Environmental related projects at Nxuba Senior Primary School in South Africa

Constraints and possibilities

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Abstract

Since the end of apartheid South Africa has been rebuilding the country with the aim to create a society based on equality. In the rebuilding and formation of a new constitution the aim to build a society based on the principles of sustainable development is evident. Education is an important part in the rebuilding. This thesis is a case study of Nxuba Senior Primary School in the traditionally black township Lingelihle in Eastern Cape. The objective is to analyse how the school management can engage in environmental issues and take the role of promoting values, attitudes and lifestyles for sustainable development to its learners. There are three research questions: What environmental related projects are being done at Nxuba Senior Primary School? How do the school management motivate the projects? How do these projects affect the learners’ environmental awareness and ability to act pro-environmentally?

The thesis is based on a field study where school documents were analysed and in-depth interviews with the school management and a questionnaire among the learners were carried out. The theoretical framework that is presented discusses what factors influence sustainable behaviour and what conditions foster pro-environmental behaviour among children.

Four environmental related projects are identified at the school; a recycling project, an environmental awareness club, a vegetable garden as well as an indigenous garden and greening of the school. Based on the questionnaire the learners’ attitudes towards environmental issues and their pro-environmental behaviour are examined. In the discussion the motives behind the projects concluded to be a combination of environmental and social motives. The projects are put in relation to Stern’s four factors influencing pro-environmental behaviour and Chawla and Cushing Flanders’ six conditions for fostering pro-environmental behaviour among children.

Keywords: South Africa, school, environmental awareness, pro-environmental behaviour
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1. Introduction

1.1 Background

After decades of racial segregation apartheid in South Africa came to an end in 1994. In the same year the first democratic election, where all races were allowed to vote, was held and the transition towards a democracy began. The African National Congress (ANC) won the election and took presidency. They were now faced with the challenge to rebuild the country which was heavily troubled with a failing economy and huge inequalities among its people.

The aim of ANC policy was that the country should be reconstructed into a non-racial society where growth and development was based on the principles of sustainable development\(^1\) and they stated that everyone had the right to a safe and healthy environment.\(^2\) This position was reflected in the new South African Constitution which was considered very progressive since it contained both environmental and human rights. The Constitution showed a determination to build a country on equality and democracy and the Bill of Rights protected the civil, political and socio-economic rights of all people. Furthermore, the rights of future generations in the context of sustainable development were also recognised.\(^3\)

As a part of the process of rebuilding the country the South African government formed the Reconstruction and Development Programme (RDP) which was an ambitious growth and development strategy addressing the problems of poverty and inequalities. The vision was to bring South Africa into the global economy by integrating economic growth and social development. Creating a sustainable and environmentally friendly path to growth and development as well as involving the people in the decision-making process was also part of the vision.\(^4\)

This national policy vision was also reflected in the fact that the country adopted UN’s Agenda 21 programme to be the fundamental strategy to achieve sustainable development. Agenda 21 is an action programme that is set to move towards sustainable development through poverty eradication and elimination of environmental threats. It was also the first international document that identified education as an essential tool for achieving sustainable development and highlighted areas of action for education. Agenda 21 also recognizes the

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\(^1\) African National Congress. 1994a  
\(^2\) African National Congress. 1994b  
\(^3\) South African Government Information. 1996  
\(^4\) South African Government Information. 1994
role of youth as important in sustainable development and it is essential that youth participate in the decision-making processes.

In order to come to an end with inequalities the right to equal education was a crucial element in the RDP. During the period of apartheid the Bantu Education Act had been a cornerstone in the system which systematically had deprived black South Africans of proper education for decades. Black people did not have access to the same educational opportunities as the country’s white population. Instead the black population was educated in a way that was said to be appropriate to their culture and had curriculums that “suited the nature and requirements of the black people”. The aim was to prevent black South Africans receiving education that would qualify them to positions they were not allowed to have according to apartheid laws and they, for example, did not receive any education in natural sciences.

South Africa still struggles with the legacy of the Bantu Education Act. One of the RDP’s key programmes was to develop human resources and give the whole population opportunity to a proper education. Having an educated population was crucial in order to be able to build a nation with democracy and it was also a prerequisite for having meaningful public participation in the decision-making concerning sustainable development. Environmental education was identified as a vital element of all levels and programmes of the education and training system in order to create environmentally literate and active citizens that would help rebuild the country in a sustainable way.

Today the South African government’s efforts to reduce poverty levels and inequalities have begun to make effect but problems still remain and the reconstruction of the country should be considered a long-term project. The political objective is to obtain social justice, economic development, environmental protection and freedom and security for the whole population.

According to UNESCO education “…is a key instrument for bringing about the changes in the knowledge, values, behaviours and lifestyles required to achieve sustainability and stability within and among countries, democracy, human security and peace.” Therefore education is considered a vital tool for addressing global problems relevant for sustainable development and reorienting educational systems and curricula towards these needs must be

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5 South African Government Information. 1994
6 South African Government Information. 1994
7 Parliament of the Republic of South Africa. 1995
8 South African Government Information. 2010
9 UNESCO. 2002
highly prioritized. The South African government is aware of the importance of a good educational system and it is the government’s largest item of expenditure. Even though education has improved there are still problems with inequalities and especially people in poor and rural areas do not have the same opportunity to proper education. For example, most South African schools have no library and of the 8% of the country’s schools that do have a library stocked with books almost all are formerly white schools. In the poor and rural areas there are few opportunities of further education and school-dropouts are quite common.

1.2 Objective and research question

The objective of this thesis is to analyse how school managements in South Africa can engage in environmental issues and take the role of promoting values, attitudes and lifestyles for sustainable development to its learners. The Nxuba Senior Primary School in the traditionally black township Lingelihle is studied as a case and the thesis is limited to analyse that school’s environmental related projects outside of the curriculum. How the projects affect the learners as well as the possibilities and constraints the school is facing with these projects are taken into consideration.

The research questions are:

What environmental related projects are being done at Nxuba Senior Primary School?

How do the school management motivate the projects?

How do these projects affect the learners’ environmental awareness and ability to act pro-environmentally?

1.3 Method

The thesis is based on a field study which makes it possible to observe what is actually happening and what is actually being done. During the data collection period I have gotten the opportunity to live in the study area, Lingelihle, with a family. According to Alan Bryman it is a big advantage to be acquainted with the environment the interview objects live in because then it is easier to understand and interpret the result of the interviews. By being at the school it has been possible to listen to the people in and around the school as well as witness some of the daily activities that take place. The advantage with observations like this is that the observed situations take place whether the study is performed or not and that they are

10 Global Post. 2010
11 Bryman, A. 2007
studied in their natural environment. However, it is important to take into account that the presence of the researcher may lead to observer effect, thus that those who are being observed might act differently when they know that they are being studied.\textsuperscript{12}

1.3.1 Case study
The thesis is a case study of Nxuba Senior Primary School and its environmental related projects based on multiple qualitative data collection methods. A case study entails the detailed and intensive analysis of a single case and aims to analyse the unique features of that specific case.\textsuperscript{13} The aim with a case study is to understand complicated social phenomena and it often tries to answer the questions; how and why. A case study can be used to examine contextual factors if that is of great relevance for the studied subject.\textsuperscript{14} Critics claim that it is impossible to generalize the result from just one case, however, even if every case is unique it is also an example from a broader category. Thus, the possibility to generalize the result from the case study depends on its resemblance to other cases in the same category.\textsuperscript{15} A case study can also be used in order to test existing theories by comparing the results to the theories.\textsuperscript{16} This thesis compares the findings of the case study with theories that is presented in the theoretical framework chapter.

The data collection of this thesis is a combination of text analysis of school documents and in-depth interviews with persons from the school management as well as a small questionnaire among the learners.

To examine what is said by the school management official documents, such as school policies, have been analysed and interpreted. The documents will give an indication on the motives behind the school’s projects and show their written ambitions. Content analysis has been used and key words have been extracted from the documents. When using content analysis the investigator’s role is emphasised in the construction of the meaning of the text. Categories are allowed to emerge out of the data and recognising the significance of the context in order to understand the meaning is highlighted. The documents have not been produced at the request of the researcher and are therefore non-reactive which enhances the validity of the data.\textsuperscript{17}

\textsuperscript{12} Denscombe, M. 2008
\textsuperscript{13} Bryman, A. 2008
\textsuperscript{14} Yin, R K. 2006
\textsuperscript{15} Denscombe, M. 2008
\textsuperscript{16} Yin, R K. 2006
\textsuperscript{17} Bryman, A. 2008 s 515
1.3.2 Interviews
In order to identify which efforts have been taken for creating environmental awareness in the school persons on key positions in the school management have been interviewed. Interviews were conducted with the principal of the school and one of the educators which also were coordinator of the vegetable garden and involved in one way or another in each of the analysed projects. An in-depth interviewing method was used in order to get a deeper understanding of the motives behind the efforts and the interviewees’ perception of the constraints and possibilities concerning them. By using qualitative interviews it is possible to get the interviewee’s story and there is room for explanations. The information received from interviews is based on what the respondents are saying and not on what is actually happening. It is a fact that words are not always coherent with actions. The interviews were semi-structured which is a flexible interviewing method allowing the interviewee to talk about issues that he/she finds most interesting and important. An interview guide was used to make sure that the main focus was kept during the interviews. Four key areas were identified and open questions were constructed so that the interviewees could give their own personal story. An advantage with the semi-structured interview is that the interviewer is able to vary the sequence of the questions and it is also possible to ask further questions.

The interviews took place in the school’s staff room and were recorded and later transcribed. The transcribed material was then read through multiple times and a content analysis was done in order to interpret the interviews.

1.3.3. Questionnaire
Qualitative and quantitative methods do not have to exclude each other. Martyn Denscombe claims that social scientists seldom build their studies on one of the two but often combine elements from both. While qualitative methods emphasize words the qualitative methods focus on quantification and measurable values. By using a questionnaire which is more of a quantitative method the aim is to somehow measure the level of environmental awareness among the learners as well as the amount of learners that have a specific behaviour or habit concerning environmental issues in their everyday life.

In order to analyse the effect of the school management’s efforts for raising environmental awareness a self-completion questionnaire have been handed out to the learners at the school.

18 Denscombe, M. 2008
19 Holme, I-M. Solvang, B-K. 1997
20 Denscombe, M. 2008
21 Denscombe, M. 2008
The reason why a questionnaire was chosen to analyse the learners was that it is easier to administer and do not take as much time as interviews would have done. The self-completion questionnaire also requires the respondent to answer the questions without the aid of an interviewer.22

When forming the questionnaire consideration was taken to the fact that it is children that were answering it, thus the questions were easy to understand and they had simple answering alternatives. The questionnaire contained ten statements that the learners could respond “Yes”, “No” or “Don’t know” to. When using closed answering alternatives like this it is easier to quantify the results and it takes less time to analyse them. Due to the time frame of this thesis closed answering alternatives were used. The amount of questions was kept low in order to not be too comprehensive for the learners to answer and in that way reduce the risk for “respondent fatigue”.23 The questions were constructed with the ambition to analyze awareness, behaviour and habits among the learners and it was done anonymously.

The 7 graders were chosen to answer the questionnaires because they have studied at the Nxuba Senior Primary school for the longest period of time and therefore experienced the school’s efforts for raising environmental awareness the most. A total of 170 questionnaires were handed out to an educator responsible for the 7th grade and she distributed the questionnaires to the learners during class hours.24 The learners in grade 7 are between 12 and 15 years old. A statistical significant survey should have 50 respondents which makes this survey valid.25

All of the 170 questionnaires were filled out by the learners and thus the answering frequency was 100 %. There might have been learners that were absent from the lesson and therefore did not have the chance to participate in the survey. However, the questionnaire was answered by all learners to whom it was administrated. The non-response varied between the different questions and was either because more than one answering-box was ticked in or that none of

23 Bryman, A. 2008
24 There are 209 learners in grade 7 but because of insufficient amount of printed questionnaires all 7th graders could not participate in the survey. Instead there were 34 respondents in each of the five 7 grade classes. The exact number of learners was unknown before the field study and due to the limited resources of the school printing more questionnaires was considered unnecessary.
25 Hartman, J. 2004
the boxes were ticked in. It is important to bear in mind that there is always a risk that the respondents tend to agree with what is claimed in the statements.  

1.4 Presentation  
The thesis begins with an exploration of theories concerning the relationship between knowledge, environmental awareness and pro-environmental behaviour. Factors influencing pro-environmental behaviour and conditions that foster environmentally responsible actions among school children are presented. In chapter 3 the area in which the school in situated in is described. Chapter 4 shows the result of the interviews and questionnaire and list the school’s environmental related projects. Finally, a discussion of the results and theories is presented in chapter 5.

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2. Theoretical framework

It is recognized that although polluting industries contribute to the environmental problems of the world they are not the only ones to blame. The everyday lives of millions of people have a huge effect on the environment which also means that the individual citizen has a responsibility concerning environmental issues. One way to illustrate the impact one individual make on the environment is the concept of ecological footprint which estimates the environmental space we occupy as we live our daily lives. The size of your ecological footprint depends on what choices you do in your daily life and therefore varies between individuals. The size of almost every individual’s ecological footprint in the industrialized parts of the world is considerably larger than the size of the footprint of those people living in the less developed world. This is considered to be a major obstacle in the way to sustainability since it prevents both present generations living in developing countries as well as future generations in general to be able to meet their needs.27

In order for individuals to be able to take upon this responsibility the citizenry needs to be educated on environmental problems and their solutions. In the creation of responsible citizens the formal educational system plays a great role. Thus, the schools have a responsibility to educate its students on environmental issues so that they can take informed decisions and actions that address the environmental challenges. Louise Chawla and Debra Cushing Flanders claim that it is common that environmental educators assume that simply imparting knowledge to their students will lead to them taking responsible actions, however, research indicates that it takes more than knowledge to trigger actions and that the driving forces behind pro-environmental actions is more complex.28

There are several studies that try to explore and explain the relationship between knowledge, awareness and pro-environmental actions. Stern identifies four types of factors as influencing pro-environmental behaviour; contextual factors, personal capabilities, attitudinal factors and habits or routines.29 Contextual factors include external factors such as the physical, economic and social context in which the individual acts. These contexts can be seen as more or less facilitating for pro-environmental behaviour. The second type of factors is personal capabilities and includes the individual’s knowledge, time and money. Social status and

27 Lundmark, C. Matti, S. Michanek, G. 2010
28 Chawla, L. Cushing Flanders, D. 2007
29 Stern, P C. 2000
power also affects the possibility to act pro-environmental. A higher level of knowledge would arguably lead to stronger, or more positive, beliefs about a specific behaviour. Our personal capabilities have been shown to have an influence on the willingness to act in a pro-environmental manner. Another set of factors is attitudinal factors which include the values, attitudes and norms the individual holds. Habits or routines are influencing pro-environmental behaviour as well since much environmentally significant behaviour is performed repeatedly in a relatively stable context they tend to evolve into behavioural habits. The behaviour becomes automatic and the individual do not have to think about the behaviour. These habits are difficult to change and they can involve more or less pro-environmental behaviour.\textsuperscript{30}

The relationship between attitudes and behaviour is discussed in the ABC theory proposed by Guagnano et al.\textsuperscript{31} Only when contextual factors are neutral the relation between attitudes and behaviour is strong. When the contextual factors instead is either strongly inhibiting or strongly facilitating the relation between attitudes and behaviour is weaker. Thus, there is no need for favourable attitudes when it is easy to act pro-environmentally and when contextual factors makes it very difficult to act pro-environmentally even very favourable attitudes cannot influence behaviour. According to the ABC theory attitudes only influence behaviour when the context neither facilitates nor inhibits the behaviour and, thus, attitudes are only related to behaviour in certain conditions. If the context of behaviour is changed it is more likely to achieve behavioural change to a larger extent than if trying to change the behaviour directly. However, this is not easily done since the context is often more or less set. In addition, attitudinal factors mainly influence behaviour when the behaviour is not habitual and thus habits have a boundary effect on the attitude-behaviour relationship.\textsuperscript{32}

What characterizes most demands for personal environmental responsibility is that they require personal sacrifices of some kind in the form of money, time or perhaps less convenience. They benefit the common good in the form of a better environment, but the direct benefit to the individual is often minor. In a study done by the British Sustainable Consumption Roundtable people expressed a wish to be assured that they preformed pro-environmental actions in collaboration with others rather than in isolation. Otherwise they would be making an individual sacrifice for no guaranteed outcome or benefit and that would

\textsuperscript{30} Nordlund, A. Eriksson, L. Garvill, J. 2010
\textsuperscript{31} Guagnano, G. A., Stern, P. C. Dietz, T. 1995
\textsuperscript{32} Nordlund, A. Eriksson, L. Garvill, J. 2010
be considered being unfair. To reassure people that they are part of a collective movement that is making a real difference local feedback and community initiatives is needed. In order for new behaviours to be truly effective and successful they need to become social norms so that they turn into a social obligation.\(^\text{33}\)

Chawla and Cushing Flanders show that when asking environmental educators what the sources of their environmental interest and actions are the answers are similar around the world regardless of the nationality. The answers show that childhood experiences have a great influence on future environmental interest and pro-environmental actions. Based on conclusions from different bodies of research Chawla and Cushing Flanders list a set of conditions that foster responsible environmental behaviour among children and youth. They identify six conditions; role models and mentors, everyday life experiences, education, development of action skills, participation in organizations and personal significance.

One of the most important conditions is the existence of a role model that shows interest in nature and the environment. The role model could be a teacher, an influential family member, friends or any other significant person in the child’s life. Children observe others and by doing that they can learn about the difficulties of a task and how to tackle these challenges. When the role model performs an action that produce positive outcome and the environment is supportive the child is likely to imitate that behaviour. A condition just as influential as role models is everyday life experiences. Childhood experiences of nature and environmental problems may cause the child to develop a bond with nature. Both these conditions can be seen as entry-level variables that influence people to take an interest in environmental issues. Direct experience has a stronger influence on behaviour than indirect experiences, such as learning about it in school, nevertheless, education is a vital condition that affects pro-environmental behaviour. By providing knowledge about environmental issues the children are more likely to understand the consequences of environmental problem for themselves and others. In order to know how to deal with environmental problems children must develop action skills and practice them in reality. Both knowledge and action skills can be further developed through participation in environmental organizations or clubs which in turn would empower the children. The sense of personal significance is also important in order for the children to feel that they are competent and believe that they can have an effect on the

\(^{33}\) Sustainable Consumption Roundtable. 2006
environmental issues. In order to enhance the sense of competence reaching goals is vital. Therefore, the children need to play a central role in the setting of goals and having smaller sub-goals is to recommend.

Chawla and Cushing Flanders also shows that the most effective environmental programmes in schools runs over an extended duration of time, gives opportunities to learn and practise action skills and success in achieving valued goals. When the programme is run over a longer period of time it is more likely to lead to behavioural change and the programmes should include an action component. It is critical that the efforts of the young people are taken seriously by other and that they are able to realize at least some of their ideas. To avoid the sense of acting alone it is recommended to create groups where the children can work for environmental change with others and in that way create a collective sense of competence.\(^{34}\)

\(^{34}\)Chawla, L. Cushing Flanders, D. 2007
3. Environmental issues in rural South Africa

It is in the rural and poor parts of South Africa where development is needed the most. The field study took place in the town of Cradock in Eastern Cape Province which is one of the country’s poorest areas. Cradock lies within the Inxuba Yethemba Municipality and is about 250 kilometres north of Port Elizabeth. The town is divided into three parts as a legacy of apartheid when the different races were forced to dwell in certain parts of town. The segregation is still evident and the traditional black part, the township Lingelihle, is also the poorest.\(^{35}\) Lingelihle has approximately 15 000 inhabitants and is characterized by poor conditions. Poverty is unmistakable and unemployment rates are very high which has led to widespread alcoholism and criminality among the inhabitants in the township. It is estimated that approximately 28 % of the pregnant women in the Eastern Cape are infected with HIV/Aids and Lingelihle is not an exception.\(^{36}\)

Lingelihle is situated in the Karoo area which is a semi-desert and an area with water scarcity, therefore, the inhabitants are obliged to use water wisely. Most of the houses in Lingelihle are so-called RDP houses which have been criticised for being of poor quality and energy inefficient and next to many of these RDP houses shacks are built in order to enlarge them. In the township there are a few households that cultivate vegetables for their own use. The streets in the township are littered with waste and there are hardly any rubbish bins to find in the streets. The municipality comes and collect the household waste once a week to take it to the disposal site but burning household waste on backyards or someplace nearby is common. There are illegal dumping sites on several places in the township where waste is thrown and left for the municipality to take care of.

There is a low level of education in the community and a large number of household members in Lingelihle do not have any training at high school level. There are few opportunities for further education and those who finish school often have trouble finding a job. The high unemployment rates might be a discouragement for young people to complete their schooling.\(^{37}\)

Traditionally South Africa’s rural development strategies have been characterised by a top-down approach though more recent strategies have changed focus to more public participation.

\(^{36}\) Avert. 2009.
which gives the locals a chance to affect their own development. Education empowers people and helps them participate in decision-making processes which are an important element in order to obtain sustainable development. The Eastern Cape Department of Education declares their vision and missions for the province’s education system to be as followed:

**Vision**

To offer a quality public education and training system that transforms schools into centres of community life and promotes shared moral values, good governance and sustainable development.

**Mission**

The Department of Education strives to provide quality education for sustainable development by:

- Providing socially relevant and economically responsive programmes that address the human resource needs of the province and the country.
- Enhancing the skills base for agrarian transformation, manufacturing diversification and tourism in order to meet the needs of the second economy.
- Providing quality programmes to build the capacity of all employees.
- Encouraging participatory decision-making processes which strive to empower the whole community at all levels.  

Dealing with environmental issues in a poor, rural township as Lingelihle is a challenge since more urgent needs, such as food and adequate livelihood, is often prioritized. Therefore, taking environmentally sustainable actions is often considered a luxury in many poor areas. However, the need for development in a sustainable way is necessary for the community’s welfare in a long-term perspective.

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38 Eastern Cape Department of Education. 2010
4. Nxuba Senior Primary School

Nxuba Senior Primary School is a state school that is located in the township of Lingelihle and has an enrolment of 674 learners in the grades 5 to 7. The school was established in 1966 and Mrs. Nomandla Singeni is the principal. There are 22 educators working at the school and a larger renovation took place in 2005.

The decision-making concerning what projects and issues the school should work with is characterised by a mixed model of top-to-bottom and bottom-to-top processes. In general the school is free to decide on what projects should be done as long as it is to the benefit and advantage to the learners. Usually a department decide on a concept and the individual school is then free to decide on how they should approach this concept. For example, the Department of Health has introduced a concept called Health Promoting Schools which aims at strengthen the health and well-being of the learners, educators and the wider community. The concept has five key components of which environment is one. The environmental key component is aimed at “creating a safe and healthy environment for living, learning and working”. Although the Department of Health strives for all schools to be Health Promoting schools at the end the schools are not forced to participate in the concept. However, if the school do want to participate the Department of Health encourages the school to, for example, create vegetable gardens and school grounds where the learners can play and also helps with e.g. information. Thus, the department do not decide exactly how the school should work with the Health Promoting School concept and the school is free to choose what project to work with and what issue to target as long as it is benefitting the key components of the concept.

4.1 The school’s environmental policy

The school has an environmental policy in which the aim is set out to be to “make the learners aware of the importance of the environment” and also that the learners should “love, respect and protect the environment”. This indicates that the school wants to create awareness, appreciation and consideration among its learners for the environment. The objectives in the policy focus on cleanliness, health, aesthetics and the creation of good citizens.

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39 Singeni, N. Principal. Interview 2011-04-04
40 Bango, P. Department of Health. Conversation 11-03-23
41 Bango, P. Department of Health. Conversation 11-03-23
42 Environmental policy
The policy also defines responsibility for the cleanliness of the school premises and the maintenance of the school’s gardens and different groups of learners are responsible for different areas. In that way the school hope to get responsible learners. The principal consider the school management to be very conscious about cleanliness and the environment and they are impelling those thoughts to the learners. According to the principal the Nxuba Senior Primary School is one of the cleanest schools in Lingelihle and she believes that the behaviour of the learners has contributed to that.

4.2 Recycling project
A recycling project was started at the school in 2009 and it had two main purposes; to keep the environment clean and give unemployed parents to learners at the school an income. According to the recycling project policy the aim of the project was by collecting waste improve the school environment and by using unemployed parents contribute to poverty alleviation. The project also aimed at educating the learners on health issues by integrating the project in the curriculum. Thus, both environmental and social motives lie behind the project.

The project was initiated by the principal, Mrs. Singeni, who declares that she was very committed to the assignment. “It was my baby and I was so passionate about it. And you know I had it all figured out in my mind.” This indicates that the management of the school was interested and showed devotion to the project. The educator Mr. Majiba emphasises the importance of a supportive and interested management and he thinks that the principal and the administration are interested and hands on in the school’s projects which makes it easier for those working with them.

4.2.1 Starting up a recycling project
When the recycling project was starting up the principal involved educators as well as four parents of learners in the project. The idea of the recycling project was that each learner brought waste from their homes to school and sorted it there. On the school yard a recycling station was put up well visible right opposite of the main entrance gate and it contained of four bins where glass, paper, plastic and cardboard could be sorted. The sorted waste was then

43 Environmental policy
44 Singeni, N. Principal. Interview 2011-04-04
46 Recycling project policy
47 Singeni, N. Principal. Interview 2011-04-04
48 Majiba, X. Educator. Interview 2011-04-04
moved by the involved parents and stored in a shack on the school grounds. The school had provided the parents with safety equipment such as glasses and gloves. The sorted waste was then sold to a recycling project in town which came and collected the sorted waste at the school. A month later the school would be paid and then that money would be split between the school and the parents working with the project. The parents would receive 50% of the payment and the remaining 50% would go into the school. Thus, there was a possibility to generate money from the waste and both the school and the parents would get an income. Mr. Majiba expressed the advantage to be able to generate money from something that is free by saying: “the learners they bring it here at school without paying a cent.”

When the recycling project was started the learners were interested and even members of the community showed interest and brought waste to the school. The collecting of the waste was then very easy since each learner brought their waste from home and with over 600 learners the amount of collected waste was significant. Since the learners brought waste from their homes their parents were also involved in a way since they had to give their children the household’s waste. Some parents showed more interest and would even contact the school and ask them to come and collect waste such as bottles after having a party.

4.2.2 Forced to end the project
However, the project did not work as planned. The school felt that the man with the recycling project to whom they sold their sorted waste was taking advantage of them and that they did not get paid enough. The principal expressed it as “...he was robbing us; we were working for him practically”. As a result the parents did not get enough money for their work and the school even had to take money from the school funds to pay the parents. Thus, the existing infrastructure for recycling did not work satisfactory for the school and there was a lack of alternatives as well since the recycling project in town was the only place where they could sell. Though other buyers existed in Port Elizabeth, a coastal town approximately 250 km from Cradock, the distance was a problem since it would not be profitable to transport the waste such a long way. Since the school is situated in a rural area the access to working infrastructure is more limited than in urban areas. Thus, the school was dependent on how one local actor operated and had no other alternative buyer to turn to. The school management were in contact with the municipality and asked for guidance and support but were

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49 Singeni, N. Principal. Interview 2011-04-04
50 Majiba, X. Educator. Interview 2011-04-04
51 Singeni, N. Principal. Interview 2011-04-04
52 Singeni, N. Principal. Interview 2011-04-04
discouraged by the official from the municipality who said that the recycling project was too big for the school to handle. The school could not get any help from any other governmental institution either so the project was forced to end. 53

A long-term goal for the project was to through selling of waste generate enough money to buy compress machinery and machinery for production of toilet paper. The intention was to produce toilet paper from the collected paper waste and then sell that toilet paper to the local community. The whole project of producing the toilet paper was supposed to be run by parents of learners at the school and in that way create jobs for them.54 Since the first phase of the recycling project, collecting and selling waste, did not go as planned the project never moved on to producing toilet paper. The project never generated enough funds to buy compress machinery either.55

4.2.3 Waste management today
Today the school’s waste is taken care of the municipality which collects it once a week and takes it to the town’s disposal site. The school pays a fixed amount of approximately R 325 per month to the municipality for the waste removal. If the waste container at the school is full the school can call the municipality and they would come and collect it earlier.56 Most of the paper, however, is burnt at the school grounds and according to the principal after school hours.57 Though through own observation waste have on at least three occasions during the time of the study been burnt at the school grounds during school hours. For example, one morning there was smoke from the waste container at the same time as the learners were playing soccer at the school grounds. After having a closer look at the waste container it was clear that it is not only paper that is being burnt but also plastic and garden waste. With consideration to the fact that plastics were being burnt the fire would presumably have produced toxic fumes that the nearby playing learners could inhale. According to the municipality it is illegal to burn waste,58 however, own observations have shown that the waste that is taken by the municipality to the town’s disposal site is being burnt.

53 Singeni, N. Principal. Interview 2011-04-04
54 Recycling project policy
55 Singeni, N. Principal. Interview 2011-04-04
56 Singeni, N. Principal. Conversation 2011-04-18
57 Singeni, N. Principal. Interview 2011-04-04
58 Majiba, N. Manager of community services, Inxuba Yethemba Municipality. Conversation 2011-04-19
4.2.4 Future hopes and plans
The principal would like to see the recycling project running again but the problem today is that the school do not know how or where to sell the sorted waste.\textsuperscript{59} If the project should be restarted there is a need for funds and workforce. Mr. Majiba expressed that from an educator’s point of view there would be a need for a project leader, someone from outside of the school that could focus on the project in order to get it to move forward. Since the educators’ most important task is to educate the learners and they have a limited amount of time there is little time to spend on these projects. Mr. Majiba suggests that the project leader could be a parent and the educators’ roles would then be more of an assisting role.\textsuperscript{60}

There is a recycling project that is starting up in the outskirt of the township. When this recycling project is up and running the municipality have plans to involve the schools in the project. It will work similarly to how it worked at Nxuba Senior Primary School; the learners at the schools bring waste from their homes to the school which then sell the waste to the recycling project. The money the school gets from the selling can then be used and distributed as the school wants to. The municipality sees that the whole community would benefit from this kind of collaboration. The learners get educated in an environmental issue and how to sort waste, the town is kept clean and less waste is transported to the disposal site which makes the lifetime of the disposal site longer.\textsuperscript{61}

4.3 Environmental awareness club
At the same time that the recycling project was started an environmental awareness club was formed which contained of nine educators, six learners and the four parents that were involved in the recycling project. The learners that were part of the club had been chosen because of their interest in environmental questions and, according to the principal, they were very committed. The motive behind the forming of the club was to raise awareness on environmental issues and to emphasise the importance of a healthy environment.\textsuperscript{62} According to a school document the reason why the school’s environmental awareness club focuses on a healthy environment is that the different environmental problems South Africa is facing contributes to both loss of biodiversity and a reduction of quality of life options for the citizens. Therefore it is important for the school to learn how to contribute to a healthy environment. In the document four areas are listed; water conservation, recycling, greening

\textsuperscript{59} Singeni, N. Principal. Interview 2011-04-04
\textsuperscript{60} Majiba, X. Educator. Interview 2011-04-04
\textsuperscript{61} Majiba, N. Manager of community services, Inxuba Yethemba Municipality. Conversation 2011-04-19
\textsuperscript{62} Singeni, N. Principal. Interview 2011-04-04
and sanitation. Underneath each one there are a few measures that can be taken in order to improve the situation. For example, under recycling measures such as collecting, sorting and recycling waste is mentioned. It is also stated that the community must be involved in all these projects.63

The school also has a list of activities for awareness where clean-up campaigns, making other learners aware of environmental issues and having an environmental day is mentioned.64 There is usually an information day every year for raising awareness on different topics, concerning both social and environmental issues. The school invites, for example, the Department of Health, social workers or the police which then come and inform the learners on the topic of the day. At one occasion a “water week” was arranged where the learners were educated on how to use water wisely by staff from a nearby national park. Although the principal consider these days to be easy to arrange lack of time is sometimes a problem and there are other tasks that the school management has to prioritize. This year there was only one information day on a social topic; the police came and had a debate concerning crime.65

Since the recycling project did not work out the environmental awareness club did not continue either. Even though the club no longer exists the school management thinks that the club made some achievements and that the level of environmental awareness has been raised among the people in and around the school.66 For instance the school have class reps that control the discipline among the learners and also ensure that the school premises are kept clean. The club also resulted in an idea that learners would share problems with each other, called child to child. If the learner is afraid to talk to an educator about a problem the learner could talk to another learner instead and get help through that. In that way the environmental awareness club resulted in solutions that deal with social issues. Even though these achievements might not be directly connected with environmental issues it has an impact of the learners’ everyday life. The principal shows recognition of the link between lifestyle and environment by saying: “Because if you talk environment you talk even the way of living.”67

4.4 Vegetable garden
The school has had a vegetable garden since the end of apartheid and when the school was renovated in 2005 the garden was moved to another location at the school grounds. Mr Majiba

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63 Environmental awareness programme.
64 Recycling project policy
65 Singeni, N. Principal. Interview 2011-04-04
67 Singeni, N. Principal. Interview 2011-04-04
is an educator at the school and also acts as coordinator of the vegetable garden. His role is to supervise the people that work in the garden and also to involve the learners in it in an attempt to make them interested in gardening. According to the school garden policy all learners should participate in the garden project. Two learners from each class get to be a part of the planting of the vegetables and sometimes during Mr Majiba’s classes he takes all the learners to the garden to show them how a vegetable garden is run and maintained. Mr Majiba expressed the point of involving the learners by saying: “We are trying to make them responsible for themselves so that tomorrow they’ll be independent”. Thus, he is trying to raise knowledge about gardening among the learners and is in that way trying to make them responsible and good citizens.

In the vegetable garden potato, carrot, beetroot, spinach, onion and cabbage are grown and crop rotation is used in order to minimize the need for pesticides. The weeds are removed manually and manure, and sometimes compost, is used to fertilize the soil. There are two large tanks that collect rain water from the roofs of the school buildings and that water is used to irrigate the garden through drop irrigation at night. The school puts funds into the garden and they buy for example seeds, fertilizers and gardening equipment.

The main purpose with the garden is to feed vulnerable learners at the school, thus, the project is driven by a social motive and it is targeting poverty. Many of the learners come hungry to school since they come from poor families where the parents are unemployed. Mr Majiba said that: “…our learners are coming from different backgrounds and when you look at these backgrounds most of them are poor...so we try to feed these learners from the garden”. In addition there are several of the learners that have HIV/AIDS and are on ARV medication. Some of them are not given the medicine correctly at their homes and are therefore experiencing problems at school. Thus, health is a strong motive for the vegetable garden as well. The school defines a vulnerable learner as:

- Orphans living with relatives who do not care for them well
- Affected and infected HIV/AIDS learners, some taking medication at school
- Learners whose parents are unemployed, depending on social grant
- Learners whose parents are alcoholics not taking care of them

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68 Majiba, X. Educator. Interview 2011-04-04
69 Majiba, X. Educator. Interview 2011-04-04
70 Singeni, N. Principal. Interview 2011-04-04
• Learners who are heading homes because parents are deceased or are working on farms.

The school has a food nutrition program sponsored by the province that serves the learners food every day. The vegetables grown in the school garden are used as a supplement in the meals cooked by the nutrition program. Unemployed parents to learners at the school are preparing the food in the programme. Initially the vegetable garden and the nutrition program were only targeting a few of the learners, the most vulnerable ones, but nowadays, because of financial support from the province, all learners are allowed to eat. However, the writer has observed that the amount of food is not always enough for everyone to eat and some learners therefore are left without food that day. According to the principal the amount of learners that eat the food from the nutrition programme differs from day to day since some learners bring food from home. Therefore calculating the right amount of food is difficult and that is why the food is not always enough for everyone. Since learners are given food at school those who did not come to school because of hunger are now given an incitement to come and in addition the health of the learners has improved which in turn makes it easier for them to concentrate. Educators and community members could buy vegetables from the garden before but now all the vegetables are used by the nutrition program instead and in that way the vegetables stay at school. Just before longer holidays vulnerable learners can get vegetables to take home if there are any left over from the nutrition programme.

The site to where the vegetable garden was moved in 2005 was barren, stony and full of weed at the time so parents and community members were called in to help with the construction of the garden. Stones were removed and soil and fertilizers were taken there before the vegetables were planted. With governmental support the vegetable garden has since then been developed. The Department of Agriculture have given the school material help in form of garden implements and seeds. For example, the department have donated the two water tanks and a shelter where you can grow the seeds before you place them in the garden. The only requirement the Department of Agriculture has for getting support is that the school can show that they are serious and that they have started on a vegetable garden. The school can only get

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71 Nxuba Senior Primary School
72 Singeni, N. Principal. Interview 2011-04-04
73 Singeni, N. Principal. Interview 2011-04-04
74 School garden policy
75 Majiba, X. Educator. Conversation 2011-03-30
76 Construction of vegetable garden
77 Majiba, X. Educator. Interview 2011-04-04
free seeds once as a help to start up the garden. The school can also receive fertilizers through a project that runs over one year at a time and with new participants every year. Nxuba School received fertilizers in form of manure from the department in 2005 and in 2011. However, the school would need more fertilizers since there are, for example, potatoes that have not grown because of the poor soil. The writer has observed that at one occasion almost everything that was planted in the garden had to be dug up since it did not grow properly.

Nxuba Senior Primary School has been encouraged by the Department of Health to construct and maintain the vegetable garden through their concept of Health Promoting Schools. Schools are able to get free seeds from the Department of Health to start up a garden. The aim for the Health Promoting School concept is to constantly strengthen the school’s capacity and it intends to strengthen the involvement of community and collaborate with all stakeholders. According to Mrs Bango at the Department of Health Nxuba Senior Primary School do more than what is demanded to be a Health Promoting School.

The Department of Education supports the school’s vegetable garden by employing general workers that take care of the school grounds and thus amongst other things work in the garden. Nxuba Senior Primary School has three general workers and they do not have time to maintain the garden in a satisfactory way. Mr Majiba says: “we only got three guys here and it is not only the garden, they must look after the whole environment, yes, so they don’t cope”. Thus, the workforce in the garden is insufficient and it is hard to keep the weeds away. The lack of workforce also impedes the possibility to develop the garden further. At times when there is a lot to do in the garden and the general workers do not have enough time the school can contact the Department of Correctional Services (the prison) and a group of inmates come to the school and work in the garden.

What also hinders the development of the garden is the lack of educated workforce. Mrs Singeni says that: “...the people whom we’ve employed here they don’t have the expertise on developing the garden”. There is a lack of knowledge among the general workers on how to grow and maintain a vegetable garden and they have had no education on the subject. Since the school is located in an area that is characterized by quite dry climate there are dry periods...

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78 Technicians from Department of Agriculture. Conversation 2011-03-30
79 Singeni, N. Principal. Conversation 2011-04-15
80 Majiba, X. Educator. Interview 2011-04-04
81 Bango, P. Department of Health. Conversation 2011-03-23
82 Majiba, X. Educator. Interview 2011-04-04
84 Singeni, N. Principal. Interview 2011-04-04
when the workers are experiencing difficulties in the garden. Only one of the general workers has some experience about gardening but being the only one makes it hard to cope anyway. The school have received some information on gardening from the Department of Agriculture. There is a retired educator that used to be responsible for the garden that the school sometimes contacts when they want some help with work in the garden. This man has what the principal describes as “green fingers” and contributes to the school with know-how. The principal requests somebody to educate the workers in garden maintenance.

The reward of the vegetable garden comes when it is possible to reap the vegetables and you can see that all the hard work have paid off. The principal also thinks that it is satisfying to know that when the learners eat the reaped vegetables they know that they are coming from the soil of the school. The vegetable garden also brings economic benefits since they get vegetables to the nutrition programme cheaper than if they would have to buy them and the learners benefit by getting more nutritious food.

4.5 Greening of the school and indigenous garden

In order to make the school grounds greener indigenous plants have been planted around the entrance and on the assembly area and an indigenous garden have been constructed. The indigenous garden and the greening of the school were initiated by a national project called Greening of the Nation Programme which intended to beautify the whole country. The Department of Environmental Affair and Tourism funded the project and the facilitating agent was the South African National Biodiversity Institute. The programme aimed to green impoverished areas that lacked green community spaces and greening schools were one of the major goals. Indigenous gardens were designed for teaching purposes which intended to enhance environmental education at the schools and the project created job opportunities for the locals that helped with the construction of the gardens.

Both esthetical and environmental motives lie behind this project. The purpose with the whole program was to green the country and by doing that beautify the areas and also discourage littering. If a place is green and beautiful people are less likely to throw rubbish there or as the principal expressed it: “…a place that is green with plants and flowers, you can’t dump waste on it!” The plants was intended to make the school attractive and make it look alive at the

85 Singeni, N. Principal. Interview 2011-04-04
86 Majiba, X. Educator. Interview 2011-04-04
87 Impumelelo. Social innovations centre. 2008
88 Singeni, N. Principal. Interview 2011-04-04
same time as it would teach the learners to appreciate and take care of the environment. The plants in the indigenous garden can be used in traditional medicine and is therefore a way to care of the traditional culture. The indigenous garden is today used for educational purposes and the learners are taught about the different plants and what they are good for.\textsuperscript{89}

It was a top-to-bottom initiative to which the school management was positive and people were sent to the school to start planting plants on the school grounds. The program funded the project on the school by employing the workers that were starting up the gardens and bringing the plants and all the equipment needed. The school had a supervising role where they had to ensure that the workers did the job they were supposed to do. However, the principal found it hard to get the workers motivated and she perceived them to have low work ethics. She tried to explain the situation with the fact that these people have been without a job for a very long time and thus that the social conditions in the township has an effect on the willingness to work. In the construction of the garden parents were asked to help in the garden, however, the principal finds it hard to involve people in the school’s projects unless they receive money. She described it as: “If you are calling the parents, the first question will be; what am I going to get from this?”\textsuperscript{90} There are only a few parents that are passionate about the school’s projects and the only way to motivate people is to give them an income. The principal explained the situation by referring to Maslow’s hierarchy of needs and meant that the people of South Africa are at the stage where the priority is to concentrate on their own life and wellbeing. The people have not yet come to the stage where they can ask themselves what they can do for others.

This national program lasted for a year but after it was finished the school showed interest and continued with the greening of its premises. Today general workers at the school take care of the maintenance of the plants. However, there is a lack of knowledge among the general workers on how to maintain the plants and only one of them have attended a weeklong education. The lack of sufficient workforce experienced in the vegetable garden is noticeable even in the indigenous garden and the other green areas at the school. The amount of workers is simply not enough to keep weeds away and maintain the gardens in an adequate way. Still, there is help to get from the Department of Correctional Services which sometimes sends a group of inmates to come and help with the maintenance.

\textsuperscript{89} Majiba, X. Educator. Interview 2011-04-04
\textsuperscript{90} Singeni, N. Principal. Interview 2011-04-04
During the greening and the construction of the indigenous garden consideration was taken to the fact that there is a problem with soil erosion and water scarcity in the area when choosing which plants to use. That shows proof of awareness of these problems. The learners were involved in the construction of the project by participating in a workshop that was held for the people working within the greening project. Parents were involved in the construction of the garden and the same two educators that were responsible for the vegetable garden were involved as well. The principal has dream that science students could come and conduct studies at the indigenous garden.\textsuperscript{91}

4.6 Environmental awareness and pro-environmental behaviour among the learners

Learners in grade 7 answered a questionnaire concerning their self-reported environmental awareness and pro-environmental behaviour.

The way I live affects the local environment.

<table>
<thead>
<tr>
<th>Answering alternative</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>75</td>
<td>44.6</td>
</tr>
<tr>
<td>False</td>
<td>68</td>
<td>40.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>25</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>168</td>
<td>100</td>
</tr>
</tbody>
</table>

Non-response: 2

The statement The way I live affects the local environment was intended to give an indication whether the learners are aware that their lifestyle and way of living affects the environment surrounding them. If they feel they affect the local environment if would indicate that they recognise that by changing lifestyle or behaviour they could make a difference. The answers show that there is no unified picture of how the way of living affects the local environment. A remarkably amount of the answers were Don’t know which points to that these respondents are uncertain whether the lifestyle of one person affects the local environment or not.

\textsuperscript{91} Singeni, N. Principal. Interview 2011-04-04
**It is okay to throw rubbish on the streets.**

<table>
<thead>
<tr>
<th>Answering alternative</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>18</td>
<td>10.8</td>
</tr>
<tr>
<td>False</td>
<td>148</td>
<td>88.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>167</td>
<td>100</td>
</tr>
<tr>
<td>Non-response: 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The statement aims at giving an indication whether the learners think that it is acceptable to litter and thus to get a picture of their attitudes towards waste. To throw rubbish on the streets can be seen as an unsustainable behaviour. Although 18 respondents think that it is okay to throw rubbish on the streets a large majority of the learners think that it is not okay to litter.

**I throw rubbish on the streets.**

<table>
<thead>
<tr>
<th>Answering alternative</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>False</td>
<td>115</td>
<td>68.9</td>
</tr>
<tr>
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<td>2.4</td>
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<tr>
<td></td>
<td>167</td>
<td>100</td>
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<tr>
<td>Non-response: 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The statement *I throw rubbish on the streets* was meant to show what behaviour the learners have when it comes to waste. To not throw rubbish on the streets must be considered as a pro-environmental behaviour which a majority of 115 learners say that they have. There are respondents that are of the opinion that it is wrong to throw rubbish on the streets yet they do according to the answers of this survey throw rubbish on the streets anyway.
5. Discussion

The objective of this thesis is to see how Nxuba Senior Primary School in South Africa can promote environmental awareness and pro-environmental behaviour to its students. One of the research questions was what environmental related projects are being done at Nxuba Senior Primary School and four such projects have been identified. The answer to the question how the school management motivates these projects are that the motives behind the projects are not solely environmental but a combination of environmental and social motives. The social motives concern various issues such as health, aesthetics, poverty alleviation, job creation and culture. Because of the poor conditions in Lingelihle taking action towards environmental problems can be seen as luxury but in this thesis it becomes clear that it is possible, and maybe even preferable, to take actions that target both environmental issues and social issues.

In order to reflect on how Nxuba Senior Primary School can promote environmental awareness and behaviour the possibilities and constraints the school is facing with its environmental related projects need to be taken into consideration. After going through the school’s projects it is clear that there are both facilitating and inhibiting factors concerning them. It should be noted that the school is first and foremost an education institution and the primary task for the educators is to teach which gives them a limited amount of time to run projects as well. One possibility to relieve the workload of the educators in the projects could be to involve parents, which to some degree have been done. However, the school management have experienced difficulties when trying to involve parents since they want to get money in return. One of the school’s strengths is that the school management and the principal is interested and committed which makes it possible to run the projects. As mentioned in the theoretical framework it is according to the British Sustainable Consumption Roundtable important for individuals to be reassured that they are not doing pro-environmental actions on their own. The school have a possibility to by organising collective actions, such as recycling waste, assure the learners that they are not acting alone.

The recycling project was conducted in a relatively inhibiting context since there was a lack of working infrastructure and the municipality did not provide any recycling service nor any support to the school. On the other hand the fact that it is possible to earn money by recycling waste must be seen as a strongly facilitating contextual factor. That possibility was a driving
force to start the project since one of the motives behind it was to generate income to the school and the working parents. Although the school could sell its waste the amount of money they received did not make it worthwhile which means that the context was not facilitating enough. The overall inhibiting context was a contributing factor to the fact that the project was put to an end. However, the recycling project can be seen as a progressive effort and maybe the school was before its time on that matter. The municipality have plans to in the future involve schools in a recycling project that is being started and that will presumably lead to a more facilitating context for recycling at schools. Considering the context of the recycling the school can initiate a project but if it should work in the long run the project has to, in one way or another, be backed up by a functioning structure for handling waste.

Concerning the vegetable garden the context should be considered more facilitating since a supporting structure exist and the school have received support from various governmental institutions. The Department of Agriculture, the Department of Health and the Department of Correctional Services have contributed with material help and workforce as well as encouragement and information. The Department of Education also supports the school by employing general workers but the workforce is insufficient in order to maintain the garden in a satisfactory way and must therefore be considered a constraining factor. The fact that the general workers have a lack of knowledge on how to run a garden in the best way is also a limiting factor. The lack of sufficient workforce and knowledge affects the greening and the indigenous garden in an inhibiting way as well. However, when the project was started the context would be seen as facilitating since the national programme initiated and funded the whole project.

The third research question is how the school’s projects affect the learners’ environmental awareness and ability to act pro-environmentally. In the theoretical framework chapter research is presented that points out that simply teaching about environmental issues in the classroom would not be enough to change the learners’ behaviour. However, the school’s four environmental related projects outside of the curriculum involve the learners in other ways than traditional classroom education. In order to analyse how they affect the learners Stern’s four types of factors that influence pro-environmental behaviour is used; contextual factors, personal capabilities, attitudinal factors and habits or routines.

All four environmental related projects at the school affect the learners’ opportunity to act pro-environmental. By starting up the recycling project the school changed the context in
which the learners act and the learners were given the opportunity to sort waste at school, something that had not been possible before. The context should then be considered strongly facilitating for the learners which according to the ABC theory would mean that there is no need for the learners to have strong favourable attitudes towards recycling, they will do it anyway. According to the ABC theory behavioural change is easier to attain by changing the context of the behaviour rather by changing the behaviour itself. The recycling project did change the context of the behaviour recycling and the learners were given a chance to act pro-environmentally. Since the recycling project ended the context in which the learners act should be seen as inhibiting for recycling at school. By having a vegetable garden as well as green areas and an indigenous garden at the school the physical context the learners live in is affected. The school grounds are greener and more beautiful and the learners see it every day.

The second type of factors Stern identifies is personal capabilities which include, for example, knowledge, money and social power. The school’s main task is to provide the learners with knowledge and it has or is using some of the projects in the education. While the recycling project was running the idea was to integrate the project in the curriculum and educate the learners on health issues. The vegetable garden is used in the classroom education at present and the learners are taken to the garden and taught how to run and maintain it. During classes the indigenous garden is used as well in order to teach the learners about indigenous plants and how they are used. The information days the school have arranged about different topics would presumably have raised knowledge and awareness among the learners, for example, on how to use water wisely. If the learners have knowledge about these things they are more likely to be willing to act pro-environmentally and a higher level of knowledge often leads to stronger beliefs about the behaviour.

Many of the learners at Nxuba Senior Primary School come from poor families with unemployed and uneducated parents. Due to these conditions several of the learners come hungry to school and therefore experience trouble concentrating and learning what is expected. The yield of the vegetable garden is added to the nutrition programme that gives the learners one meal of food every day and the garden is in that way contributing to feeding the learners. Although providing learners with food might not be seen as targeting a direct environmental issue the fact that learners are no longer staying at home or are failing to concentrate because of hunger enhances the learners’ ability receive knowledge. Since knowledge affects environmental awareness and the ability to act pro-environmental the effect on the learners’ awareness and behaviour should be considered indirect.
According to Stern attitudinal factors influence pro-environmental behaviour as well. The school’s wish for the learners to learn to value the environment is expressed in the environmental policy. The environmental policy as well as the school management mention the environment as an important and prioritized issue and the school management is said to be trying to impede positive attitudes to the learners. Solely by having these projects that involve environmental issues the school shows that environmental questions are important and that is something that probably would affect the learners’ attitudes. However, by burning waste on the school grounds the school shows that it is okay to do so. It is not only illegal to burn waste but doing it at the school most likely affects the learners’ attitudes towards burning waste. In the questionnaire a majority of the learners report that they think that it is not okay to throw rubbish in the streets which would indicate that the majority of learners have attitudes that it is wrong to litter. Thus, most learners show a positive attitude towards a pro-environmental behaviour.

The last of Stern’s factors influencing pro-environmental behaviour is habits or routines. In the recycling project the school made the collecting and sorting of waste a routine, every day when the learners came to school they sorted the waste. This was a behaviour that was preformed repeatedly and if the project would have continued the collecting and sorting of waste could have developed into a sustainable habit. Out of the environmental awareness club the idea of class reps evolved which among other things help to make sure school premises is kept clean. It is also mentioned in the environment policy that different groups of learners are responsible for different areas of the school grounds and should control cleanliness and caretaking of plants. This indicates that the school is able to create habits or routines among the learners.

In the chapter on theoretical framework Chawla and Cushing Flanders emphasise the importance of childhood experiences for future environmental interest and pro-environmental behaviour. A list of six conditions for fostering responsible environmental behaviour among children is presented; role model and mentors, everyday life experiences, education, development of action skills, participation in organisations and personal significance. The school’s environmental related projects are put in relation with these conditions in order to see how well they are met.

The first condition is the existence of role models and mentors that show interest in environmental issues. The school and its staff can take the role to act as a good example and
be role models to the learners. By starting progressive projects as the recycling project the school gives the picture of being early adopters of pro-environmental actions which sends positive signals to the learners. The vegetable garden produces a positive outcome in the form of vegetable yield that is used to feed the learners which according to Chawla and Cushing Flanders makes it more likely for the learners to imitate the behaviour and thus are more likely to grow vegetables themselves. By observing the school’s projects the learners can learn about the difficulties that come with the projects and how to cope with these difficulties as well as their potential outcomes. A prerequisite for that is of course that the learners are involved in the projects and told about the possibilities and difficulties that come with the projects. By involving parents in the school’s projects they can also be role models to the learners.

If the school is being a role model the learners can imitate unsustainable behaviour as well as sustainable behaviour. For example, by sorting waste the school is setting a good example of how to treat waste in a sustainable way but when burning waste on the school grounds the school sets a bad example and shows an unsustainable way of treating waste. Even though the waste otherwise would be taken to the municipal disposal site where it might get burnt anyway the burning would take place in front of the learners. And even though the burning of waste on the school grounds would take place after school hours the learners are able to see the ashes and half burnt waste in the container. Not just with consideration to the toxic fumes but also to show the learners that it is not oaky to burn waste. By burning waste at the school grounds the school shows that it is acceptable and the learners are likely to do it at home as well.

Everyday life experiences of nature and environmental problems are according to Chawla and Cushing Flanders, together with role models, the most influential condition for children to take an interest in environmental issues. By having both the vegetable and indigenous garden as well as the other green spaces on the school ground the learners are surrounded by plants and in a way nature is brought closer to the school. Living in an environment that is green may enhance the possibility for the learners to develop a positive bond to nature. During the period of the recycling project sorting waste was made an everyday life experience for the learners. The learners had the opportunity to experience recycling directly which would have had a stronger influence on behaviour than if just reading about it. The projects gave the indication to the learners that you can take care of the nature by sorting waste.
Although it have been discussed that education alone is not enough to trigger environmental actions it is one of the six conditions that foster pro-environmental behaviour. The school’s main task is to educate its learners and in order to be able to act pro-environmentally the learners need to receive education on environmental problems. The school have shown ambitions to involve the projects in the curriculum and talk about the issues concerning them during classes. Both the vegetable and the indigenous garden is used in the teaching and when the recycling project was still running the intent was that the learners should be taught on the concerning issues as well.

In order to foster pro-environmental behaviour the school should help the learners to develop action skills. During the time of the recycling project Nxuba Senior Primary School was doing that by making the learners bring their household waste and sorting it themselves at school. The learners thereby learnt how to something tangible for the environment. Another way in which the school is helping the learners to develop action skills is by involving them in the vegetable garden. The school’s aim is that all learners should be a part of the garden and in that way learn how to grow and maintain vegetables. If the learners are told how to grow vegetables at school they are more likely to grow vegetables at their homes. The mentioned lack of knowledge among the general workers in how to maintain the garden might be a constraint when the knowledge should be passed on to the learners. However, the learners are able to learn the basics in where vegetables come from and how they are grown.

Chawla and Cushing Flanders also list participation in organizations as an important condition to promote pro-environmental behaviour among the learners. By having the environmental awareness club the school provide a possibility for interested learners to engage in such organization. Participating in the club would probably increase knowledge and a chance to develop action skills. Even though the achievements of the club were not solely environmental related the fact that new hands on solutions evolved from the club indicates that the learners have learnt something. These solutions might have been difficult to do without the club and simply participating in the club may lead to a sense of not acting alone among the participants.

The last condition is personal significance which emphasizes the importance of feeling competent and believing that one’s efforts have an actual effect. The school have involved
learners in all the projects and groups of learners have responsibilities such as the class reps which would probably enhance the sense of personal significance. The environmental awareness club would also have had an effect on the participating learners’ sense of personal significance if they were listened to and had something to say in the club. Chawla and Cushing Flanders mention setting and reaching goals as a vital tool for enhancing the sense of competence something that the study has not found being a part of the school’s projects.

In summary the environmental related projects at Nxuba Senior Primary School have both environmental and social motives. Some of the school’s projects are backed up by a structure such as support from governmental institutions while with other projects the school are acting without support, as in the case with the recycling project. The projects that have a supporting structure can be seen as more successful. Regardless how successful the individual projects have been they have had an effect on the learners’ environmental awareness and pro-environmental behaviour. All the projects have in one way or another provided the learners with knowledge about environment and by having these projects the school shows the learners that the environment is something to care for and thereby it promotes environmental awareness. Through the projects the school has also enhanced the possibilities for the learners to act pro-environmentally, however, more can be done and the projects can be further developed.
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7. Appendix

7.1 Interview 1
How would you describe the school’s possibility to decide what projects should be done?

Could you shortly list the school’s efforts for raising environmental awareness (outside of the curriculum)?

**Vegetable garden**

Could you describe how the vegetable garden was started?
When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
Involvement of learners? Educators? Community?
Have educators had any education in the area?
What was difficult/easy?
Would you say it is successful?
Does it work well today?
Plans for the future? Develop it in any way?

**Recycling project**

Could you describe how the recycling project was started?
When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
Involvement of learners? Educators? Community?
Have educators had any education in the area?
What was difficult/easy?
Would you say it is successful?
What worked well? Did not work well?
How is the school’s waste taken care of today? Is any of it burnt?
Plans for the future? Develop it in any way?
Do anything different?

**Greening of the school and the indigenous garden**

Could you describe how the project was started?
When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
Involvement of learners? Educators? Community?
Have educators had any education in the area?
What was difficult/easy?
Would you say it is successful?
Plans for the future? Develop it in any way?

**Environmental awareness club**

When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
How was the participating learners identified?
What was difficult/easy?
Would you say it is successful?
Plans for the future? Develop it in any way?

Do you have anything else you would like to add?
7.2 Interview 2

**Vegetable garden**

What is your role in the vegetable garden?
Who else is working with the garden?
What vegetables are grown?
What kind of fertilizers is used? Do you compost?
Watering?
How are weeds and pests kept controlled? Chemicals?
Is there any effort to grow organic vegetables?
Could you describe how the vegetable garden was started?
When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
Have you gotten any help from the D o Agriculture? D o Health?
How is the garden funded? Seeds, fertilisers etc.
How are learners involved? Educators?
Have those who work with the garden had any education in the area?
What was difficult/easy?
Would you say it is successful?
Does it work well today?
Plans for the future? Develop it in any way?

**Greening of the school and indigenous garden**

Could you describe how the project was started?
When did it start?
Who took the initiative?
What was the purpose when it was started?
Who were involved? How?
Involvement of learners? Educators?
How is it maintained?
What was difficult/easy?
Would you say it is successful?
Plans for the future? Develop it in any way?

**Environmental awareness club**

Are you a member of the environmental awareness club?
What is the purpose?
Does it work well today? If not, why?
What do you think you have achieved?

Is there anything else you would like to add?
7.3 Questionnaire

Below there is a list of statements, please fill out the boxes if you think the statement is true or false.

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<thead>
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<tbody>
<tr>
<td>1. I have a responsibility for the environment.</td>
<td>True</td>
<td>False</td>
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<td>2. The way I live my life affects the global environment.</td>
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<td>3. I am concerned with the problem with global warming.</td>
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<td>4. I talk to my family about the state of the environment.</td>
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<td>5. The way I live affects the local environment.</td>
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<td>6. The environment surrounding the school is in good condition.</td>
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<td>7. It is okay to throw your rubbish on the streets.</td>
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<td>8. I throw rubbish on the streets.</td>
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<td>9. I live in an area that has little water.</td>
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<td>10. When I use water I always use as little as possible.</td>
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Thank you!
7.4 Map


A: Cradock