Rubbish and recycling
A study on the pre-conditions for a sustainable waste management in rural South Africa

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Abstract

South Africa’s new Constitution was developed after the first democratic election in 1994. It is well composed and shows a great willpower to build the country on equality, freedom and democracy, and it also protects the rights of future generations. Despite a Constitution that promotes sustainable development and several laws that protect the environment, activities that are detrimental to nature go on. One of South Africa’s largest environmental problems is waste, in the forms of illegal dumping and poorly managed landfill sites.

The aim of the thesis is to explore the pre-conditions for waste management practices in Cradock, a rural town within the Inxuba Yethemba Municipality in the Eastern Cape Province. The study is conducted through a qualitative minor field study in Cradock during six weeks. First the legislative framework was explored in order to see what the Municipality has to live up to, and then two interviews were performed: one with the Municipality’s Community Services Manager and one with the employees at the Municipality’s recycling project Ikamvalethu. This gave an understanding on the waste management in practice and the main obstacles and possibilities considered.

Cradock’s landfill site is not designed to prevent environmental damage but is still in use even though it is not legally permitted to be utilized. The Municipality has got refuse removal for households once a week, something that has been shown to be too seldom. People cannot wait for the Municipality’s lorry to come and instead they dump the rubbish illegally in e.g. the streets or in open areas. In order to decrease the amount of waste that goes to the landfill and in an attempt to create work opportunities in the community, the Municipality has started the Ikamvalethu Recycling Project which is explored in the thesis.

The theoretical link used in the thesis consists of Stern’s (2000) four types of causal variables influencing individual’s environmentally significant behavior. These variables are applied in order to discuss and explain the barriers and facilitators the community faces regarding waste. The most central obstacle is the lack of financial resources in the local government. The national and provincial governments must pay attention to and raise the issue of waste and support the local governments in order to improve its waste management.

Key words: Waste Management, Recycling, Rural South Africa, Cradock, Lingelihle.
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1. Introduction

1.1 After 1994

After suffering from apartheid since 1948, South Africa’s first democratic election was held in April 1994. The African National Congress (ANC) emerged from the election with Nelson Mandela as the country’s president. The ANC’s history goes back to 1912, but was from the 1950’s the leading liberation movement fighting against apartheid. They are still today the majority party, now with Jacob Zuma as president. The driving force behind ANC’s policy was the determination to achieve development on a non-racial basis, and a big part of the democratization of South Africa was the making of the country’s new Constitution in 1996. The new Constitution was very well composed and showed a great willpower to build the country on equality, freedom and democracy. In the Bill of Rights - chapter two in the new Constitution, not only the civil, political and socio-economic rights of all people are protected, but also the rights of the future generations; a sustainable development.

“24. Environment

Everyone has the right

a. to an environment that is not harmful to their health or well-being; and
b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
   i. prevent pollution and ecological degradation;
   ii. promote conservation; and
   iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

One of the government’s ambitious plans on how to rebuild the country was the Reconstruction and Development Program (RDP). South Africa was now, after total isolation during the apartheid period, determined to be integrated into the global political, economical and social system, and the RDP program illustrated this strong vision. The RDP is a socio-economic framework which seeks to mobilize the South African people towards the final

1 The Bill of Rights (1996)
eradication of apartheid and instead build a democratic, non-racial and non-sexist future. It consists of six key principles:

- A sustainable and integrated development program
- A peoples driven process
- Peace and security
- Nation building
- Linking reconstruction and development
- The need to democratize state and society

Main focus was determined to lie on “A peoples driven process”. Due to segregation during apartheid, poverty and degradation existed side by side with modern cities and the country was ranked as one of the most unequal in the world. The RDP focused on people’s immediate needs regarding e.g. housing, but it also focused on giving the people the empowerment to form their own future and be involved in the political processes.

Many progresses has been made since 1994 and hundreds of thousands of the poorest households have been provided with a range of social services such as housing, electrification, water and education, and there also has been a reduction in the levels of poverty and unemployment. But, many of the structural features of the apartheid economy are still evident on the provincial level and the rank of inequalities is still high. A vulnerable industrial economy and massive service and infrastructure backlogs are only a few of the problems and the access to good quality social services still correlates strongly with race, class and gender. Out of a population of 50.7 million, 50 % is estimated to be below poverty line and the unemployment rate is now 24 %. Life expectancy at birth is for the total population only 49 years and a big causal factor of this is the fact that 18 % of the population is living with HIV/aids. Almost 40 % of the South Africans are living in poor rural areas where the road to the government halls seems to be very long.

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2 South Africa Government Online (1994)
3 Sogoni (2009)
4 The National Encyclopedia (2011)
5 Central Intelligence Agency (2011)
1.1.1 The Eastern Cape Province

After the election in 1994, South Africa was divided into nine provinces. One of the most rural and also one of the poorest provinces is the Eastern Cape Province. The study area of this thesis is the town of Cradock, Inxuba Yethemba Municipality in the Chris Hani District which lies within the Eastern Cape Province. The Chris Hani District is situated in the centre of the Eastern Cape and comprises eight local municipalities. It is considered rural since 95% of the population is rural or semi-rural and live in former homeland areas. The largest private sector is agriculture and livestock, but poverty is widespread in the district and households living under the minimum level are estimated to be more than 70% and the unemployment rate is over 58%. The land is on many places barren and dry.  

In a speech to the people in 2009 the former premier of the Eastern Cape Province, Mbulelo Sogoni, list visions of the future and strategies about rural development, agrarian transformation, education, health, crimes, corruption, democracy, participatory governance and how to attract local investors. These are all very important factors in the progress of developing a broken country, but Sogoni never once mentioned the environment. The words “sustainable” and “development” are mentioned many times, but never together – only “sustainable work opportunities” or “economic development”. The third part of sustainable development – the environment, is absent. Does this mean that the Eastern Cape Province does not have any environmental challenges to work with?

Of course not. One of the most visible environmental problems, not only in the Eastern Cape but in the entire country, is the poor waste management. No one really knows how much waste is produced, recycled or dumped in South Africa since it in the past not has been a question of interest for the government. Of interest or not, it is a fact that South Africa has got a big problem with waste. Out of the 1327 landfill sites that are documented, 639 do not have licenses to operate while many of the ones that are licensed are ill managed. But unlicensed municipal landfill sites are not the only waste problem; unscripted street dumpsites are also very common. In street corners, on grass fields, next to play grounds and schools, mixed waste is piling up. Sometimes the wind comes and sweeps it over the streets, and sometimes someone decides to burn it all up, leaving a distinct smell of plastics and unidentified chemicals all over the neighborhood. Also, a growing number of poor people are today

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6 Eastern Cape Province’s Official Website (2010)
7 Friends Of the Earth International (2008)
making a living as informal “waste pickers”, collecting garbage of value at municipal landfill sites. Hungry people are prowling the sites for food and clothes, walking bare feet on the unsorted household waste.\(^8\)

1.2 Aim of project and research question

The aim of this thesis is to explore the preconditions for waste management practices in Cradock and to discuss the possibilities and obstacles for a change in a more sustainable direction. The study will be limited to household waste and main focus will be on the township Lingelihle in the town of Cradock.

The thesis will be based on the following question:

- How does the municipality work with waste management in Cradock?
- What are regarded to be the present and future challenges?

1.3 Method

This thesis is made through a qualitative minor field study in Cradock, South Africa. I spent two weeks at a guesthouse in Cradock and then got the opportunity to live with a family in Lingelihle for four weeks during my research. This is a big advantage for the study since it is easier to interpret the result from the study when you are acquainted with the environment you are studying. To live with and get to know people from the community also makes it easier to understand cultural differences, stereotypes and mentalities which can give a greater understanding of the result the study brings in.\(^9\) To analyze the result with a Swedish point of view and take for granted that the South Africans deliberate in the same way could make me come to downright incorrect conclusions. South Africa and Sweden has different histories and severe differences in their present political and social system and structure which affects the people’s way of thinking in different ways.

A big part of the six weeks in Cradock and Lingelihle was dedicated to make observations. Conversations with new-made friends and the temporary family in Lingelihle gave a great

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\(^8\) Daily Sun (2011)
\(^9\) Bryman (2007)
understanding of the South African mentality. Also, to walk around in the streets, look at houses, shops, supermarkets and the people wandering around gave a good perception of how life there is. Focus has not been on a studious ethnographic method – in the sense that one should operate a long-term and strong involvement in a social environment to study and understand the culture\textsuperscript{10}, but a lot of the information presented in this thesis is coming strictly from first-hand observations of daily participation. This is called unstructured observation; when one has not in advance prepared what behavior or happening is to be observed and an observation scheme has not been made, but one takes notes freely on what is seen.\textsuperscript{11} The information these unstructured observations brought in is invaluable and makes it possible to picture Cradock in a more correct and alive way that never had been possible with a research from home instead of a field research.\textsuperscript{12}

The first part of the study focus on what the legislative framework says about the municipality’s waste management. This is done through a content analysis of the Inxuba Yethemba Waste Management Plan.\textsuperscript{13} The most important parts of the plan has been extracted and summarized into the study to give understanding on what framework the municipality has to live up to and understand how they motivate what they do.

Two interviews were also performed during the study to get a deeper understanding on how the waste management actually works in practice. The first interview was with the Municipality’s Community Services Manager and the second was with employees at a recycling project which also included a visit to the project. It was important to get a viewpoint from the decision-making authorities, but also to get a bottom-to-top perspective from the community members who are employed at the municipality’s project. The validity of the study is emphasized with several perspectives.

Depending on what you are about to study, there are different interviewing methods which could be used. Semi-structured interviews were used in this study since it is considered a flexible process and very suitable for qualitative studies.\textsuperscript{14} Two interview guides, one for every interview, were prepared and used as guidelines during the interviews. The two interview guides were not identical, but both of them were divided into five over-arching themes which had a number of semi-structured questions under them. Though the questions

\textsuperscript{10} Bryman (2007)
\textsuperscript{11} Hartman (1998)
\textsuperscript{12} Ely et al (1993)
\textsuperscript{13} Inxuba Yethemba Municipality (2005)
\textsuperscript{14} Bryman (2007)
were prepared and written in advance, they did not depend on each other and could therefore be asked anytime during the interview. This made the interview process flexible and made it possible to have a focus on the interviewed person’s perspective. Another positive effect of not having a too rigid structure is that it gives the interviewed person the opportunity to bring up the issues he or she finds to be the most important.\textsuperscript{15} Waste management in a rural community in South Africa is something new to me, and therefore it is important to have open questions that explore “how” and “what” and not just give the interviewed person the option of saying “yes” or “no”. The over-arching themes in the interview guide make sure that the main focus is kept, but also give a lot of room for spontaneous follow-up questions that were not prepared in advance.

The interviews were recorded on tape and afterwards processed through transliteration; the interviews were listened to with head phones and transcribed from spoken words to written words. The material was after the transliteration worked through many times and a content analysis was made by dividing the result into themes to get a structure, find patterns and get a deeper understanding. Transcribing interviews makes it easier to make a thorough analysis and allows you to go back and look at the material over and over again.\textsuperscript{16}

A qualitative data collection is the method most appropriate for this study since it emphasizes on words instead of quantifying data, and is more focused on the interpretation of people’s stories and tries to get an insight in the social reality.\textsuperscript{17} Since the aim of this study is to explore what the municipality is doing regarding waste management, not only official documents needed to be studied, but also interviews had to be made with the people concerned to get a greater understanding of practice, possibilities and constraints. Combined with own observations it is an appropriate approach to get a picture of the situation.

1.4 Theory on pro-environmental behavior

Environmental problems have for long only been linked to industrial activities in polluting factories, but it has come to be more and more recognized that the many choices people make in their everyday lives affects the environment perhaps just as much. The implementation of environmental policies therefore often requires ordinary people’s active involvement and also

\textsuperscript{15} Hartman (1998)
\textsuperscript{16} Bryman (2007)
\textsuperscript{17} Bryman (2007)
a great understanding on what is going on when an individual is making a decision regarding their everyday life activities. Today we can see that many of the existing new environmental action programs, such as Agenda 21, are expressed in terms of household-related activities like recycling and ecological consumption. The policymakers need to explore how policies interplay with household’s values, attitudes and old habits, and also what possible challenges they will face in their daily lives because of the policies. Some pro-environmental behavior requires a big amount of knowledge, time and money which could make households that aim at integrating environmental concerns in their daily habits and decisions face a social dilemma where their individual interests clash with what is best for the collective. \(^{18}\)

Individual choices on how to act are not made in isolation, but are closely interrelated with other everyday activities within the household context. \(^{19}\) Pro-environmental behavior is based on self-interest as well as concern for other people and if the households perceive that they are left without support from the state it might affect the degree of willingness for change. \(^{20}\)

### 1.4.1 Stern’s causal factors

In order to clarify the complex underlying reasons to why individuals behave in a pro-environmental way or not, Stern\(^ {21}\) has structured four types of causal variables influencing individual’s environmentally significant behavior:

- Contextual factors
- Personal capabilities
- Attitudinal factors
- Habit or routine

#### 1.4.1.1 Contextual factors

Contextual factors include variables such as the physical environment, social and societal norms, regulations and costs, and also a broader social, economical and political context. The context is often highlighted when it acts as a constraint for pro-environmental behavior. When

\(^{18}\) Söderholm (2010)  
\(^{19}\) Skill (2008)  
\(^{21}\) Stern (2000)
it comes to recycling, the contextual factors of importance have shown to be physical availability to recycling facilities, and storage facilities in the household. For example, in studies where a recycling bin for cans has been placed in classrooms rather than on a central location, the percentage of recycled cans increased since it was in the classroom the majority of the beverages were consumed. The social context has also been found to influence recycling; if others in your social context recycle or have expectations on you to recycle it could influence you to recycle as well.\(^\text{22}\)

1.4.1.2 Personal capabilities

Personal capabilities are the knowledge, skills, time and money required for performing particular pro-environmental actions. Social status and power is also included in personal capabilities.\(^\text{23}\) Studies have shown that people with higher education and income are more likely to have more pro-environmental attitudes. A higher income makes it possible to bear increased costs that could be associated with pro-environmental behavior, although people with a higher income may work more hours and have less time to e.g. recycle. Young people and people with higher education are often considered to be more aware about environmental issues and more prone to take action. However, result from studies of personal capabilities in relation to recycling are not altogether conclusive; some point at these factors as important while others point at their lack of importance.\(^\text{24}\) Stern himself means that these variables have very limited explanatory power for many environmentally significant behaviors, but the findings reflect the fact that the level of environmental citizenship depends on an individual’s social and economic resources.\(^\text{25}\)

1.4.1.3 Attitudinal factors

Attitudinal factors include environmental and non-environmental attitudes, personal norms, beliefs and values. To explain relations between attitudinal factors and pro-environmental behavior, some theories are frequently used. The theory of planned behavior (TPB) argues that attitudes towards the behavior, subjective norms, and the individuals perceived behavioral control influence the intention to perform a behavior. Moreover, beliefs about consequences of the behavior influence the attitude, beliefs about the normative expectations

\(^{22}\) Eriksson et al (2010)
\(^{23}\) Stern (2000)
\(^{24}\) Eriksson et al (2010)
\(^{25}\) Stern (2000)
of others influence the subjective norm, and beliefs about factors facilitating or inhibiting the behavior influences the individuals’ perceived behavioral control. According to this theory, factors such as personality, education, age, gender and context only have indirect influences on behavior.

Another theory often used in this context is the value-belief-norm theory (VBN). The VBN theory means that there is a hierarchy of values, environmental beliefs and personal norms which explains pro-environmental behavior. Unselfish and biospheric values put others above one’s own interests, and an awareness of the destructive ecological consequences and an ascription to oneself with a responsibility to act, activates a personal norm to save the environment.

Studies have shown that if an individual is recycling due to a personal norm, e.g. to avoid feelings of guilt, this person is more prone to listen to counter attitudinal information, especially coming from a, to them, attractive source. Also, when people act in a pro-environmental way in one area this behavior is to some degree also related to other types of environmental behavior.²⁶

1.4.1.4 Habit or routine

The fourth factor which needs to be considerate is people’s habits and routines. Behavior change requires breaking old habits and establishing new ones. Habit, in the form of standard operating procedure is a key factor in pro-environmental behavior.²⁷ Much pro-environmental behavior is performed repeatedly which makes it important to considerate this factor. It has been shown that habits develop if a certain behavior has rewarding consequences and is repeated in a stable context. The traditional perspective is that e.g. consumers’ choices are based on conscious information processing, but others propose that many of the choices are made unconsciously even though other alternatives are present. In order to establish pro-environmental behaviors there is a need to activate environmental values in order to interrupt old habits, and then consider alternatives to the present behavior.

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²⁷ Stern (2000)
1.4.2 Policy packages as a solution

Behavior is consequently both a function of the person and its environment and based on a self-interest as well as concern for other people. The contexts we function within influence our behavior, attitudes, personal capabilities and habits. When trying to understand how we can eliminate constraints and instead facilitate pro-environmental behavior with different strategies or policies, these earlier mentioned four causal factors are a good point to start from.\(^{28}\) A new context may make old habits weak and lead people to reconsider their attitudes, and financial incentives may make certain behaviors attractive. In the latter case, information to make individuals aware that the incentive is available is crucial.\(^{29}\) Much pro-environmental behavior is similar in the way that they come with a cost such as time or money, and even if the individual has the right attitude and is motivated, the perceived cost or strong habits may inhibit the action from actually be performed.

When policies are developed to facilitate people’s pro-environmental behavior, these four causal factors need to be considerate. The factors’ complex nature gives support to use multiple policies, so called policy packages, ranging over more than one causal factor and present the household a facilitating perspective on the related cost of giving something of value up in their everyday life. A multiple policy could be able to create a personal norm which make an individual act pro-environmentally by obligation, and also contribute with necessary facilitators required for the given behavior. Behaviors are more or less linked to the context, and behavioral change may require a contextual change most of all.\(^{30}\) But establishing new policies can be difficult; many municipalities face obstacles in the form of lack of resources, lack of knowledge, lack of engagement, short-sighted political decisions, structural obstacles and deficient support from national level.

Householders in Sweden have pointed out that they are directly influenced by the municipality and recycling companies as they are the ones designing the pre-conditions for actions. As mentioned earlier, it has been proven that the locations of recycling stations are very central, and even so in Sweden. If they are located close to people’s homes the recycled amount increased. People generally do not like to have the sorted waste at home for too long,

\(^{28}\) Eriksson et al (2010)  
\(^{29}\) Stern (2000)  
\(^{30}\) Eriksson et al (2010)
and if it is far to the recycling station one does not go as regularly. Then the waste piles up at home and all of a sudden every visit to the recycling station is very time consuming and perhaps requires a car. The householders need systems which are simple to follow. Predefined size of waste bins and limited refuse removal from the municipality has shown to be efficient in influencing people’s recycling habits in Sweden; it forces them to recycle more. Recycling is a typical example of symbolic activity since it cannot be measured as the most efficient action in terms of ecological footprints, but waste is an issue which is visible to householders and easy to take on, as compared to reduce one’s car use which does not have an immediate reward.  

To sum up the studies and theories reviewed, there are factors that together can encourage people to take active responsibility for the environment: Problem awareness, positive perception of one’s own personal capability to affect environmental outcomes, social influence, facilitating infrastructure and reasonable sacrifices. 

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31 Skill (2008)  
2. Environment and waste in South Africa: Regulations and strategies

All law regarding environmental waste management planning must since 1994 comply with the South African Constitution. Everyone in South Africa has got the constitutional right to have an environment that is not harmful to his or her health and to have the environment protected for the benefit of present and future generation through reasonable legislative and other measures that:

- Prevent pollution and ecological degradation
- Promote conservation
- Secure ecologically sustainable development and use of natural resources

The Constitution also imposes a duty on the state to promulgate legislation and to implement policies to ensure that these environmental rights are upheld. Responsibility for waste management functions is to be devolved to the lowest possible level of government and local government is therefore assigned the responsibility for refuse removal, refuse dumps and solid waste disposal.

In addition to the constitution, a number of government policies and statues are relevant to waste management at the local government.

The Environment Conservation Act 73 of 1989 (ECA) is still legally binding despite that it got established before 1994. Its objective is to provide for the effective protection and controlled utilization of the environment and concerns waste in many of its articles. ECA starts by defining waste as “any matter, whether gaseous, liquid or solid or any combination thereof, which is officially designated by the Minister as an undesirable or superfluous by-product, emission, residue or remainder of any process or activity”. The ECA then states that “no person shall discard, dump or leave any litter on any land or water surface, street, road or site in or on any place to which the public has access, except in a container or at a place which has been specially indicated, provided or set apart for such purpose.” Littering is consequently prohibited and considered an offence, and the authority in charge has got the responsibility to provide containers for the discarding of litter and clear the containers from litter within a reasonable time. The Act then states that all disposal sites in South Africa must have a license.

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to be utilized, issued by the Minister of Water Affairs and Forestry. To be permitted one must fulfill the requirements set up on design, construction, monitoring and closure. The requirements are subject to “such conditions as the Ministry deem fit” and can range from case to case.\textsuperscript{35}

The National Environment Management Act 107 of 1998 (NEMA) is regarding integrated environmental management which purpose is to “promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.” The Act states in the preamble that “sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations”. NEMA is establishing principles and procedures for decision makers on matters affecting the environment. Some of the principles in the Act are regarding Accountability, Affordability, Cradle-to-grave management, Equity, Integration, Open Information, Polluter Pays, Subsidiary, Waste Avoidance and Minimization, Co-operative Governance, Sustainable Development and Environmental Protection and Justice. It also requires that every province must develop environmental implementation plans (EIPs) every four years and an environmental management plan (EMP). The local governments are obliged to exercise its responsibilities in accordance with these plans and to report annually. NEMA also imposes a duty of care regarding pollution and environmental degradation. Any person who has caused significant pollution or degradation of the environment must take steps to stop or minimize the pollution.\textsuperscript{36}

The Department of Water Affairs and Forestry (DWAF) Minimum Requirements for Landfill, 2nd Edition of 1998 confirms that landfills in South Africa historically have been badly sited, designed and operated and that they therefore are significant sources of pollution which requires top priority. It then provides standards and specifications to ensure environmentally acceptable waste disposal practices. The Minimum Requirements’ main objectives are to prevent human health and the environment from harmful effects caused by the handling, treatment, storage and disposal of waste. It also states that the long-term objective is not only to improve the present landfill sites, but to make alternatives more attractive in order to minimize the waste. South Africa’s urge to make its waste management practices

\textsuperscript{35} The Environment Conservation Act 73 (1989)
\textsuperscript{36} The National Environmental Management Act (1998)
internationally acceptable is also presented and it stresses the importance of an effective administration.\textsuperscript{37}

South Africa also has the National Waste Management Strategy (NWMS) which was developed during 1997-1999.\textsuperscript{38} The NWMS seeks to reduce the generation of waste and the environmental impact of all forms of waste and thereby ensure that an uncontrolled and uncoordinated waste management no longer will have a negative effect on the socio-economic development of South Africa, the health of the people and the quality of the country’s environmental resources. The strategy outlines the functions and responsibilities of the three levels of government regarding waste management. The roles and responsibilities for local government include: Integrated Waste Management Planning, Waste Information System, Waste Minimisation, Recycling, Waste Collection and Transportation, and Waste Disposal. The local government is to establish recycling centers and/or facilitate community initiatives, and have the full responsibility for the establishment and management of landfill sites. In addition, the permit holder of the landfill site has the responsibility to control and counteract scavenging.\textsuperscript{39}

The Polokwane Waste Summit Declaration took form in 2001 during a national waste summit in the Northern Province. All stakeholder groupings in the waste field attended to in cooperation chart a way forward in terms of waste management. The Declaration includes a vision and goals for the management of all waste; domestic, commercial and industrial. The Vision is to “implement a waste management system which contributes to sustainable development”, and the Goals are to “reduce waste generation and disposal by 50 % and 25 % respectively by 2010 and develop a plan for zero waste by 2022.” To reach the goals and attain the vision puts pressure on local governments to implement the NWMS, develop waste information and monitoring systems, and facilitate recycling and waste reduction.\textsuperscript{40}

\textsuperscript{37} Minimum Requirements for Landfill (1998)  
\textsuperscript{38} NWMSI-project web site (2011)  
\textsuperscript{39} National Waste Management strategy (1999)  
\textsuperscript{40} The Polokwane Declaration on Waste Management (2001)
3. Challenges for waste management in Cradock

3.1 Smoke, black plastic bags and refuse removal

Cradock is a rural town in the Eastern Cape Province and consists of three parts as a legacy of apartheid when the different races were relegated in to different parts of town – one white, one black and one colored. The traditionally colored part of town is called Michausdal and the traditionally white part is called Cradock. The black part of town; the township Lingelihle, is also the poorest. The township is full of life and colorful houses, with children eagerly walking to school and smiling people greeting you good day. But while walking in the streets of the township the community’s huge problem with waste management hits you in the face. Some day it apparently is refuse removal-day, and the pavements are filled with black plastic bags. But it is hard for an outsider to understand the system because the black bags are not outside of every house on the street. One early morning when the sun put its first rays over Lingelihle, a woman came out from a house with a big black plastic bag on her back. It was heavy, but she carried it to the other side of the street and put it behind a bush. She then lit it on fire, waited for a minute until the smoke began to rise towards the sky and then she left. This is not a one-time-thing in Lingelihle; behind many bushes, in street corners and behind houses unofficial dumping sites take place. Garden waste, old building materials and mixed plastics, papers and metals are piling up. Due to the high levels of alcoholism in the township, crushed glass bottles pretty much cover the ground everywhere. That is, on the same grounds where bare foot children and dogs play. Of unclear reasons, maybe in an attempt to get rid of the waste, people frequently lit the piles of rubbish on fire. The fire leaves a smoke which when it is fresh makes your eyes water.

The Inxuba Yethemba Municipality is struggling with waste management and the municipality’s Community Service Manager Mrs. Majiba seems to be fully aware of the problem. Today they have two teams in Cradock which are responsible for the refuse removal of household waste. The town is divided in to three wards; Cradock, Lingelihle and Michausdal. These teams are visiting every household once a week for refuse removal. The municipality’s Community Services Manager describes:

“What we do then, we issue one refuse disposal bag, the black bag, and they go in the houses to pick up whatever they should throw out, and they leave a clean
bag, for them to use the… the next week. They are removing the old one. So they are just giving the bag to the household and they are taking the dirty one in to the lorry. Then when they are finished with that, they take it to the disposal site.”

This is the waste relationship between municipality and households. The municipality picks up the waste from the household and in exchange they give them a clean, black disposal bag for them to use for next week. After the teams have picked up the waste, they go to the municipality’s landfill site and put the bags there. The black plastic bags are very thin in structure and reefs are easily torn. The householders in general do not recycle or compost, so all waste – wet and dry – goes into that black plastic bag that sometimes have smaller reefs or holes in it. It gets smelly and people are afraid it may attract rats, so they do not always wait for the day when the lorry comes and instead they get rid of the bag themselves.

### 3.2 Waste Management Plan

In the beginning of the new millennium the Chris Hani District Municipality appointed the compilation of an Integrated Waste Management Plan (IWMP) for the District Municipality as well as for the six local municipalities they represent.

The IWMP for the Inxuba Yethemba Municipality was finished in 2005. It first states that there are few large industries in the area and retail outlets are being the largest producers of waste. There are no waste records kept for the Inxuba Yethemba Municipality, but there is an estimate of the expected waste people generates, regarding to what income group they belong to. The majority of the people, 75 %, fall into the lower income group due to the high unemployment. The IMWP mentions that the general trend for waste generation is to increase with an increase in household income, but that it however is evident that there is no direct correlation and many variances occur. It is therefore difficult to predict a forecast on the waste generation rates, but an assumption that an economic growth would be accompanied by an associated increase in waste generation is acceptable. Due to this assumption, the NMWP states that waste minimization strategies are to prefer.

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41 Mrs. Majiba (2011)
Other than obliging to follow the legal framework regarding waste, as presented in Chapter 2, seven focus areas with relevant objectives have been identified in the work towards an acceptable waste management and waste minimization:

- Disposal Infrastructure Development – Improve and permit the Cradock landfill site.
- Waste Collection Infrastructure – Provide an effective waste collection which is standardized and monitored.
- Institutional Capacity and Human Resources – Train staff to provide the community with effective waste management services.
- Financial Resources – Improve payment of service tariffs and standardize tariff structure.
- Dissemination of Information/Communication – Develop and maintain a Waste Information System and improve community awareness and education.
- Management of Illegal Activities – Minimize and prevent illegal activities through e.g. a penalty system for illegal activities or a neighborhood watch.
- Waste Minimization – Decrease waste deposited on landfill through encouraging recycling activities.

The Implementation Plan to obtain these goals and objectives stretches from 2005/2006 to 2011/2012. The reality 2011 is rather clouded. The highly wanted Waste Information System which would allow the Municipality to collect information regarding e.g. conditions of the landfill, volumes disposed of, operating and maintenance cost and permit status of landfill, is still absent. The landfill site continues to be unpermitted and the community members still do not seem to be aware of the environmental damage illegal dumping causes. It is however brighter to explore what has been done regarding recycling. It may not keep up with the ambitious Implementation Plan but a lot of work has been done despite obstacles.

3.3 The landfill site

The municipality has one landfill site of approximately 2, 5 ha situated to the southwest of Cradock in the industrial area. No data is available on what year the landfill was issued. The landfill is in desperate need of improvements and one of the reasons for this is that the site

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42 Inxuba Yethemba Municipality (2005)
today not is legally permitted to be utilized. It is the Department of Environmental Affairs who is in charge of the authorization of the site, and the criteria to be registered are stiff. An environmental impact assessment has presently not been made, and the site is not designed in any way to prevent leakage. Today it is just a large area of land which waste is dumped on. There is no estimated remaining life of the site; since there is a lack of precise borders the municipality considers it almost impossible, and there is neither separation of fresh and contaminated water nor groundwater monitoring. The waste is not covered, but the municipality’s waste management plan claims that there is sufficient drainage due to the steep slope erosion of the access road that is occurring. The soil consists of sand, and a river flows right next to the landfill site.

![Figure 1 – The municipality’s lorry at the landfill site](image)

Today there is no fencing around the site which makes it impossible for the municipality to have any kind of access control. Due to this many people are dwelling on the site which causes big problems for the municipality since they are there illegally. If they get injured it will be something for the municipality to take responsibility for. There are always people moving in and out of the landfill that are looking for something to eat, clothes or building material. Some people are even permanently living there; they have built themselves sheds of things they found on the landfill. Both children and adults are walking bare feet on the waste filled soil scavenging for something of value. There are also constant fires at the landfill. It is not the municipality who does that, but the people who are scavenging the site. The air is filled with smoke and the smell of burnt mixed waste makes it hard to breathe for someone

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43 Inxuba Yethemba Municipality (2005)
44 Kajsa-Lisa Jonsson (2011)
who is not used to the odor. The municipality has not got any separation of toxic waste and regular household waste which means that chemicals, light bulbs and batteries etc. goes to the landfill as well. This makes the burning of waste very alarming since there probably are very toxic substances in the smoke which the landfill inhabitants are living in. However, medical waste from the hospital is taken care of by a hired specialist company, appointed by the government.

![Figure 2 - A young boy outside his home at the landfill site.](image)

### 3.3.1 A sustainable landfill?

The landfill site is not just an aesthetical issue for the municipality, it is also a hazard to both humans and nature. One look in the municipality’s waste management plan or a visit at the site states the fact that the landfill is not sustainable. At the moment the municipality is up for funding from the department of the environmental affairs to be able to build the landfill site in to a new structure. First of all they want fences around the site to cut out the people who are moving in and out. They also want waste information and plans, and the lorries should have access to a scale which they can weigh the waste on before they dump it on the landfill so the municipality can keep records on how much waste currently is occupying the site. This will make them able to construct accurate waste management plans according to reality. The Department of Environmental Affairs has not yet today answered to the municipality’s wish

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45 Kajsa-Lisa Jonsson (2011)
3.4 Illegal dumping

The municipality has, as described earlier, a big problem today with illegal dumping, illegal burning of waste and the law enforcement regarding that. The Environment Conservation Act 73 of 1989 states that the authority in charge must provide with containers for the discarding of litter, but few or none trash bins are seen in the community. What the Municipality can see comparing the areas Lingelihle, Michausdal and Cradock is that they are all dumping illegally; even the people who can afford to take their waste to the landfill. But the main difference experienced by the municipality is the kind of waste people dump illegally. The wealthy citizens in Cradock mainly dump things they cannot use from e.g. the garden; branches and brushwood, while citizens located in Lingelihle dump their own household waste; colorful plastics and smelly food leftovers are covering the sidewalks. The people in Lingelihle don’t wait for the day when the lorry comes to their house, the day their black plastic bag is full they take it outside and dump it in the street. They could keep it in their yard until the lorry comes to pick it up, but the Municipality experience it that people is of the attitude that “as long as it is not in my backyard I don’t care”. The Community Services Manager wishes to increase the refuse removal from once a week to twice a week, since one plastic bag per household per week apparently is too little.

“I even said to mayor one day, maybe we should think of twice a week / ... / But at this moment, we cannot afford it, presently. But otherwise, twice a week I think would make a difference.”

In bigger municipalities there are Peace Officers that drive around in the community and look up environmental deeds like noise, burning of rubbish, illegal dumping or other things that are affecting the public. Unfortunately Cradock has not got a Peace Officer yet, but the municipality hopes that they will be able to allocate a number of people in a near future if the economy allows it. Considering many people’s situation with unemployment the Peace Officers will not be able to forfeit the law breakers since they will not have money to pay the fines with anyway and the municipality does not think that sending people to jail for e.g. littering is the right way to go. The appropriate sentence in these situations is according the

Mrs. Majiba (2011)
Community Services Manager to clean the streets for a period of time, since this would be a correction that also is educational.

Figure 3 – An unofficial dumping site in Lingelihle

The IWMP states that illegal dumping does occur and is caused by labor shortage and lack of sustainable collection services. Expansion of new residential areas also leads to illegal dumping, which dominates by household waste. The illegal dumping costs the Municipality a vast amount of money with basically no returns. The municipality has got a wish to make Cradock greener, but they experience that it is particularly the open spaces that people are dumping illegally on. This makes it hard for the municipality to green areas and to create a clean environment.

### 3.5 Recycling

The Inxuba Yethemba Municipality realizes that they need to think differently about the waste management. Money is neither available to increase the refuse removal nor build a new landfill but something still needs to be done. This is where the idea of starting a recycling project in Lingelihle was set in motion, with help from driven citizens. The recycling project

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47 Kajsa-Lisa Jonsson (2011)  
48 InxubaYethemba Municipality (2005)
is in accordance with the National Waste Management Strategy\textsuperscript{49} which states that the local authorities are to establish recycling facilities. The Community Services Manager is confident that recycling in general has a future success, because she has seen a recycling project turn from nothing into a real business a couple of years ago in Middleburg.

3.5.1 Middleburg

Middleburg is the neighbor town of Cradock which also is comprised within the Inxuba Yethemba Municipality. Many years ago, in the end of the 1990’s, a man with a dream came to the municipality and asked if he could borrow an empty space in town so he could start a recycling business. He wanted to take all cardboard from the shops in town to his project where he would compact it and sell it to recycling companies. 15 people worked at the project in the beginning free of charge while they waited for a reply on an enquiry for money from the government. In 2005 they received R2,5 million from the Department of Environmental Affairs. With help from this money the project was able to sustain itself after only two years, and today they have expanded into 59 employees. As Mr. Moses, the man with the dream, once wished, all cardboard from the shops in Middleburg goes directly to the project, but it has also expanded further. Today many people from Middleburg come there to sell waste that they have found or taken from their household. This gives the many unemployed people in town an income from things they or others would have thrown away.

The Community Service Manager at the municipality, who have a regularly contact with Mr. Moses and the Middleburg project means that a contributing factor to Middleburg’s success is that the recycling project is located near town, since many people do not have a car or cannot afford to transport themselves longer distances. This is also good for the environment since the project’s lorries do not have to travel far when they pick up waste from the shops in Middleburg.

3.5.2 The Ikamvalethu Recycling Project

The main thing the Inxuba Yethemba Municipality is focusing on when it comes to managing waste in Cradock is the Ikamvalethu Recycling Project in Lingelihle. This was an initiative from Mrs. Majiba, the Community Service Manager at the Municipality, and Mr. Jack, a driven citizen in Lingelihle. After getting the idea from the project in Middleburg and the

\textsuperscript{49} National Waste Management Strategy (1999)
knowledge of the fact that each and every business in Cradock has waste in form of cardboard and plastics, Mrs. Majiba wanted to take advantage of that and do something about the big amount of waste that the businesses contribute with to the landfill. She then appointed ten people – Mr. Jack one of them - to start a recycling project in November 2010. They called it Ikamvalethu and the employees’ task was to collect cardboards and plastics from all the shops in Cradock for a couple of months.

With today’s increasing problems with lacking resources all over the globe, there are many businesses that see money in recycling. The plan for the Ikamvalethu Recycling Project is to sell the collected waste to companies in this business. The money this will bring in will make them able to start with what the project from the beginning was aiming at; buying waste from the community. People can pick up e.g. plastic bottles from the streets or save cardboards from their own households and take it to Ikamvalethu which will weigh the waste and pay for it. They will then continue to sell it to the recycling businesses in the big cities and that will bring in more money with which they can buy more waste from the community with. Hopefully the project will sustain itself in a near future only from buying and selling waste and then be able to employ more people.

The Ikamvalethu employees’ only salary is a grant from the Municipality of approximately R1000 a month, but that grant will only be there until the end of April 2011 which makes it important for Ikamvalethu to start making their own money. As soon as the Ikamvalethu projects starts to make its own money the Municipality has big hopes that the community members will bring and sell as much waste as possible to the site. There is no need to pretend with the fact that money is a big motivating factor, and what the majority of the community members need is money. As soon as people realize that they can earn some money from picking up bottles and other wastes from the ground or take it directly from their household, it will hopefully both clean up the streets and make people put some food on their tables. The Municipality claims that the Municipality itself does not need the money that the project will bring in; this is simply a project for the community members.

The Municipality has learned from other people’s mistakes; a couple of years ago some people took an initiative and hired a truck which they filled with collected metals from the community. They went to Port Elizabeth to sell it, but because they had not compacted the metals it was not of much weight, which in the end led to that the cost for the truck and petrol was exactly the same amount as they received from selling the metals. The Municipality has
this is mind, and one of the first things they realized that the Ikamvalethu Recycling Project needed was a compacter. A compacter is a big machine which presses the material you put in it in to bales of approximately 1x1 meter. That makes it possible to fill a truck with more weight on less space, which makes it more efficient and allows you to make more money on every truck load. The compacter was funded by the Local Economic Development Department after a letter of enquiry from the Municipality’s Community Service Manager.

Figure 4 – The employees at Ikamvalethu with the new compacter.\textsuperscript{50}

The recycling project has more than one benefit to contribute with to the community. One is that it will reduce the amount of waste that goes to the landfill, which means that the landfill’s life is going to be longer. If the Municipality can recycle and reuse as much as is feasible, they could get the least amount possible to the landfill. But as much as it is an environmental project it is also a project which seeks to improve the social situation in all Cradock, and maybe especially the social situation in Lingelihle which is more struck by poverty and unemployment. When reading the Ikamvalethu project’s constitution, it is quite obvious that the main focus not is on the environment at all. The aims of the project are:

Primary aims

- Create jobs for youth
- Reduce the rate of unemployment
- Reduce crime which is caused by unemployment
- Fight poverty amongst community

\textsuperscript{50} Kajsa-Lisa Jonsson (2011)
Secondary aims

- Assist in cleaning the community
- Assist youth in developing some skills

Looking at the primary aims it is clear that the project initially is an initiative to handle the community’s high employment rate and its negative consequences. The positive effect it will have on the environment is a secondary goal which will come as a positive side effect of the project. The Community Services Manager says that she not necessarily sees the problematic with waste as an environmental issue, but possibly a social issue. The win-win situation that emerges from the project shows how closely related environmental and social issues often are. Even though Mr. Jack would be called the CEO of the project, he particularly wants to point out that Ikamvaletu is a co-operative and that any employee has as much say as the other.

The Ikamvaletu Recycling Project and the Municipality are closely cooperating with the project, and both seem to be very satisfied with the relationship they have established amongst one and another. The Municipality has facilitated the project with premises and the compactor, and are in April/May 2011 working on installing electricity in to the premises which they will need to get the new compacter going. So far everything seems to be going smooth with the start-up of the project, but the employees at Ikamvaletu points out that since they really not have started with the actual work yet it is hard to notice what challenges they will be facing.

The Municipality’s project is not the only recycling site in Cradock today; actually there are a couple of other businesses just like Ikamvaletu. These are private persons who started the businesses with their own money and bought all the equipment themselves, but it is unclear how successful they are and where they collect their waste.

3.5.3 The future of Ikamvaletu - “an endless project”

In the future the Municipality has plans to start cooperation with the schools in Lingelihle and the Ikamvaletu recycling Project. The plan is that every school should hold a recycling station to which the learners can bring sorted waste from home. Ikamvaletu will then be able to go to the schools regularly and pick the waste up and pay the schools for it. This will have a lot of positive effects on the Municipality’s waste management since it will decrease the waste that goes in to the households black plastic bags, and therefore lessen the amount of
waste that goes to the landfill. The Municipality does not want the Ikamvaletu team to take the households black plastic bags of waste to the project since it will be messy and smelly and possibly attract both flies and rats which probably would cause new environmental and social issues for the community. This is why they focus on involving the schools first instead of the households, because the learners would sort the waste at home and only bring the dry waste to school.

The Community Services Manager is also trying to involve all the government departments in the community by encouraging them to save the offices’ used A4 paper and give it to Ikamvaletu. Step by step she tries to involve everybody. A proper waste management needs to be integrated in every part of the community and the municipality really hopes that the recycling project is one way to make a difference.

“This is why they focus on involving the schools first instead of the households, because the learners would sort the waste at home and only bring the dry waste to school.

The employees of Ikamvaletu like to think of the project as an “endless project” since waste always will be around and their intentions are to expand the business every year. They have big hopes on starting to make some money on the project, both so they can raise their own salaries but also so they can employ more people. In their eyes the project is supposed to be an alleviation of poverty and create jobs, but also to clean the streets. They do not deny that they would like to improve their own living conditions and maybe be able to build a bigger house for their family or afford to get married, but to them it is also very important that the community gets something from the project. The founder of the project, Mr. Jack, is a real driving spirit with big hopes that the project could both help fight unemployment and crimes. He explains that the people that steal are the ones who have nothing to sell, and if the poorest people could put food on the table by pick up bottles from the ground, maybe that would help them stay out of criminality.

“Yeah, because the ones who are stealing, they have nothing to sell. So if they can pick up a bottle, they won’t steal. They will pick up bottles, card-
boards, plastics, put it on their shoulders and come and sell it here, and they can go and buy something. So it is going to... lower crime, yeah."

Another hope the employees of Ikamvalethu have for the future is education on the subject recycling. Both for themselves but also for the people in the community, they stress how important it is that people do not throw waste in the nature since it could not only destroy the environment but also hurt people and animals. They also wish that the employees would be trained in Health, Security and Environment (HSE) and first aid, and that they will get protection equipments suitable for the work they are doing.

The recycling project in Lingelihle is not collecting metal at all today since the Municipality claims that there is not much metal in Cradock. A few years ago some private people in the metal business took the initiative to go with their lorries in and out of communities and bought all the big scrap metals; old cars, engines, bed structures and such. This actually caused some trouble for the Municipality since people saw a way to make quick money and even stole the drain covers in the streets of Cradock and sold them to the metal collection. But soft drink cans are still lying on the pavements and the shelves in grocery stores are filled with vegetables, mushrooms, beans, fruit and jam and many other common groceries packed in tin cans. This speaks against the Municipality’s opinion on how much metal there is in Cradock.

3.6 People, awareness and motivation

According to the Municipality, only a few individuals in Cradock know about recycling, and that is the ones who are employed at the Ikamvalethu project. Mr. Jack, the founder of Ikamvalethu, agrees with that statement but is careful with calling the people who are not recycling lazy, since the recycling opportunities have been poor in the past. The private recycling businesses in town are too far away from the people in Lingelihle and that is the reason why the Municipality and Mr. Jack wanted to try to bring the recycling closer to the people in Lingelihle. If people are lazy or not will show when Ikamvalethu starts making money and have the opportunity to buy waste from people. Mr. S. Jack, a young employee at Ikamvalethu, is not sure if it is about laziness at all, the majority of the people who are not into recycling may just be lacking in information. However the shops in Cradock are very

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52 Mr. Jack (2011)
cooperative with the Municipality and the Ikamvalethu project when it comes to recycling, they have a good relation since the shops want to get rid of their waste and the Ikamvalethu Recycling Project is happy to take care of it. The Community Services Manager says that even though there are recycling possibilities in Cradock they still haven’t gotten to the point where householders have got the behavior of recycling. She comments on the reason for this:

“No one really orientated them about the importance of waste and how rich a person can be on that. No one really did that.”

Regarding illegal dumping, she claims that there should not be a lack of information. At the same time as the startup of Ikamvalethu in November 2010 the Municipality started a campaign called “The Clean Up Campaign” where people from the Municipality during two weeks got into every household in Cradock and informed them about illegal dumping and the negative effects on the environment. The quality of, and the effect caused by this campaign is today unclear but reality points at a low real effect since many people still do dump illegally. The Municipality has a hope that they in the future will be able to carry on educating people about the negative effects people’s actions have on the community’s environment.

The Community Services Manager is certain of the fact that the only way to motivate people in to doing something is letting them know that they can benefit from it. Almost everybody in Lingelihle is struggling financially. Paying for electricity, water and food has a higher priority to people than keeping the environment clean. This is why the Community Services Manager chose to make a business out of the recycling project since she believes that free will may not be enough in this case. What she calls “the School Route”; involving the schools in the recycling project, will hopefully spread information about the benefits of recycling. The learners can in turn teach their parents, and soon everybody will take part in the recycling. A decreased amount of waste that goes to the landfill site is one positive effect; a small income to families and schools is another.

“[The people] will know [that the waste] is money! When this project starts making money, all the community members will collect whatever they can get and take it to the project. /…/ I’m telling you, we won’t see a bottle, we won’t see a can in the streets, because [the people] will know that it will give them money.”

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53 Mrs. Majiba (2011)
54 Mrs. Majiba (2011)
However, the people in general are today not as cooperative as the Municipality wants them to be when it comes to waste. Increasing the refuse removal to twice a week would according to the Municipality make a big difference since it is shown that once a week is not enough. But it would require twice the machinery and twice the men, something the Municipality today not can afford.
4. Discussion

The research question presented in chapter 1.2 was as follows: How does the Municipality work with waste management in Cradock, and what is regarded to be the present and future challenges? Shortly summarized, the Municipality is mainly focusing on the Ikamvalethu Recycling Project at the moment, in an attempt to decrease the amount of waste that goes to the landfill site. Furthermore, the Municipality conducts refuse removal of household waste once a week, which demonstrably is too seldom and have consequences like illegal dumping. A small information campaign about the detrimental effects on the environment illegal dumping has was operated, but the real effects of it seem to have been low.

Other than the Ikamvalethu Recycling Project, the Municipality has many good ideas and whishes about an improved waste management. This includes e.g. more frequent refuse removal or the hiring of a Peace Officer, but ideas like this keep being postponed due to lack of financial resources. The Municipality seems to be well aware about what challenges they are facing and also what possible solutions these problems may have. But the biggest challenge; lack of financial resources, is a big obstacle. Nothing can be done without money. The fact that there are no trash bins in the streets, or that the landfill site is unpermitted even though the legislation demands it shows us how tight the Municipality’s hands are tied.

Sterns four causal factors will now be used to further discuss Cradock’s possibilities and obstacles to achieve a sustainable waste management.

As mentioned in chapter 1.4, contextual factors that influence pro-environmental behavior includes the physical environment, social norms, regulations and costs. Regarding recycling the location of recycling facilities was shown to be of great importance, and also the social context i.e. if others in your social context recycle or have expectations on you to recycle. To locate the Ikamvalethu Recycling Project close to the people who are expected to recycle would according to this theory be a great advantage. People need simplicity, and the physical availability of Ikamvalethu does not require a car or walking long distances. However, in the quest to get as many as possible to recycle it is important to consider the fact that “the importance of recycling” is different for people with different contexts. Wanting to recycle does not have to do with a wish for an improved environment; if one can earn money from it some people will do it for that reason without as much as a thought of the environment.
Regarding contextual factors such as regulations and costs, the Municipality faces a lot of obstacles. As mentioned, few or none trash bins on the streets in neither Lingelihle nor Cradock nor Michausdal make it difficult to put pressure on people to not litter. There is no physical availability of containers for the discarding of litter, and people cannot be expected to follow a non-existing system. Regulation and costs does not really exist regarding illegal dumping. Even though the National Environmental Management Act of 1998 requires a punishment of people who have caused pollution or degradation of the environment it is not possible in Lingelihle to e.g. sentence a fine for littering since people will not be able to pay. Filling the correctional services with people guilty of littering or illegal dumping may not be of best interest for the community, but there might be other ways to punish the litterers. A sentence to e.g. clean the street could be an efficient punishment and also educational. But without a Peace Officer it is hard to target those who break the law.

Another area where it is hard to establish required regulations is the landfill site. First of all it needs to be fenced, improved and redesigned to fulfill the minimum requirements and to be permitted. But since it is a very expensive project and the Municipality has not got any replies to its inquiry for money, it turns into just another obstacle the Municipality cannot get past.

The social norm regarding illegal dumping is not facilitating any kinds of pro-environmental behavior. “Everybody else” is dumping everywhere and if a big pile of rubbish already lies in the streets it is easier to continue to throw waste there than if it would have been a clean, green area.

Personal capabilities required to perform a pro-environmental behavior were described in chapter 1.4 to be knowledge, time, money, social status and power. It was also said that young people and people with higher education and income in general were more likely to have more pro-environmental attitudes. This was vaguely confirmed with the fact that the more wealthy people in Cradock conducted less illegal dumping. This could be explained with a higher income that allows you to have a car or a truck and you are able to take your excess waste to the landfill site yourself.

Many people in Lingelihle are unemployed, and time is something they are wealthy with. But time is not enough in this case, because how can you be expected to make the best of your time if you do not have any knowledge about “the best”? The knowledge of the people is too poor. The only attempt to inform the people about waste was as mentioned the Clean Up Campaign in 2010, which obviously had little effect. It is a good start, but the information
might need to be designed in a different way to reach out. People need to be able to relate to something that concerns their everyday lives. The information not only needs to be about the adverse environmental effects from human activities, but also about how a pro-environmental lifestyle is something one can benefit from. Education in general in the township is poor, and many people cannot afford more than a few years in school. But still there is a hope for the new generation; if the “School route” succeeds and the learners get knowledge about recycling and practice it in school, they can take the knowledge with them home.

Money is a re-appearing subject on all levels. In the majority of the cases money, or at least the lack of it, is an obstacle but if used right it could also be a major facilitating factor. The environmental issues in Cradock, and all over South Africa, are tightly bound to social issues. And the major social issue is that people are unemployed and poor, which have consequences like alcoholism and criminality. For example, solving the problem with the people dwelling on the landfill by fencing the site will not really solve the source of the problem. It would only leave the landfill inhabitants homeless and without a source of food. What everybody need but do not have is money. Money is therefore a huge motivating factor that could be utilized. We live on a planet where interest of profits is the world order, and people’s urge and need for money could in some cases be used to achieve positive effects on the environment.

With these facts in its back-pocket, the Municipality has chosen to make the Ikamvalethu Recycling Project a business. The Community Services Manager range between stressing that the project is for the sake of environment and pointing out that it is important for the citizens to earn money. In reality I can see that the focus above all is on putting food on people’s table and preventing criminality. More and more during this thesis it has come to be apparent that the environmental issues and the social issues are hard, if not impossible, to separate. Instead of trying to disjoint them and look at them separately, we might have more to gain in accepting their relation and focus on how they are correlating.

The attitudinal factors Stern points out to be influencing people in their behavior are environmental and non-environmental attitudes, personal norms, beliefs and values. As presented in chapter 1.4, the Theory of Planned Behavior (TPB) argues that the intention to perform a behavior is a result of people’s attitudes towards the behavior, subjective norms and the individuals perceived behavioral control. According to that theory factors such as personality, education and context only have indirect influences.
In Cradock’s case the attitude towards pro-environmental behavior may not be negative per se, in that meaning that people actively would have chose not to act in a pro-environmental way. Without the right knowledge it is hard to have a stand-point and many behaviors are conducted out of habit without much consideration. The present subjective norm may also have been formed through ignorance and how are one supposed to have any perceived behavioral control over a problem one is not aware of? The people who do have knowledge about the issues regarding illegal dumping in Cradock might face a low perceived behavioral control. They depend on the Municipality’s refuse removal and if they need more than that they are left on their own. Incentives that facilitate actions, like the Ikamvalethu Recycling Project, might strengthen people’s perceived behavioral control and the benefits from it could change their attitudes towards pro-environmental behavior like recycling.

The other theory regarding attitudinal factors presented in chapter 1.4 was the Value-Belief-Norm (VBN) theory and means that pro-environmental behavior is explained by a hierarchy of values, environmental beliefs and personal norms. The VBN theory continues with stating that people attribute themselves responsibility to act because of unselfish and biospheric values that put others above their own interests. There does not seem to be enough widespread knowledge in Cradock, and a strong personal norm that people’s actions are detrimental to nature has not been established. Moreover, the VBN-theory is hard to apply in this study since there is very little pro-environmental behavior to analyze; Ikamvalethu had not during this study fully started their business where householders can come and sell sorted waste. But the theory is in my opinion however hard to apply in a community where most of the people are struggling to fulfill their basic needs. The priority will naturally be on labor opportunities, education and food instead of a long-term sustainable environment. I am not arguing the fact that a society has invaluable gains if investing in a sustainable development, but I realize the complexity in persuading people who e.g. are living with AIDS and may not have a tomorrow that the environment needs to be intact. On the other hand, a love for children and grandchildren may be enough to be motivated to act. It is either way important to realize that people have different intentions when they act with pro-environmental manners.

As also mentioned in chapter 1.4, it has been shown that habits develop if a certain behavior has rewarding consequences and is repeated in a stable context. This leads me yet another time to point out how important the “School Route” can be as an instrument when trying to establish a recycling-habit. The Ikamvalethu Recycling Project could have the same effect on adults outside of school. It will be a rewarded behavior if one collects waste and bring it to the
project which will give strong incentives to continue to do it. Regarding the illegal dumping and littering, habits of throwing waste in containers instead of on the ground cannot be set up until there are containers to throw the rubbish in.

As stated in Chapter 1.4 concerning policies, many municipalities face barriers in the form of e.g. lack of resources, lack of knowledge and lack of engagement. The Municipality has got both the knowledge and the engagement through their Community Services Manager and the driven employees at Ikamvalethu, but lack of resources is constantly restricting the municipality in their work. People are directly influenced by the Municipality since they design the pre-conditions for actions and the lack of financial resources is very troubling. Creating a perfect policy package to solve Cradock’s waste issues is not done overnight, especially not with the current financial pre-conditions. The Municipalities in South Africa must put pressure on the Government to not only set up laws and regulations, but also help the local governments to fulfill them with financial support. The Constitution imposes a duty on the state to promulgate legislation and to implement policies to ensure that the environmental rights are upheld. The state must take its responsibility to also make it possible to actually implement the policies.

First of all the Municipality must focus on the landfill site and improve and upgrade it so it will fulfill the minimum requirements and be permitted. Maybe it will be possible to found an entirely new landfill site on a new location if it is too big of a project to reconstruct and sanitize the present one. After the construction of the new landfill site focus can be on phasing out the old one.

The Municipality must also concentrate to facilitate a structure that makes it easy to act pro-environmentally. Physical availability is one important facilitating factor and therefore trash bins must be on regular intervals all over town and be emptied within a reasonable time. Information on these bins presence and importance must reach out to the citizens, and a suggestion is to start with including this in the education at schools. I believe in general that much can be achieved with a focus on education and knowledge. Educated, young people are said to be more aware of environmental issues. It could be possible to educate the children and create a social norm that states that the environment is something to appreciate and to appraise.

The Ikamvalethu Recycling Project has got much future potential, especially with the Middleburg project in mind. Ikamvalethu will hopefully engage a great number of people
regardless what their intentions are. Perhaps it does not matter on what grounds people are acting, as long as they are acting. Suppose that the Ikamvalethu becomes a success and half of all garbage in the streets disappear in people’s search for recyclable material, then the Municipality could have a lot to win if they make an effort to clean up the rest of the waste and green areas in Lingelihle. If the streets are clean and the grass is green it could prevent illegal dumping since it does not look like “everybody else” is dumping anymore. And if “everybody else” is recycling instead of dumping their rubbish in the street, the social context puts pressure on those who not recycle. Creating new habits may take time, but weaken the incentives to perform old behavioral habits while presenting benefits of new ones sets us off in the right direction. The economic benefit the Ikamvalethu Recycling Project offers might be what people need to be motivated enough to let go of their old non-recycling habits. If the project is successful even in the future, recycling habits could be established for good. Hopefully then people will not let go of this habit even if they e.g. for some reason get an increase in income or move to another town.
5. Conclusion

The Inxuba Yethemba Municipality is facing a lot of obstacles when it comes to run a sustainable waste management in Cradock. The two main challenges are regarding the landfill site and the illegal dumping occurring in the community. The landfill site is not designed to prevent environmental damage but is still in use even though it not is legally permitted to be utilized. The Municipality has not got any access control to the landfill site and some people dwell illegally on the site while searching for food and clothes. An upgrade of the landfill site has to be done in order to be sustainable and to cope with South African legislation but it is an expensive project and not possible at the moment due to lack of financial resources.

Illegal dumping is also a big challenge the Municipality is struggling with. The Municipality has got refuse removal for households once a week, something that has been shown to be too seldom. People cannot wait for the Municipality’s lorry to come and instead of keeping the full bag of waste in the yard until refuse removal day people dump the rubbish illegally in e.g. the streets or in open areas. The law enforcement regarding this is weak and it is hard to forfeit those who dump illegally. The core problem is complex. It is largely challenges in the contextual factors that plays in; both the physical environment in form of the insufficient refuse removal and lack of trash bins, and the social context where a fear for rats in the yard makes it okay to get rid of household waste illegally. But primarily it is a financial problem. The Municipality can neither afford twice the men and machinery that an increased refuse removal would require nor the necessary Peace Officer and therefore the problem remain.

The Municipality however has taken an initiative that could pose a great possibility for an improved waste management while also creating labor-opportunities. It is called the Ikamvalethu Recycling Project and even though it has many benefits for the local environment it initially aims at preventing crimes caused by unemployment. The idea of the project is simple; people from the community will be able to bring sorted waste like cardboard, plastics and paper to the project and get paid according to weight. The Ikamvalethu Recycling Project will then sell the materials to businesses in the recycling industry and the profit will be used to expand the project and employ more people. The Municipality has helped the project with premises and necessary equipment and hopefully the project will be able to sustain itself in a not too far away future only by buying and selling waste.
Cradock’s waste management has got opportunities to develop in sustainable direction if efforts are made in the right areas. Policies must be customized to steer people’s actions from more than one direction. A multiple policy could for e.g. create a personal norm and also contribute with necessary facilitators in order to achieve a desired behavior. Unfortunately the local government has limited ability to influence its own situation as long as support from national level defaults. To achieve the major change needed, financial resources are crucial. An investment in people’s personal capabilities such as knowledge is important in order to change the prevailing social norm, but waste issues must also be integrated on all levels, not only in the “bottom”. The national and provincial governments must pay attention to and raise the issue of waste and support the local governments in their work.

5.1 Suggestions on further research

The subject on waste in South Africa is an endless topic and more than once it has been hard to delimitate this study in order to prevent it from becoming hundreds of pages long. Research needs to be done on how social issues correlate with environmental issues and how it is possible to develop policy packages that take both dimensions into account. Furthermore, an in-depth research on the knowledge and attitudes regarding waste amongst householders in South Africa would be useful in order to get a bottom-to-top perspective and to customize policy packages. A study on the awareness of waste issues on national level and how environmental issues are prioritized in the Governments agendas will provide an important and complementary top-to-bottom perspective.
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Photographs

Kajsa-Lisa Jonsson (2011)
APPENDIX 1: Interview guides

Interview guide 1

Interview with Mrs. Majiba, the Community Service Manager at the Inxuba Yethemba Municipality, April 2011.

Theme 1 – Urgent environmental issues
  • What do you consider to be the most urgent environmental issues in Cradock?
    ○ Focus on waste

Theme 2 – Waste management
  • How is the municipality managing waste in Cradock?
    ○ Important: To get a description on how they do...
    ○ Important: To understand why they do....

Theme 3 – Urgent problems with waste
  • What are the most urgent problems related to waste management?
  • What is it that is not working?
  • What do you think is needed for making a change?
    ○ Dumping site:
      ▪ How is the planning of the dumping site made?
      ▪ How does the municipality deal with toxic waste?
      ▪ Prevention of leakage?
      ▪ Illegal dumping sites, a problem?
      ▪ How are problems like that managed?

Theme 4 – Recycling
  • What possibilities are there to recycle today in Cradock?
  • How is the recycling business practically working?
    ○ On whose initiative?
  • How is the municipality involved in the recycling business?
  • Is the municipality helping the recycling business?
Financially?
- With infrastructure?
- Something else?

- What are the biggest problems with the recycling sites as it is today?
- How would you like to change it?

**Theme 5 – Awareness and motivation**

- How do you perceive the people of Cradock’s awareness about the importance of recycling?
  - Is there a lack of information?
- How do you perceive the people of Cradock’s motivation about recycling their waste?
  - Businesses, companies and shops?
- How is the municipality working with motivating people to recycle?
- What do you think would be the best way to motivate the people of Cradock to recycle?

**Interview guide 2**

Interview with Mr. Jack and the recycling team at Ikamvalethu Recycling Project, April 2011.

**Theme 1 – The recycling project, basics**

- How did this project start?
  - On whose initiative?
  - How was it funded?
  - Where you, Mr. Jack, involved?
  - How many people were involved in the start-up?
  - Who owns the project today?
  - How many employees?
- Who is buying the recycled waste?
  - How did you find these buyers?
  - Do you see an increased interest in buying recycled waste?
- How was the municipality involved in the start-up?
Theme 2 – The recycling project, practice

- How is the project practically working?
- From where do you get the waste?
  - Businesses, private persons?
- What kind of materials do you recycle at this project?
- Do people come with waste to you or do you pick it up somewhere?
- What do you do with the waste after you have collected it?
  - Sorting?
  - Pressing?
- How is the selling of the recycled waste working?
  - Where are the buyers located?
  - Are the buyers coming to you to pick up the waste?
- Is the recycling business profitable after paying salaries, etc.?
  - How are you handling the profits?

Theme 3 – The future

- What do you think the recycling project’s future will be like?
  - Expanding?
  - More buyers?
- How would you want the recycling project’s future to be?
  - A food way to create jobs?

Theme 4 – Challenges

- What are the biggest problems with the recycling project today?
  - What would you like to change?
  - How is the cooperation with the municipality working?

Theme 5 – Awareness and motivation

- How do you perceive people’s awareness about the importance of recycling?
  - Is there a lack of information?
  - What is the problem? (If there is a problem)
- How do you perceive people’s motivation about recycling?
  - Why is that so?
- Do you think there are a lot of people who would like to recycle if it was easier?

- How do you think it would be possible to motivate people to recycle?
  - How to make them aware?
APPENDIX 2: Maps\textsuperscript{55}

Cradock

Point A: Cradock

\textsuperscript{55} Google Maps, 2011.
Point B: The Township Lingelihle in Cradock.