent in Xhosa and one was fluent in Afrikaans. All enumerators were fluent in English. Two of the student enumerators had prior field research experience, while three had completed training in survey methods. The researcher provided additional training to the enumerators, which included a site visit to the school garden, explanation of each of the questions and an interview practice session.
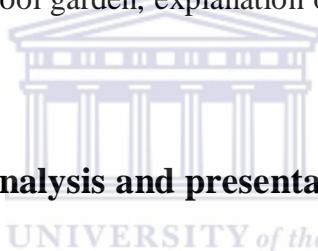
1.9   Data processing, analysis and presentation

Quantitative and qualitative data were collected. The quantitative data were coded, processed and analysed using the Statistical Package for Social Scientists (SPSS) and presented in the form of tables and pie charts. The qualitative data collected through participant observation, focused and casual interviews and the questionaire were grouped into related themes, namely, participation, capacity, capacity building, partnerships and sustainability. These findings are presented in text form.

1.10   Limitations of study

Some limitations were encountered during the research process. These included the following: First, the main challenge pertained to accessing literature on school gardens and sustainability in South Africa. South African academic databases used in the literature search were rather sparse. Literature on the topic of school gardens and sustainability was difficult to source on academic databases. Useful information pertaining to the topic of school gardens in South Africa was generally documented in

environmental magazines or the publications of non-governmental organisations (NGOs) working in the field of environmental education. A literature search for documented research into the topic of school gardens and sustainability generated no South African research reports or theses.

A second challenge was to navigate the research time frames of the Western Cape Department of Education (WCED) and the academic time frames. The interview process and in particular participatory observation requires time, patience and flexibility. Much-needed interview time was lost to requesting and waiting for WCED authorisation to undertake research at West-End Primary. Interviews could not be conducted during the last semester when learners were writing final examinations or when educators were teaching or busy with quarterly examinations. The school very generously accommodated and assisted the researcher in interviewing 77 learners prior to the WCED cut-off period for conducting research in schools. This left no time for focused interviews with educators. Fortunately, casual interviews had been conducted with educators and ground staff during participatory observation, and hence the researcher was able to use this data.

Third, certain constraints accompany undertaking research for a mini-thesis for a master's degree. These constraints are mainly time and the need to focus the topic under investigation. The study is therefore not conclusive. External contextual sustainability factors have implications for a topic of this nature. The implications of environmental factors such as climate change, water scarcity and government economic policy could not be adequately investigated in such a brief study. Additional studies therefore need to complement this study.

Despite these limitations, the researcher is confident that this study represents a starting point for further research required on this topic. The findings of the study are reliable and West-End Primary and SANBI-EEU will gain useful insight into the status of sustainability factors at West-End Primary.

1.11   Research Agenda

Chapter 1 *(Introduction)* contextualises and provides the rationale for the research. It presents the background to the study, the research problem, the aims of the study and the research design and methods used. An outline of subsequent chapters is provided below:

Chapter 2 *(Theoretical Framework and Literature Review)* is a synthesis of the literature reviewed for purposes of establishing a conceptual framework which is used to define, inform and assist in explaining the questions under investigation in this study.

Chapter 3 (*Overview of West-End Primary and SANBI-EEU Partnership*) provides an overview of both West-End Primary and SANBI and serves to provide an insight into both organisations.

Chapter 4 *(The Factors contributing to Sustainability of a School Garden)* presents the findings into the factors which contribute to sustaining a school greening project. The findings are premised on an analysis of data collected through participatory observation, use of a structured questionnaire and personal interviews. It is framed by a literature review which suggests that participation, capacity and partnerships are important for ensuring project sustainability.

Chapter 5 (*Conclusion and Recommendations*) presents general conclusions and recommendations to West-End Primary for sustaining its greening project and to SANBI-EEU for sustaining a greening programme.

CHAPTER TWO

2 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

This chapter provides a theoretical framework and conceptual platform for the topic under investigation. The study is undertaken from a developmental perspective and hence a review of literature on development theory is presented. The review of literature on development theory commences with traditional classical development theories such as modernisation and dependency theory. This is followed by a description of alternative development approaches such as participatory development, people-centred development and sustainable development. Hereafter a review of literature on policy as it relates to implementation is discussed.

The literature review identified three development paradigms which relate to the topic of sustainability. These are people-centred-, participatory- and sustainable development. The literature review presented here is a refinement and integration of several but not all the ideas which relate to the topic of sustainability. The concepts which emerged from the review process included participation, capacity and capacity building, sustainability, programme-, project and operations management. In concluding, these theories and concepts serve to launch and guide the study into factors which contribute to sustainability of a project.

2.2 Conceptualisation of Development

Development, as a discourse, which aims to and in several instances has succeeded in bringing about change in people's lives, is an enterprise which in the last five decades, has generated several theories and techniques of how to bring about positive change. Development is premised on the view that sustainable change is possible, that poverty, hunger, HIV/Aids, unemployment, environmental crises and an endless list of challenges facing humankind, can be overcome or managed for the purpose of improving people's lives.

How one defines and understands development is largely a matter of subscribing to a particular ideology. Rahman (1993:186) stated that there are two opposing views of development, one a consumerist view and the other a creativist view. The latter views of development are underpinned by two opposing ideologies, the consumerist view by capitalism and the creativist view by communism. This however does not mean that two opposing, neat and clearly defined definitions of development exist. On the contrary, vociferous debate and criticism of approaches to development have resulted in numerous meanings and definitions of development, with these opposing ideologies underpinning the various definitions (Abiche, 2004:15; Lewis & Gardner, 1996:1-16). Lewis and Gardner (1996:3) stated that in virtually all its usages, development implies positive change or progress. The *Oxford Dictionary of Current English* (cited in Lewis & Gardner, 1996:3) defines it as a 'stage of growth or advancement'.

As a verb, the concept of development refers to activities required to bring about these changes, while as an adjective it is inherently judgmental, for it involves a standard against which things are compared (ibid, 1996:3). Coetzee (2001:120) noted that development infers a form of social change that will lead to progress, the process of enlarging people's choices, acquiring knowledge and having access to resources for a decent standard of living, and a condition of moving from worse to better.

2.3   Development Theories

Lewis and Gardner (1996:12) stated that there is no single theoretical model which is commonly used to explain development, nor is there any one 'solution' to the problems of underdevelopment. They argued that contemporary understandings draw from a variety of theoretical sources and suggested a variety of strategies. Theron (2005:104) stated that there are many schools of thought or approaches to choose from when the issue of development is debated. A review of classical development theories, alternative development theories and policy implementation instruments are presented in subsequent pages.

2.3.1 Traditional or Classical Theories

The dominant theories of development in the early 1960's to 1970 have included modernisation and dependency theory. These are macro theories of development and are included to provide a sense of the history of development theories, but also to explain the context for the emergence of alternative theories of development.

2.3.2 Modernisation Theory and Community Development

Modernisation theory, as a theory of development was promoted by the United States of America(USA), during the 1950s to 1970s and within some quarters in the 1980s (Graaff, 2006:14;Lewis & Gardner,1996:7;So,1990:17). The main rationale for promoting modernisation theory was to deter the spread of communism and to promote capitalism as a model of development in newly independent African- Asian and Latin American countries (Coetzee, 2001:28; Graaff, 2006:14; So, 1990:17).

Modernisation theory viewed development as occurring in a linear manner. Traditional societies were encouraged to abandon traditional values and practices and instead replace these with modern ones, hereby replicating 'developed' societies such as the USA and Europe.

A modernisation approach to development required economic, political and social change which meant a capitalist economy based on industrialisation, high levels of consumption, urbanisation and the commercialisation of agriculture, a democratic government, free press and adopting individual and rational values (Graaff, 2006:15; Lewis & Gardner, 1996:7).

De Beer and Swanepoel (1998:6) drew the link between modernisation theory and community development stating that early versions of community development originated within the modernisation school of thought. Such an approach is top-down which means that the elite, with power over communities, initiates and controls the development process. These elites, rather than the poor who are meant to be the intended beneficiaries, are the key beneficiaries of the development process (De Beer & Swanepoel, 1998:4); communities are not included in decision making or planning

and thus their needs are not the focus of development. Sustainability of projects therefore decreases as the beneficiaries have no control over the different stages of project planning and implementation.

The inherent Eurocentric bias of the modernisation approach diminishes its value as a model for achieving sustainable development. It is an approach which views traditional values and structures as obstacles to development (Graaff, 2006:15). It is a top-down approach to development with no place for local knowledge and input into decision making or planning of development which is intended to benefit local people.

2.3.3   Dependency Theory

Dependency theory originated in Latin America in the 1960s (Davids, 2005:12), against the backdrop of the Cold War. It was a political response from Third World academics and activists (Baran, Cardoso, Frank and Prebisch) who criticised the impact of the modernisation approach in their own countries (Davids, 2005:12; Graaff, 2006:35-36). It is a Marxist theory which argues that First World countries (referred to as the core nations) developed through underdevelopment of Third World countries (referred to as the periphery) through a process of surplus extraction, a lack of investment by multinationals in expanding their operations and an unequal balance in trade with the Third World (Graaff, 2006:37-38; Graaff & Venter, 2001:77-83).

Dependency theorists such as Frank, Cardoso, Prebisch and Sweeny argued that development in Third World nations are geared towards meeting the needs of First World nations (Graaff & Venter, 2001:78, 83). Evidence of this can be drawn from the colonial period, when First World nations developed transport -, governance - and education systems in the colonies, as well as traded for raw materials with their colonies. This was done to develop First World nations and not to develop Third World nations.

Dependency theorists, according to Graaff (2006:39), see no hope of development for underdeveloped nations/communities since any development is regarded as the underdeveloped subordinating its needs to the developed, resulting in its exploitation. Dependency theorists argued that development can only occur if capitalism is overthrown. The latter view however was discredited in the East Asian nations of

South Korea, Taiwan and Singapore. These nations once regarded as underdeveloped, attained "developed" status without overthrowing capitalism (Graaff, 2006:20; Graaff & Venter, 2001:83).

2.4   Alternative Approaches

Alternative theories of development have its origins in the critiques of classical theories. The critics of classical development approaches regard it as failing to address the development needs of poor and marginalized people (Chambers, cited in Blackburn, 1998: xiii; Cooke & Kothari, 2001:5; De Beer & Swanepoel, 1998:3-4). Chambers (cited in Blackburn, 1998: xiii) stated:

> From the 1950's through the 1960s and 1970s, in the prevailing orthodoxies of development, it was professionals who had the answers. In general we were right and we were the solution. Poor and local people were the problem, and much of the problem was to be solved by education and the transfer of technology. Increasingly, that ideology has been questioned and undermined. …Development imposed from the top down was often not sustained. More and more we have been recognized as much of the problem and their participation as the key to sustainability and many of the solutions.

Alternative development theories which emerged during development debates in the 1980s included the people-centred approach, participatory development, the social learning process approach, sustainable development and capacity building and empowerment strategies (Mohan, n.d.; Theron, 2005:107-108). A more detailed discussion of the latter theories and policy implementation is presented below as it provides a theoretical framework for the investigation into the sustainability of projects.

2.4.1   People-Centred Development

People-centred development advocates people and community control over resources to meet their needs (Korten, 1990:1). As a developmental approach it emerged as a result of dissatisfaction with the modernisation approach, which Korten and Carner (1984:201) described as "dehumanizing, inequitable and environmentally unsustainable".

Korten (1990:76) defined people-centred development as a "process by which the members of society increase their personal and institutional capacities to mobilize and manage resources". He stated that this capacity is used to "produce sustainable and justly distributed improvements in their quality of life consistent with their aspirations". People-centred development is concerned with human growth and well-being, equity and environmental sustainability (Korten, 1984:299). He (ibid: 300) described its dominant logic as "that of a balanced human ecology", where the dominant resources are "inexhaustible resources of information" and local people's "creative initiative". As regards its concern with environmental sustainability, people-centred development holds the view that the earth's natural resources belongs to all people and not only the rich and powerful (Robertson, n.d.).

People-centred development emphasises a participatory role for development practioners, such as NGO's and governments (Korten, 1990:1). Supporting and building self-organised, self-reliant communities is important to practioners of people-centred development, and thus Korten (1990:1) reminds practioners that they are participants in supporting people's agendas. The people or individual, is the actor "who defines goals, controls the resources, and directs the processes affecting his or her life" (Gran, cited in Korten, 1984:300). Thus people-centred development is unlike the modernisation approach. The beneficiaries of development are not the subjects in their own development and the development practioner is not the professional with all the answers.

2.4.2 Participatory Development

Paulo Freire, a Brazilian academic and radical activist, was amongst the first proponents of participatory development in the 1970's (Mohan, n.d.). Others which contributed to the discourse on participation in development, included academics such as Robert Chambers (1983) who "argued that 'putting the last first' was the only way to achieve rural development (Mohan, n.d.).

2.4.2.1   Participation

An agreed definition of participation does not exist (Mohan, n.d.; Theron, 2005:113). Development strategists, policy-makers and the public do not agree on how participation should be implemented or what (public) participation is (IAP2, 2000; Johnson, 2003; World Bank, 1996a, cited in Theron, 2005:113). Theron (2005:113) viewed this as positive, stating that "definitions should not serve as blueprints" especially in contexts where interaction is with grassroots communities.

Several definitions are put forward by various academics and organisations (Kumar, 2002:23-24; Rahman, 1993:150; the United Nations Department of Economic and Social Affairs, 1963:4, cited in Theron, 2005:114). Theron (2005:114) presented the key issues of participation. These are:
- participation is an **organised activity** and the primary unit of participation is a collective of persons who stand in a relationship with the state.
- the **collective takes initiative** in gaining access to programmes and projects.
- the **origin of initiative** for programmes and projects is based on the **people's own thinking** and deliberations –the latter directs their collective activities.
- the **people control the process** of action initiated.
- the **needs** of a particular group of people called a "**community**" lie at the **heart** of the **programme** or project.

The manner in which participation is enlisted varies and is informed by different ideologies (Theron, 2005:114; Mohan, n.d.). Participation can be applied either for passive or active purposes in development (Long, 2001:5; Oakley: 1991, cited in Theron, 2005) (see Table 2).
In externally designed and planned programmes/projects, participation is harnessed to achieve a particular objective. This is referred to as passive participation or the instrumental view of participation "whereby participation increases the efficiency and cost-effectiveness of…development programmes" (Mohan, n.d.).

Alternatively, participation can be used in an active, transformative way, whereby local people are involved as "actors" and not "subjects" in all aspects of a programme/project's design, planning and implementation (Gran, cited in Korten,

1984:300; Long, 2001:5; Oakley: 1991, cited in Theron, 2005). This view of participation sees local people (the beneficiaries of development) as the most important role player in the development process (Chambers, cited in Theron, 2005:120). In other words, people's initiative, knowledge, skills, capacity and identification of their needs form the basis of the participatory development process (Theron, 2005:120). The change agent and local people are therefore partners in the development process. The change agent does not control and implement development on local people's behalf; instead they own the development process and are capable of doing things for themselves (Burkey, 1993:211). The end products of active participation in development processes are not only facilities or services but include empowerment and self-reliance (Chambers: 1997, cited in Van Baalen & De Coning (2006:234); Korten: 1990, cited in Theron, 2005:111). Active participation is therefore an "important means to secure sustainability of development projects" (Kellerman, 1997:51).

Table 2 *Comparative analysis: participation as a means and/or an end*

Participation as a means	Participation as an end
Implies the use of participation to achieve some predetermined goal or objective	Attempts to empower people to participate in their own development more meaningfully.
Attempts to utilize existing resources in order to achieve the objective of programmes/ Projects.	Attempts to ensure the increased role of people in development initiatives.
Emphasises achieving the objective rather than the act of participation itself.	Focuses on improving the ability of the people to participate rather than just achieving the predetermined objectives of the project.
More common in government programmes, where the main concern is to mobilize the community and involve them in improving the efficiency of the delivery system.	Finds relatively less favor with government agencies. NGOs in principle agree with this viewpoint.
Participation is generally short term.	Participation is a long-term process.
Participation as a means, therefore, appears to be a passive form of participation.	Participation as an end is relatively more active and dynamic than participation as a means.

Source: Oakley, cited in Kumar, 2002:26, cited in Theron: 2005:117

There are several criticisms which have been leveled at participatory development (Cooke & Kothari, 2001; Parfitt, 2004; Rahman, 1995, cited in Hickey and Mohan, 2005:1). Some of these are from supporters of participatory development who criticise the use of participation by powerful development agencies (Rahman, 1995, cited in

Hickey and Mohan, 2005:1). Hickey and Mohan (2005:1) noted that these aid agencies use participation as a means rather than as an end (see Table 2) and that the emphasis is on efficiency rather than empowerment. With regard to participation used in a transformative way, they (ibid, 2005:4) stated that it does not guarantee pro-poor distribution and (ibid, 2005:4) argued for a "broader project of social justice" to address redistribution of resources.

2.4.2.2 The Social Learning Process Approach

Theron (2005:120) described the social learning process approach as the second building block of development. He stated that it is introduced once public participation (the first building block) has been set in place. Public participation establishes a reciprocal relationship, a partnership between project beneficiaries and the change agent which makes possible sharing and learning from each other (Korten, 1984:182; Theron, 2005:120). Theron (2005:122) argued that the benefit of the public contributing their indigenous knowledge and experience to the project design is that planning partnerships reduce the risk of inappropriate, top-down planning being imposed on them. He said it also creates and leads to the realisation of human orientation, participation, empowerment, ownership, learning, simplicity and adaptiveness.

2.4.2.3 Empowerment

Theron (2005:122) regarded empowerment as the third building block of development. He associated empowerment with strong public participation, a social learning process, capacity building and a bottom-up decision-making process.

According to Oakley (1998:9, cited in Theron, 2005:123) there are two views of empowerment. The first views empowerment as the development of skills and abilities which enables people to manage and/or negotiate better with the development delivery system. The second view of empowerment is as a process that equips people to decide on and take action regarding their development process. As regards the latter view, Burkey (1993:59) argued that meaningful participation is concerned with power, meaning having the power to influence the decisions that affects one's

livelihoods. Hence, he saw empowerment as a process which challenges established interests and seeks to confront those who oppose the public's access to the means of development. Abiche (2004:25) stated that the World Bank refers to empowerment as the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives. It categorised empowerment into four key elements such as access to information, inclusion/participation, accountability and local organizational capacity (ibid, 2004: 25).

2.4.2.4   Capacity Building

Capacity is understood to include availability and access to concrete tangible resources (human, financial, material, technological, logistical etc), as well as intangible requirements such as leadership, motivation, commitment, willingness, courage, endurance and other intangible attributes needed to transform rhetoric into action (Brynard & De Coning, 2006:199). The presence of the latter tangible and intangible requirements to ensure adequate capacity to implement is not complete without sympathetic or conducive political, administrative, economic, technological, cultural and social environments in which actions need to be effected (Grindle & Hildebrand, 1995, cited in Brynard & De Coning, 2006:199). In terms of this definition capacity building should be interpreted as the strengthening of project beneficiaries' availability and access to resources such as financial, human, material, technological and logistical resources. It would also include strengthening availability and access to intangible resources such as leadership, commitment, willingness and courage.

Capacity building refers to strengthening people's capacity to determine their own values and priorities, and to organise themselves to action (Eade and Williams, cited in Abiche, 2004:24). Capacity building is linked to empowerment and it can be characterized as the approach to community development that raises people's knowledge, awareness and skills to use their own capacity. This enables beneficiaries to understand the decision-making process and to communicate more effectively at different levels and stages. Thus beneficiaries may share in the management tasks of

the project by taking on operational responsibility for different segments themselves (Paul, 1988, cited in Abiche, 2004:24).

Developing the capacity of beneficiaries could contribute to the sustainability of the project, sustainability which goes beyond the disbursement period and which is credited to the enhanced level of beneficiary interest and competence in the management and implementation of their own projects (Abiche, 2004:24).

2. 4.2.5 Community

Community is defined as a specific system that arises when human populations settle in a given territory, have shared common characteristics and interests and build mutual relationships for common benefit (Ferrinho, 1980, cited in Abiche, 2004:27).

Several authors point to the need to represent 'the community' as complex and not as simple, unproblematic organisational forms. Scholars Cleaver (2001:44-45) Garcia, Guliani and Wiesenfeld (1999 cited in Abiche, 2004:27) and Gardener and Lewis (1996:121) argued that 'the community' represents people from different economic-, ethnic- and gender backgrounds. In addition to shared interests they also have different needs and interests. As regards power, Kothari (2001:140) argued that power is not only concentrated in the 'upper levels' of society – with those at the top who own resources and control decision-making but power is exercised at other levels too, which includes local community levels.

The concept of community can be understood to mean a geographic community, but in terms of this research will refer to a school community which is constituted of learners, parents and staff, as well as people residing in the surrounding vicinity of a school.

2.4.3 Sustainable Development

Sustainable development has become one of the most prominent phrases in development discourse, and in some ways in the 1990s became a development paradigm (Adams, 2001:1; Lélé, 1991:607, cited in Adams, 2001:1). Its origins lie in

discussions about the need for ecological conservation in a context of environmental destruction and exploitation resulting in loss of flora and fauna (Adams, 2001:1-51).

Rogers, Jalal and Boyd (2008:42) noted that there are many definitions of sustainable development.[1] Several authors (Rogers et al, 2008:42; Theron, 2005:123) acknowledged a definition of sustainable development as articulated in a 1987 World Commission on Environment and Development report. The report, Our Common Future, also known as the Brundtland Report after its chief author, defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987:3; World Commission on Environment and Development: 1987, cited in Theron, 2005:123; Rogers, Jalal & Boyd, 2008:42). This perspective on sustainable development is termed mainstream sustainable development (Adams, 2006:102).[2]

Brundtland's definition of sustainable development is based on two concepts. The first is the concept of basic needs and the corollary of the primacy of development action for the poor. The second involves the idea of environmental limits. These limits are not those set by the environment itself, but those set by technology and social organisation (Adams, 2001:71).

Sutton (2000), Rogers et al (2008:42) and Munasinghe (cited in Rogers et al, 2008:23) identified different dimensions to sustainable development. Rogers et al (2008:42) and Munasinghe (cited in Rogers et al, 2008:23) stated that there are three dimensions to sustainable development namely the environment (ecological sustainability), society (social sustainability) and the economy (economic sustainability). Sutton included organisations (organisational sustainability) and people within an organisation (human sustainability in a corporate context). Sutton (2000) further stated that sustainability is "about maintaining or sustaining something..." and that one has to "first identify what people are choosing to sustain". He stated that sustainability is "not about the integration of ecological, social and economic issues…widespread consultation…or…about improving quality of life". He stated however that

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[1] Rogers, Jalal and Boyd (2008:42) identify 57 definitions of sustainable development and refer readers to http://www.iisd.org/ie/info/ss9504.htm and http://www.gdre.org/sustdev).
[2] See Adams, 2006:139 for Ecosocialist and Ecoanarchist perspectives on sustainable development.

integrating ecological, social and economic issues may at times be necessary to sustain something.

Some scholars and students of development, (Abiche, 2004:27; Theron, 2005:123) limit their interpretation of sustainable development. They place emphasis on defining organisational (project) sustainability without emphasising its relationship to the natural environment. Penderis (2007:7) stated that sustainable development "relates to the capacity of an organization to become self-supporting". Hence, stating that a development project or a business venture should be sustainable, is interpreted as meaning that the staff running the project would manage to do so without external help, that is, in the form of technical advice or through sponsoring/subsidising financial operations (Abiche, 2004:27).

2.4.3.1   Economic, Environmental and Social Dimensions of Sustainable Development

Munasinghe (cited in Rogers et al, 2008:23) in 1993 discussed three approaches to sustainable development namely economic, environmental and social. Munasinghe (cited in Rogers et al, 2008:23) explained the three dimensions of sustainable development as follows:

- Economic – maximizing income while maintaining a constant or increasing stock of capital;
- Ecological – maintaining resilience and robustness of biological and physical systems; and
- Social-cultural – maintaining stability of social and cultural systems.

2.4.3.1.1   The Economic dimension

The basic premise of the Brundtland definition is that development and environmental issues cannot be separated (Brundtland: 1987, cited in Adams, 2001:71). The Brundtland report recognised that development could 'erode the environmental resources on which they must be based', and hence that environmental degradation could undermine economic development (Brundtland: 1987, cited in Adams, 2001:71).

The Brundtland Report emphasised economic growth as the only way to tackle poverty but argued that economic production systems should respect and be obliged to preserve the ecological basis of development, that is (natural) resource bases should be conserved and enhanced (Brundtlandt:1987, cited in Adams,2001:71-73). Repetto (1986, cited in Rogers et al, 2008:23, 43) noted that the core idea to sustainability is that economic production systems should not impair the prospects for maintaining or improving future living standards. The need to manage natural resources today to ensure that future generations are left with resources to live off is therefore central to sustainable development.[3]

2.4.3.1.2   The Environmental dimension

International organisations such as the World Wide Fund for Nature (WWF), the United Nations Environment Programme (UNEP) and the International Union for the Conservation of Nature (IUCN), (cited in Rogers et al, 2008:44) in their definition of sustainable development emphasised the "maintenance of essential ecological processes and life support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems".

In chapter 1 reference was made to SANBI's view that South Africa's biodiversity forms an important basis for economic growth and development. It was also noted that biodiversity ensures "ongoing provision of ecosystem services such as production of clean water through good catchment management, prevention of erosion, carbon storage (to counteract global warming), and (the production of) clean air" (SANBI, n.d.)

According to Johnson, Johnson and Nichols (2002:4) many of the world's plant species are located in Southern Africa, with the south-western Cape boasting a very high number of endemic plants. These endemic plants occur naturally only in the south-western Cape. In the South African context, horticulturalists and botanists refer to endemic plants as indigenous plants (Van Jaarsveld, 2000:9). Johnson et al (2002:4) stated that indigenous means "homegrown, local; occurring naturally,

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[3] Rogers et al 2008:43 provide detailed explanations of the green technologies and economic equations used.

without artificial assistance, and in a defined place". Hence they argued that plants everywhere is indigenous to someplace where it grows naturally.

There are several reasons for promoting the planting of indigenous plants (National Botanical Institute, 2002:10; Johnson et al, 2002:4). First, an indigenous garden provides "food, shelter and breeding places for many small animals like birds, reptiles and insects (ibid, 2002:10)". Planting an indigenous garden is thus regarded as a way of restoring the natural habitats of these animals and conserving biodiversity. Second, urban development has reduced the size of natural areas and has isolated the habitats of species. This has had implications for the long-term survival of animal and plant species. The restoration of a species' natural habitat allows "species to move between larger natural areas" and thus helps to "conserve genetic diversity (ibid, 2002:10). Third, plants which grow in its natural area "are used to local conditions" such as " soil type, rainfall, temperature and wind" and therefore need to be "watered less than plants from regions with different rainfall patterns(ibid, 2002:10)". Hence, South African horticulturalists and botanist refer to indigenous plants as "water-wise" plants (NBI, 2002:10). Fourth, indigenous plants survive longer in their natural setting and thus reduce costs for replacing plants (ibid, 2002:10).

2.4.3.1.3   The Social dimension

The needs of the poor for food, water and sanitation, education and jobs are an important dimension of sustainable economic development (Barbier, cited in Rogers et al: 2008:44; Brundtland, cited in Adams, 2001:71-72,). Brundtland (cited in Adams, 2001:71) recognised the links between poverty and environment with poverty being seen as causing and having an effect on the environment, while simultaneously environmental degradation was seen as contributing to poverty.

The researcher adopts a definition of sustainability as meaning maintaining, that is, continuing or sustaining something identified by beneficiaries (Sutton, 2000) when establishing   projects and doing so without depending on external help to do so (Abiche, 2004:27; Penderis, 2007:7). In addition to this, sustainability includes environmental, financial and social sustainability (Rogers et al (2008:42). The environmental concern being with the "maintenance of essential ecological processes

and life support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems" (Munasinghe, cited in Rogers et al, 2008:44). The financial dimension is concerned with ensuring that sufficient resources is generated and maintained to fund expenses beyond project conclusion. The social dimension is concerned with the needs of the poor for food, water, education and jobs (Barbier in Rogers et al: 2008:44; Brundtland, cited in Adams, 2001:71-72).

2.6   Policy and Implementation

A policy articulates basic principles to be pursued to achieve specific goals (De Coning, 2006:3). Policy, according to Cusworth and Franks (1993:2) determines the environment and the framework within which development takes place. Policies are linked to achieving sustainability. The relationship between policy and sustainability lies in the content of a policy as well as the process of implementing policy.[4]   The researcher argues that the selection of policy implementation instruments to transform policies into concrete service delivery outputs in the form of facilities and services, (Cusworth & Franks, 1993:2; Van Baalen & De Coning, 2006:215) provides opportunities to integrate relevant aspects of people-centred, participatory and sustainable development approaches into implementation processes. Hence, combining the use of development approaches with policy implementation instruments contributes to achieving sustainability.

The range of implementation instruments which project managers and project planners can use to implement policy includes programme-, project- and operations management, planning, strategy generation, contracting, privatisation and public-private partnerships (Brynard & De Coning, 2006;183). In South Africa, since 1994, public policy has had a developmental focus and programme- and project management has increasingly been used by public managers to implement public policies (Brynard & De Coning, 2006:213, Van Baalen & De Coning, 2006:216). Brynard and De Coning (2006:180) noted that the public policy process has been attempted at various levels of government in South Africa and has been pursued in conjunction with the private sector, civil society and NGOs.

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[4]See Brynard and De Coning (2006:196-203) for further information on policy content and the context through which policy passes in the process of implementation.

2.6.1 Programme Management

Programme management is defined as "…the purposeful management and coordination of a portfolio of projects on the basis of geographical targeting, sectoral and functional mix as well as nature of assistance" (Van Baalen & De Coning, 2006:217). A programme consists of any two or more projects that are managed in conjunction with one another (ibid, 2006:217).

2.6.2 Project Management

A project is defined as "…a temporary endeavour in which human (or machine) material and financial resources are organised in a novel way, to undertake an unique scope of work, of given specification, within constraints of cost and time so as to deliver beneficial change defined by quantitative and qualitative objectives" (Burke, 1992:2; Turner, 1993:8, cited in Van Baalen & De Coning, 2006:221). There are several definitions of project management which Burke (2001:3) appropriately defined as "the application of knowledge, skills, tools and techniques to project activities in order to meet stakeholder needs and expectations from a project". These definitions will be discussed in more detail below.

2.6.2.1 Development projects

Van Baalen and De Coning (2006:234) included in their definition of projects the concept of development projects. They stated that there are two ways of looking at development projects. First there is the "focus on the outputs of projects, that is, the facilities created to bring about (developmental) change" and second is the "focus on the methods employed by project managers to make projects work". They note that the "second type of development projects…seeks to combine the delivery of project outputs with the mobilisation of local people to take charge of their own development". Drawing on the work of several authors (Brinkerhoff, 1991; Bryant & White, 1982; Chambers, 1993; Cusworths & Franks, 1993; Rondinelli, 1993) they stated (ibid, 2006:234) that these projects "focus on the 'softer outputs,' i.e. capacity building and empowerment of involved community members, and sustainability through a participative and social learning approach to management of projects".

2.6.2.2 Project life Cycle

Projects are divided into four basic phases or stages, that is, project initiation, project planning, project execution and control and project closure (Burke, 2001:3,25,27-30;Knipe, 2002:25-32) also referred to as identification, appraisal, implementation and evaluation. These phases constitute a project life cycle and are viewed as making allowance for better planning and management of projects, also known as the blueprint approach (Cusworth & Franks, 1993; Knipe, 2002:27). [5]

Knipe (2002:27) noted that a project life cycle is not "intrinsic to projects" and should rather be viewed as a management tool. He (ibid, 2002:31) stated that it has several uses namely, it assists in maintaining an overview of the project, in identifying tasks, in breaking the project sequence into manageable parts and it allows for integration of activities and to time decisions. Cusworth and Franks (1993:201) also pointed to the project cycle's usefulness. They viewed it as enabling project planners and managers to "see beyond the project phase and to appreciate that the end result of the project is the outputs which create assets of continuing benefit and value to the clients, and beneficiaries". Hence, they (ibid, 1993:201) explained that there are two aspects to be considered for the post-project phase. These are the management of commissioning and management of the operation and maintenance project outputs, that is, beneficiary assets in the form of facilities or services.

2.6.3 Differences between projects and operations

There are several differences between project and operations (Turner, 1993:6, cited in Van Baalen & De Coning, 2006:222). Three such differences are highlighted here. First, projects exist for a limited period (ibid, 2006:222) while operations are ongoing. Second, projects use "transient teams" whereas operations build "stable, permanent teams" (ibid, 2006:222:6). Third, projects are unique while operations are repetitive (ibid, 2006:222).

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[5] In addition to the blueprint approach to project planning and management is the idea of development as an adaptive approach (Rondinelli, 1983) with successive stages of experimentation, piloting, demonstration and replication (Cusworth & Franks, 1993).

2.7   Conclusion

Social development in essence is about social change and an improvement in peoples' standards of living. There are several theories of development, of which the classical theories of modernisation and dependency, popular in the 1960's and 1970s respectively, no longer holds relevancy for development practitioners. This thesis has drawn on people-centred -, participatory - and sustainable development to frame the theoretical context through which to view the research question.

The review of theory suggested that project sustainability is achieved and ensured through adopting a people-centred, participatory and sustainable approach to development. Hence, participation, capacity and capacity building is important to ensure this. Incorporating these development approaches into programme, project and operations management strengthens the process for achieving and ensuring project sustainability. In the final instance, however, ensuring project sustainability is not complete without situating development project activities in an environmental context, where any development takes cognisance of the need to consider the capacity of the natural environment to sustain development as well as the impact of development actions on the natural environment.

CHAPTER THREE

3 OVERVIEW OF THE WEST-END PRIMARY AND SANBI-EEU PARTNERSHIP

This chapter provides an overview of both West-End Primary, the case study for this research, and the SANBI-EEU partnership. The West-End Primary project formed part of SANBI-EEU programmes, namely the School Indigenous Greening Programme and the Greening of the Nation Programme, and therefore the overview serves to provide insight into both organisations.

The chapter commences with a description of West-End Primary which includes its location, a profile of the school, its environmental policy and the history of its garden project. Thereafter an overview of SANBI-EEU is provided which includes a description of its mission, a discussion of policy and objectives and finally a description of the SANBI-EEU project management approach and various programmes.

3.1 West-End Primary

3.1.1 Location of case study area

West-End Primary is a public primary school situated in Lentegeur, Mitchell's Plain. It is located on the Cape Flats, approximately 20kms from the central business district of the City of Cape Town in the Cape Province of South Africa; the Phillipi Horticultural area lies to the west, the False Bay Coastline to the south, while Khayelitsha comprises its eastern boundary (ibid, 2007:8).

The Department of Provincial and Local Government (2007:7) stated that Mitchell's Plain "was planned as a segregated, self-sufficient dormitory town far from the white area of the city, and also isolated from its black and Indian neighbours". It was built in the 1970's for South African's classified as "coloured," and who were forcefully

removed from their homes in terms of racially based legislation under a system called Apartheid (ibid, 2007:7).

In 2001, it had a population size of 398 650. This included 40% of Afrikaans speakers, 30% of Xhosa speakers and 29% of English speakers (ibid, 2007:14). It had 94 759 households of which 48% earned less than the household subsistence level of R19 200 per annum (ibid, 2007:15). Furthermore, less than half of the population, that is, 43% were employed, 24% were unemployed and 33% were not economically active (ibid, 2007:15). The key challenges facing the area in 2001 were unemployment, crime, drugs and gangsterism (ibid, 2007:56). The area had 43 primary schools and 15 secondary schools (ibid, 2007:16).

3.1.2   West-End Primary profile

The school is managed by an academic manager (principal), deputy academic manager and employs 36 educators, three grounds men and cleaners. Several parents are employed on a casual basis to assist educators in the classroom, or with the feeding scheme and in the garden. One parent has consistently worked in the garden from 2006 to 2008 on a two year contract as an employee of Rainbow Cleaning Services.

The school has 1290 learners enrolled for grades starting at a pre-primary level (Grade R) with subsequent progression from Grade 1 through to Grade 7. The medium of instruction in most grades is English, with Afrikaans as a medium of instruction for only one class per grade. The school has 33 classrooms, a computer laboratory with 45 computers, a store-room for garden tools, learner toilets and a tuck-shop. The (Western Cape Education Department, n.d.). The schools administrative area includes the principal's office, secretary's office, staff room, staff toilets and an informal feeding scheme kitchen. The school grounds include playgrounds, a netball court, general assembly area, a partially grassed sports field, an indigenous garden, a vegetable garden and staff parking.

3.1.3   West-End Primary Environmental Policy

Given the socio-economic conditions in the area which the school serves, the school "strives to offer learners a different view of life, give them sporting and cultural alternatives and empowering them to rise above their trying situations"(West-End Primary, 2004). Hence in addition to formal education, the school offers extra-mural activities such as an eco-club, athletics, volleyball and netball.

The school's environmental policy is as follows:

- To teach a love for our city, country and the earth.
- To teach values e.g. appreciation of the beauty of nature.
- To teach learners about our indigenous fauna and flora.
- To teach learners why and how to protect our natural heritage.
- To keep our school environment clean and healthy.
- To create opportunities for learners to become active campaigners in the struggle to protect our natural heritage.
- To educate the broader school community about threats to our environment so that we can save our natural heritage for our future generations to enjoy (West-End Primary Eco-file, 2008).

School records do not provide any evidence to suggest that national policy, namely the 1997 White Paper on Environmental Management or the White Paper on Education and Training, had influenced the above environmental policy. However, the school's policy articulates the intent of national policy as encapsulated in Goal 5 of the 1997 White Paper on Environmental Management Policy. As stated in chapter one, Goal 5 refers to increasing peoples' "awareness of, and concern for, environmental issues, and assist in developing" their "knowledge, skills, values and commitment necessary to achieve sustainable development" (Department of Environment Affairs and Tourism, 1997:26). The school's policy therefore is in alignment with national policy. It articulates an intention to teach learners and the broader community about the environment and to equip them with knowledge and skills to protect the environment for future enjoyment.

3.1.4   History of the school garden project

The initiative to start an indigenous garden evolved out of a context where a few educators had an awareness and interest in the natural environment. For example, a Grade 5 educator had previously attempted to "reclaim a piece of eroded soil" by planting grass and plants as part of a science competition. This initiative was not sustained. However, various complaints about the school's dusty, sandy grounds by community members (see Figure 1), who had visited a polling station at the school, later motivated the school to participate in a SANBI Greening Programme.

Figure 1 **A sandy, barren area in the school grounds prior to the start of the greening project.**

Various educators[6], over a period of five years, between 1999 and 2003, organised educational excursions to Kirstenbosch. These excursions were incorporated into the educators teaching schedules and were paid for by parents. The excursions were supported by SANBI's garden based Environmental Education Programme, which provides a free bus service to transport learners to and from the school to Kirstenbosch Botanical Gardens.

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[6] A few educators namely Grade 1(Mrs Carelse), (Mrs Thompson), Grade 5 (Mr Arendse).

An excursion by a Grade 8 educator, her learners and the academic head (principal) to Kirstenbosch in November 2003 (West-End Primary, 2004), was a turning point in the school's history. During the excursion a few learners expressed the desire of planting an indigenous garden at the school. Similarly, the academic head, an avid gardener, was impressed by what he saw. The Grade 8 educator "had heard" about the SANBI Outreach Greening Programme which supported schools in establishing indigenous gardens. Hence, after the November 2003 excursion, the initiative to embark on a school greening project at West-End Primary was set in motion. The school applied to the SANBI Outreach Greening Programme and was accepted onto the programme in 2004. A project team was established and educators attended a series of capacity building workshops which equipped them with knowledge on planning and implementing an indigenous garden. The indigenous garden (see Figure 2) was established by learners, educators, ground staff and parents between 2004 and 2006.

Figure 2 **The school indigenous garden established between 2004 and 2006.**

3.2 South African National Botanical Institute (SANBI)

The South African National Biodiversity Institute (SANBI), formerly the National Botanical Institute, was formed in 2004 in terms of the National Environmental Management: Biodiversity Act (Fullard, 2006:1). SANBI's work includes research,

environmental education and tourism services. It administers its work through eight botanical gardens throughout South Africa, one of which is Kirstenbosch situated in Cape Town in the Western Cape Province of South Africa.

3.2.1 SANBI's Mission

SANBI's mission is "to promote the sustainable use, conservation, appreciation and enjoyment of the exceptionally rich biodiversity of South Africa, for the benefit of all people" (Fullard, 2006:1). SANBI makes this mission a reality by utilising South Africa's biodiversity in "building a culture of environmental knowledge and awareness" through school greening programmes and educational visits for learners to its botanical gardens (SANBI, n.d.). Its Environmental Education Unit (EEU) is guided by South African environmental and education policy and works with schools to establish indigenous school gardens. Hence, in terms of policy and through the instrument of indigenous and food gardens, SANBI-EEU, in partnership with schools, is executing an environmental education mandate.
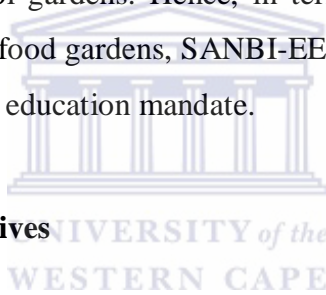
3.2.2 SANBI-EEU's objectives

It is clear that SANBI-EEU's objectives are informed by national policy, which includes, the 1997 White Paper on Environmental Management, the White Paper on Education and Training, the National Environmental Management Act (No 107 of 1998) and the National Environmental Management Biodiversity Act. National policy has not specifically detailed the instruments for achieving a vision of "green spaces in neighbourhoods" or for environmental education for sustainable development. However, SANBI-EEU provides such instruments in the form of its various programmes and therefore has set itself the objectives of "integrat(ing) indigenous gardens into the South African (school) curriculum," and using these gardens to "introduce environmental awareness, responsibility and sustainability to South Africa's youth" (Eyssell, cited in Qwathekwana, 2006:4). It has further set itself the objective of "isolating" in other words identifying and addressing the conditions which "hinders a green, healthy environment in South African townships" (ibid, 2006:4) and thus for example encourages the creation of jobs for community members

in school gardens. SANBI-EEU also aims to "act locally (using indigenous resources, cultures and traditions) while always thinking globally" (ibid, 2006:4). Planting indigenous South African and more particularly Western Cape vegetation such as Fynbos, which is endemic to the Cape, reflects their perspective of how local actions and resources plays a crucial part in ensuring environmental sustainability with both local and global benefits.

3.2.3 Location

SANBI's environmental education programmes are implemented throughout South Africa in the provinces of the Western Cape, Eastern Cape, Northern Cape, Gauteng, Free State, Mpumalanga, Kwazulu-Natal, North-West and Limpopo. In the Western Cape, SANBI works in schools in Mitchell's Plain, Kleinmond, Khayelitsha and Lavender Hill (SANBI, 2007:56).

3.2.4 SANBI programmes and projects

SANBI-EEU (Qwathekana, 2006:2) administers its work through environmental education programmes which are complementary and largely serves to support the educational curricula. Its programmes are fully operational at five of its national botanical gardens (SANBI, 2007:4). Its programmes include the following:

School Indigenous Greening Programme: this is an outreach programme whereby trained horticulturalists and environmental education officers assist schools and communities to develop indigenous water-wise gardens used as a teaching and learning resource. The promotion and conservation of South Africa's indigenous plants is an important focus of SANBI-EEU's outreach greening programme. The programme was initiated in 1997 and initially was limited to ad hoc, once-off projects with little follow up. However, once funding became available, greening developed into a well-planned programme. The programme also includes food gardens, as this assists school feeding schemes and neighbourhoods to meet their nutritional needs. To develop these school gardens, SANBI works in partnership with organisations such as the Food Gardens Foundation and the School's Environmental Education

Development (SEED) Programme (National Botanical Institute, 2002:3). The programme's aims are to:

- establish indigenous, water-wise school and community gardens;
- encourage ecological awareness and environmental responsibility;
- develop gardening skills to enable economic empowerment and local environmental action;
- promote the educational value of indigenous plants and gardens; and
- develop partnerships between communities and organisations (ibid, 2002:3).

Garden based Environmental Education Programme: this programme brings learners and educators to SANBI's Botanical Gardens for environmental education sessions. The programme is funded by the National Lotteries Distribution Trust Fund (SANBI, 2007:58).

Teacher Professional Development Programme: this is a capacity building programme for educators. Educators are taken through the process of how they can use indigenous water-wise school gardens as a teaching resource. It also assists educators with implementing education policy, namely the Revised National Curriculum Statements which encourage inclusion/interpretation of environmental education into formal education.

Greening of the Nation Programme: in addition to the above programmes, SANBI also facilitates the Greening of the Nation Programme. It is an extension of the outreach greening programme in schools and has a major focus on job creation, training and capacity building, food security and beautification. SANBI, through its Greening of the Nation Programme, has greened more than 100 schools throughout South Africa. In the Western Cape alone it has planted 2 385 indigenous trees in areas such as Mitchell's Plain, Kleinmond, Khayelitsha and Lavender Hill (SANBI, 2007:56). Job creation is an important focus area of the programme and for the period 2006-2007, it was able to generate 1 539 temporary jobs nationally. The programme also focuses on capacity building and from 2006 to 2007 funded 120 educators nationally to enrol for a Participatory Course in Environmental Education at Rhodes University (ibid, 2007:57).

The programme's partnerships extend to government departments, namely the Department of Education and the Department of Labour for training and capacity building, to local municipalities who provide services such as water to schools and with NGOs such as the Wildlife and Environment Society of South Africa (WESSA) who co-ordinates an eco-school programme in schools (ibid, 2007:57). Its partnerships also extend to community members who are employed at schools to assist with garden maintenance and safety. The employment of such community members is facilitated through the programme's business partnership with the Rainbow Group of Companies in the Western Cape (ibid, 2007:57).

3.2.5 Project Management Approach

SANBI-EEU follows a clearly defined project cycle of preparation, planning, implementation and evaluation in developing its schools gardens. In doing so, project participants learn project management skills. SANBI-EEU works with schools for a period of three years. In this time it focuses on a different aspect of garden development each year. The three year period allows SANBI-EEU to develop a 100m² 'starter garden' and "to ensure that the project team at the school is competent and confident to continue developing and maintaining the garden once" SANBI-EEU is no longer involved. The time period also provides opportunities to "focus on the educational use of the garden" (National Botanical Institute, 2002:4). The different focus in the three year cycle is presented below:

- Year 1: SANBI-EEU focuses on horticultural training and informal learning through developing an indigenous, water-wise 'starter garden';
- Year 2: The existing garden is extended. This extension is led by the project team with strong support from SANBI-EEU; and
- Year 3: The existing garden is further extended and the garden is used by educators as a site for learning (National Botanical Institute, 2002:4).

SANBI's project cycle has four steps, namely the selection stage (preparation), establishing a project team (preparation), developing gardens and skills (planning and implementation) and finally learning by doing (evaluation).

Step 1: Selecting schools

The demand from schools for SANBI-EEU's assistance in establishing school gardens is high; however SANBI-EEU only selects five schools annually. Schools are required to formally apply to SANBI-EEU in writing. The written application describes a school's previous efforts at greening and their vision for a proposed school garden. The selection of schools is guided by a set of criteria as well as the results of interviews conducted with applicants and organisations working with them. The set of criteria used to identify participating schools are as follows:

- some attempts have been made to improve the school environment;
- the principal approves of the project;
- two dedicated individuals, preferably educators, are available to drive the project;
- at least six individuals are available to actively support the project;
- the project has the support of other staff and community members;
- the group shares a clear vision for the project;
- ideally the school should have an environmental club to ensure learner involvement; and
- the school grounds should be fenced (National Botanical Institute, 2002:4).

Step 2: Establishing a Project Team

A school's project team usually consists of two educators, one member of the grounds staff, three learners, e.g. members of the environmental club and two members of the local community (National Botanical Institute, 2002:4).

Step 3: Developing Gardens and Skills

All participating schools attend a series of two hour long 'Major Workshops' presented either at the school or the botanical garden. The workshops focus on the successive stages in the process of garden development. Information provided at these workshops fall under the following themes:

- People and Plants
- Pace the Space
- Earthwormers

- Taking Root

- Parenting Plants

- Programme Evaluation

These 'Major Workshops' are followed by participation by individual schools in a 'Mini Workshop' whereby SANBI-EEU works with the project team to implement what was learnt at the 'Major Workshop'. SANBI-EEU also visits schools regularly to support the project teams with ongoing practical implementation.

Step 4: Learning by Doing

SANBI-EEU recognises the value of evaluation in the development of school gardens, viewing it as an opportunity to improve what it does and to solve problems which arise during the process of establishing a school garden. Evaluation is built into the process from the outset at SANBI's first greening workshop (People and Plants). At this workshop participants discuss and set assessment criteria for the project (National Botanical Institute, 2002:5). During the course of each year, project teams reflect on their progress; discussions are held regularly with SANBI-EEU staff members and a 'file of evidence' is kept and updated regularly.

Formal evaluation workshops to assess all garden projects are held annually. The respective project teams from the five selected schools are issued with a self-assessment sheet, peer-assessment sheets and an assessment sheet relating to the role of SANBI-EEU.

The assessment criteria identified at the first greening workshop forms the basis of each school's self-assessment. This is followed by presentations of each school's garden development project, as well as the viewing of display posters and files from each project team. The latter forms the basis for peer assessment, with participants completing the peer-assessment sheets. Hereafter, an assessment into SANBI-EEU's role is undertaken.

Once the assessments are completed discussions focus on problem-solving. The experience and ideas of the various group members are used to address issues

identified during the evaluation. Once the workshop is complete a summary of the assessments are compiled and distributed to all participants (National Botanical Institute, 2002:5).

3.3. Conclusion

This chapter has provided an overview of both West-End Primary and SANBI-EEU. It has provided insight into the policies guiding both organisations. The project history and context in which the project was established was described. West-End Primary's school greening project was part of a SANBI-EEU programme. Hence, an overview of the SANBI-EEU's mission, objectives, programme and project approach were provided.   The latter descriptions serve to provide insight into the empirical fieldwork and research findings presented in the following chapter.

CHAPTER FOUR

4   THE FACTORS CONTRIBUTING TO SUSTAINABILITY

4.1   Introduction

This chapter presents the findings of the study regarding the factors which contribute to sustaining a school greening project. The findings are based on an analysis of data collected through participatory observation, use of a structured questionnaire, focused and casual interviews and use of a case study and is framed by a literature review that suggests that participation, capacity, capacity building and partnerships are important for ensuring project sustainability.

The presentation of the research findings is preceded by a description of the categories of respondents (informants from partner organisations, West-End Primary staff and learners, and a parent/community member) as this will assist the reader's understanding when the various individuals and learner groups are identified in the discussion of the research findings. Hereafter, the research findings are presented under the themes of *participation*, *capacity*, *partnerships* and *sustainability*.

4.2   Categories of Respondents

The following categories of respondents used in this study were identified in chapter 1. These categories will be discussed in the section below:

The first category includes individual, focused interviews with four respondents, one an ex-educator at West-End Primary, now employed by SANBI, a second who works as SANBI-EEU's Principal Environmental Education Officer, a third who works with SEED and a fourth who was employed by SANBI-EEU as an Eco-School Programme node co-ordinator. Interviews with these individuals generated qualitative data and also served to provide background information about the greening project.

The second category includes informal meetings and casual interviews with eight respondents. These included four staff members of West-End Primary, that is, the ex-Academic Manager, two educators involved with the greening project, and an individual from the ground staff. Casual interviews were also conducted with a parent/community member working for Rainbow Cleaning Services. Casual interviews were conducted with three respondents from partner organisations and included two respondents from SANBI-EEU, one working as Head of Education and the other as Outreach Greening Co-ordinator. The third respondent worked for SEED. The casual interviews and informal meetings with these respondents generated substantial qualitative data, which served to provide insight into the project and operations management of the greening project.

The third category included structured interviews with 77 learners in Grades 5, 6 and 7 at West-End Primary. These interviews generated both quantitative and qualitative data and serve to verify and expand on data collected from undertaking participatory observation and focused interviews.

4.3   Demographic Profile of Learners

A total of 77 learners from West End Primary School in Lentegeur, Mitchell's Plain comprised the sample which was surveyed. The majority, 94.8%, of these learners, are residents of Mitchell's Plain, 2.6% of Phillipi and 2.6% of Strandfontein. A description of the respondents' education levels, gender, age, home language, medium of instruction at school, membership of the eco-club and duration of study at West-End Primary is presented below. These descriptions provide an important backdrop to understanding the analysis of learner responses provided in Section 4.8.

4.3.1   Education Levels, Gender, Age and Language of Respondents

Table 3 illustrates the level of education attained by respondents at primary school level: 44% of learners were in Grade 5, 34% in Grade 6 and 22% in Grade 7. In contrast to the higher number of male participants observed working in the garden, the individual sample, as illustrated in Table 4.1, included 62. % of female learners and 38% of male learners, with 28% of female and 16% of male learners in Grade 5, 17%

of female and 17% of male learners in Grade 6 and 17% of female and 5% of male learners in Grade 7.

Table 3 *Level of Education and Gender of Respondents*

Level of Education		Gender	
		Male	Female
Grade 5	44%	16%	28%
Grade 6	34%	17%	17%
Grade 7	22%	5%	17%
Total	100%	38%	62%

As reflected in Table 4, the ages of respondents ranged between 10 years and 15 years. Of the 10 year olds, 9% were in Grade 5. Learners aged 11 years were present in each of the three grades: 27, 2% in Grade 5 and 5, 1% in Grade 6 and 1, 2% in Grade 7. Learners aged 12 years were also present in each of the three grades: 7, 7% in Grade 5 and 27, 2% in Grade 6 and 3% in Grade 7. The remainder of learners in Grade 7 were aged 13 to 15 years: 12, 9% were 13 years old, 1, 2% were aged 14 and 2, 5% were aged 15 years.

Table 4 *Respondents' ages*

Age	Level of Education		
	Grade 5	Grade 6	Grade 7
10	9%	0%	0%
11	27,2%	5,1%	1,2%
12	7,7%	27,2%	3%
13	0%	0%	12,9%
14	0%	1,2%	1,2%
15	0%	0%	2,5%

As can be seen in Table 5, the majority of learners, namely 63.6 %, who participated in the research, spoke English as a home language, while 20.8% had Afrikaans as a home language, 13% spoke both English and Afrikaans at home and only 2.6% had Xhosa as a home language. Furthermore, 79% of learners who participated in the interviews had English as their medium of instruction, while 21% of learners had Afrikaans as their medium of instruction. It is not surprising that most learners speak

English since for every three classes where learners are instructed in English, one class is for learners instructed in Afrikaans.

Table 5 *Home language and medium of instruction*

	English	Afrikaans	Xhosa	English and Afrikaans
Home language	63.6%	20.8%	2.6%	13%
Classroom medium of instruction	79%	21%		

4.3.2 Eco-Club membership and Year of commencing studies at West-End Primary

Table 6 shows that 17% of learners were members of the eco-club and 60% were not members of the eco-club. The majority of learners had commenced their studies at West-End Primary when the greening project was in the process of implementation, 83% of learners commenced studies in 2005, 3% in 2006, 7% in 2007 and 7% in 2008. These figures strengthen analyses of learner responses as they serve to confirm that the majority of learners were indeed present during project implementation, thus lending credibility to their responses.

Table 6 *Learner membership of the Eco-Club and Year of commencing studies*

	Eco-club membership		Year of commencing studies at West-End			
	Eco-club	Non-Eco-club	2005	2006	2007	2008
Total	17%	60%	83%	3%	7%	7%

4.4 Participation

According to Theron (2005:120), the beneficiaries' initiative, knowledge, skills, capacity and identification of their own needs form the basis of the participatory development process. The change agent and the beneficiaries are partners in the development process, with the public owning the development and directing the process (Burkey, 1993:211) rather than the change agent controlling and implementing development on their behalf. The analysis of participation presented

below examines the participation of all role-players in the greening project. This includes learners, community members (parents and non-parents), educators and project partners in the West-End greening project.

The analysis of participation during project management is based on focused interviews with an ex-educator, SANBI-EEU staff and the review of school records. The analysis of participation during operations management is based on participatory observation, survey results and casual interviews with educators, ground staff and casual labour.

The analysis shows a clear distinction between participation in the project and participation in the operations management of the school garden. There are several differences (Turner, cited in Van Baalen & De Coning, 2006:222) between project and operations management. However, only three such differences are highlighted. First, projects exist for a limited period (ibid, 2006:222) while operations are ongoing. Second, projects use "transient teams", whereas operations build "stable, permanent teams" (ibid, 2006:222:6). Third, projects are unique, while operations are repetitive (ibid, 2006:222).
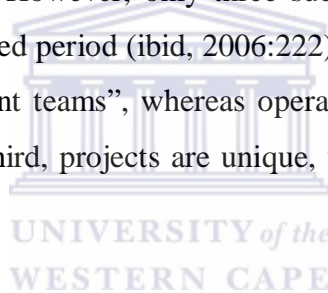
During the project period, activities were undertaken to establish the garden. This was a once-off, unique process, undertaken between 2004 and 2006. A working group undertook fundraising, planning, design and planting of the garden. All members of the working group ceased to play a role once the garden was established.

Operations management at West-End includes activities such as watering, weeding, making compost, planting vegetable seeds, harvesting vegetables, garden-based lessons, annual recruitment of new eco-club members, training eco-club shadows, supervising learners' activities in the garden and recruiting and managing casual labour. To sustain the garden and garden-based learning, these activities have to be repeated on an ongoing basis. A few members of the working group continued with sustaining the garden and garden-based learning.

4.4.1 Community Participation in Decision Making and Planning

Initially, broader community participation in the decision making and planning of the greening project was limited. Scrutiny of school records suggest that the concept of community in the project phase of the greening project was initially defined as including educators, learners and ground staff. Interviews with ex-staff and learners revealed that the decision to initiate the greening project was initially limited to a few educators. School records do not reflect a broader consultation with learners or parents about the need for a school garden. This suggests that there was no broader community mandate which prioritised the project as a need. Anecdotal evidence, however, suggests that complaints from community members about the sandy grounds were a consideration when the decision to establish the project was taken.

As regards the planning of the greening project, analysis of interviews and of the information gleaned from the interviews suggests that there was no broad community participation. The formation of a working group to drive the project is a SANBI-EEU requirement. SANBI-EEU advises schools to include two educators, one member of the ground staff, three learners and two members from the local community in the group (SANBI, 2002:4). At West-End Primary, the group included five educators, three ground staff and four community members and parents. The planning of the greening project was undertaken by a few educators in the West-End Primary Working Group, whilst implementation included educators, learners, parents and community members.

Oakley (cited in Theron, 2005:114) and Long (2001:5) made a distinction between participation as a *means* to achieving a particular objective, that is, it is passively utilised, with participants involved in programmes/projects which are designed and planned externally, and participation as an *end* in itself, that is, with participants actively involved in all aspects of programmes/projects. The analysis of participation by learners, parents and educators suggests that the nature of participation in the greening project was a mix of both active and passive participation. The participation of a few educators during the project management phase appears to have been active. These educators played a key role in decision making about garden site selection and fundraising and expenditure. The participation of several non-eco-club learners and

parents has been primarily passive. This means that their role was to support achieving the goal of establishing the garden and thereafter maintaining it.

Participatory observation of the operations management phase has seen the numbers of educators participating in maintenance planning dwindling. It was observed that only one educator plays an active role in maintenance planning. Furthermore, neither learners nor parents, except for one parent employed by Rainbow Cleaning Services, are active in maintenance planning. It was deduced during the course of participatory observation in 2008 that one to two educators played significant decision-making roles as regards ongoing operations management of the garden.

4.4.2   Community Participation in Implementation

Photographic evidence suggests that parents played a supportive role in garden implementation during the course of 2005 (year 2 of the project phase). This is confirmed by personal interviews with SANBI-EEU staff and an ex-educator. Implementation activities in which they participated included clearing the school grounds of stones, constructing garden paths, preparing flower beds, constructing garden furniture, planting indigenous plants and trees, and weeding and watering the garden. Learners from Grades 1, 6 and 8 worked alongside educators, parents and caretakers in completing these and other tasks that resulted in the implementation of the indigenous garden.

An attempt by SANBI-EEU to broaden community participation by asking a service provider, Lukholo Training and Development, to assist with garden establishment was unsuccessful. The duties of Lukholo Training and Development, among others, are to assist schools with establishing indigenous and vegetable gardens. Lukholo Training and Development employs persons from local communities, hereby creating jobs in these communities. The view of one of the educators on the working group was that the garden should be established by learners rather than community members employed by Lukholo Training and Development.

4.4.3   Community Participation in Garden Maintenance

Participatory observation has established that West-End Primary benefits from community participation in the maintenance and extension of the indigenous and vegetable garden. Such participation, for the period January to July 2008, was demonstrated in two ways, namely, through donating vegetable waste, egg shells, tea bags and grey water, as well as through paid casual work in the indigenous and vegetable gardens. These factors will be discussed in the section below.

4.4.4   Community Donations

Vegetable waste is donated to the school on a weekly basis by a former School Governing Board chairperson; this is supplemented by smaller donations of vegetable waste, egg shells and tea bags donated by parents. The smaller donations of waste from parents dwindled and were not regular. Donations of vegetable waste from the ex-School Governing Board chairperson, however, remained regular.

4.4.5   Employing Parents and Casual Labour

Participating community members are either parents of learners at the school or casual labour sourced from within the community. This casual labour includes labourers who stand on a nearby street corner looking for daily employment.

The school contracts casual labour through the Rainbow Cleaning Service. The Rainbow Cleaning Service is a partnership which was initially facilitated by SANBI-EEU. Rainbow Cleaning Service staff are contracted for two years to work in the school garden, the rationale being that after two years other community members are given the opportunity to work in the garden.

A parent was employed by the school through Rainbow Cleaning Service on a two-year contract from 2006 to September 2008. The school has subsequently continued to employ the parent without contracting her services through Rainbow Cleaning Service. The parent works at the school twice weekly and her responsibilities have included garden maintenance work in the indigenous and vegetable gardens. Such

work includes, among other, planting, weeding, propagating plants, making compost, watering the garden, and supervising learners assisting with maintenance work.

4.4.6   Learner Participation

Learner participation in the garden, both during the project and during the operations management phase, has been as either members of the eco-club or as non-eco-club members. Their participation in the garden has been ongoing through both the project and operations management phases and is one of the key factors which sustain the garden. Figure 3 illustrates learners and ground staff working to establish the indigenous garden during the project phase.
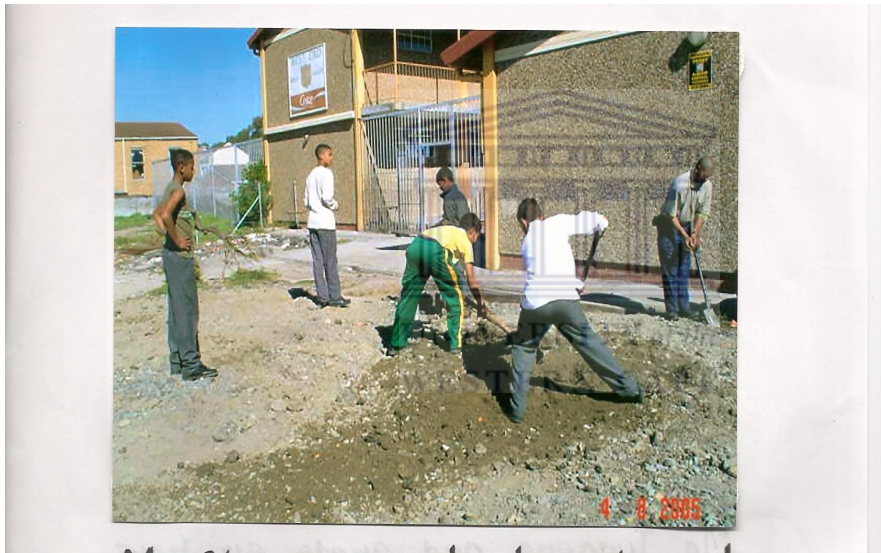
Figure 3 **Learner participation in the establishment of the indigenous garden**.

4.4.7   Learner Participation in Decision Making

Most learners interviewed had not participated in decision making concerning establishing either the indigenous or the vegetable garden. Tables 7 and 8 indicate the percentage of learner participation in the decision-making process to establish either the indigenous or the vegetable garden. Table 7 indicate that 88.3% of learners stated that they did not participate in decisions to establish the indigenous garden, while Table 8 illustrates that 79.2% stated they did not participate in decisions to establish the vegetable garden. Learners' participation in decision making as regards both

vegetable and indigenous garden was weak, with only 11.7% being part of the decision making in the indigenous garden and 20.8% in the vegetable garden.

Table 7 *Indigenous Garden Decision Making*

Answers	No. of respondents	Percentage
No	68	88.3%
Yes	9	11.7%
Total	77	100%

Table 8 *Vegetable Garden Decision Making*

Answers	No. of respondents	Percentage
No	61	79.2%
Yes	16	20.8%
Total	77	100%

4.4.8   Learner Participation in Garden Maintenance

Participation of learners in physical work to maintain and extend the indigenous and vegetable gardens was evident on visits to West-End Primary from January to July 2008.   The observed evidence of participation is supported by the results of the surveys. An analysis revealed that 67.5% of learners interviewed had helped in the indigenous garden and 48.1% had helped in the vegetable garden for the period January to July 2008. This is illustrated in Tables 9 and 10 respectively.

Table 9 *Learner participation in indigenous garden maintenance*

Answers	No. of respondents	Percentage
No	25	32.5%
Yes	52	67.5%
Total	77	100%

Table 10 *Learner participation in vegetable garden maintenance*

Answers	No. of respondents	Percentage
No	40	51.9%
Yes	37	48.1%
Total	77	100%

The survey results indicate that there is stronger learner participation in the maintenance activities of the indigenous garden and less participation in maintaining the vegetable garden. However, data collected during observation stages revealed that because of the vegetable garden requiring more maintenance than the indigenous garden, there was more learner participation in maintaining the vegetable garden. Observation of learner participation twice monthly over a six-month period (January to July 2008) indicated that most learners were involved in activities relating to maintenance of the indigenous and vegetable gardens. These activities included weeding, watering, pruning and making compost.
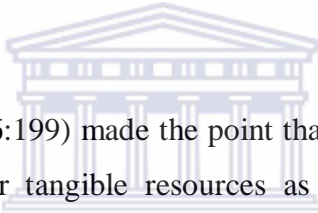
It was observed that those learners participating in maintenance activities included both eco-club and non-eco-club learners. It was further observed that more male than female learners and more learners from senior grades were involved. A review of project photos from 2004 to 2007, the period in which the garden was established, also showed that more male than female learners participated in the activities of the garden. The survey, however, indicated that 7.8% of male learners, compared to 14.3% of female learners, from Grades 5, 6 and 7 participated in the establishment of the garden. However, it should be noted that more females than males were selected for the interview sample and thus, from the outset, a female bias would be reflected.

4.4.9   Educator and Garden Staff Participation in Maintenance Management

Observation of educator participation in maintenance management, twice monthly from January to July 2008 suggests, that educator participation in garden maintenance pertains to decision making, planning and monitoring the work of casual staff employed to undertake maintenance activities in the garden. It was noted that only one educator played an active role in decision making and monitoring of maintenance work. It was further noted that she had support from another educator who assisted with sourcing casual staff to assist in the garden. A conclusion, based on participatory observation, is that educator participation in managerial work responsibilities could be strengthened. However, an analysis of personal interviews and participatory observation suggests that due to teaching workloads, educator participation and enthusiasm for maintenance management is weak.

The three ground staff employed by the school are less active in operational activities. In general, ground staff responsibilities pertain to repair and maintenance of the school building and grounds. However, all of the ground staff employees do not undertake garden maintenance. Instead, this is most frequently undertaken by contract Rainbow Cleaning Services staff. A senior ground staff employee, however, is responsible for providing access to the garden and tool shed (unlocking gates). He also monitors garden safety and assists with watering of the garden and access to the garden during vacations. An analysis of interviews and participatory observation of the activities of ground staff in garden maintenance suggests that their participation is weak. It is concluded that weak participation by ground staff is the result of ground staff withdrawing their participation in garden maintenance because Rainbow staff is contracted to undertake these responsibilities.

4.5   Capacity

Brynard and De Coning (2006:199) made the point that capacity refers to availability of and access to concrete or tangible resources as well as intangible resources. Tangible resources include financial, human, material, technological, logistical and other elements, while intangible resources refers to leadership, motivation, commitment, willingness, courage, endurance and other intangible attributes needed to transform rhetoric into action. The availability of and access which West-End Primary has to financial, material and human resources and intangible personal qualities, such as willingness and commitment, will be examined below.

A distinction between project and operations is made in this discussion. During the project period, the West-End Primary Working Group was able to access resources for the indigenous garden project through fundraising activities and non-cash donations, primarily received from SANBI-EEU and individual contacts. During the operations management phase, school fundraising activities generated limited funds while partnerships continued to be beneficial insofar as they were a source of material resources.

4.5.1 Project Management Finances and Material Resources

The financial resources which the Working Group was able to draw on during the project period included established school fundraising activities such as the school's 'civvies day', an event at which learners pay to wear civilian clothing to school. The Working Group requested half of the funds raised on each last Friday of the month for the Environmental Club. The Working group also initiated several other fund-raising activities involving learners at the school. Such activities included karaoke evenings and the sale of plants and *koeksisters* (coconut doughnuts).

The school also used its professional and family networks to generate funds and donations. For example, the working group requested donations of R100 from various ex-staff members to fund particular garden items. In response, an ex-secretary donated funds to build a bridge (known as the Bridge of Hope), an ex-teacher funded a wishing well, another ex-teacher funded a garden bench and the Principal sourced a donation of stones from a family member, to be used in the garden paths.

The school's participation in a garden competition was an additional source of funds. The school won vouchers to the value of R5000, which it used to purchase plants and several garden features. However, the full R5000 was not utilised as the school failed to use it prior to expiry of the vouchers.

The material resources which the working group acquired included plants, trees, compost, garden tools and a water tank from SANBI-EEU. It also collected recycled materials from within the community to construct garden furniture. The availability of recycled material on the school premises as well as in the surrounding Lentegeur community proved beneficial for the project team. Various materials that had been discarded as damaged items were used to establish the indigenous garden.

Several examples demonstrate the use of recycled materials. A caretaker, employed at the school in the second year of the project built several garden features, namely, benches, a birdhouse, a bridge and a water-well, using old school benches. The working group also collected old baths and transformed them into containers which were used for plants and compost. Broken concrete slabs, which had served as a fence at the school, were recycled and used to construct a path in the vegetable garden.

Learners recycled the branches of a tree, a Port Jackson willow, which is classified as an "alien invader", to construct a windscreen and a roof (see Figure 4).

Figure 4 **Recycled branches of alien vegetation used to construct a windscreen.**

Old tyres were recycled for various purposes, ranging from demarcating the indigenous garden path to serving as both containers for indigenous plants and windscreens in the vegetable garden. The school also recycled building rubble to construct a hill in the indigenous garden (see Figure 5).

Figure 5 **Recycled building rubble used to construct a hill and recycled tyres used as plant containers.**

4.5.2 Operations Management of Financial and Material Resources

Resources to maintain the indigenous and vegetable gardens during the post project period (2007 to 2008) continue to consist mainly of non-cash resources and limited cash resources. Cash resources are generated by learners on 'civvies day'. Non-cash resources include recycled materials and donations such as seedlings and compost received through partnerships.

The practice of using recycled material in the garden during the project period has continued during the operations period. During the course of observations from January to July 2008, learners were seen to bring egg shells, used *rooibos* tea bags (indigenous tea), vegetable waste and grey water from home. It was observed that parent/learner donations of waste do not generate a regular quantity of waste; however, vegetable waste donated on a weekly basis by an ex-School Governing Board chairperson was of substantial quantity.

The latter waste is used in the vegetable garden, where vegetables are planted for use in the school's feeding scheme. The donation of vegetable waste is used to feed earthworms, which transform it into compost. Earthworms are kept in containers made of recycled tyres. On a weekly basis, learners or Rainbow Cleaning Service garden staff place shredded vegetable waste and newspapers into these containers. The latter is also regularly moistened with water. A nutrient-rich liquid is produced when the earthworms process the moist waste. Since soil quality in the vegetable garden is of poor quality for vegetable growth, the liquid and compost improve soil quality and enhance vegetable growth.

The school's partnership with the ex-School Governing Board chairperson is important. The partnership is a strong one. The researcher has noted through participatory observation that regular donations of vegetable waste contribute to sustaining the compost-making process.

It was observed that plant cuttings generated during garden cleaning are also recycled. Plant cuttings are propagated and planted in the school garden. The school, however, was not able to increase the number of plants it propagates due to lack of materials,

for instance, plastic containers, funds for hormone powder and limited human resources to work in the garden.

In 2008, prior to establishing a partnership with SEED to extend the vegetable garden, the vegetable seedlings and seeds (spinach, turnips, and carrots) that the school purchased with its own funds. SEED also donated compost, tools, plants and mulch. Donations of vegetable seedlings were also received from the Heart and Stroke Foundation in 2007.

The school's water bill is funded by British Petroleum (BP). The partnership with BP came about after the school drilled three boreholes and discovered that the water was polluted with petrol. An investigation into the pollution was undertaken, and it was found that a petrol tank at a BP petrol station in close proximity to the school was leaking petrol. Since then, BP has been paying the school's water bill. In addition to tapped water, the school also uses rainwater, which it collects in two water tanks donated by SANBI and SEED.
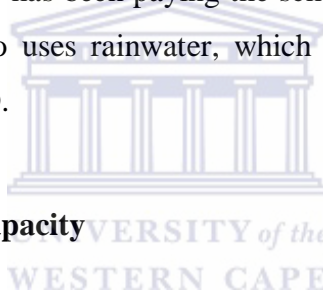
4.5.3   Human Resource Capacity

The human resources utilised in the project phase included educators, ground staff, learners, parents, a network of ex-staff, individuals in partner organisations, for example, a SANBI-EEU horticulturalist, and environmental educators. This range of qualified and experienced individuals contributed their knowledge, skill, expertise and personal character traits, such as commitment and enthusiasm, to establishing the garden project. Many of the initial persons involved in the project phase are no longer active in the operations phase. Those currently involved in operations include an educator, a parent, casual staff, learners and, occasionally, individuals from partner organisations.

4.5.3.1   Educator Capacity

Educator capacity in terms of knowledge, awareness, commitment and enthusiasm for garden-based teaching, as well as participation in overseeing garden maintenance and

the eco-club, varies. It was not possible to undertake a full investigation into the capacity of all educators at West-End Primary. Therefore, it is not possible to comment conclusively on their knowledge, experience, skill, enthusiasm and commitment as relates to the garden project. There is evidence to suggest weaknesses in capacity as well as certain strengths in capacity.

Examples of strong capacity are two educators who played a role in establishing the garden and then continued playing a role during operations management of the garden. The first educator had 20 years of experience as an educator prior to her involvement in the project. Her educator training included a three-year Diploma in Teaching and a Bachelor of Arts degree. In the third year of the project, she enrolled for an Advanced Certificate in Environmental Education at Rhodes University. She played an active role in the planning, fund-raising, design and implementation of the indigenous garden. At the end of 2007, she resigned from her teaching post to work with SANBI-EEU. A second educator, a Grade 1 educator is equally qualified. She has several years of teaching experience and furthered her studies in horticulture. She is credited with establishing the vegetable garden in 2006. She has continued to play an active role in maintaining the garden. In addition to her teaching responsibilities, she plays a key role in overseeing garden maintenance work and in co-ordinating the activities of the eco-club. She also plays a liaison role with partner organisations, organises Arbour Day activities and, in 2008, introduced the idea of 'shadows' into the eco-club. Shadows are junior learners in the eco-club who are taught by senior learners in the garden about the garden and how to take care of it.

The ability of several educators to develop garden-based lesson plans is a second example that suggests a strong capacity. A review of the Eco-School Portfolio suggests that several educators possess the knowledge, skill, awareness and ability to develop lesson plans for garden-based learning. A Curriculum Links file, which is updated annually, is a record of lesson plans developed by West End Primary educators for Grades 2, 3, 5, 6 and 8 learners. It includes lessons plans for subjects such as Life Skills, Life Orientation, Mathematics, Arts and Culture, English and Natural Science. In addition to the lesson plans, it also includes photographs, artwork and learner assignments as evidence of implementation of lesson plans. The Curriculum Links file therefore is proof that certain educators have used the garden to

support learning. Furthermore, it is evidence of educator capacity to develop lesson plans, which uses the garden as a teaching resource. An example of this is lesson plans developed by an educator for three subjects, namely, English, Mathematics and Arts and Culture. The focus of each of the lesson plans is the threat to the environment. The educator based lessons on a study of an indigenous shrub, named *protea scolymocephala*. In the English lesson, learners were given a fact sheet about the *protea scolymocephala*. The fact sheet formed the basis of an English lesson. The Mathematics lesson was about the Protea Red Data list. Among other learning activities, learners drew bar graphs using the information on the Protea Red Data list. Another example is of a lesson plan developed on the topic of "Growing our own food". This lesson is inspired by the vegetable garden. The lesson focused on the method of establishing a vegetable garden. It too was linked to other lessons, for example, Natural Science lessons on soil and the 'greenhouse effect'.

Despite making some progress since 2006 to introduce garden-based learning (West-End Primary Eco-School Portfolio, 2007), the attainment of school-wide garden-based learning remains a capacity weakness. An analysis of interviews suggests that not all of the educators who develop garden-based lesson plans implement these using the garden.

The school's capacity to manage maintenance of the garden and the eco-club is both strong and weak. It was not possible to access documented evidence of garden financial management and general management processes; however, it was ascertained through a casual interview that garden finances generated through learner 'civvies day' events is managed by a Grade 1 educator. Learners do not participate in managing finances. Furthermore, it was observed that the management of garden maintenance in 2008 was primarily undertaken by one educator, namely, the Grade 1 educator. It was deduced from casual interviews during participatory observation that the Grade 1 educator did receive some assistance with garden maintenance from a Grade 6 educator. This educator was a member of the initial working group and has agricultural training. He provided assistance with sourcing casual labour and was available to offer advice in the vegetable garden. Several other educators also supported the garden project either through selecting learners for the eco-club or by granting permission for them to assist with garden maintenance or by drafting lessons

plans submitted annually to attain Green Flag status with the Wildlife Environment Society of South Africa (WESSA). Although other educators provided assistance to the Grade 1 educator in 2008, the observation made was that she consistently played a leading role in overseeing garden maintenance and the eco-club. The support of educators given to the Grade 1 educator can be interpreted as strong capacity. However, the fact that only one educator manages the eco-club, garden finances and garden maintenance and co-ordinates the Eco-Links file is regarded as a weakness in capacity.

4.5.3.2   Community Capacity

The availability of and access to community capacity for maintenance of the garden is embodied in community members, such as a parent employed through Rainbow Cleaning Services, the ex-School Governing Board Chairperson and various casual staff. The parent is a key resource for the maintenance of the garden. Her commitment and passion has been important for sustaining the garden. She demonstrates an understanding of and commitment to applying horticultural knowledge, permaculture- and water-wise garden principles and recycling knowledge to the garden. In addition, she demonstrates an understanding of garden maintenance requirements, school protocol, its activities and achievements, as well as an ability to educate learners who assist in the garden. Her duties include ongoing garden maintenance, which includes preparing vegetable seed beds, planting vegetable seeds and plants, and pruning, weeding and cleaning the indigenous garden, teaching small groups of learners to use vegetable waste to make compost and to weed, clean and water the garden. This parent is one of the school's key human resource assets for maintaining the vegetable and indigenous garden. She is motivated, committed and passionate about the work she does in the garden.

During the course of 2008, this parent has been assisted by different community members. The school made several attempts to employ an additional community member on a two-year contract to assist with garden maintenance work. Various individuals were employed but proved unsuitable: for example, one worked for one day and another for a few weeks. There were hopes that one of these individuals, a

parent with children at the school, would fill the vacancy, but this did not occur. The school, however, experienced a rapid turnover of casual labour and struggled to retain the services of casual labourers. It was the view of one educator that the high turnover of casual staff was due to low wages.

A conclusion arising from investigating the availability of and access to human resources is that the school was not able to easily access casual labour despite the availability of human resources within the Mitchell's Plain community. Casual interviews with casual staff revealed an interest and willingness to do garden maintenance work. However, this was not followed through, which can thus be interpreted as a lack of commitment to garden maintenance work. However, casual staff commitment was also influenced by other factors, with one casual staff member complaining of low remuneration in relation to volume and intensity of garden work. Another casual staff member pointed to poor health as the reason for absence from work. A third casual staff member demonstrated limited garden maintenance experience, an inability to follow through on instruction or to work unsupervised, which resulted in damage to plants. He was not re-employed.

It was noted that most casual staff had either no or limited garden maintenance experience and were reliant on the supervision and instruction of the parent to undertake maintenance work.

4.5.3.3 Ground Staff Capacity

Two ground staff members participated in the project phase and were included in SANBI-EEU's capacity-building workshops. One of the two ground staff members who joined the working group in the second year of the project demonstrated creativity and skill. He used his woodwork skills and ingenuity to construct garden furniture, such as a bridge, a birdhouse and a water-well, by recycling old school benches. He further supported the school's interest in recycling by collecting old baths, which he transformed into plant and compost containers. He also played an active role, working alongside educators, parents and learners in preparing the soil for planting of indigenous vegetation. A conclusion drawn from focused interviews with

an ex-educator and SANBI-EEU staff is that ground staff capacity to assist with establishing the garden during the project phase was strong. The conclusion drawn from participatory observation during the operations phase, however points to a decline in capacity. The capacity referred to is consistent interest and willingness to assist with either garden maintenance or supervision of casual staff. The availability of these personal qualities, which Brynard and De Coning (2006:199) termed *intangible resources* is weak in comparison to that demonstrated during the project phase. Very few examples of commitment to and an interest in garden maintenance were evident during participatory observation from January to July 2008. It was noted that the unlocking of gates by a senior ground staff member to enable the parent to access the garden to do maintenance work such as watering and weeding during the vacation did occur. It was also noted that the senior ground staff member did assist with watering of the indigenous garden during school terms; however, he did not water the vegetable garden, which was left to Rainbow Cleaning Service staff. It was concluded that ground staff have withdrawn from participation in garden maintenance because Rainbow Cleaning Service staff is contracted to assume these responsibilities.

4.6   Capacity Building

According to Paul (cited in Abiche, 2004:24) and Rahman (cited in Penderis, 1996:129) capacity building can be characterised as the approach to community development which raises people's knowledge, awareness and skills to use their own capacity. In terms of Brynard and De Coning's definition of capacity (2006:199), capacity building should be interpreted as strengthening project beneficiaries' access to resources such as financial, human, material, technological and logistical resources. It would include strengthening availability of and access to intangible resources such as leadership, commitment, willingness and courage. Capacity building of educators, community members and learners is examined below.

During the project phase, SANBI-EEU was responsible for co-ordinating a series of capacity-building workshops. These workshops are titled People and Plants, Pace the Space, Earthwormers, Taking Root and Parenting Plants. These workshops were geared towards assisting the working group with planning, designing and establishing

an indigenous garden. The People and Plants workshop introduced the Outreach Greening Programme and the roles of various stakeholders to participants. The Pace the Space workshop entailed completing an environmental analysis checklist (situation analysis) to establish what resources the school had. It also included measuring and designing the garden site. The Earthwormers workshop guided participants through clearing the garden area and preparing the soil for planting. The Taking Root workshop taught participants to propagate plants, while the Parenting Plant workshop provided guidelines on how to maintain the garden. The participants in these workshops were the members of the working group, which included educators, ground staff and learners from the eco-club.

Certain workshops, namely, the Teacher Professional Development workshops, however, were exclusively for educators. These workshops included two learning areas, namely, interpretation, and biodiversity and sustainable development. Two educators on the working group attended these workshops.

The Interpretation workshops taught educators how to develop environmental lesson plans. Educators were encouraged to select a section of their school year plan when developing these lesson plans. Lesson plans about the *protea scolymocephala* (see 5.2.1) were developed for the Interpretation workshop. Through participation in the Interpretation workshops, educators were also exposed to designing plant labels which could be used to facilitate garden-based learning.

The Biodiversity and Sustainable Development workshop made educators aware of sustainable development from an environmental perspective. They participated in a sustainability game and were exposed to the meaning and interpretations of concepts such as sustainable development and biodiversity. They were provided with information about South Africa's biodiversity and the threats to this biodiversity. They were also exposed to the key trends in environmental education from the 1970s to the 2000s.

The school undertook several capacity-building initiatives after the conclusion of the project period. It did so through participation in the WESSA Eco-Schools Programme,

its eco-club and interaction with personnel from SANBI-EEU, SEED and the Heart and Stroke Foundation.

SANBI-EEU offered the capacity-building services of an eco-school co-ordinator to educators at West-End Primary. In particular, such capacity building was concerned with raising educator awareness of how to integrate environmental knowledge into lesson plans and how to implement the lesson plans by using the garden to support teaching. Of the school's 36 educators, 2 educators made use of the opportunity to be assisted by the eco-schools co-ordinator in terms of using the garden for teaching.

One of the educators was seen to be making an effort to nurture an interest in garden-based learning amongst other educators. For example, the School Curriculum Links file, which records samples of lesson plans, was shown to another educator with eco-club members in her class. The latter file thus served as an instrument for building educator capacity through the sharing of knowledge and experience. Similarly, this educator organised an environmental awareness-raising event, namely Arbour Day, which was attended by all educators and learners.

It was observed that casual staff employed to undertake garden maintenance often had no prior garden maintenance knowledge or experience. At times, this resulted in the undoing of previous work. For example, new casual staff either uprooted plants they mistook for weeds or would over-prune indigenous vegetation. It was observed that building the capacity of casual staff employed to do garden maintenance was difficult as they did not stay in employment long enough to participate in workshops offered by partner organisations. The retention, training and building of capacity of casual staff is thus a weak area for the school.

On the other hand, strengthening the capacity of the parent employed through Rainbow Cleaning Services was possible. This was so because she was committed to her two-year contract and was thus always at work. This made strengthening of capacity possible as she was present to learn from the educators involved in the garden as well as from the staff of partner organisations. Her knowledge and experience of plant propagation, garden maintenance, recycling, permaculture and indigenous vegetation was acquired through working in the garden and was

strengthened by her interaction with educators, the staff of partner organisations and attendance of permaculture workshops. Her experience of garden maintenance and permaculture gardening was also further developed by her ability to learn from the successes and failures of her first year on the project.

It was observed that she was an important link for building the capacity of new casual staff since she was able to guide new staff and show them what is expected of them. At times she displayed uncertainty in sharing her increased knowledge and experience with new staff due to the frequent turnover in casual staff.

Building learner capacity to undertake garden maintenance work is undertaken by the Rainbow Cleaning Services staff member, the educator responsible for the eco-club and senior eco-club members who mentor junior learners, referred to as *shadows*. Participation in garden maintenance work has enhanced learner understanding and knowledge of the natural environment. The survey results show that learners have learnt some important lessons in the garden: 48% of learners stated that they had learnt how to do garden maintenance, and 22% of learners indicated they had learnt the names of plants. However, 4% of learners indicated that they had learnt nothing in the garden. It can therefore be deduced that the lessons learnt in the garden have contributed to building learner capacity to sustain a garden. The latter point will be discussed again in the section on sustainability (see Section 4.8).

The survey investigated the role of learners in building capacity and found that learners shared their garden experiences with others either at school or at home, which resulted in these persons assisting with garden maintenance. The knowledge shared essentially entailed telling others about garden maintenance work (e.g. weeding, picking papers, and watering the garden), helping them learn about plants and the beauty of the garden. The survey found that 73% of learners told others about the garden and the work they did in the garden, while 27% did not. Of the learners who shared information with others, 25% told classmates in the same grade, 14% told learners in grades lower to them, 17% told friends at home and 47% told family at home. The survey found that after learners had communicated their knowledge to classmates, learners in lower grades, friends and family about what they learn and do in the garden, an additional 39% of learners were subsequently inspired to work in the

garden and two parents supported the garden by sending tea bags and vegetable waste to school.

4.7 Partnerships

West-End Primary has a culture and history of partnering with individuals, private organisations and NGOs. With regard to the greening project, the school has formed partnerships with SANBI-EEU, Schools Environmental Education and Development (SEED), Western Cape Education Department's Education, Management and Development Centre in the Southern Region of the Western Cape (EMDC-South), as well as individuals associated with the school, for example, the ex-chairperson of the School Governing Board and ex-educators.

4.7.1 WESSA Eco-Schools Programme

West-End Primary is registered with the Wildlife and Environment Society of South Africa (WESSA) Eco-Schools Programme. WESSA supports government's policy goals pertaining to environmental education. It does this through participation in an international Eco-Schools Programme, founded in Europe in 2004 by the Foundation for Environmental Education. The main focus of WESSA Eco-Schools is to strengthen South Africa's national schools curriculum and to support the implementation of environmental education (WESSA, n.d.). WESSA's role through the Eco-Schools Programme is one of capacity building. WESSA publishes educational materials to be used in schools; it conducts workshops with educators on how to use environmental projects.

West-End Primary's registration in the Eco-School's Programme requires that it commits to an "ongoing process of developing lesson plans and learner-centred activities that are in line with the Education Department's Revised National Curriculum statement" (WESSA, n.d.). This entails choosing three focus areas, developing lesson and school improvement plans and recording the school's progress in a portfolio, that is, the Curriculum Links file. WESSA assesses portfolios annually, and if schools are successful, they gain Eco-School status and are awarded a Green

Flag. In 2006, West-End Primary chose school grounds and fieldwork, resource management and health and safety as its three focus areas. West-End Primary was awarded a Green Flag in 2006.

WESSA has funded a SANBI-EEU post of eco-schools co-ordinator for the Mitchell's Plain area for 2006 to 2008. The role of the eco-schools co-ordinator is to build educator capacity to use the garden to support the teaching of various school subjects. West-End Primary educators have generally not made use of the services provided by the eco-schools co-ordinator. Two educators have taken up training.

4.7.2 SEED

West-End Primary has partnered with an NGO, namely Schools Environmental Education Development (SEED), since 2007. SEED works with schools to transform learning through permaculture (SEED, n.d.). In June 2008, SEED undertook a sustainability study of the school's vegetable garden. It subsequently decided to embark on a three-year project, that is, from 2008 to 2010, with West-End Primary to establish a new vegetable garden at a site with better soil quality. The new vegetable garden project will increase the school's vegetable output and is thus beneficial to the school's feeding scheme. As a consequence of embarking on a new project, the school also receives additional resources. SEED does not make direct cash donations but provides material and human resources. The benefits which SEED brings to the partnership during the project period are expertise, infrastructure, that is, a water tank, irrigation pipes and a fence, and plant material such as vegetable seedlings, vegetable seeds, plants and trees. In terms of human resources, SEED brought in its expertise and worked alongside learners and garden staff to establish a new vegetable garden in 2008. SEED also employs an entrepreneurial facilitator, who will work with West-End Primary to discuss different ways of sustaining the vegetable garden.

4.7.3 EMDC South

While the Western Cape Education Department does not provide funding specifically for the garden, it provides support through its regional Education Management and

Development Centres, the EMDC South. For example, the EMDC South Curriculum Advisor for Biology and Natural Sciences often accompanies visitors to view the school garden. Two educators have stated that they find this support of their work encouraging.

4.8   SUSTAINABILITY

The findings on sustainability are not divorced from some of the findings that are presented in the above sections on learner capacity.   However, sustainability is discussed as a separate section to ease the reading of this chapter. For the same reason, the section on learner capacity is presented here rather than under the theme *capacity* (sub-section 4.5.3).

4.8.1   Learner Understanding of Sustainability

There are many definitions of and different dimensions to the concept of sustainable development (Munasinghe, cited in Rogers et al., 2008:23; Rogers, Jalal, & Boyd, 2008:42; Sutton, 2000). The researcher has adopted a definition of sustainability as meaning maintaining (i.e., continuing) or sustaining something identified by beneficiaries (Sutton, 2000) when establishing projects and doing so without depending on external help (Abiche, 2004:27; Penderis, 2007:7). In addition to this, sustainability includes environmental, financial and social sustainability (Munasinghe, cited in Rogers et al., 2008:23; Rogers et al., 2008:42.

It was important to ascertain whether learners had heard the term *sustainability* before and what they understood it to refer to (see Annexure 1, Q.12 & Q.13). It was expected that learners might not know the meaning of sustainability. Regardless of whether they had or had not heard of the concept of sustainability before, learners were provided with a definition of sustainability prior to asking any further questions. It was important to do so because certain answers to questions (see Annexure 1, Qs.14-17) required an understanding of the concept.

The survey found that 78% of learners had not heard of the concept before, whereas 14% of learners had heard the term before and 8% of learners did not know if they had heard it before (see Figure 6). The researcher therefore concluded that 84% of learners had not heard of the concept of sustainability before. These results are a possible indicator of weakness in learner knowledge and awareness of sustainability. However, additional findings, presented below, suggested differently.
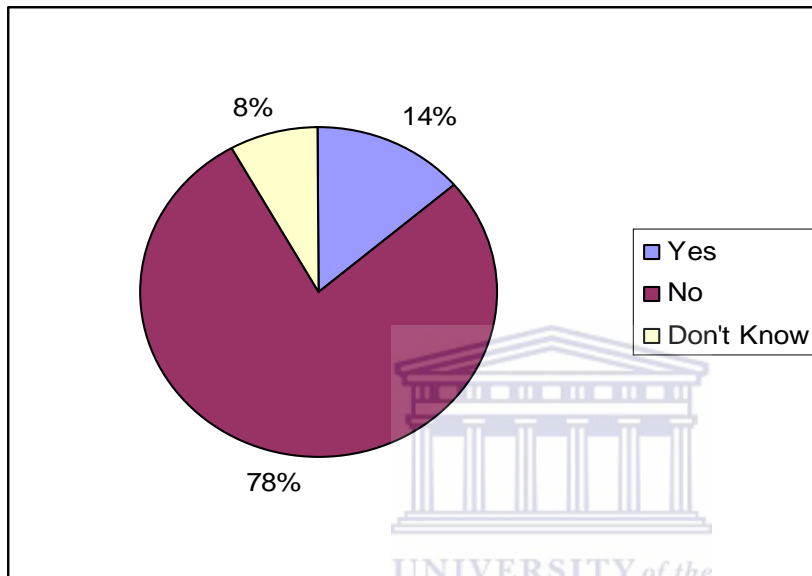
Figure 6 **Learner awareness of the concept of sustainability.**

The survey further investigated learners' understanding of sustainability by providing learners with concepts, namely, *environmental, social, financial* and *organisational*, which are associated with sustainability. All learners understood sustainability as being linked to a single concept associated with sustainability, for example, environmental sustainability (see Figure 7). In response to the survey question, 48% of the learners stated that sustainability refers to the environment, 14% stated that it refers to social sustainability, 12% stated that it refers to organisational sustainability and 5% stated that it refers to financial sustainability. The statistics did, however, indicate that 12% of the learners associated the term *sustainability* with all of the concepts, namely, environmental, financial, social and organisational sustainability. A small number of learners (6%) did not know what sustainability referred to, while 3% were not able to answer the question.
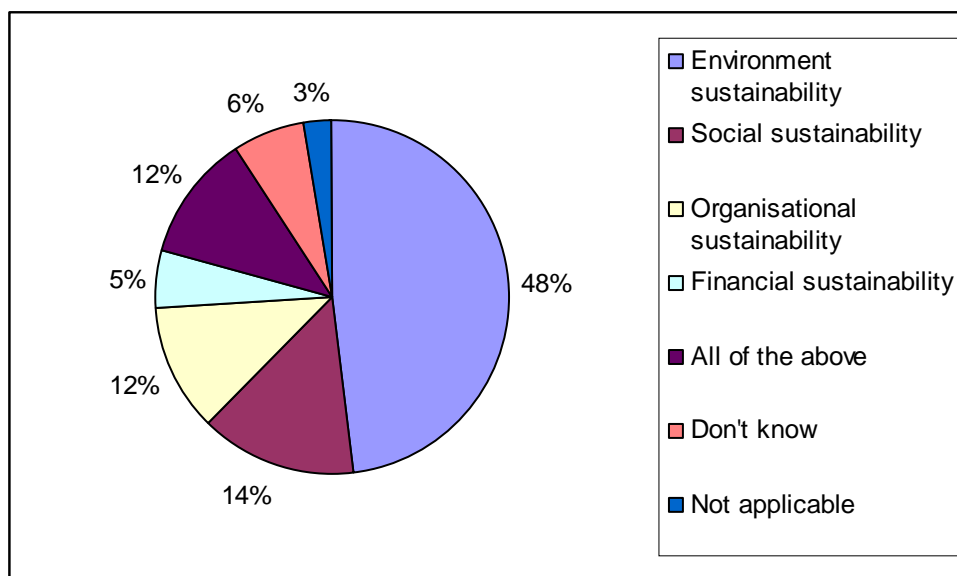
Figure 7 **Learner understanding of sustainability.**

The survey further investigated sustainability of particular components of the greening project by examining the reasons why and the views on how learners wanted these components to be sustained in the next 10 years. The reason for posing these questions was to collect qualitative data which could be analysed for evaluating learner capacity, that is, awareness, knowledge, commitment and enthusiasm. These insights into learner capacity would indicate whether such capacity is weak, average or strong. They would also explain whether the 84% of learners who correctly associated one or all of the relevant concepts with sustainability do have an understanding of the concept or whether they simply guessed the correct response.

Most learners interviewed indicated that they would like the school greening project to be continued and sustained for the next 10 years. When asked which component of the greening project they wanted to sustain, 49% of learners indicated the school feeding scheme, 39% of learners indicated they wanted all components to be sustained, 25% of learners indicated the vegetable garden, 10% of learners indicated the eco-club, 8% of learners indicated the indigenous garden, 7% of learners indicated lessons in the garden and 4% of learners indicated the school indigenous and vegetable gardens.

Each learner named his or her reasons for wanting to sustain all or particular components of the greening project that are important to them. These reasons were

diverse; however, it was possible to broadly categorise them under the following headings: (1) school feeding scheme, (2) vegetable garden, (3) eco-club success in ensuring garden maintenance, (4) beautification of the school, and (5) support for garden-based learning and environmental awareness. There was significant support for sustaining the feeding scheme and vegetable garden, with 64% of the learners recognising its value in providing food to other learners who "come to school hungry". Sustaining the eco-club was important to 10% of the learners, who believed that the eco-club "looks after West-End's garden nicely" and was therefore viewed as important for ensuring sustainability. Sustaining the indigenous garden because "it is beautiful" was important to 8% of the learners, while 7% of the learners viewed sustaining lessons in the garden as important because "one learns good things" in the garden.

The findings into how to sustain the greening project suggest that most learners, that is, 60% of the learners, viewed garden maintenance activities as a way to ensure sustainability of particular or all components of the greening project. Learner suggestions on how maintenance activities would ensure sustainability of the greening project require of learners to "…pick up papers", to "… water the plants , not littering, not damaging plants by stepping on them,…by planting more plants and trees"…and for educators to put "…more children in the eco-club". Several learners, (10% of the abovementioned 60%) and an additional 17% of learners specified that sustainability could be ensured if learners undertook maintenance work; 8% of the 17% specified that this could be done by the eco-club. Sustaining the greening project, that is, the feeding scheme and the indigenous and the vegetable gardens, with family donations of compost or foodstuffs was mentioned by 3% of learners.

An analysis of the above findings suggests that learner awareness and knowledge of sustaining the greening project through maintenance activities and learner participation is strong. Awareness and knowledge of social sustainability, that is, the need to support "hungry learners", however, is average.

4.8.1.1   Learner Awareness and Knowledge of Environmental Sustainability

Plants endemic to South Africa are referred to as indigenous plants, which mean that these plants occur in their natural setting and grow "without artificial assistance in a defined place" (Johnson, Johnson & Nichols, 2002:4). Indigenous plants adapt to an area's local conditions, such as soil type, rainfall, temperature and wind, and therefore require less water than "plants from regions with different rainfall patterns" (National Botanical Institute, 2002:10).

The school's greening project includes an indigenous and a vegetable garden. It was necessary for learners to know the difference between the two gardens because several questions related to participation and capacity specifically referred to either of the two gardens. Learners were shown two photographs, one of an indigenous garden and the other of a vegetable garden. When asked to identify an indigenous garden, 68,8% of learners correctly chose the indigenous garden, 28,6% of learners incorrectly selected the vegetable garden and 2,6% were not able to identify an indigenous garden. The researcher therefore concluded that 31, 2% of learners do not know what an indigenous garden looks like.

Learners were asked (see Annexure 1, Q.16) whether planting indigenous plants would make sustaining the indigenous garden possible in the next 10 years. Responses to this question were intended to further clarify learner knowledge and awareness of sustainability, more particularly environmental sustainability.

Of the total learners surveyed, 88% agreed that indigenous plants would make sustainability possible, 8% said *no* and 4% did not know if it would. The responses of learners who said *yes* did not include any words such as "water-wise" or statements such as "indigenous plants need less water" which would suggest that they knew how indigenous plants contribute to garden sustainability. Their responses were not relevant to the question; for example, 39% of the responses made reference to garden maintenance, 6% of the responses referred to the garden's beauty and 3% of the responses related to the eco-club. Although there were no significant indicators to suggest learner awareness and knowledge of how indigenous plants contribute to garden sustainability, 3% of the learners used vocabulary which suggests some

familiarity with the topic of environment and sustainability. These learners did not give a correct response; nevertheless, they were the only learners who demonstrated some awareness of environmental issues. A learner who agreed that indigenous plants would sustain the garden said, "If they plant more indigenous plants, the alien trees will take up the water." A second learner stated, "…the indigenous plants takes a lot of air and release -…brings out bad air; most children suffer from asthma."

The findings therefore suggest that even though 69% of learners were able to identify an indigenous garden and 88% of learners agreed that indigenous plants would make possible the sustainability of the indigenous garden, learner knowledge of the relationship between indigenous plants and sustainability is weak.

4.8.1.1.2 Learner Participation in and Sustainability of the Indigenous Garden

According to Brynard and De Coning (2006:199), capacity also includes intangible requirements such as leadership, motivation, commitment, willingness, courage, endurance and other intangible attributes. Insight into learner interest, enthusiasm and commitment was evident in learner responses to a question about learner participation and sustainability of the indigenous garden. First, 88% of learners agreed that learner participation would sustain the indigenous garden; only 7% of learners did not agree, whereas 5% did not know if learner participation would sustain the garden. Second, the reasons given to explain why learner participation would sustain the garden indicated that learners were willing and committed to assisting in executing maintenance tasks such as watering, weeding, picking up papers, planting and keeping the garden safe. Several of the abovementioned 88% of learners were also committed to co-operating with other learners and expressed interest in working as members of the eco-club to educate younger learners and to assist parents in working in the garden. These findings therefore suggest that learner capacity as relates to enthusiasm, commitment and interest in sustaining the indigenous garden is strong.

4.8.1.2   Partnerships and Sustainability

Partnerships between beneficiaries and development agencies are viewed as a tool for implementing policy (Brynard & De Coning, 2006:183). Partnerships have been beneficial during the project period and to some extent have assisted in sustaining the indigenous and vegetable gardens. The researcher investigated learner preference for partnerships, which entailed assessing awareness and knowledge of types of partnerships as well as how to sustain such partnerships (see Annexure 1, Q.15).

The survey showed that all the learners interviewed indicated that they wanted the school to continue its partnerships with people and organisations that assist with the garden project (see Figure 8). The learners indicated who specifically these people and organisations should be. A total of 27% of the learners selected a partnership with WESSA Eco-Schools, 14% selected a partnership with interested parents, 10% selected a partnership with SANBI-EEU, 8% selected a partnership with unemployed community members, 7% selected a partnership with SEED and 7% selected a partnership with private business. The percentage of learners who indicated that they would want partnerships to continue with all of the latter organisations and individuals was 10%.
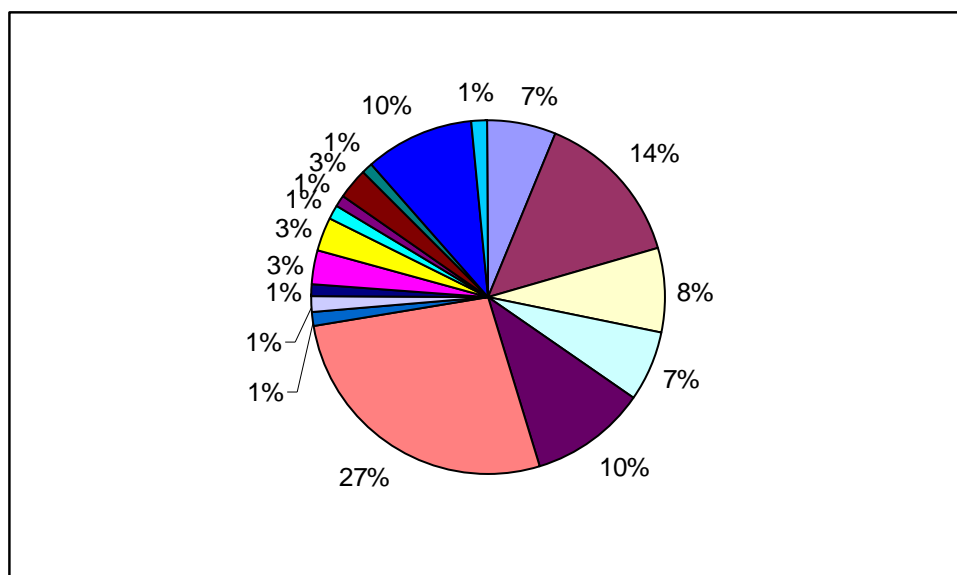
Figure 8 **Sustaining partnerships (see Annexure 6 for full figure).**

Support for sustaining the partnership with the WESSA Eco-Schools Programme was highest, at 27%, followed by support for a partnership with interested parents, at 14%.

The support for sustaining the partnership with the WESSA Eco-Schools, however, may not be accurate. Reasons provided by learners for selecting WESSA Eco-Schools as a partnership to be sustained indicated that most learners, except for 3%, viewed the Eco-Schools to be synonymous with the eco-club. In general, their responses related to the eco-club's role in garden maintenance and beautification of the school. It therefore suggests that most learners do not know what the Eco-Schools Programme is about and therefore views on why and how to sustain this partnership are applicable to sustaining the eco-club and not the WESSA Eco-Schools Programme. The reasons stated by learners as to why they supported other partnerships, however, were more accurate.

Views expressed by learners about a partnership with interested parents related mainly to the supporting role parents could offer to learners: *"Parents will help learners know how to keep the garden clean"* and *"they can give ideas on how the garden should look like"* were some of the learners' comments. Several learners viewed unemployed community members as being synonymous with interested parents. These learners viewed the garden as a vehicle for job creation, expressing views such as, *"There are many parents at home who do not have work and it will be best to work in the garden."*

Learner responses about sustaining a partnership with SANBI-EEU and SEED were in essence similar. Learners generally recognised these organisations as contributors of resources and expertise for maintenance of the gardens. *"They help by giving equipment to grow the plants,"..."bring us seeds, compost and other things,"* …*"they have more knowledge about the garden..."* and *"...they teach us about the environment and they give us some trees,"* were some of the views learners expressed about sustaining a partnership with SANBI-EEU and SEED. Learner responses about sustaining a partnership with private business were vague; essentially, learners wanted a partnership which would enable the school to maintain the garden.

Many of the views expressed by learners on how to sustain partnerships provided insight into their ability as children to formulate and propose ways for the school to undertake strategies and actions that would sustain its partnerships. Their thinking reflected a leaning towards independence and self-reliance; however, it also indicated

a recognition and appreciation for the value which partners add to the greening project. They made the following suggestions:

(1) Of the total, 16% of the learners proposed co-operation, team work and communication in the partnerships with parents, unemployed community members, SEED, SANBI and WESSA Eco-Schools (read eco-club), stating, *"The partnership will continue if they"* [parents, unemployed community members, SEED] *"help each other and have a good communication,"* and *"by"* [SANBI and school] *"working together and tell(ing) each other what to do so that there won't be mistakes"*.

(2) Several of these learners suggested calling meetings with parents, stating, *"There must be a time to have a meeting with parents where mothers who do not work,… say if they would like to work in the garden",* and meetings with SEED and eco-schools, where *"people must come together and make plans of how to improve the wellbeing of the school garden"*.

(3) The view that the provision of a garden maintenance service would sustain partnerships with parents, unemployed community members, the eco-club or SANBI was expressed by 5% of the learners. Parents, unemployed community members and the eco-club were seen to be the service providers, and the fact that they would provide a service would be the basis of sustaining a partnership with them and SANBI. One learner stated, *"If the school keeps maintaining the garden, the partners will be interested in continuing with the partnership"*.

(4) Furthermore, 5% of the learners suggested that partnerships with parents and unemployed community members could be sustained by providing paid work. They stated, *"People who do not work can come help out at school,"* and *"Help the people who can't get work including interested parents."* They also said, *"The school could give more money to these unemployed community members",* and *"The school can give them vegetables so that they can make soup at home"*.

(5) Another 4% of the learners stated that partnerships with SANBI, SEED and parents could be sustained *"if they*[SANBI, SEED, parents]*donate more plants to the*

school", and *"They* [SANBI] *will help the school by providing seeds and plants and they will teach us how to take care of the garden."*

(6) Finally, 3% of the learners suggested that if the garden is well maintained through a partnership with private business, then this would serve as publicity for the garden and sustain partnerships with private business: *"Private business will invite more people to come to our school and see the garden", and "people overseas can see"* (the garden). Another learner suggested sustaining partnerships through media exposure of the eco-club's work. She suggested the eco-club, *"be in the newspaper ... eco-club can keep the school clean. Put it on television…"*

The above findings provide insight into learner knowledge of the partnerships which they believe should be continued in order to sustain the greening project. Several learners may have confused the eco-club with the WESSA Eco-Schools Programme; however, many others demonstrated the capacity to propose strategies and actions to sustain partnerships. This capacity was demonstrated by 33% of the learners, and while this figure is low, the quality of their responses is high. Learner capacity is therefore average in terms of the numbers who expressed views related to the question; however, capacity is strong amongst those who responded appropriately.

4.9   Concluding Remarks

The findings presented in this chapter have demonstrated that, thus far, sustainability of the West-End Primary greening project has been possible because of the combining of developmental factors such as participation, capacity and capacity building with the use of policy implementation tools such as project management, operations management and partnerships. Although there were some weaknesses in levels and types of participation displayed by educators and ground staff in managing maintenance of the project and in educator capacity to implement garden-based learning, there was emerging strength in educator capacity to design lesson plans for garden-based learning. Furthermore, learners demonstrated weak areas in capacity as regards awareness and knowledge of environmental sustainability; however, they also displayed strong levels of awareness and knowledge of operational issues in garden

maintenance and social sustainability, as well as strong capacity in terms of enthusiasm and interest in maintaining the greening project. Capacity, as it relates to resources (financial, non-financial and human resources), has its strong and weak areas; financial resources are limited, but the school has sustained the project with limited funds, recycling of various materials and donations from individuals and partner orgnisations. Overall, human resource capacity is weak; however, there are islands of strength, as demonstrated by the commitment of one educator and a parent/community member, with assistance from learners, either as eco-club or non-eco-club members. Therefore, using these research findings as a base, the next chapter will present the general conclusions of the study and recommendations for the future.

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CHAPTER FIVE

5 CONCLUSION AND RECOMMENDATIONS

5. 1 Introduction

This chapter presents concluding comments on the status of factors contributing to sustainability of the West-End Primary greening project. It also provides two sets of recommendations, one for West-End Primary and the other for SANBI-EEU. Recommendations offered to West-End Primary pertain to garden-based learning, learner participation, resources (fundraising, recycling) and partnerships. Recommendations offered to SANBI-EEU pertain to project management, capacity building and operations management and the need for further research. The entire research and, more particularly, the recommendations are presented with a view to sharing insights on sustainability of the greening project. It is therefore open to critique, debate and discussion by West-End Primary, SANBI-EEU and others interested in school greening.

In general, the research findings indicate that degrees of sustainability were achieved after 2006. It can be argued that the degree of sustainability which has been achieved was partly due to successfully applying a development framework which combines people-centred, participatory and sustainable development principles with the use of policy implementation instruments such as programmes, projects and partnerships. Analysis of the results of the study showed that developmental factors such as participation, capacity and capacity building did in part contribute to achieving and ensuring this degree of sustainability. The researcher's use of the words *degree of sustainability* is meant to infer that sustainability of the greening project is fragile. This fragility is due to a mix of weaknesses and strengths in the factors that have contributed to sustaining the greening project. The strengths are not adequate to enhance current prospects for sustainability. Instead, the weaknesses neutralise the strengths demonstrated in capacity and participation by one very active and committed educator, a parent/community member and several learners.

5.2   Participation

The study indicated that learners, educators and community members displayed strong levels of participation during the project period (2004-2006) when the indigenous garden was established. The nature of participation was a mix of passive and active participation, with educators playing a key role in decision making, while learners and community members essentially undertook work to establish and then later to maintain the garden. Participation by learners in the maintenance of the garden continued to be strong during operations management. However, community member and educator participation varied between strong and weak, with strong and consistent participation observed in two individuals, that is, an educator and a parent/community member. Participation by community members in general remained weak with the school experiencing high casual staff turnover.

Proponents of participatory development (Burkey, 1993:211; Chambers, cited in Theron, 2005:120) argued that this approach requires the involvement of beneficiaries in all stages of a project. It was observed that not all beneficiaries were involved in the decision-making and planning processes of the greening project. Furthermore, it was observed during operations management of the greening project, that decision making lies either with educators or school management. Other beneficiaries, such as learners and community members, are not part of decision making and planning. Learners, ground staff and community members are passive participants involved in garden maintenance activities. Hence, it can be argued that non-inclusion of certain stakeholders throughout all stages of the project has partly contributed to the fragile status of the greening project.

Added to this argument is the fact that participation of learners and parents/community members has essentially been of a passive nature. Passive participation, as stated by Mohan (n.d.), "increases efficiency and cost-effectiveness"; however, it does not necessarily ensure sustainability.

Instead, as argued by Kellerman (1997:51), active participation is an "important means to secure sustainability"; it places emphasis on beneficiaries as initiators, owners and controllers of a development process based on their needs as a self-organised community (Groenewald, cited in Theron, 2005:114; Rahman, 1993:50). A

core group of educators initiated and participated actively from the start of the greening project, and currently, one educator remains fully active in operations management of the greening project. It could be argued that her participation is one key reason for the degree of sustainability which has been achieved at the school.

5.3   Capacity and Capacity Building

Brynard and De Coning (2006:199) emphasised availability and access to tangible and intangible resources when defining capacity. They argued that intangible resources such as commitment, leadership, willingness and courage were as important as tangible resources (financial, human, material, technological, logistical) for translating "rhetoric into action".

With regard to capacity and capacity building, the study identified areas in which the school demonstrated strong and weak capacity. Areas where strong capacity has been demonstrated are in human resource capacity, which includes a commitment and ability to recycle materials, learner interest and commitment to garden maintenance, one educator's awareness, knowledge and commitment to garden-based learning and garden maintenance and, finally, one parent/community member's interest, commitment and experience in garden maintenance and interaction with learners.

Weaknesses, however, have also been evident in resource capacity, that is, both human and cash/non-cash resource capacity. With regard to human resources, this has included the school's inability to access and retain the services of committed parents/community members who could undertake garden maintenance. It also includes inability to increase educator involvement in implementing garden-based learning as well as increasing and sustaining educator involvement in operations management of the gardens. With regard to cash/non-cash resources, capacity for generating non-cash resources is strong because of the school's ability to access such resources through partnerships. However, this capacity is like the proverbial double-edged sword, which on the one hand, builds resource capacity but, on the other, builds a degree of dependence that would leave the school weaker when partners no longer donate non-cash resources.

5.4   Recommendations for West-End Primary

- Indigenous and vegetable gardens are resources which make teaching and learning possible. The findings on **learner knowledge and awareness** of indigenous plants suggest that even though 69% of learners were able to identify an indigenous garden and that 88% of learners agreed that indigenous plants would make possible the sustainability of the indigenous garden, learner knowledge of the relationship between indigenous plants and sustainability is weak. It is therefore recommended that West-End Primary continue to afford learners the opportunity to utilise the garden to support learning.

- Weak capacity in terms of learner awareness and knowledge of the role of indigenous plants creates opportunities to enhance garden-based learning. Information boards providing general information about topics such as biodiversity, climate change, and the impacts of pollution is one practical way in which this could be achieved without having to depend only on educators to provide oral garden-based lessons. In fact, it could support classroom-based environmental learning in a way which is less abstract to learners. Furthermore, such information boards would expand on the work started when garden labels stating the names of plants and their uses were placed in the indigenous garden. It was observed that West-End Primary had garden labels in the indigenous and vegetable garden. The vegetable garden labels were made of recyclable material, that is, ice-cream lids; these labels were present in the garden and the ink had faded, making it difficult to read. Labels in the vegetable garden have, to date, been removed. The indigenous garden's labels are still in place; however, the ink on the plastic labels is faded and several labels are hidden under indigenous vegetation. There was no evidence in 2008 of new labels being made by educators who participated in the SANBI-EEU workshop or of old labels being maintained. It is recommended that the potential to utilise the indigenous garden to support teaching be maximised. Information boards should be created and installed in the indigenous garden. Text on plant labels should be made more legible and visible than is currently the case. The school should identify a person or persons who will take

responsibility for creating and maintaining information boards and garden labels.

- **Learner participation** in garden establishment and maintenance is an asset and contributes to the success of the greening project. Observation and an analysis of project photos, however, suggested that male learner participation in garden maintenance work was stronger than female learner participation. It is recommended that West-End Primary remain vigilant in ensuring that any garden activities, for example, garden maintenance, should equally include female and male learners. West-End Primary should also ensure that it continues the practice of including eco-club and non-eco-club members in garden maintenance work. West-End Primary should consider allocating eco-club members and other learners from particular grades to certain garden areas. These learners could assist garden staff to maintain their particular area; for example, they could assist with watering, weeding, composting, pruning and propagating. The school may wish to consider enhancing learner ownership and pride by introducing signage for these areas, for instance, "Garden proudly maintained by Grade 6A".

- Each year, learners who participate in the greening project graduate from primary to high school, and hence, each year, a number of learners interested in and knowledgeable about the garden are lost. The analysis of learner interviews found that when learners play a role in building **capacity**, it either resulted in other learners assisting with the garden or parents supporting the garden. The introduction of 'shadows' in the eco-club in 2008 is a valuable mechanism for transferring of skills from senior to junior learners. Similarly, non-eco-club members who were selected to work in the garden also proved valuable in encouraging other learners to be interested in the garden. It is recommended that West-End Primary continues to work with shadows for transferring skills and for developing an interest in the garden among new eco-club members, as well as teaming up eco- with non-eco-club members when doing garden-based learning and maintenance work.

- West-End Primary successfully generated **funds** for the garden project through a network of friendships with ex-educators and parents and through established fundraising activities, such as 'civvies day'. It is recommended that West-End Primary continues to tap into established fundraising activities, such as 'civvies day', to generate funding to pay for garden expenses and to fund eco-club activities. It is further recommended that it initiate new fundraising activities, for example, inviting learners to have their photos taken in the garden for a small fee. This would nurture pride in and awareness of indigenous gardens.

- Learners continue to litter the school grounds with sweet and chip wrappers. Despite cleaning efforts undertaken by cleaning staff and occasionally by learners, these efforts have not succeeded in minimising litter and learners have not learnt to take responsibility for their waste. It is recommended that West-End Primary introduces minimal fines (say 20-50c) for littering by learners. This could serve to deter littering as well as raise funds for the greening project. It is recommended that eco-club members and prefects identify learners who litter during break and, together with an educator or parent, manage the collection of fines.

- Garden maintenance generates opportunities for school fundraising. It was observed that plant cuttings were discarded because garden staff capacity to do maintenance and propagation were limited. It is recommended that West-End Primary consider encouraging each eco-club learner to propagate a minimum of 10 plant cuttings generated during maintenance to stock the plant nursery which is being established at the school. These propagated plants could then be sold to generate funds needed to maintain the garden.

- The practise of **recycling** various materials to establish the garden and thereafter to maintain the garden has been one of the school's strengths. It is recommended that West-end Primary continue its practise of recycling various materials, for instance, vegetable waste, rain water, plant cuttings, generated during maintenance work, for propagation, and that it explores opportunities

for further recycling, such as collecting and using yogurt containers to plant vegetable seedlings.

- West-End Primary has developed **partnerships** with various organisations and individuals who assisted in establishing the school garden. West-End Primary would need to look at ways to sustain its relationships with current and previous partners in a way that enhances self-reliance rather than dependency. It is recommended that West-End Primary consider inviting ex-learners and ex-educators who participated in establishing the garden to formalise their support by signing up to be friends of the West-End Primary garden. These friends could be invited to annual garden open days to view the garden and they could be asked to make financial or non-cash donations to the greening project, be asked to assist with co-ordinating activities involving the eco-club and be asked to assist with garden activities, for example, watering the garden during vacations.

- It has been deduced from observation of **staff participation** in garden maintenance that one particular parent/community member has played a significant role which although is beneficial in terms of community empowerment also carries risks. A key role played by this particular person is to ensure continuity in knowledge transfer; that is, this person knows what various activities needs to be done in the garden and is able share this with new staff and learners. She is also capable of monitoring that garden maintenance is done as required by the school. The risk of this person's absence means a lapse in maintenance work, new casual staff working without direction and possibly damaging or undoing work done, for example, pulling out plants that new staff mistakenly identify as weeds. It is recommended that West-End Primary reviews who should manage work undertaken by community members/casual staff. It is not adequate that only one educator works with casual staff to oversee garden maintenance. An opportunity exists to extend the garden management team, for example, by including full-time garden staff that can play a communication role by explaining work requirements to new casual staff and ensuring that initially they are guided in undertaking work and who assists in monitoring their progress.

5.5. Recommendations for SANBI-EEU

- It has been noted by some researchers that **active participation** which includes beneficiaries in all aspects of a programme/project's design and planning leads to self-reliance (Chambers: 1997; Korten, cited in Theron, 2005:111) and to securing sustainability (Kellerman, 1997:51). In the case of West-End Primary, participation in the decision-making process to initiate the garden project was limited to a few educators. It is recommended that SANBI-EEU ensures during the project application stage that schools have indeed undertaken broad consultation and included more parents, learners and educators in decision-making processes to start greening projects.

- The SANBI-EEU **capacity-building** workshops included certain operational requirements to sustain the greening project. However, there is no evidence to suggest that beneficiaries were made aware of the need to dissolve the project team and establish a new team to undertake operations management. Neither is there evidence which suggests that beneficiaries were made aware of the need to plan for the finances of operations in the early stages of the project. It is recommended that SANBI-EEU considers providing operational management training prior to project implementation. Such training could include community members, garden staff, eco-club members and educators. SANBI-EEU could encourage workshop participants to a) establish operations management teams at the end of the project, which may or may not include members from the project implementation team b) to undertake financial planning for operations in the planning stages of the project, and c) to develop annual general maintenance schedules which list activities, persons responsible and time-lines. It is further recommended that SANBI-EEU partners with the Department of Education to work towards mainstreaming its training workshops. One way of doing so would be to seek its inclusion on a list of accredited courses offered to staff by the Department of Education.

- This study did not fully assess the capacity and participation of all educators in implementing garden-based teaching. Furthermore, it did not investigate the challenges which educators encounter in participating in and sustaining the

environmental education component of school garden projects. It is recommended that a comprehensive study be undertaken at participating schools in the SANBI-EEU programme and that such a study assesses educator capacity and identifies and investigates the challenges faced by educators in initiating, participating in and sustaining garden-based learning. It is recommended that SANBI-EEU initiates the commissioning of such research in partnership with the Department of Education.

- Analysis of the research results suggested that finances play a role in the school's inability to access and retain participation by parents/community members in garden maintenance. This may be one of the reasons; however, it cannot be accepted as the only reason. It is recommended that SANBI-EEU, in partnership with the Department of Public Works and Department of Social Development, commissions research into the factors which contribute to sustaining community participation in school greening projects. It is further recommended that such research includes an investigation into matching the needs, skills and ability of unemployed community members to the school's garden maintenance needs in a socio-economic context which is underpinned by neo-liberal economic policies.

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7 ANNEXURES

ANNEXURE 1

Anita Carelse

<u>Institute of Social Development: University of Western Cape</u>

Questionnaire no __

1.

1.Gender	2. Date of Birth	3.Level of Education	4. Home Language	5. Language of Instruction in class	6. Name of neighbourhood where you stay while attending school?	7.Time it takes to travel to school (minutes)	8. Have you been at West-End Primary since 2005?
□ Male □ Female	(Day/month/year) ___/_____/__	Grade _____	□=Afrikaans □=English □=Xhosa	□=Afrikaans □=English □=Xhosa			□ Yes □ No since ____

2. Are you an eco-club member?

1	Yes		2	No	

2.1. If yes, how many years have you been a member of the eco-club?

1	2	3	4	5	>6, state no of years

2.2. If no, why are you not a member of the eco-club?

_____
_____
_____

3. Which garden in the photograph is an indigenous garden?

1	Yes		2	No		3	Don't Know	

[If no, indigenous plants are these plants in the photo -see the photo of school's indigenous garden)

4. Do you help in the **indigenous** garden?

1	Yes		2	No	

4.1**. If yes,** what is your reason for working in the indigenous garden?
   Please indicate reason from the list below. (there can be more than one answer)

	Indigenous Garden	
1	It is part of lessons	
2	I don't have to do school work during class time	
3	I will be chosen to go on camps	
4	I care about the environment	
5	My friends work in the garden	
6	Teacher tells me to	
7	I like helping the garden staff	
8	Any other reasons please state	

4.2. If no, what is the reason you do not work in the indigenous garden?

_____
_____

5. Do you help in the **vegetable** garden?

1	Yes		2	No	

5.1. **If yes,** what is your reason for working in the vegetable garden?
Please indicate reason from the list below. (there can be more than one answer)

	Vegetable Garden	
1	It is part of lessons	
2	I don't have to do school work during class time	
3	I will be chosen to go on camps	
4	I care about the environment	
5	My friends work in the garden	
6	Teacher tells me to	
7	I like helping the garden staff	
8	Any other reasons please state	

_____

_____

_____

5.2. If no, what is the reason you do not work in the vegetable garden?
_____
_____
_____

I will now ask you about participation in garden maintenance and garden planning.

6 (a) Since **1 January 2008,** have you participated in the following **activities to maintain** the indigenous garden. (Please answer Yes or No)

	Indigenous Garden			
	Maintenance Activity	YES	NO	If yes, how many times 1 2 3 4 5 6 7 8 9 10 >10 or <20 times
1	Make compost			
2	Put compost in soil			
3	Water garden			
4	Remove weeds			
5	Prune trees/plants			
6	Pick up litter			

6 (b) Since **1 January 2008,** have you participated in the following **activities to maintain** the vegetable garden. (Please answer Yes or No)

	Vegetable Garden			
	Maintenance Activity	YES	NO	If yes, how many times: 1 2 3 4 5 6 7 8 9 10 >10 or < 20 times

1	Bring vegetable waste			
2	Bring egg shells			
3	Bring tea-bags			
4	Make compost			
5	Put compost in soil			
6	Water garden			
7	Remove weeds			
8	Prune trees/plants			
9	Pick up litter			

7 (a) Since **1 January 2008,** have you participated in the following **planning activities to extend** the indigenous garden. (Please answer Yes or No).

		Indigenous Garden		
	Planning Activity	Yes	No	If yes, how many times 1 2 3 4 5 6 7 8 9 10 >10 or < 20 times
1	Garden design			
2	Propagate plants i.e. grow new plants from plant cuttings			
3	Grow seedlings			
4	Planted seedlings			

7 (b) Since **1 January 2008,** have you participated in the following **planning activities to extend** the vegetable garden. (Please answer Yes or No)

		Vegetable Garden		
	Planning Activity	Yes	No	If yes, how many times 1 2 3 4 5 6 7 8 9 10 >10 or < 20 times
1	Garden design			
2	Propagate plants i.e. grow new plants from plant cuttings			
3	Grow seedlings			
4	Planted seedlings			

8. Since **1 January 2008,** have you participated in the following activities?
(Please answer Yes or No).

	Activity	Yes	No	If yes, how many times 1 2 3 4 5 6 7 8 9 10 >10 or < 20 times
1	Guide visitors on garden tour			
2	Attended environmental camps			
3	Attended environmental workshops			
4	Attended garden competitions			
5	Attended Eco-club meetings			

9. Who owns the garden? Please indicate from the list below:

1	Teachers		4	Parents		7	Principal	
2	Learners		5	Government		8	SANBI –Kirstenbosch	
3	Ground staff		6	Eco-club		9	SEED	

10. *I will now ask about participation in decision-making*

	Yes	No
Did you help decide whether the school needs an indigenous garden in 2004		
Did you help decide whether the school needs a vegetable		

garden in 2006		

11. In the last 6 months have you helped to check (i.e. monitor):

	Yes	No	Don't Know
Plant growth			
Soil quality			
Water quality			
Litter (chips/sweet papers)			
Garden safety			

I will now ask you about sustainability

12. Have you heard the word sustainability before?

1	Yes		2	No		3	Don't Know	

[If no,
sustainability means to continue or prevent something from failing –to do this on one's own without depending on the help of others]

13. Would you agree that sustainability refers to:
   1. □ Environmental sustainability
   2. □ Financial sustainability
   3. □ Social sustainability
   4. □ Organisational sustainability
   5. □ all of the above

13.6. Why have you selected _____[state what was selected above]?
_____

_____

_____

_____

14. Would **you** like the school greening project to be continued (i.e. be sustained) for next 10 years?

1	Yes		2	No		3	Don't Know	

14.1. If yes, what on the list would **you** want to continue (i.e. sustain)?

   1. □ Indigenous garden
   2. □ Vegetable garden
   3. □ Lessons in the garden
   4. □ Eco-club
   5. □ School Feeding scheme
   6. □ All of the above.

[Remember the answer you give is what you think, please say what you think]

14.2. If yes, why is it important to continue (i.e. sustain) _____[state what was selected above] ?

_____

_____
_____

14.3. If yes, how is _____[what was selected above] going to be continued (i.e. sustained) in the next 10 years?
_____
_____
_____

□ don't know

14.4. **If no**, please explain why **you** do not want the greening project to be sustained?
_____
_____
_____
_____

15. Would **you** want the school to continue (i.e. sustain) its **partnership** with people who help with the garden?

| 1 | Yes | | 2 | No | | 3 | Don't Know | |

15.1. If yes, which partnership would you want to sustain?
   1. □ Private business.
   2. □ interested parents.
   3. □ unemployed community members.
   4. □ SEED (School's Environmental Education Development)
   5. □ SANBI-Kirstenbosch(South African National Biodiversity Institute Environmental Education Unit)
        6. □ Eco-schools
   7. □ All of the above.

15.2. If yes, why is it important to continue (i.e. sustain) a partnership
      with _____[state what was selected above]?
_____
_____
_____
_____

□ don't know

15.3. If yes, how is the partnership with _____ [what was selected above] going to be **continued** (i.e. sustained) in the next 10 years?
_____
_____
_____
_____

□ don't know

15.4. **If no**, please explain why **you** do not want the school to sustain its partnership with people who help with the garden.
_____
_____
_____

16. Will the planting of **indigenous plants** make it possible to continue (i.e. sustain) the indigenous garden for next 10 years?

| 1 | Yes | | 2 | No | | 3 | Don't Know | |

16.1. If yes, please explain how indigenous plants make it possible to continue the indigenous garden

_____
_____
_____

16.2. If no, please explain why not

_____
_____
_____
_____

17. Will **the help of learners** maintain (i.e. sustain) the indigenous garden for the next 10 years?

| 1 | Yes | | 2 | No | | 3 | Don't Know | |

17.1 If yes, please explain how_____

_____
_____
_____

17.2. If no, please explain why not

_____
_____
_____
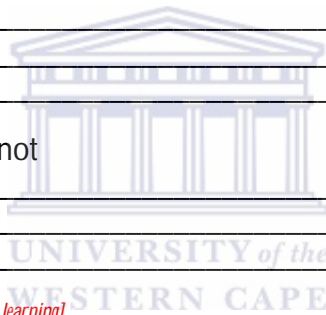
[We near the end now. I will ask you questions about learning]

18. What have you **learnt** in the school garden?

_____
_____
_____
_____

19. Do you tell anyone else about what you **learn** in the garden?

| 1 | Yes | | 2 | No | |

19.1. If yes, who from the list below do you tell:
  1. □ classmates in the same grade
  2. □ learners in grades lower to you
  3. □ friends at home
  4. □ family at home: if yes, who in the family _____

19.2. What do you tell them about the garden?

_____

_____

_____

_____

19.3. Did _____(person selected) help with the garden after you told him/her about it?

1	Yes		2	No		3	Don't Know	

19.4. If yes, how did she/he help with the garden?

_____

_____

_____

_____

19.5. If no, why do you not tell anyone about the garden?

_____
_____
_____

If I need to speak with you again about these questions could I do so?
Many thanks for your help.

(To be completed by Enumerator)
Date of Interview _____/_____/2008
Interview site_____
Enumerator name _____ _____

ANNEXURE 2a

Instituut vir Sosiale Ontwikkeling: Universiteit van Wes-Kaapland

Vraelys no. __

1.

1.Geslag	2. Geboortedatum	3.Vlak van opvoeding	4. Huistaal	5. Taal van onderrig in die klaskamer	6. Naam van buurt waar jy woon terwyl jy skoolgaan	7.Tyd wat dit neem om skool toe te reis (minute)	8. Is jy al van 2005 af by West End Primêr?
☐ Manlik ☐ Vroulik	(Dag/maand/jaar) ___/_____/__	Graad _____	☐=Afrikaans ☐=Engels ☐=Xhosa	☐=Afrikaans ☐=Engels ☐=Xhosa			☐ Ja ☐ Nie sedert ____

2. Is jy 'n lid van die eko-klub?

1	Ja		2	Nee	

2.1. Indien ja, hoeveel jaar is jy al 'n lid van die eko-klub?

1	2	3	4	5	>6, noem aantal jare	

2.2. Indien nee, waarom is jy nie 'n lid van die eko-klub nie?

_____
_____
_____

3. Watter tuin in die foto is 'n inheemse tuin?

1	Ja		2	Nee		3	Weet nie	

[Indien nee, die plante op die foto is inheemse plante – verwys na die foto van die skool se inheemse tuin.)

4. Help jy in die **inheemse** tuin?

1	Ja		2	Nee	

4.1**. Indien ja,** wat is die rede waarom jy in die inheemse tuin werk?
Dui asseblief 'n rede uit die volgende lys aan (daar kan meer as een antwoord wees).

	Inheemse Tuin	
1	Dit vorm deel van lesse	
2	Ek hoef nie gedurende klastyd skoolwerk te doen nie	
3	Ek sal gekies word om na kampe toe te gaan	
4	Ek gee om vir die omgewing	
5	My maats werk in die tuin	
6	Die onderwyser sê ek moet dit doen	
7	Ek hou daarvan om die tuinpersoneel te help	
8	Noem asseblief enige ander rede	

_____

_____

4.2. Indien nee, wat is die rede waarom jy nie in die inheemse tuin werk nie?

_____
_____
_____

5. Help jy in die **groentetuin**?

1	Ja		2	Nee	

5.1**. Indien ja,** wat is die rede waarom jy in die groentetuin werk?
Dui asseblief 'n rede uit die volgende lys aan (daar kan meer as een antwoord wees).

	Groentetuin	
1	Dit vorm deel van lesse	
2	Ek hoef nie gedurende klastyd skoolwerk te doen nie	
3	Ek sal gekies word om na kampe toe te gaan	
4	Ek gee om vir die omgewing	
5	My maats werk in die tuin	
6	Die onderwyser sê ek moet dit doen	
7	Ek hou daarvan om die tuinpersoneel te help	
8	Noem asseblief enige ander rede	

_____

_____

━━━

5.2. Indien nee, wat is die rede waarom jy nie in die groentetuin werk nie?
_____
_____
_____

Nou gaan ek jou uitvra oor deelname aan instandhouding en beplanning van die tuin.

6 (a) Het jy sedert **1 Januarie 2008** aan die volgende **aktiwiteite om die inheemse tuin in stand te hou** deelgeneem? (Antwoord asseblief Ja of Nee.)

		Inheemse Tuin		
	Instandhoudingsaktiwiteit	Ja	Nee	Indien ja, hoeveel kere? 1 2 3 4 5 6 7 8 9 10 >10 of <20 kere
1	Maak kompos			
2	Sit kompos in die grond			
3	Maak die tuin nat			
4	Trek onkruid uit			
5	Snoei bome/plante			
6	Tel rommel op			

6 (b) Het jy sedert **1 Januarie 2008,** aan die volgende **aktiwiteite om die groentetuin in stand te hou** deelgeneem? (Antwoord asseblief Ja of Nee.)

	Groentetuin			
	Instandhoudingsaktiwiteit	Ja	Nee	Indien ja, hoeveel kere? 1 2 3 4 5 6 7 8 9 10 >10 of < 20 kere
1	Bring groenteafval			
2	Bring eierdoppe			
3	Bring teesakkies			
4	Maak kompos			
5	Sit kompos in die grond			
6	Maak die tuin nat			
7	Trek onkruid uit			
8	Snoei bome/plante			
9	Tel rommel op			

7 (a) Het jy sedert **1 Januarie 2008** aan die volgende **beplanningsaktiwiteite om die inheemse tuin uit te brei** deelgeneem? (Antwoord asseblief Ja of Nee.)

		Inheemse Tuin		
	Beplanningsaktiwiteit	Ja	Nee	Indien ja, hoeveel kere? 1 2 3 4 5 6 7 8 9 10 >10 of < 20 kere
1	Tuin beplan			
2	Kweek nuwe plante van steggies			
3	Kweek saailinge			
4	Plant saailinge			

7 (b) Het jy sedert **1 Januarie 2008** aan die volgende **beplanningsaktiwiteite om die inheemse tuin uit te brei** deelgeneem? (Antwoord asseblief Ja of Nee.)

		Groentetuin		
	Beplanningsaktiwiteit	Ja	Nee	Indien ja, hoeveel kere? 1 2 3 4 5 6 7 8 9 10 >10 of < 20 kere
1	Tuin beplan			
2	Kweek nuwe plante van steggies			
3	Kweek saailinge			
4	Plant saailinge			

8. Het jy sedert **1 Januarie 2008** aan die volgende aktiwiteite deelgeneem**?**
(Antwoord asseblief Ja of Nee.)

	Aktiwiteit	Ja	Nee	Indien ja, hoeveel kere? 1 2 3 4 5 6 7 8 9 10 >10 of < 20 kere
1	Lei besoekers op 'n toer deur die tuin			
2	Woon omgewingskampe by			
3	Woon omgewingswerksessies by			
4	Woon tuinkompetisies by			
5	Woon Eko-klubvergaderings by			

9. Aan wie behoort die tuin? Dui asseblief een van die volgende aan:

1	Onderwysers		4	Ouers		7	Skoolhoof	
2	Leerders		5	Regering		8	SANBI –Kirstenbosch	
3	Terreinpersoneel		6	Eko-klub		9	SEED	

10. *Nou gaan ek vrae vra oor deelname aan besluitneming.*

	Ja	Nee
In 2004, het jy help besluit of die skool 'n inheemse tuin nodig het?		
In 2006, het jy help besluit of die skool 'n groentetuin nodig het?		

11. Het jy in die afgelope 6 maande gehelp om die volgende te kontroleer (d.w.s. moniteer):

	Ja	Nee	Weet nie
Plante se groei			
Gehalte van die grond			
Gehalte van die water			
Rommel(bvb.aartappelskyfies-/lekkergoedpapiere)			
Tuin se veiligheid			

Nou gaan ek vir jou vrae vra oor volhoubaarheid.

12. Het jy al voorheen die woord volhoubaarheid gehoor?

1	Ja		2	Nee		3	Weet nie	

[Indien nee, volhoubaarheid beteken om met iets voort te gaan of om te keer dat dit misluk – om dit alleen te doen sonder om op iemand anders se hulp staat te maak.]

13. Stem jy saam dat volhoubaarheid verwys na:
 1. ☐ omgewingsvolhoubaarheid
 2. ☐ finansiële volhoubaarheid
 3. ☐ sosiale volhoubaarheid
 4. ☐ organisasionele volhoubaarheid
 5. ☐ almal hierbo genoem

13.6. Waarom het jy _____ [noem wat hierbo gekies is] gekies?

_____

_____

_____

_____

14. Sou **jy** daarvan hou as die skool se vergroeningsprojek vir die volgende tien jaar voortgesit (volgehou) word?

1	Ja		2	Nee		3	Weet nie	

14.1. Indien ja, wat op die volgende lys sou **jy** graag wou voortsit (d.w.s. volhou)?

1. □ Inheemse tuin
2. □ Groentetuin
3. □ Lesse in die tuin
4. □ Eko-klub
5. □ Skoolvoedingskema
6. □ Al die bogenoemde

[Onthou die antwoord wat jy gee, is wat jy dink. Sê asseblief wat jy dink.]

14.2. Indien ja, waarom is dit belangrik om _____ [noem wat hierbo gekies is] voort te sit (d.w.s. vol te hou?

_____
_____
_____

14.3. Indien ja, hoe moet _____ [wat hierbo gekies is] vir die volgende tien jaar voortgesit (d.w.s. volgehou) word?

_____
_____
_____

□ weet nie

14.4. **Indien nee**, verduidelik asseblief waarom **jy** nie wil hê die vergroeningsprojek moet volgehou word nie?

_____
_____
_____

15. Wil **jy** hê die skool moet sy **vennootskap** voortsit (d.w.s. volhou) met mense wat met die tuin help?

1	Ja		2	Nee		3	Weet nie	

15.1. Indien ja, watter vennootskap sou jy wou volhou?
1. □ Private besigheid
2. □ Belangstellende ouers
3. □ Werklose lede van die gemeenskap
4. □ SEED (School's Environmental Education Development)
5. □ SANBI-Kirstenbosch(South African National Biodiversity Institute Environmental Education Unit)
6. □ Eko-skole
7. □ Al die bogenoemde

15.2. Indien ja, waarom is dit belangrik om 'n vennootskap met _____[noem wat vooraf gekies is] voort te sit (d.w.s. vol te hou)?

_____
_____
_____
_____

□ weet nie

15.3. Indien ja, hoe moet die vennootskap met _____ [wat vooraf gekies is] vir die volgende tien jaar **voortgesit** (d.w.s. volgehou) word?

_____
_____
_____
_____

□ weet nie

15.4. **Indien nee**, verduidelik asseblief waarom **jy** nie wil hê die skool moet sy vennootskap met mense wat met die tuin help volhou nie.

_____
_____
_____

16. Sal die beplanting van **inheemse plante** dit moontlik maak om vir die volgende tien jaar met die inheemse tuin voort te gaan (d.w.s. vol te hou)?

1	Ja		2	Nee		3	Weet nie	

16.1. Indien ja, verduidelik asseblief hoe inheemse plante dit moontlik maak om die inheemse tuin voort te sit.

_____
_____
_____

16.2. Indien nee, verduidelik asseblief waarom nie.

_____
_____
_____

17. Sal **die hulp van leerders** die inheemse tuin vir die volgende tien jaar onderhou (d.w.s. volhou)?

1	Ja		2	Nee		3	Weet nie	

17.1 Indien ja, verduidelik asseblief hoe.

_____
_____
_____

17.2. Indien nee, verduidelik asseblief waarom nie.

_____
_____
_____

[Ons is nou naby die einde. Ek gaan nou vir jou vrae vra oor leer.]

18. Wat het jy in die skooltuin **geleer**?

_____
_____
_____

19. Vertel jy vir enigiemand anders oor wat jy in die tuin **leer**?

1	Ja		2	Nee	

19.1. Indien ja, vir wie van die volgende vertel jy?
- 1. □ klasmaats in dieselfde graad
- 2. □ leerders in die grade laer as joune
- 3. □ maats by die huis
- 4. □ familie by die huis: indien ja, wie in die familie? _____

19.2. Wat vertel jy vir hulle van die tuin?

_____

_____

_____

_____

19.3. Het _____ (persoon gekies) met die tuin gehelp nadat jy hom/haar daarvan vertel het?

| 1 | Ja | | 2 | Nee | | 3 | Weet nie | |

19.4. Indien ja, hoe het sy/hy met die tuin gehelp?

_____

_____

_____

_____

19.5. Indien nie, waarom vertel jy nie iemand van die tuin nie?

_____

_____

_____

Indien ek weer met jou oor hierdie vrae moet praat, kan ek dit doen?
Baie dankie vir jou hulp.

(Moet deur onderhoudvoerder ingevul word)
Datum van onderhoud _____/_____/2008   Plek van onderhoud _____   Onderhoudvoerder se naam _____   _____

ANNEXURE 2b

IZiko loPhuhliso lwezeNtlalo
IDyunivesithi yeaseNtshona Koloni

Iphepha lemibuzo nomb
__

1 .

1. ISini	2. UMhla wokuZalwa	3. Inqanaba leMfundo	4. ULwimi lwaseKhaya	5. ULwimi oluSetyenzis wayo	6. . Igama lendawo ohlala kuyo ngeli lixa uhamba isikolo?	7. Ixesha olithabathayo ukuya esikolweni (imizuzu	8. Ingaba ukhe wakwiSikolo saMabanga aPhantsi sase oko kwango-2005?
☐ Male ☐ Female	(Day/month/year) ___/_____/__	IBanga _____	☐= IsiBhulu ☐= IsiNgesi ☐= IsiXhosa	☐= IsiBhulu ☐= IsiNgesi ☐= IsiXhosa			☐ Ewe ☐ Hayi oko ____

2. Ingaba ulilungu leqela lofundo ngezinto eziphilayo?

1	Ewe		2	Hayi	

2.1. Ukuba uthi ewe, ingaba mingaphi iminyaka ulilungu leqela lofundo ngezinto eziphilayo?

1	2	3	4	5	>6, xela inani leminyaka

2.2. Ukuba uthi hayi, kutheni ungelilo ilungu leqela lofundo ngezinto eziphilayo?
_____
_____
_____

3. Ingaba seiphi isitiya kule foto esisitiya sendalo?

1	Ewe		2	Hayi		3	Andazi	

[Ukuba uthi hayi, izityalo zendalo zezi zityalo zisefotweni – jonga ifoto yesityalo sendalo sesikolo]

4. Ingaba uyanceda kwisitiya **sendalo**?

1	Ewe		2	Hayi	

4.1**. Ukuba uthi ewe,** sithini iosizathu sakho sokusebenza kwisitiya sendalo?
Nceda bonisa isizathu kolu luhlu lungezantsi. (kunokubakho ngaphezu kwempendulo enye)

	ISitiya seNdalo	
1	Yinxalenye yezifundo	
2	Akufuneki ndenze msebenzi wesikolo ngexesha leklasi	
3	Ndiza kuchongelwa ukuya kwiinkampu	
4	Ndinekathalalo ngokusingqongileyo	
5	Abahlobo bam basebenza kwesi sitiya	
6	UTitshala undixelela konke	
7	Ndiyathanda ukunceda isitafu sesitiya	
8	Esinye isizathu esingesinye, nceda uxele	

_____

4.2. Ukuba uthi hayi, sithini isizathu sokuba ungasebenzi kwisitiya sendalo?

_____
_____
_____

5. Ingaba uyanceda **kwisitiya** sendalo?

1	Ewe		2	Hayi	

5.1**. Ukuba uthi ewe,** sithini isiszathu sakho sokusebenza kwisitiya sendalo?
Nceda bonisa isizathu kolu luhlu lungezantsi. (kunokubakho ngaphezu kwempendulo enye)

	ISitiya seNdalo	
1	Yinxalenye yezifundo	
2	Akufuneki ndenze msebenzi wesikolo ngexesha leklasi	
3	Ndiza kuchongelwa ukuya kwiinkampu	
4	Ndinekathalalo ngokusingqongileyo	
5	Abahlobo bam basebenza kwesi sitiya	
6	UTitshala undixelela konke	
7	Ndiyathanda ukunceda isitafu sesitiya	
8	Esinye isizathu esingesinye, nceda uxele	

_____
_____
━━━

5.2. Ukuba uthi hayi, sithini isizathu sokuba ungasebenzi kwisitiya sendalo?

_____
_____
_____

Ngoku ndiza kukubuza ngentathonxaxheba kulondolozo nocwangciso lwesitiya.

6 (a) Oko kwangowo-**1 Januwari 2008,** ukhe wathabatha inxaxheba kule **misebenzi** ilandelayo **ukulondoloza** isitiya sendalo. (Nceda phendula ngoHayi okanye u-Ewe)

		ISitiya seNdalo		
	UMsebenzi woLondolozo	EWE	HAYI	Ukuba uthi ewe, kangaphi 1 2 3 4 5 6 7 8 9 10 amaxesha ali>10 okanye <20
1	Yenza umgquba			
2	Beak umgquba emhlabeni			
3	Nkcekceshela isitiya			
4	Susa ukhula			
5	Thena imithi/izityalo			
6	Susa okulahliweyo			

6 (b) Oko kwangowo-**1 Januwari 2008,** ukhe wathabatha inxaxheba kule **misebenzi** ilandelayo **ukulondoloza** isitiya sendalo. ((Nceda phendula ngoHayi okanye u-Ewe)

		ISitiya seMifuno		
	UMsebenzi woLondolozo	EWE	HAYI	Ukuba uthi ewe, kangaphi 1 2 3 4 5 6 7 8 9 10 amaxesha ali>10 okanye 20
1	Yiza nokungafunekiyo kwemifuno			
2	Yiza namaqweqwe amaqanda			
3	Yiza neengxowana zeti			
4	Yenza umgquba			
5	Beak umgquba emhlabeni			
6	Nkcenkceshela isitiya			
7	Susa ukhula			
8	Thena imithi/izityalo			
9	Chola okulahliweyo			

7 (a) Oko kwangowo-**1 Januwari 2008,** ukhe wathabatha inxaxheba kule **misebenzi** ilandelayo **yocwangciso ukwandisa** isitiya sendalo. (Nceda phendula ngo-Ewe okanye u-Hayi)

		ISitiya seNdalo		
	UMsebenzi woCwangciso	Ewe	Hayi	Ukuba uthi ewe, kangaphi 1 2 3 4 5 6 7 8 9 10 amaxesha ali>10 okanye 20
1	Uyilo lwesitiya			
2	Qulunqa izitiya i.e. khulisa izityalo ezitsha ngemifanekiso yezityalo			
3	Khulisa imbewu			
4	Imbewu etyaliwetyo			

7 (b) Oko kwangowo-**1 Januwari 2008,** ukhe wathabatha inxaxheba kule **misebenzi** ilandelayo **yocwangciso ukwandisa** isitiya semifuno. (Nceda phendula ngo-Ewe okanye u-Hayi)

		ISitiya seMifuno		
	UMsebenzi woCwangciso	Ewe	Hayi	Ukuba uthi ewe, kangaphi 1 2 3 4 5 6 7 8 9 10 amaxesha ali>10 okanye 20
1	Uyilo lwesitiya			
2	Qulunqa izitiya i.e. khulisa izityalo ezitsha ngemifanekiso yezityalo			
3	Khulisa imbewu			
4	Imbewu etyaliwetyo			

8. Oko kwangowo-**1 Januwari 2008,** ukhe wathabatha inxaxheba kule misebenzi ilandelayo? (Nceda phendula ngo-Ewe okanye u-Hayi)

	Umsebenzi	Ewe	Hayi	Ukuba uthi ewe, kangaphi 1 2 3 4 5 6 7 8 9 10 10 amaxesha ali>10 okanye 20
1	Khokelela abatyeleli kuhambo lwasesitiyeni			
2	Uzimase iinkampu zesokusingqongileyo			
3	Uzimase ucweyo lwezokusingqongileyo ps			
4	Uzimase ukhuphiswano lwezitiya			
5	Uzimase iintlanganiso zeqela lezinto eziphilayo			

9. Ngubani umnini wesitiya? Nceda ubonise kolu luhlu lungezantsi:

1	OoTitshala		4	ABazali		7	INqununu	
2	ABafundi		5	URhulumente		8	SANBI –Kirstenbosch	
3	Isitafu sebala		6	IQela lokuPhilayo		9	SEED	

10. *Ngoku ndiza kubuza malunga nentathonxaxheba kuthatyatho-zigqibo*

	Ewe	Hayi
Ingaba ukhe wanceda ekugqibeni ukuba aingaba isikolo sifuna isitiya sendalo (in 2004)		
Ingaba ukhe wanceda ekugqibeni ukuba aingaba isikolo sifuna isitiya semifuno (in 2006)		

11. Kwezi nyanga zi-6 zokuqgibela ukhe wanceda ukuphononga (i.e. ukuhlola):

	Ewe	Hayi	Andazi
Ukhulo lwezityalo			
Umgangatho womhlaba			
Umgangatho wamanzi			
Okulahlwayo (iitshipsi/amaphepha eelekese)			
Ukhuseleko lwesitiya			

Ngoku ndiza kukubuza ngozinzo

12. Ingaba ukhe weva ngegama lozinzo ngaphambili?

1	Ewe		2	Hayi		3	Andazi	

[Ukuba uthi hayi, uzinzo luthetha ukuqhuba okanye ukuthintela into ukuba ingapheli – ukweza oku ngokwakho ungaxhomekekanga kwabanye]

13. Ungangqina ukuba uzinzo lubhekise koku kulandelayo:
   1. □ Uzinzo kokusingqongileyo
   2. □ Uzinzo lwezemali
   3. □ Uzinzo lwezentlalo
   4. □ Uzinzo lweqela
   5. □ Konke oku kungentla

13.6. Kutheni ukhethe _____[xela okukhethe ngentla]?

_____

_____

_____

14. Ingaba **ungathanda** ukuba iprowujekthi yohlaza yezikolo iqhube (i.e. izinziswe) le minyka ili-10 izayo?

| 1 | Ewe | | 2 | Hayi | 3 | Andazi | |

14.1. Ukuba uthi ewe, yintoni kolu luhlu **ongathanda** ukuba iqhube (i.e. izinziswe)?

1. □ Isitiya sendalo
2. □ Isitiya semifuno
3. □ Izifundo esitiyeni
4. □ Iqela lezinto eziphilayo
5. □ Isikimu seSondlo seSikolo
6. □ Konke oku kungentla.

[Khumbula impendulo oyinikezelayo yilo nto uyicingayo, nceda yitsho okucingayo]

14.2. Ukuba uthi ewe, kutheni kubalulekile nje ukuba kuqhutywe (i.e. kuzinziswe)
_____[xela okukhethwe ngentla] ?

_____
_____
_____
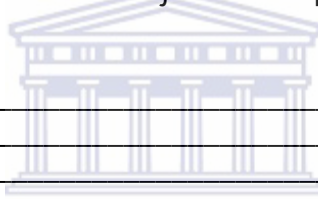
14.3. Ukuba uthi ewe, kuza _____[kukhethwe ntoni ngentla] kuqhutywa njani (i.e. kuzinziswe) kule minyaka ili-10 izayo?

_____
_____
_____

□ andazi

14.4. **Ukuba uthi hayi**, nceda ucacise ukuba **kutheni** ungafuni ukuba iprwujekthi yohlaza izinziswe?

_____
_____
_____
_____

15. Ingaba **ungathanda** ukuba isikolo siqhube (i.e. nozinziso) **nobambiswano** nabantu abanceda kwesi sitiya?

| 1 | Ewe | | 2 | Hayi | 3 | Andazi | |

15.1. Ukuba uthi ewe, loluphi ubambiswano ofuna ukuluzinzisa?
1. □ Ushishino lwabucala.
2. □ abazali abanomdla.
3. □ amalungu oluntu angaqeshwanga.
4. □ i-SEED (UPhuliso lwezeMfundo yezokusiNgqongileyo yeZikolo)
5. □ i-SANBI-Kirstenbosch(South African National Biodiversity Institute Environmental Education Unit)
   6. □ Izikolo zezinto eziphilayo

7. ☐ Konke oku kungentla.

15.2. Ukuba uthi ewe, kutheni kubalulekile ukuba kuqhutywe nje (i.e. kuzinziswe) ubambiswano no _____[xela okukhethwe ngenxa]?

_____
_____
_____
_____
☐ andazi

15.3. Ukuba uthi ewe, lunjani ubambiswano no _____ [okukhethwe ngentla] oluza ku**qhuba** (i.e. uzinziso) kule minyaka ili-10 izayo?

_____
_____
_____
_____
☐ andazi

15.4. **Ukuba uthi hayi**, nceda ucacise ukuba kutheni **ungafuni** ukuba isikolo sizinzise ubambiswano nabantu abanceda esitiyeni.

_____
_____
_____

16. Ingaba ukutyala **izityalo zendalo** kwenza kube lula ukuqhuba (i.e. sustain) isitiya sendalo kule minyaka ili-10 izayo?

| 1 | Ewe | | 2 | Hayi | | 3 | Andazi | |

16.1. Ukuba ewe, nceda ucacise indlela izityalo zendalo ezenza kube lula ngayo ukuqhuba isitiya sendalo

_____
_____
_____

16.2. Ukuba uthi hayi, nceda ucacise ukuba kutheni

_____
_____
_____

17. Ingaba **uncedo lwabafundi** luza kugcina (i.e. ukuzinzisa) isitiya sendalo kule minyaka ili-10 izayo?

| 1 | Ewe | | 2 | Hayi | | 3 | Andazi | |

17.1 Ukuba uthi ewe, nceda cacisa ukuba njani

_____
_____
_____
_____

17.2. Ukuba uthi hayi, nceda cacisa ukuba kutheni

_____
_____
_____

[Sikufutdhane ekupheleni ngoku. Ngoku ndiza kukubuza malunga nokufunda]

18. Ingaba **ufunde ntoni** kwisitiya sesikolo?

_____
_____
_____

19. Ingaba uxelela omnye umntu malunga **nokufundileyo** esitiyeni?

1	Ewe		2	Hayi	

19.1. Ukuba uthi ewe, ngubani kolu luhlu lungezantsi omxelelayo:
     1. □ amaqabane ofunda nawo kwibanga elinye
     2. □ abafundi abakumabanga angezantsi kunelo lakho
     3. □ abahlobo ekhayeni
     4. □ usapho ekhayeni: ukuba uthi ewe, ngubani elusatsheni

19.2. Ingaba ubaxelela ntoni malunga nesitiya?

_____

_____

_____

19.3. Ingaba _____(umntu ochongiweyo) ukhe wanceda esitiyeni emva kokuba umxelele ngaso?

1	Ewe		2	Hayi		3	Andazi		

19.4. Ukuba uthi ewe, ingaba uncede njani apha esitiyeni?

_____

_____

_____

19.5. Ukuba uthu hayi, kutheni le nto ungaxeleli mntu malunga nesitiya?

_____
_____
_____

Ukuba ndifuna ukuthetha nawe kwakhona malunga nale mibuzo, ingaba ndingakwenza oko?
Ndibulela kakhulu ngoncedo lwakho.

(Iza kuzaliswa nguMbali)
Umhla woDliwanondlebe _____/_____/2008
Indawo yodliwanondlebe_____
Igama lombali _____   _____

ANNEXURE 3

Northwood Primary School
Minerva Way 8
Woodlands
Mitchell's Plain
Tel: 021 371 7510

28 July 2008

Dear Ms Jansen

Re: Permission to test a questionnaire

Firstly, thank you for granting me permission to test a questionnaire with learners at Northwood Primary.

I am a student in the Institute of Social Development, University of the Western Cape. I am researching the *factors which contribute to the sustainability of a school garden project: case study of West-End Primary.* The assistance from Northwood Primary is helpful in the research process as I need to test my questionnaire before interviewing learners.
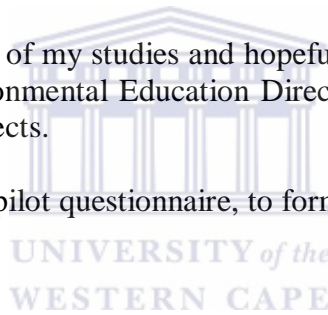
The research is a requirement of my studies and hopefully the research findings could be of value to SANBI-Environmental Education Directorate and others interested in sustaining school garden projects.

I have attached a copy of the pilot questionnaire, to formalize my communication with Northwood Primary.

With thanks

Anita Carelse
E-mail: 2561397@uwc.ac.za

ANNEXURE 4

Masters: Social Development

Institute of Social
Development
E-mail:2561397@uwc.ac.za
Student No: 2561397

15 August 2008

Dear Parent/Guardian

Re: Request for Child's Voluntary participation in research interview

I, Ms A.Carelse, am a Master's student in the Institute of Social Development, University of the Western Cape.

I would like to ask your permission to **allow your child** to be **interviewed for 20-30 minutes** as part of a research project. The research is about the *factors which contribute to the sustainability of a school garden project: case study of West-End Primary.*

The research is part of my Social Development studies. Interviews will be conducted by me and students of the University of the Western Cape. Participation in the research is voluntary, no payment or rewards is offered. The findings of the research will be shared with West-End Primary and other interested persons.

- -**Cut and Return to Class Teacher- - -**

Kindly sign the consent form if you permit _____to
be interviewed about the West-End Primary School Garden.

Parent/Guardian
Name: _____
Signature: _____
Date: _____/_____/2008

PLEASE RETURN BEFORE 28 AUGUST 2008

ANNEXURE 5

FOCUSED INTERVIEWS

Rolene Allman	Principal Environmental Education Officer
	Goldfields Environmental Education Centre
	Kirstenbosch National Botanical Garden, Cape Town.
Eunice Jurgens	Environmental Education Centre
	Harold Porter Botanical Gardens, Betty's Bay.
	Former educator: West End Primary.
Kevin Guyo	School's Environmental Education Development
Melanie Vandayar	Eco-School Programme node co-ordinator
	Goldfields Environmental Education Centre
	Kirstenbosch National Botanical Garden, Cape Town.

MEETINGS/CASUAL INTERVIEWS

Mr Blignaut	Academic Manager (Principal)
	West-End Primary
	Mitchell's Plain.
Paul Barker	School's Environmental Education Development.
Claire Carelse	Educator, Eco-club and Garden Co-ordinator
	West-End Primary, Mitchell's Plain.
Benjamin Festus	Co-ordinator Outreach Greening
	Goldfields Environmental Education Centre
	Kirstenbosch National Botanical Garden, Cape Town.
Donovan Fullard	Head of Education
	Goldfields Environmental Education Centre
	Kirstenbosch National Botanical Garden, Cape Town.

Mr Jooste   Educator and Greening Project Working Group

                             West-End Primary, Mitchell's Plain

Charmaine Klein   Environmental Education Unit

                             University of the Western Cape

Mr Lambeth   Groundsman

                             West-End Primary, Mitchell's Plain

Mrs F. Sait   Parent, Community member and Rainbow Cleaning

                             Services

                             West-End Primary, Mitchell's Plain

ANNEXURE 6 Figure 8 Sustaining Partnerships

Legend:
- Private Business
- Interested parents
- Unemployed community members
- SEED
- SANBI-Kirstenbosch
- Eco-schools
- Private Business, intersted parents and unemployed community members
- Interested parents and Eco-club
- Private business and unemployed community members
- SEED and Eco-schools
- Interested parents;unemployed community members;SEED;SANBI and Eco-schools
- Interested parents and SEED
- SANBI and Eco-schools
- Interested parents; unemployed parents and SEED
- Private business; unemployed community members; SEED; SANBI and Eco-schools
- All of the above
- Not sure