# IMPLEMENTING ENVIRONMENTAL POLICY REQUIREMENTS IN LOW-COST HOUSING IN SOUTH AFRICA: A CASE STUDY OF MSUNDUZI MUNICIPALITY

**By**

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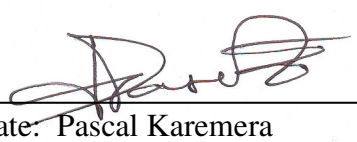
# PREFACE

The work described herein was carried out at the Centre for Environment, Agriculture and Development, University of KwaZulu-Natal, Pietermaritzburg, under the supervision of Prof. R. J. Fincham
and the co-supervision of Ms M. Lawhon

This mini-dissertation represents the authentic work of the author and has not otherwise been submitted in any form for any degree or diploma at any university. Where use has been made of the work of others it is duly acknowledged in the text.



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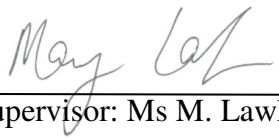

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# ABSTRACT

In 1994, the South African government set in place an ambitious plan to reduce the housing backlog and eradicate slums by 2012. The delivery of housing is subject to the South African National Environmental Management Act of 1998 that seeks to ensure sustainable resources use towards sustainable development of all activities. However, the question is whether or not reality matches the policy's vision. One concern which arises is that the high demand for housing and the speed with which delivery of low-cost housing is occurring may compromise the environment.

This study examines the challenges of implementing environmental policy requirements in low-cost-housing, using the case study of Ambleton in the Msunduzi Municipality, KwaZulu-Natal, South Africa. In attempting to assess the challenges of implementing environmental management policy requirements of the housing policy of 1994 and NEMA of 1998, four key challenges were identified: understanding environmental policy requirements, institutionalising capacity and cooperation, resolving conflict of values among stakeholders, and recognising budget constraints. The key participants in the study were officials from the provincial departments of Housing and the Department of Agriculture and Environmental Affairs, Msunduzi Municipal officials who implement the policy, including the Ward Councillor of Ambleton and the Service Provider. The methodology used to gather data was observation, in-depth interviews, and document review.

It was revealed in the study that the understanding of policy requirements amongst key stakeholders is limited and that the institutional capacity is limited in terms of skills, coordination, and physical capacity. Different priorities of stakeholders play a major role in budget and priority setting by government, which affect the implementation of environmental policy requirements. It was pointed out by municipal staff that there is a shortage of funds for meeting all environmental policy requirements. Also explored were possibilities for improving environmental policy implementation. These include making environmental policy requirements in housing and NEMA more explicit to enhance stakeholders' understanding, and enforcing compliance by environmental monitoring and

audits. There is also a need for increased capacity building as well as improving coordination for better implementation of environmental policy requirements in low-cost housing.

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **CEAD** | Centre for Environment, Agriculture and Development |
| **DAEA** | Department of Agriculture and Environment Affairs |
| **DEAT** | Department of Environment, Agriculture and Tourism |
| **DoH** | Department of Housing |
| **EA** | Environmental Assessment |
| **EIA** | Environmental Impact Assessment |
| **EMP** | Environmental Management Plan |
| **GEAR** | Growth, Employment and Redistribution |
| **IDRC** | International Development Research Council |
| **MEC** | Member of Executive Council |
| **NEMA** | National Environmental Management Act |
| **NEPA** | National Environmental Policy Act |
| **NFR** | National Housing Forum |
| **OSS** | Onsite Sewage Systems |
| **PoS** | Plan of Study |
| **RDP** | Reconstruction Development Programme |
| **ROD** | Record of Decision |
| **RSA** | Republic of South Africa |
| **SOP** | Standard Operating Procedures |
| **UN** | United Nations |
| **USA** | United States of America |
| **WCED** | World Commission on Environment and Development |

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# Chapter One: Introduction

In 1994, with the advent of the new democratic government in South Africa, the government adopted a new Housing Policy which would address the rapid provision of much needed housing (Republic of South Africa, 1994). The Housing Policy is subject to the environmental requirements of the National Environmental Management Act (NEMA) which is an overarching piece of legislation for environment management in South Africa (Republic of South Africa, 1998).

In the light of the above, the focus of this study is twofold: to identify environmental management policy requirements in Housing Policy and how NEMA impacts on the implementation of housing policy. The study seeks to assess the reality of implementing environmental policy requirements by soliciting the views of key informants from the Department of Housing (DoH) and the Department of Agriculture and Environmental Affairs (DAEA) at the Provincial level in KwaZulu-Natal as well as other key stakeholders in the Msunduzi Municipality and the service provider.

This study assesses the challenges of implementing environmental policy requirements, as found in the Housing Policy and NEMA, concerning low-cost housing. The study is conducted in South Africa, within the Province of KwaZulu-Natal, and the Msunduzi Municipality in particular. The Ambleton area is the key focus because it is one of the sites in the municipality where low-cost housing was completed about 3 years ago. The study draws lessons from the Ambleton example, with the intention to stimulate discussion on addressing environmental challenges in low-cost housing. These challenges range from, amongst others, managing soil erosion, water and sanitation requirements, and managing other solid waste.

## 1.1. The Background of the Study

The Department of Housing has a mandate, from the Constitution of South Africa (Republic of South Africa, 1996), which stipulates that everyone has a right to access adequate housing. This mandate seeks to address the housing backlog at that time – the early 1990s - which was estimated at three million people needing houses in a total population of some forty million people (Wilkinson, 1998). These three million people were housed in what was officially regarded as inadequate shelter and it is these that constitute the target population of the current Housing Policy (Republic of South Africa, 1994). The problem of housing in South Africa, especially for low-income communities, was so serious that the new government was determined to embark on the process of providing low-cost housing and eradicating slums by 2012.

Since 1994, a total of 2,148,658 house units have been built, but still the backlog is increasing and by June 2006, the backlog was estimated to be 2.4million units (Sisulu, 2006). The cause for this increase is attributed to population growth within urban areas and migration (Sisulu, 2006). In the case of the Msunduzi Municipality, there is a serious backlog of housing units. The housing backlog today in the Msunduzi Municipality is about 15, 000 housing units (Spearman, Personal Communication, 2006). According to Spearman, this figure reflects only the number of people who came forward to register for housing subsidies.

As much as there is a growing recognition of the importance of caring for the environment, there has been a growing demand for housing in South Africa especially for low-cost housing. Policy analysts suggest that there has been a problem within the housing policies themselves and that the physical condition of the houses conflict with the goals of sound quality of housing, maintaining environmental integrity, and the number of house units needed (Dewar and George, 1979). This is why in the Housing Act 107 of 1997 (Republic of South Africa, 1997), it was emphasised that housing developments should establish and maintain habitable, stable, and sustainable public and private residential environments to ensure viable households and communities. It is in

this regard that the housing policy is subject to environmental management policy requirements in order to meet the sustainable settlement standards.

However, there have been concerns that the delivery of housing has been stalled by stringent requirements of environmental legislation. In March 2006, it was reported in the *Mail and Guardian* that Lindiwe Sisulu, the Minister of Housing was challenging environmental policy requirements by blaming so-called green laws that require Environmental Impact Assessment (EIA) process for blocking the speedy housing delivery. Environmental considerations in her speech were reduced to the topic of butterfly eggs that stop development activities (McClead, 2006). Some people may interpret this as an attempt to end the stalling of EIA processes which are seen to be blocking the speedy delivery of houses. The conflict of values between housing delivery imperatives and environment management raises the serious concern of how low-cost housing development can be made sustainable with the environment well protected. The following discussion explores the idea of sustainable development to understand why it is important to consider environmental policy requirements in low-cost housing.

## 1.2. The Vision of Sustainable Development

This section provides a basis for understanding the importance of addressing the challenge of achieving a balance between development and environmental protection. The physical, economic, and social destruction that took place in the Second World War saw the emergence of programmes and policies of reconstruction and economic growth - such as the Marshall Plan - that guided the key priorities for many governments (World Commission on Environment and Development (WCED, 1987). As the years went by - in the post 1950s - there developed growing disparities between rich and poor countries. Both sets of poor and rich countries nevertheless experienced environmental impacts in the process of their reconstruction and economic growth (WCED, 1987).

Almost three decades after the Second World War, in 1972 the United Nations (UN) held a Conference on the Human Environment which sought to address the pressing challenge

of human poverty (WCED, 1987). However, little achievement was registered because around the 1980s, there was still an increasing threat of environmental degradation that became a challenge to development and, thus, environmental protection became another focus for development (Mupimpila, 2000). It is in this context that the concept of sustainable development was designed to address the challenge of development and environmental protection. The idea behind the concept is that it offers a framework of engaging in development activities in such a way that is within the ability of the biosphere to absorb the effects of human activities (WCED, 1987). This is the reason the term 'Sustainable Development' was suggested to address three interrelated concepts, namely social, economic, and environmental integrity (Mupimpila, 2000).

The WCED has defined sustainable development as "a path of progress which meets the needs and aspirations of the present generation, without compromising the ability of future generations to meet their needs" WCED (1987: xiii). Sustainable development recognises that economic growth alone cannot solve the world's problems, rather, it exacerbates them. The concept suggests that meaningful development can only take place when it is done within the environmental carrying capacity (Smith, 1993). Therefore, achieving a balance between development and environmental protection, there is a need to use tools and indicators to measure human activity.

It is in light of the above considerations that countries adopted environmental legislation to address environmental protection in the process of engaging in development. The South African government adopted the National Environmental Management Act (NEMA) 107 of 1998 (Republic of South Africa, 1998) which provides a framework for environmental management in the country. One of the requirements of NEMA is the Environmental Impact Assessment (EIA) which is a tool that gives hope to attain sustainable development. The (World Bank, 1991: 1) suggests that "Environmental assessments (EA) are to ensure that development options under consideration are environmentally sound and sustainable and that any environmental consequences are recognised early and taken into account in project design". When implementing low-cost

housing in South Africa in the context of sustainable development, the environmental policy requirements as stipulated in the Housing Policy and NEMA should be considered.

### 1.3. Problem Statement

Although housing backlog continues to pose a challenge to South Africa, it is imperative that in housing delivery environmental policy requirements need to be considered. Today, there is much criticism of the Housing Policy because of serious environmental concerns about low-cost housing. There has been criticism over housing conditions despite heavy governmental investment in construction and housing delivery. Residents in low-cost housing are frequently unsatisfied with their housing conditions and housing environment, and neighbourhoods where public housing tends to deteriorate rapidly, both socially and physically, because people do not take care of their environment (Oxman and Carmon, 1986). Many people are faced with lack of access to clean drinking water; others are in unsanitary living conditions, while there is continual exposure to air, land, and water pollution. All of these can impede the attainment of sustainable development. In addition, there are problems of soil erosion with water runoff, refuse removal, and sanitary issues. The question is 'Why do these environmental concerns continue to arise and why are low-cost housing developments not implemented in such a way as to take these issues into consideration?'

There is a need to evaluate the challenges of implementing environmental management policy requirements to analyse why good implementation does not happen the way it should. The available studies have focused on housing policy analysis from historical and socio-economic perspectives. There is scant research on implementation of environmental policy requirements in low-cost housing to establish the state of environmental conditions in housing development.

There is an assumption that the speedy delivery of low-cost housing, which is target-oriented, may infringe on the implementation of environmental requirements. This research is motivated by the assumption that the high demand for low-cost housing and the challenges associated with it have some implications on environmental protection.

Although there are many challenges that can be discussed on the environmental front, this research will focus on four key issues: the understanding of environmental policy requirements in low-cost housing and NEMA, the institutional capacity to deliver adequate housing, the challenges of budget in such housing development, and the challenges associated with the conflict of values over the environment among different stakeholders. These four challenges have been chosen because they are priorities for national and local government, and these issues have raised concern in me during field visits to low-cost housing in Msunduzi Municipality.

## 1.4. Research Aim and Objectives

The aim is to assess the challenges of implementing environmental policy requirements in low-cost housing, using the Ambleton low-cost housing in Msunduzi Municipality as the case study.

The following six objectives were drawn from the literature review and field visits to Ambleton:

- To identify the relevant environmental policy requirements in the South African Housing Policy and National Environmental Management Act (NEMA),
- To assess the institutional capacity and cooperation for implementing environmental policy requirements in low-cost housing,
- To assess the understanding of environmental policy requirements of various stakeholders,
- To assess the level of conflict of values among stakeholders in the implementation of environmental policy requirements in low-cost housing,
- To assess the budget constraints of implementing environmental policy requirements in low-cost housing,
- To provide policy recommendations and suggestions for future research.

## 1.5. Structure of the Dissertation

The dissertation comprises five chapters: In Chapter One, the general background and roadmap of the study is set out by explaining the background, problem, aim and objectives of the study, as well as the structure of the dissertation. In Chapter Two the conceptual framework is discussed and the chapter has three major components: policy implementation, environmental policy requirements in housing policy and NEMA, and the challenges of implementing environmental policy requirements in low-cost housing. In Chapter Three, the context and research methodology and the background to Msunduzi Municipality and Ambleton in particular are provided. In Chapter Four the following topics are presented: data collection and data analysis which examines the perceptions and experience of stakeholders with regards to the challenges of implementing environmental policy requirements in low-cost housing. In Chapter Five, recommendations and conclusion of the study are provided.

# Chapter Two: Literature Review

## 2.0. Introduction

This chapter covers three critical issues that are necessary to understand how environmental policy impacts on low-cost housing in South Africa. Firstly, it is important to provide a historical context that underlines the need for examining environmental issues in low-cost housing. A key component of this context of housing is the impact of the apartheid era on accentuating the shortage of housing for black people in South African cities from 1994 democratic era. The chapter also covers the definition of key terms and in this regard, that of *low-cost housing* is considered in this section.

Secondly, it is essential to analyse the national environmental management framework in South Africa as a basis for understanding its potential impact on the establishment of low-cost housing estates. In this regard the National Environmental Management Act, 107 of 1998 (Republic of South Africa, 1998) and in particular, the environmental impact assessment legislation form the main focus of the review. The definition of what is meant by the term *environment* is also considered in this section.

Thirdly, environmental issues are considered within the housing policy framework to establish if environmental issues are adequately addressed within this framework. The term *policy* is also defined in this section. In this chapter are also included some experiences from other countries and their challenges in implementing environmental policy requirements are explored. The lessons from other countries as well as South Africa help one to understand the challenges of implementing environmental policy requirements in a broader context.

Finally, a summary of key implications coming out of the literature concludes this chapter.

## 2.1. Historical Context of Low-cost Housing and Environment

In this section, the rationale behind low-cost housing in South Africa is examined from an historical perspective. It also contains an analysis of the pre-apartheid situation and post-apartheid challenges in terms of housing backlog despite government effort to deliver houses.

### 2.1.1. Historical Context

The challenge of housing essentially low-income black workers in urban areas became accentuated in South Africa around World War II (1939-1945) when South Africa started experiencing industrial growth with high demand for labour. The influx of migrant labour to cities increased and the apartheid government, a Nationalist Government which came to power in 1948, acted swiftly to restrict the movement of migrant workers (Republic of South Africa, 1950). The Group Area Act of 1950 was introduced to restrict black people from living in the major cities which were regarded as the domain of white people (Freund and Padayachee, 2002). The Land Acts in 1954 and 1955 as well as the Bantu Authorities Act of 1951 were introduced by the apartheid government to impose restriction on the location of 'non-whites' (Robinson, 2008). The implication of the Group Area Act, Land Acts, and Bantu Authorities Act was that racial groups were forced to live in different residential urban areas (Republic of South Africa, 1950). The industrial boom and the emergence of capitalism went hand in hand with the racially constructed social and political order. Freund and Padayachee (2002) indicate that the Group Area Act of 1950 encouraged the construction of segregated locations according to South Africa racial make-up.

Freund and Padayachee (2002) suggest that despite the apartheid restrictions on migrant workers since around the beginning of new industrial growth in the 1940s, the government of South Africa gave workers access to housing near their workplaces. There was a need for workers to contribute to the economic growth as Bell *et al.* (2002: 37) indicate: "economic growth with the extension of the manufacturing sector, increased job

opportunities for mostly male unskilled manual workers, skilled artisans and semi-skilled machine operatives." It is against this context that the government built hostels where migrant workers could stay while employed. These migrant workers could leave their families and relatives in homelands and come to work in cities. The period after the Second World War was characterised by a housing policy which was aligned to the employment policy (Freund and Padayachee, 2002). This meant that hostels were built near employment locations to keep up the economic growth. The result was that black people could not have proper housing within cities inspite of the black population increasing. The result was a lack of proper family housing, resulting in informal shack development, increased homelessness, poverty, and environmental degradation (Robinson, 2008). This has been the situation up to the end of Apartheid and housing was one of the pressing needs for the new democratic government.

The new democratic order in South Africa and the abolishment of apartheid drastically changed the nature of housing policy. Removal of the Group Area Act encouraged a massive influx of black people into cities (Bell *et al*., 2002). The cities were not prepared to accommodate the influx. The implications included housing shortages, spreading poverty, and environmental stress. The challenge was not avoidable and needed a legal framework and an integrated approach to address it.

Since the 1990s, the new Housing Policy (Republic of South Africa, 1994) was adopted to address the housing needs of black people. By June 2006, the housing backlog was estimated to be 2.4 million units (Sisulu, 2006). Kotsoane (2007) suggests that the government has built around 250,000 houses a year, and 2,3 million houses have been built since 1994. The same report suggests that there is currently a 2, 4 million backlog of housing units in South Africa (Kotsoane, 2007). The current housing backlog in the Msunduzi Municipality stands at more or less 15, 000 housing units according to the Municipal Manager for the Department of Housing (Spearman, Personal Communication, 2006).

### 2.1.2. What is Low-cost Housing?

This study adopts the terminology 'low-cost housing' to describe housing development that targets low-income groups which are characterised by high unemployment and poverty. Lefebvre (2004) defines 'low-cost housing' as affordable housing for poor or low-income families. Low-cost housing was advocated by the Reconstruction and Development Programme (RDP), the Growth, Employment and Redistribution strategy (GEAR), the Agenda 21 programme, the Housing White Paper of 1994, the Capital Housing Subsidy Scheme of 1995, and the Housing Act of 1997 with subsequent amendments (Chanda, 2005). In most cases, low-cost houses are uniform in appearance because of the equal subsidy allocated to construct large numbers of these houses.

**Table 2.1.** Selection Criteria for the beneficiaries of low-cost housing

| |
|---|
| - Married or financial dependents |
| - Residents (Citizen or a permanent resident) |
| - 21 years of age |
| - Monthly household income should not exceed R 3 500 |
| - Not yet benefited from government funding |
| - First time property owner |

*Source: South Africa Department of Housing. Housing Act 107 of 1997:http//www.housing.gov.za/ accessed on 16 November 2006.*

The houses are often crowded, one next to the other, because of the cost of appropriating land and the desire to provide services cost effectively (Figure 1). Low-cost housing is allocated according to criteria set by the Department of Housing and as set out in Table 2.1.

***Figure 1***: *A view of the Ambleton Reconstruction and Development (RDP) housing project (Source: R.J. Fincham)*

## 2.2. An Overview to Environment Management Policy: Implications for Delivering Housing in South Africa

Before discussing the environmental management policy in South Africa it is important to define the term 'environment'. The environmental considerations in policy, both in NEMA and housing policy are considered. Attention is then given to broader international literature to consider ways of evaluating the impact of South Africa's environmental policy on delivery of low-cost housing deliver. A set of four key factors emerge from this review. The study undertakes the examining of stakeholders' understanding of environmental policy in both NEMA and the housing policy, assessment of institutional capacity, budget constraints, and conflict of values.

### 2.2.1. What is the 'Environment'?

The term 'environment' has been defined in various ways. Some people define it from the point of view of the natural environment while others define it from social, economic,

and cultural perspectives. Yet others consider it from the perspective of the built environment. The built environment refers to a constructed or modified environment for human habitation and activity which encompasses buildings, infrastructure, and urban open space. One definition of environment suggests that the term 'environment' refers to all that is external to humans (Hardoy *et al.,* 2001). Urban environments are complex with a mix of natural elements including air, water, land, climate, flora and fauna, as well as human constructed elements (Hardoy *et al.,* 2001). In this study, the term 'environment' will be used to refer to the urban environment, with its natural and built components. Furthermore, since the study focuses on the environment of low-cost housing, the term will include water runoff, waste disposal, open space, potable water and sanitation delivery, and land transformations through such entities as roads, sewage, and pollution.

## 2.3. National Environmental Management Act (NEMA)

The government of South Africa manages the environment through regulations that are enacted to address environmental issues. The Environmental Conservation Act of 1989 and the National Environmental Management Act (NEMA) 107 of 1998 offers frameworks for the country's environmental management activities (Republic of South Africa, 1998). The former provides a basis for an integrated environmental management, while the latter requires EIA in the process of doing development work. Human activities and use of natural resources have implications on land use, water, air, and biota, and they cannot be left without a sound environmental management system in place. It has been understood that these activities, together with the generation of wastes and the use of energy, can lead to environmental degradation (Biswas and Agarwala, 1992).

The Government Gazette N. R.386 lists all activities and competent authorities identified in terms of Sections 24 and 24D of the National Environmental Management Act, 1998. The activities listed in Table 2.2. below require an environmental assessment and may not commence without environment authorisation from the competent authority and in respect of which the investigation, assessment, and communication of the potential impact of activities must follow the procedure as described in Regulations 22 to 26 of the

Environmental Impact Assessment regulations, 2006, promulgated in terms of Section 24(5) of the Act. Among these activities are the treatment of effluent, wastewater or sewage, the construction of roads, the transformation of undeveloped, vacant or derelict land for residential use, and the disposal of waste (Republic of South Africa, 2006b).

The following Government Notices in its Gazette No. 387 also emphasise the activities which may not commence without an EIA and which must follow the procedure as described in the regulations 27 to 36 of the Environmental Impact Assessment regulations, 2006, promulgated in terms of section of the Act. These regulations also speak of waste disposal, building houses, roads, or any development activity intended to use twenty hectares or more (Republic of South Africa, 2006c). The Housing Policy seeks to improve living conditions of the poor in that it stipulates that there should be minimum conditions that enhance human well-being such as health, physical environment, natural resources conducive for personal development and security (Kamp *et al.,* 2003). The environmental regulations highlighted above match the housing requirements as stipulated in the Housing Policy of 1994 as defined by Huchzermeyer (2001: 305) that the concept of 'adequate housing' encompasses:

> Viable, socially and economically integrated communities, situated in areas allowing convenient access to economic opportunities as well as health, educational and social amenities, within which all South Africa's people will have access to. A permanent residential structure and with secure tenure, ensuring privacy and providing adequate protection against the elements, and potable water, adequate sanitary facilities including waste disposal and domestic electricity supply.

The National Environmental Management Act 107 of 1998 (NEMA), Section 2, gives a framework of how development must be socially, environmentally, and economically sustainable. The following table summarises listed activities that require an environmental impact assessment.

**Table 2.2.** Listed activities in the new regulation concerning low-cost housing

| Regulations | Section and Paragraph of the Regulation | Listed Activities related to low-cost housing |
|---|---|---|
| No. R. 386 | 1 (a)<br>1 (k)<br><br>1 (o)<br>1 (s)<br>5<br><br><br>12<br><br>15<br>16 | • Electricity more than 10 megawatts<br>• Transport of sewage and water, including stormwater, pipelines<br>• Waste handling<br>• Treatment of effluent, wastewater, or sewage<br>• Removal or damaging of indigenous vegetation of more than 10 square metres within a distance of 100 metres inland<br>• Transportation or removal of indigenous vegetation of 3 hectares in a critically endangered ecosystem<br>• Construction of road wider than 4 metres<br>• Land transformation bigger than 1 hectare |
| No. R. 387 | 1 (a)<br>1 (e)<br>1 (p)<br><br>5 | • The generation of electricity output over 20 megawatts<br>• Generation or release of effluent or waste<br>• Treatment of effluent, wastewater, or sewage with an annual throughout capacity of 15000 cubic metres or more<br>• Construction of roads |

***Source:*** *Government Gazette, 21 April 2006. Listed activities and competent authorities identified in terms of sections 24 and 24D of the NEMA, 1998. No. R.386, 387*

### 2.3.1. Environmental Impact Assessment (EIA): Implications for Delivering Housing in South Africa

The implementation of a low-cost housing strategy has to fall within the framework of the laws in the country. One of these laws is the National Environmental Management Act (NEMA) of 1998. A key component of the Act is the requirement for an environmental impact assessment to be taken into account in development activities. The Department of Environmental Affairs and Tourism requires that all development activities that are listed in the environmental Act, should consider seriously "environmental considerations across the full life cycle of the activity: example, for a

project, this implies considerations of environmental issues through the pre-feasibility, feasibility, planning and design, construction, operational and decommissioning phases" (Republic of South Africa, 2004: 9). Some development activities have been termed 'scheduled', meaning they cannot go ahead without an environmental impact assessment being undertaken. Housing generally involves a change of land use, a position/principle within NEMA for which an EIA is required. Therefore, providers of low-cost housing development are compelled by the environmental law to preempt their conceptual and operational phases with EIAs.

#### 2.3.1.1. Definition and the Background of EIA

The historical background and definition of EIA is briefly explored to facilitate its following detailed analysis. The Environmental Impact Assessment has been recommended by three International UN conferences, namely the Conference of Stockholm 1972, Conference of Rio de Janeiro, known as the Earth Summit, and the Conference in Johannesburg 2002 on sustainable development (Republic of South Africa, 1998). All these conferences highlighted the need for EIAs to maintain ecological integrity while development is taking place.

However, an EIA has been defined differently from country to country and some countries call it Environmental Assessment (EA). For an example, the United Nations defines EIA as "a process that attempts to identify and predict the impacts of proposed activities on the environment and on human health and well-being" (United Nations, 1990: 6). The important words in the above definition of EIA are to identify and predict the impact of proposed activities on the environment. The process of assessing the impact is a way of appraising a policy or a programme and considering alternatives, with measures that can be taken, to protect the environment (Gilpin, 1995). An EIA is also a process of collecting, organizing, analysing, interpreting, and communicating information on the environmental impact of a proposed activity (Republic of South Africa, 2006b).

Many people define an EIA as being a tool to evaluate the effects likely to arise from a development programme which is likely to affect significantly the natural and man-made environment (Wood, 1995). The assessment of all the likely environmental effects should establish quantitative and qualitative values for selected environmental components in order to compare alternatives before a decision can be made (Jorgensen, 1991). In South Africa, an EIA is the process of examining the environmental effects of a development which seeks to balance development with caring for the environment (Republic of South Africa, 1998:6). Generally, an EIA is considered to be a planning tool during the project feasibility study to make sure that the development project is environmentally as well as economically sound and sustainable (Modac and Biswas, 1999).

EIA touches on different aspects of the environment that include identification of legislative actions relative to the biophysical, cultural, and socio-economic components of the natural environment (Canter, 1996). The process of an EIA comes before any development activity to prevent unnecessary damage. An EIA is not intended to prevent development but rather to make it sustainable (Sheate, 1996). When housing development is going to take place, an EIA investigates likely impacts by assessing things such as land change, composition of biodiversity, wetlands, and health as well as socio-economic aspects in the community. Planning of housing development should consider soil erosion, land slope, stormwater, road construction, waste disposal, and many other environmental issues. The environment needs to be considered while making these plans because of the need to maintain ecological integrity. Without this consideration life is endangered.

#### 2.3.1.2. The EIA Process in South Africa

An EIA follows different steps which have been summarised in Table 2.3 together with the person responsible for each activity. It also shows where possible, the time frame required to complete the activity.

Implementing environmental policy requirements in any given project rests with the EIA process. It is advised by Jorgensen (1991: 368) that "EIA must be an integral component

of the entire project, not something which is utilised after the design phase has been completed." The process of EIA should cross the planning, implementation, and decommissioning phases as the life-cycle of a policy, programme, or project (United Nations, 1990).

Most policies, including the Housing Policies provide general environmental principles that need attention when doing development. Not all activities are part of listed activities in NEMA and this includes low-cost housing. There are, however, many listed activities that are relevant for low-cost housing, like land use, road, water, waste, and others. In this situation, an EIA serves as a basis for detailed assessment and gives necessary information to make an informed decision.

The implementation of environmental policy requirements continues to "the level of monitoring compliance with the agreed conditions, reviewing environmental impacts in order to minimise risks and uncertainties, modifying the activity or developing mitigation measures, and learning lessons that would help future activities of the same type" (United Nations, 1990: 21). The EIA process should provide clear procedures for the process which needs to be undertaken when assessing certain activities until the decision-making occurs. This includes scoping procedures, meaningful public participation, and design of environmental management plan with clear mitigation measures (United Nations, 1990). It should also highlight the post-project analysis and procedures for monitoring, including institutional requirements to implement the plan (United Nations, 1991).

The UN Taskforce recommended the implementation of EIAs through legislation, which should provide an opportunity to promote the integration of environmental considerations into planning and decision-making processes (United Nations, 1991). Appreciating the usefulness of the EIA process, Nash and Bowars (1988: 138) maintain that "obviously, a well-designed environmental impact assessment provides valuable information for the decision-taker. However, the approach relies heavily on *ad hoc* judgement both in the selection of effects for inclusion and in weighing their relative magnitudes."

Different countries started applying EIAs at different times; some prior to the 1970s, and others afterwards. The above historical context refers to when the term EIA was coined and when it began to be used as a conventional term. At the UN Conference in Stockholm 1972, the principle of an EIA was adopted in many countries to assess and monitor the environmental changes on the planet. In South Africa, the National Environmental Policy Act (NEPA) 1969 required Environmental Impact Assessment to be considered before development activity can take place. In the National Environmental Management Act, 107 of 1998, EIA is seen as an important tool for environmental management. Hart (1992: 58) argues that "an emerging orthodoxy stresses the need to link conservation and socio-economic development for sustainable development and sustainable settlement." However, he goes on to say that "a realm of potential conflict that will be familiar to many environmental managers is that which lies at the interface between the imperatives of conservation and those of resource- poor communities."

The process of an EIA in the Republic of South Africa has five important steps consisting of basic assessment, scoping, reporting, environmental management plan, and monitoring compliance. The following sections provide details of each of these steps.

#### 2.3.1.2.1. Basic Assessment

A Basic Assessment is required if the activity applied for is in the Government Notice N. R. 386 of 2006. It can also be required by the notice of the national Minister or the Member of Executive Committee (MEC) if they have identified further activities for which environmental authorisation is required. A Basic Assessment gives a quick view of possible environmental impacts and suggests whether or not any further investigation is needed. Under the new regulation above, a decision can be made for those activities that are listed in that regulation. The main steps in doing a Basic Assessment must consider public participation, identify the potential impacts of the activity on the environment, and must show any significant issues and impacts that require further investigation. There should be a Basic Assessment report (Republic of South Africa, 2006b).

#### 2.3.1.2.2. Scoping

The scoping report is always required when the proposed activities for development are amongst those listed in the Government Notice No. R. 386, 387 of 2006. It can also be required from the notice of the Minister or MEC if they have identified any further activity which is not listed and for which they determine environmental authorisation is required. Then, the relevant authorities issue a decision based on the subregulation (3) for scoping instead of requiring the basic assessment to be done. Scoping must be done for all listed activities provided that such activities may have environmental impact. The scoping covers public participation, and identifies potential environmental impacts, considers alternatives, and prepares a report on environmental analysis which help in the decision making (Republic of South Africa, 2006c).

#### 2.3.1.2.3. Full EIA

When the above steps of Basic Assessment and scoping are deemed to be insufficient due to the magnitude of the problem, a full EIA must be performed. The Government Notice No. R. 386, 387 of 2006 recommends that in case there are complex issues within the Basic Assessment and the same issues can not be addressed in a scoping report, the full EIA is conducted to provide a thorough environmental study (Republic of South Africa, 2006c).

#### 2.3.1.2.4. The Environmental Management Plan (EMP)

This is also another important part of an EIA process which requires good planning, funds, and capacity to manage the environment. The Government Notice No. R. 386, 387 of 2006 gives detailed information on guidelines and steps of EIA and all its components. The EMP outlines what should be done in the environmental management of a project of a development activity like low-cost housing (Republic of South Africa, 2006c).

#### 2.3.1.2.5. Compliance Monitoring

The Government Notice No. R. 385 on the National Environmental Management Act, 107 of 1998, requires compliance monitoring. This can be done in the form of an environmental audit to check whether the activity undertaken has complied with the

environment regulations, and that there is no contravention that may cause harm to the environment and to human health (Republic of South Africa, 2006a).

#### 2.3.1.3. Strengths and Weakness of the EIA process

The strength of the EIA process is its value in determining the benefits which people, community, country, or the world receives in adhering to it. The EIA provides hope for caring for the environment which has a positive impact on the health of species for today and for the future generations (Gilpin, 1995). For example, through good use of land and water, more open space is available, and problems of soil erosion, waste management, and stormwater, are addressed. It is a tool that offers hope for sustainable development in that it allows development activities to be done while at the same time saving natural resources.

According to Appiah (2005), EIA has fallen short with the lack of an effective model to predict impacts and consequences of changes in the ecosystem. The weaknesses of EIA range from its limitations to predict all environmental impacts because of lack of skills, resources, and inability to predict natural phenomenon (Wood, 1995). The public which participates does not have capacity to comprehend the environment, and their contribution is limited.

Though the EIA process has these weaknesses, its strengths outweigh the weaknesses and therefore, it is still the best way that has been designed to try and achieve the balance between development and the environment. Fuggle and Rabie (1992: 101) argue that "the ideal therefore is to achieve economic growth upon an environmental foundation which can sustain such growth, in short, to strive towards sustainable development." The bottom line of the EIA process is to ensure that today's generation is well sustained but also that the next generation is considered.

**Table 2.3**. The EIA process, responsible person, and timeframe

| Step | Action | Who | Time Frame |
|---|---|---|---|
| 1 | Submit application form and relevant prescribed documents to the authority | Applicant/ Consultant | Not prescribed |
| 2 | After submission of application form, conduct basic public participation and compile Scoping Report & Plan of Study for EIA | Consultant | Not prescribed |
| 3 | Submit Scoping Report and plan of Study for EIA to relevant authority | Consultant | Not prescribed |
| 4(a) | Consider Scoping Report and notify applicant of required amendments (or 4(b) | Authority | 30 days from receipt |
| 4(b) | Consider and accept Scoping Report and PoS for EIA (or revised scoping report/PoS if 4(a) is relevant | Authority | 30 days from receipt of accepted reports |
| 5 | Conduct EIA in line with approved PoS and compile EIA Report and draft EMP. Submit reports to authority for consideration | Applicant/ Consultant | Not prescribed |
| 6 | Consideration of reports follow and either accept it (see 7(a) or refer parts of it for specialist review (see 7(b) and (c) - notify applicant of outcome | Authority | 60 days from receipt |
| 7(a) | Issue decision with conditions and notification of appeal provisions or 7(b) | Authority | 45 days from acceptance notice |
| 7(b) | Specialists conduct reviews of reports and submit review reports to authority | Specialist | Not specified |
| 7(c) | If 7(b) applies, issue decision with conditions and notification of appeal provisions | Authority | Within 45 days of receipt of specialist reviews |
| 8 | Notify interested and affected parties of decision and appeal provisions | Applicant/ Consultant | Within 5 days of decision |
| 9 | If applicable, consider and respond to appeals received | Minister/ MEC | Up to 90 days |

***Source.*** *Government Notice No. R. 386, 387 of 2006*

### 2.3.1.4. EIA and Sustainable Development

EIA offers hope that, if thoroughly applied in development activities, it can promote sustainable development. Sustainability is achieved when development activities which could pose challenges to the environment can be undertaken with sound management of natural resources (Ryding, 1992). With the application of EIA, there is hope to ensure

that development activities cannot endanger the natural systems that support life on earth such as the atmosphere, the waters, the soils, and the living beings (WCED, 1987).

### 2.3.1.5. Legislation and Policy

Environmental management in South Africa revolves around the country's need to look after its own environment. Environmental management of the country falls within the international environmental management framework. Within the general Environmental Conservation Act, the government adopted NEMA which was promulgated in the Government Notices No. 385 (Republic of South Africa, 2006a). All different environmental regulations are important. However, the best strategy for ensuring a sound environmental management framework upon which development may proceed is determined by the environmental policy and administrative bodies must be subject to it (Fuggle and Rabie, 1992). The following are the main international and national legislations of environmental management.

**Table 2.4**. Summary of legislation related to housing and environment

| Number | Legal Framework | Note |
|---|---|---|
| Bill of Rights | Rights of freedom of residence in the 1996 constitution | The right to reside in South Africa is confirmed to citizens under the new Bill of Rights: section 21 of 1996. |
| | Right to a healthy environment | Section 29: Every person has the right to an environment which is not detrimental to health or well-being. |
| Constitution | Everyone has a right to have access to adequate housing | Section 26. The State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right. |
| Environmental Conservation Act 73 of 1989 | Make provision for protection and control of the environment | This Act governs a number of environmental matters on environment in South Africa. |
| Environmental Conservation Act 73 of 1989 | Integrated Environmental Management | This Act provides Integrated Environmental Management (IEM). |
| UN Conference in Stockholm 1972 | Environmental Impact Assessment (1973) | The EIA was adopted in many countries to assess and monitor the environmental changes on the planet. |
| National Environmental Management Act, 107 of 1998 | National Environmental Management Act | Under NEMA, EIA is seen as an important tool for environmental management. |

***Source**: Extracted from Republic of South Africa, 1998: Department of Environmental Affairs and Tourism. National Environmental Management Act, 1998. Pretoria, Government Printer and Republic of South Africa, 1994: Housing Policy. Pretoria, Government Printer.*

## 2.4. The Environmental Considerations in Housing Policy

### 2.4.1. What is Meant by the Term 'Policy'?

The definition of 'policy' encompasses the whole cycle of policy from its inception, implementation, evaluation, and redesign. 'Policy' can be defined in different ways from individual to individual or organizations. It can be a statement with intent of outcome or an idea which flows through all the ways the government organizes itself. Policy is not simply a label, but is part of the process which it describes (Colebatch, 2002). From the conceptual phase, policy can be regarded as a purposive course of actions (Hill and Hupe, 2002). Policy is a continuing process of social action and interaction in the pursuit of goals (Colebatch, 2002). In the case of this study, environmental and housing policies are pursuing clear goals of sustainable settlement, improving people's lives, and caring for the environment. The sequences of a policy process include the identification of a problem, assessing alternative approaches, exploring strengths and weaknesses, decision-making, implementation, and evaluation. The characteristics of a policy rest on three assumptions: purpose, hierarchy, and coherence. It is purposive because a policy seeks to accomplish a certain purpose and is hierarchical because it follows the government hierarchy. Policy is also coherent in that it holds together in a White Paper, law, or Act, which implies order, authority, and expertise (Colebatch, 2002).

Policy also implies budget because it involves an action which requires government authority to commit resources in support of positive value (Considine, 1994). Policies can also be regarded as laws, decisions, options, projects, programmes or other terms for alternatives (Nagel, 1994). Policies are laws because they are decided by the legislature and government, and most of the time published in the government Gazette.

### 2.4.2. Housing Policy in South Africa

In this section, housing policy in South Africa from 1994 and subsequent amendments are discussed. Environmental considerations in the South African housing policy with special attention to low-cost housing are examined. The implementation of low-cost housing should take place in the context of the environmental management regulations.

The Housing Policy document has provisions on the environment indicating the environmental considerations in housing development. However, environmental policy requirements can be explicit or implicit as Appiah (2005: 13) has indicated that "the practice of EIA in any country and at any time is implicitly or explicitly structured".

The window of opportunity that was opened by the 1994 new political dispensation gave rise to designing the new Housing Policy. This was followed by amendments in 1996, 1999, and 2001. Because of the magnitude and complexity of the housing backlog, different approaches were adopted to housing delivery. Among those approaches were included housing subsidy, in-situ, social housing policy, and the government created national body which deals with private institutions and individual developers within the housing industry (Republic of South Africa, 2001)

Though there are many housing policies, this study will focus on low-cost housing policy with housing subsidy and its subsequent amendments.

a) Housing White Paper 1994
b) Housing Act Amendments 1996, 1999, 2001

To study the challenges of implementing environmental policy requirements in low-cost housing, it is useful to identify what the Housing Policy says about the environment. It would help to explore the understanding of policy requirements by stakeholders who are involved in implementing it. The proper implementation of low-cost housing and caring for the environment require cooperation between government departments. As much as environmental management requires the efforts of everybody, it is imperative that all stakeholders commit themselves to conserving the environment in the process of housing development (Neuman, 1986).

The following discussion identifies key environmental provisions within the Housing Policy and draws on experiences from other countries.

### 2.4.3. Identification of Key Environmental Requirements in the Housing Policy

In order to assess the challenges of implementing environmental policy requirements in low-cost housing delivery, it is important to identify environmental requirements within the policy and other housing legislation since 1994. These are summarised in the following table.

**Table 2.5.** Environmental Requirements in Housing Policy

| Number | Environmental Policy Requirements in the Housing Policy |
|---|---|
| 1 | Land development and land use control |
| 2 | Water management and stormwater drainage systems |
| 3 | Solid waste |
| 4 | Energy |
| 5 | Sanitation |
| 6 | Roads |
| 7 | Transport |
| 8 | Staircases |
| 9 | Fire equipment |
| 10 | Social Environment |

Among these environmental considerations, this study will cover the first five issues, because they are all key concerns in the Housing Policy. Though all ten identified environmental issues are important, the first five have been regarded as more important in terms of direct implications on low-cost housing. Another reason for choosing five is because they form 50% of the total items that have been identified in the housing policy which can give a fair understanding of environmental management policy requirements in low-cost housing development.

#### 2.4.3.1. Land Development and Land Use Control

The Housing Policy and its amendments stipulate that any development requires land development and land use control. It sets objectives for land development and land use control, though also recognises the complexity of land administration. The chief objective among land management is that which seeks sustainability of land development and adequate land use control systems. This includes considerations of land tenure and

registration systems. The importance of land management is shown in many Housing Policies where planning and management of land use and development is found in the Housing Act 1997, Housing Amendment Act 28 of 1999, Housing Amendment Act 60 of 1999, and Housing Amendments Act 4 of 2001 (Republic of South Africa, 2001).

Land management helps to control the sprawl of urban settlement not only to address effective land-use, but also to reduce the problem of roads, water and electricity supplies, and other important service deliveries. Land management provides better allocation of activities, allowing space for housing, agriculture, open space, industrial areas (Hart, 1992). Land-use and land management is a critical environmental issue that needs to be addressed through geotechnical studies. It becomes even more important in urban contexts where proper land management can deal with informal slums through the identification, assembly, and development of land for low-cost housing development (Hart, 1992). There are best practices in a Brazilian model of an integrated approach to city management which gives hope of achieving effective land management that allows transportation, open space, sewage disposal, and waste recycling. Planned urban growth includes not only the physical infrastructure but also environmental preservation (Oberholzer *et al.,* 1994).

#### 2.4.3.2 Water Management and Stormwater Drainage Systems

The Housing Policy requires that there are adequate water management systems, preferably catchments-based (Republic of South Africa, 1994). The policy recommends meeting the environmental standards on water for domestic supply and water quality. It also refers to the Water Act (Act 54 of 1956) on sewerage effluent quality for discharge into water courses (Republic of South Africa, 1994). Municipalities are required by the Housing Act 1997, Housing Amendment Act 28 of 1999, Housing Amendment Act 60 of 1999, and the Housing Amendments Act 4 of 2001, to provide water ”in a manner which is economically efficient”. The Housing Act 1997, and the Housing Amendment Act 28 of 1999, Housing Amendment Act 60 of 1999, Housing Amendments Act 4 of 2001,

highlight the need for stormwater drainage as a means to prevent land erosion, and protect buildings (Republic of South Africa, 2001).

Water resources are very important in human life. Jorgensen (1991: 177) argues that "water management is closely linked to waste-water management. Insufficient waste-water management can have several negative consequences for the water supply." Stormwater management in housing delivery is an important environmental issue which needs to be integrated. Stormwater can become even more serious in urban areas because of road and other paved areas which facilitate the flow of water (Ryding, 1992). Some of the problems related to the lack of proper water management system are that it can cause an accumulation of pollution and floods once the water flow is not managed properly.

#### 2.4.3.3 Solid Waste

The Housing Policy prescribes management of waste, including solid waste, for keeping society healthy. This includes conservation for the same purpose of seeking a better quality of life. The Housing Policy refers to Health Act (Act 63 of 1977) for maintenance of public health, and the Environment and Conservation Act (Act 73 of 1989) for solid waste management (Republic of South Africa, 1994). Solid waste is one of the most important environmental issues which needs to be addressed in low-cost housing development (Ryding, 1992).

#### 2.4.3.4 Energy

The policy states that attention should be paid to "thermal efficient qualities in housing delivery by providing basic insulation, including the installation of ceilings" (Republic of South Africa, 1994). The degree of energy production by people may have an adverse impact on the environment depending on how it is managed. The disposal of energy wastes on the other hand, is the most critical factor which needs to be taken care of because it has an impact on the environment and human health (Ryding, 1992). Energy is used in heating homes, supplying power for domestic services, in travelling, and is used as coal, fuel, gas, and oil.

Domestic energy to housing developments is also mentioned in the policy. The Housing Policy makes reference to this activity to the Department of Mineral and Energy Affairs (Republic of South Africa, 1994). The Housing Act 1997, Housing Amendment Act 28 of 1999, Housing Amendment Act 60 of 1999, and the Housing Amendments Act 4 of 2001 require that municipalities provide electricity (Republic of South Africa, 2001).

#### 2.4.3.5 Sanitation

The South African housing policy mentions the issue of sanitation as an important environmental component of housing development. The Housing Act of 1997, Housing Amendment Act 28 of 1999, Housing Amendment Act 60 of 1999, and the Housing Amendments Act 4 of 2001 require municipalities to provide sanitation in housing delivery (Republic of South Africa, 2001). Human settlement considers housing and sanitation together for habitable place. Sanitation is an important aspect of low-cost housing and should be given attention in order to deal with pollution and diseases.

After the above literature review and the understanding of the environmental policy requirements in NEMA and Housing Policy, the research has revealed four key challenges of implementing environmental policy requirements. The next section examines these identified four key challenges, but it is recognised that there are many challenges and these are just the selected key ones. These challenges emerge from the preceding review regarding implementing environmental policy requirements in the Housing Policy and NEMA.

## 2.5. Challenges of Implementing Environmental Policy Requirements in South Africa and Experiences of Other Countries

There is a need to identify existing challenges of implementing environmental policy requirements of the Housing Policy and NEMA. There is no intention to appraise Housing Policy or NEMA by evaluating whether they are good policies or not, rather the purpose is to assess the challenges of implementing them.

The four key challenges have been identified and detailed in this study. These include, understanding policy, institutional capacity, conflict of values among different stakeholders, and budget constraints.

### 2.5.1. Understanding of Environmental Policy Requirements

The challenge of understanding both Housing Policy requirements and NEMA has been noted in the literature. For example, there was criticism such as that reported in the *Financial Mail*, where people were asking for policy change or reformulation (Financial Mail, 1995: 67). There have been ambiguities and errors in the housing policy which are regarded as challenges (Rust, 2003), and there have been observations that the Housing Policy is not explicit and not systematically integrated into a coherent strategy of urban restructuring (Wilkinson, 1998). If the Housing Policy is not an integral part of urban planning, and if it is not explicit, this is a challenge for its implementation. It is unclear why people still view the environment as "a politically contested issue instead of looking at it as a social and economic issue" (Kohl, 2000: 21). This indicates that the understanding of environmental policy requirements is limited.

It is noticeable that stakeholders have been unclear on what exactly is required regarding environmental considerations. The statement of the Minister of Housing Department quoted earlier indicates that there is a conflict between housing development and environmental care.

#### 2.5.1.1. Institutional Capacity and Cooperation

The second challenge is the question of institutional capacity and cooperation to implement the environmental policy requirements in low-cost housing. It has been discovered in the literature review that the task of urban housing has changed and grown so rapidly, and the needs are so urgent, that systems have not been able to keep pace with demand and performance (Hawley, 1984). Institutional capacity may be subdivided into

three aspects: skills, physical capacity, which implies the number of people to do the job, and cooperation.

Firstly, the challenge of institutional capacity lies in the limited skills of stakeholders to implement environmental policy requirements. Appiah (2005) argues that people are limited in their ability to predict the behaviour of dynamic ecosystems and EIA procedures are limited in predicting cumulative impact. Speaking about energy use and conservation, Duchin and Glenn (1994: 91) argue that "there are both technical and institutional barriers that will have to be overcome in order for these measures to be implemented in developing countries". The USA experience regarding institutional capacity is described by Halvorsen and Hugh (2006:395) thus: "local regulators with responsibility for ensuring that onsite sewage systems (OSSs) do not contaminate supplies of groundwater or surface bodies of water are finding that they do not have the capacity to ensure that the systems are operating as designed."

In some policies including Environment Policy, there is a general lack of political motivation and institutional expertise to implement the requirements of these policies (Wei, 2006). The experience of China shows the shortcomings in the implementation of environment considerations as Wei (2006: 315) points out that in "China environmental management has focused on the mitigation of industrial pollution, [and] environmental linkages across life cycles of industrial products and across geographic regions tend to be ignored." The institutional capacity was challenged in China by limited public participation because the Chinese environmental management has been operated within an authoritarian administrative (Wei, 2006). On the contrary, Mali has made significant progress in practical integration of local, regional, and national interests in land management (Guindo and Campen, 1994).

Secondly, the institutional capacity challenge can also be reflected in a shortage in numbers of staff designated to implement the policy requirements. According to Wasilewski, the experience of Poland is that urban housing and land management faces the challenge of decentralizing and delegating tasks to lower administrative units

operating with severe human resource shortage (Wasilewski, 2004). This shortage of staff becomes even more difficult in developing countries because of limited resources. At the local government level, there is no organizational machinery to enforce compliance with environment law/legislations (Hart, 1992). There is also a challenge of physical capacity in most of the municipalities in South Africa where there is a research vacuum (Hart, 1992). The shortage of physical capacity is a challenge for the effective implementation of environment policy requirements and as a result, the living environment in low-cost housing has been posing challenges to the health of ecosystems and humans.

Thirdly, the challenge of institutional capacity can be reflected in the ability of stakeholders engaging in positive cooperation in the process of implementing environmental policy requirements. The policy makers of the Republic of South Africa in 1994 maintained that:

> The current institutional arrangement for the provision of water and sanitation has resulted in the lack of provision of these services in many instances. There is fragmented responsibility at national level, an absence of authorities at provincial level and varying degrees of functionality at local governmental level (Republic of South Africa, 1994).

According to Ribeiro (1999), in Mozambique there is a low level of technical capacity amongst the human resource base. A fundamental cause of these problems is lack of autonomy and failure to integrate water companies in local government. The institutional capacity often remains a challenge because of its fragmented institutional structure, with little detailed procedures, weak cooperation among stakeholders, and lack of effective enforcement (Sheate, 2005).

Institutional capacity is a real challenge which needs a multidisciplinary approach. As Schwella and Muller (1992: 5) suggest, there is a need for "participative decision-making structure and collective financing." In Canada, the implementation is seen as administrative and the objective of achieving quality of the environment is realised in the administration context. The secret of achieving positive implementation of environmental legislation is through strategies of government forging strong cooperation by all means in order to meet policy targets (Hessing and Howlett, 1997)

#### 2.5.1.2. Conflict of Values Among Stakeholders

The conflict of values can be seen in the budget setting and priorities of different stakeholders regarding growth and the environment. In some cases, the EIA can be under funded because it is given little value. Beneficiaries may need a conducive environment around their houses which the budget does not make provision for, whilst housing delivered to the poor must reflect far-reaching changes in how and where low-income South Africans live and work (Joffe, 2006). There can also be personal preferences among stakeholders over environmental values themselves; they also consist of external-to-house components. The housing is "a composite of items that include neighborhood characteristics and access to local amenities" and different people attach values to them in different ways (Shlay 1985:593).

Different values and beliefs with the behaviours formed out of them may contribute to the challenge of implementing environment policy requirements. Hart (1992: 60) maintains that "sections of our society accord very different levels of environmental and political priority to the environments occupied by poor and disadvantaged people." The conflict of values can be seen in the budget setting and priorities of different stakeholders. For example, the environmental impact assessment has struggled with the role of the public and the potential for reconciling conflict of values (Appiah, 2005). The society has a mixture of beliefs and some people are conscious about caring for the environment while others not. Ribeiro (1999: 90) states that in Mozambique "a consequence is that rural people are unable to develop economically and environmental degradation occurs in certain areas because the local people lack the interest or the institutional mechanisms to protect their natural resource base." Concerning land management in Mali, Guindo and Campen (1994: 59) assert that in "respect for 'modern' management, decisions cannot be generated without creating tensions in the traditional system of close neighborhood relations and hospitality."

### 2.5.1.3. Budget Constraints

The budget aspect has been a challenge for implementing proper housing and taking care of the surrounding environment in low-cost settlements because of limited funding for housing and because it was ready to finance only limited activities in housing delivery. The Housing Policy is criticised for its inadequate funding which makes it difficult to implement it (Rust and Rubenstein, 1996).

Implementation of a policy requires a budget to foster implementation of activities. The allocation of budget depends on the availability of funds in the government coffers. The economic model the country chooses to follow may have a significant implication on the implementation of environmental policy requirements. The Mexican and South African experience tends to be similar because of a neoliberal economic policy. Although this model is good, there are challenges in poor communities because of lack of financial capacity to access healthy living environment. Aldrich and Ranvinder (1995:150) indicate that "policies of macroeconomic restructuring implemented in Mexico since the early 1980s have had a major impact on the urban poor. Prices of water, energy, and housing have increased." The same challenge has happened in China where rapid economic growth and fast industrialization brought about the problems of environmental management especially during the economic reforms (Wei, 2006).

The budget constraint again is aggravated when the national government gives the mandate to under-resourced local government to implement and manage environmental policy requirements. As result, there is a problem of poor services delivery which makes people prefer informal settlements.

Figure 2 demonstrates the problem of waste disposal in Ambleton community

***Figure 2****: Former Ambleton Farmhouse, which became part of the low-cost housing development. The lack of available waste management capabilities in the development is clearly evident (Source: R.J. Fincham)*

## 2.6. Summary

The historical context of low-cost housing delivery and the impact that the apartheid government had on it has been discussed. The restrictions on housing development for blacks in what were considered 'white' cities provided an insatiable demand for low-cost housing in the post 1994 period. The study also assessed the Environmental Management policy of South Africa to understand the basis of environmental considerations in low-cost housing in order to achieve sustainable settlements. The study, furthermore, considered the South African Housing Policy to understand how environment issues are integrated into the policy statement.

It is against this background that there is a realisation of the urgency of housing delivery and at the same time a dire need to respect environmental policy requirements in the process of housing delivery. It is critical to look at environmental management as a long-

term consideration, so as to minimize negative impacts that could emanate from overlooking short-term environmental policy requirements in low-cost housing. In addressing the environmental issues in low-cost housing, the implication could be reduction of land misuse, pollution, and environmental health related problems.

# Chapter Three: Research Methodology

## 3.0. Introduction

The objective of this chapter is to provide firstly, a description of the study area and secondly, the research methodology. The study was conducted in the Msunduzi Municipality at Ambleton, Pietermaritzburg, KwaZulu-Natal, Ward 18, where low-cost houses have been built. The challenges of implementing environmental management policy requirements are assessed using Ambleton as a case study. This study formed part of a larger research project, known as *Urban Ecosystems and Human Health,* and was conducted jointly by the Centre for Environment, Agriculture and Development (CEAD) and the Discipline of Geography at the University of KwaZulu-Natal and Queens University, Kingston, Ontario, Canada. The study site provided many advantages and these are set out initially in the above project. Furthermore, in the methodology section, emphasis is placed on the instruments used to collect data, and the ways in which the data were analysed. The limitation of the study and challenges encountered during the process of undertaking it are also discussed.

## 3.1. The Context of the Study

### 3.1.1. The Msunduzi Municipality

The Msunduzi Municipality is one of South Africa's local governments located in KwaZulu-Natal Province. It is estimated that the Msunduzi Municipality serves a population of over half a million people in Pietermaritzburg (Morkel, 2005). It is also stated that the Msunduzi Municipality covers 649 km square and has a population of 523, 470 people (Morkel, 2005). Figure 3 shows the location of the research area which is in South Africa, KwaZulu-Natal province, Msunduzi Municipality, the Ambleton Area.

In the context of Housing Policy in South Africa, the provision of low-cost housing is the municipality's responsibility. According to the mandate of all South African Municipalities, Housing Act 107 of 1997, Parts 2, 3, and 4 of the Act stipulate that: Municipalities must facilitate the delivery of social housing. The social housing whether upgrading, in-situ, or RDP must fall within the framework of local government integrated development strategy to ensure that housing for low income people takes place in an environment favorable to sustainable development. The social housing policy suggests that municipalities are best positioned for "creating an enabling environment for housing development in its area of jurisdiction" (Republic of South Africa, 1997:17).

The Msunduzi Municipality, as the implementing agent, has an obligation to integrate two policies which this research is dealing with: one of housing policy and the other of environmental policy. The research will use Ambleton as a case study to assess the challenges of implementing environmental policy requirements. The Msunduzi Municipality has been providing low-cost housing for its inhabitants in different areas such as Cinderella Park, Peace Valley, Ash Road, Ambleton, and Wards 8, 14, and 17. Whether the low-cost housing was *in situ* upgrading, RDP houses, or formal or informal housing, the municipality has an obligation to comply with the environmental policy requirements.

Environmental considerations began to feature in political discourse in the Msunduzi Municipality in the middle of an increase in industrialisation and urbanisation in 1984 (Letter to the Editor, Natal Witness, 1984: 1). The Mayor of Pietermaritzburg at that time, Pamela Reid, challenged industrial development by calling for an environmental impact study to be conducted along the entire length of the proposed development activity such as low-cost housing development (Letter to the Editor, Natal Witness, 1984: 1). She came to this historical decision of challenging the vision of economic growth which was ignoring the environment, partly because people had begun to understand the benefits associated with a healthy environment. This demonstrates that care for the environment and the concern over the quality of life for future generations was rapidly becoming a major consideration for the Msunduzi Municipality. People began calling attention to the

idea that it was vital to the future survival of humankind that the public begin to take an active interest in the environment. After the above brief description of the geographical location of Msunduzi Municipality and its housing and environmental concerns, the following section describes the Ambleton area.

### 3.1.2. Ambleton

The case study of this research is at the Farm Ambleton known as ERF 720 of the Msunduzi Municipality in the Umgungundlovu District Council, KwaZulu-Natal where the low-cost housing development commenced in 2002. Ambleton is located on the R56 road between Pietermaritzburg and Thornville/Richmond about eleven kilometres south of Pietermaritzburg (UDIDI, 2002a).

In 1990, the administration of KwaZulu-Natal Province approved the plan to develop this area of Ambleton as a low-income residential area of 1200 ha. In 1991, an integrated plan was developed which prepared a structural plan for the urgent need for housing 207 families displaced by war between political parties. These refugees came from Howick and Richmond. This was termed first phase housing (Republic of South Africa, 1991).

Phase 2 began when the Provincial Administration in the early 1990s acquired land to develop low-income housing. The scoping report stated that in November 2001, the Department of Housing approved the development of Ambleton as part of the Pietermaritzburg slums clearance programme (UDIDI, 2002a). In 2002, the UDIDI consultants were appointed to do a scoping report for a proposal to build 2000 more house units in Ambleton (UDIDI, 2002b). The letter from the DAEA dated 29 April 2003 was issued giving authorisation to the Housing Department to develop the area. This approval was conditional on the Housing Department designing an Environmental Management Plan (EMP), a stormwater management plan, and on condition that they protect the environment (Republic of South Africa, 2003a).

The following map shows the study area which covers where we did our research in Cinderella Park, Ambleton, Peace Valley, Ash Road and Wards 8, 14, and 17. These are areas where RDP, *in situ* upgrade, informal, and traditional housing have been built.

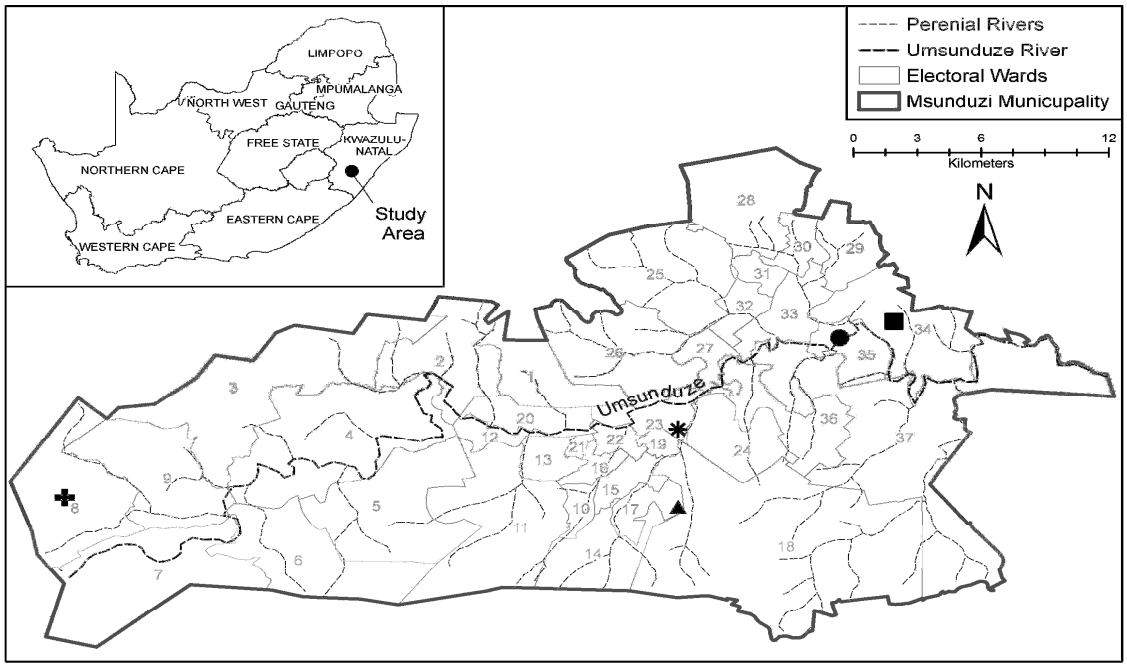


***Figure 3**: Map of Msunduzi Municipality the Study Area (Source: Modified from documentation from Prof Trevor Hill, Discipline of Geography, University of KwaZulu-Natal, Pietermaritzburg)*

## 3.2. Research Methodology

The aim of this study was to assess the challenges of implementing the environmental policy requirements in low-cost housing. The choice of the research design for this study was largely qualitative. To gather the information, three important methods were employed: observation, key Informants, and document review.

### 3.2.1. Observation and Contextualizing the Research

Observation of the situation was beneficial to the researcher both to gather information from Ambleton housing development and to more fully appreciate the nature of the

environment in which RDP housing is built. The focus was on observing the physical environment of the area which includes the natural landscape, low-cost houses, and their immediate infrastructure. The purpose of observation in this study is to help match research findings from interviews and reality at the ground.

Participation in the project 'Urban Ecosystem and Human Health in South Africa', run jointly from the Centre for Environment, Agriculture and Development (CEAD) and the Discipline of Geography at the University of KwaZulu-Natal, Pietermaritzburg, was extremely beneficial for conducting this project. The benefits of being in this group context were group discussions, incorporation of this work in a module of the coursework Master of Environment and Development (MEnvDev) in CEAD, literature review, field visits, and presentation of work at a conference at Queens University, in Kingston, Ontario, Canada. The field visits that took place with academics visiting from Queens University and those related to the coursework Masters programme provided additional opportunities to observe and discuss issues pertinent to this study. These include soil erosion, houses, sanitation, vegetation, waste management, roads, and general landscape. There have been also researches and presentations on several topics in the context of the project. It was against this background that the interviews with key informants took place and the researcher already had a first hand situation of the area under study.

### 3.2.2. Key Informants

The study instrument used to gather the data was an interview schedule presented to key informants from provincial and municipal government, as well as the service provider. These key informants were selected because of their potential to provide necessary information that is relevant to this study (Bouma, 1996). The schedule was used to solicit the views and perceptions of these key informants regarding an understanding of environmental policy requirements, institutional capacity, budget constraints, and the impact of conflict of values amongst stakeholders (See Appendix 1).

This research is based on the data solicited from the following: provincial and local government officials who are involved in implementing environmental policy in low-cost housing in the Msunduzi Municipality, the service provider, and the Councillor who has been involved in Ambleton's low-cost housing development. Seven respondents were chosen as they are placed in key positions that allow them to interpret and implement environmental policy in low-cost housing. Busha and Harter (1980: 56) argue that in the process of sampling, the **"**population can be very large or very small, depending upon the size of the group of persons or objects about which the researcher plans to make inferences". Based on this assertion, I argue that the selected seven key government officials can provide adequate information for this study.

The research has used a purposive and judgemental sampling method. Bebbie and Mouton (2004) argue that a purposive and judgemental sampling method may appropriately look at the nature of the research and its aims. This sampling method also helps the researcher to use his/her judgment. Saunders *et al.* (2000: 174) advises researchers to "select cases that will best enable him/her to answer the research question (s) and meet his/her objectives". Key informants were selected according to their job positions and the quality of information they might have which are considered useful as De Vaus (1986:68) argues that "purposive sampling is a form of non-probability sampling where cases are judged as typical of some category of cases of interests to the researcher." The research will not use the names of respondents to respect their wish to remain anonymous. The research used seven interviews for key informants from the following departments:

- The Provincial Department of Agriculture and Environmental Affairs (DAEA), (**Respondent 1**)
- The Provincial Department of Housing, (**Respondent 2**)
- The Local Government Manager for Conservation and Environment, (**Respondent 3**)
- The Local Government Manager for the Housing Directorate, (**Respondent 4**)
- The Environmental Health Officer, (**Respondent 5**)
- The Chairperson of Councillors, (**Respondent 6**)

- The Service provider (**Respondent 7**)

The interviews with department officials were held in Pietermaritzburg where six respondents worked and in New Germany, Pinetown where one respondent lives. All interviews were conducted in respondents' offices between 31 October and 19 December 2006.

### 3.2.3. The Fieldwork Experience

The preliminary list of key informants was established through consultation with my supervisors Prof. Fincham and Ms Lawhon. I then made appointments through phone calls and visited all respondents in their offices at the time they had allocated to me. All interviews were recorded using a tape recorder and respondents chose how they wanted to be referenced. This recording strategy is advised by Babbie (1990) indicating that recording the respondent's answers is very important as the researcher cannot remember everything that was said by the respondents. The recording of the voices and original words from the participant is helpful as it makes the discussions 'live', as if it was done the day of data collection. The tape recorder is useful because the researcher is able to rewind the recorder and hear again what was discussed and be able to extract useful information (Pamela and Settle, 1995).

All respondents were assured that confidentiality would be maintained. It was done to comply with the research ethics whereby the study had to seek respondents' informed consent. The most important thing is to accept the way they would like to be referenced when analysing and writing up the dissertation (Loeber and Kammen, 1995). The study obtained the consent by phoning and booking appointments and making sure that respondents agreed to participate. Therefore, the respondents committed themselves to participate in this study but maintained the right to withdraw at any time.

The study used in-depth interviews which allowed for good understanding of the subject under study. In-depth interviews provided the advantage of following up the discussion, finding out the motives and feelings of respondents in the course of the interview which

cannot be obtained in a questionnaire approach (Bell, 1999). The interviews lasted between 45 minutes and 1h 30 minutes depending on the extent to which the respondent wanted to discuss the operational system of his/her organization and the challenges of implementing environmental policy requirements in low-cost housing. This length of time was enough for an interview schedule with each individual as recommended by Blancher and Durrheim (1995) who state that this is a reasonable time to obtain a clear understanding of what is being discussed.

These in-depth interviews gave respondents a chance to formulate their own answers as advised by Salant and Dillman (1994: 81), who state that "open- ended questions can be used when the main goal is to give survey respondents a chance to state strong opinions, vent frustrations, or let researchers know what has been overlooked". The advantage of in-depth interviews is that they help the interviewer to have personal contact with the respondents, which helps the interviewer to watch or observe how respondents react to questions asked. This is helpful because the interviewer can immediately clarify or explain issues through various follow-up questions**.** After each interview, the interview was written down immediately from the tape recorder, while I could still remember my discussion with the respondent.

### 3.2.4. Secondary Information

The research also used secondary sources including policy documents, books, journals, articles, dissertations, websites, and unpublished sources. Stewart and Kamins (1993) mention that these secondary sources of information are important for learning about what has been said on a particular subject.

### 3.2.5. Data Analysis

The data collected from the seven interviews were grouped according to the four identified challenges of implementing environmental policy requirements. The analysis

of the findings was made using the theories from the literature review on environmental management policy and Housing Policy in South Africa as well as data collected from respondents. The findings were discussed in light of the literature review to see how they were linked to or differed from it.

The analysis compared the responses of seven key informants by using tables and the Likert Scaling system of weighing the respondents' views regarding all four themes of this study. These themes are understanding of environmental policy requirements, institutional capacity, conflict of values, and budget constraints.

### 3.3. Limitation of the Research

Dealing with the councillor and department officials who have many responsibilities has been a challenge due to the fact that our meetings were postponed and we were sometimes required to follow protocols in order to conduct the interview. In the Housing Department, I had to take a letter from the University seeking an appointment for an interview and it took more than a month to get it. I had to clarify whether it was official or personal information needed because staff are not authorised to give official information without official application. To set up a meeting with the councillor was difficult due to unplanned meetings and urgent demands he has to meet. I managed to secure a meeting only after my fourth visit.

At the beginning, one respondent decided to withdraw when I made preliminary contacts for the appointment, and this changed the plan for interviews as I had to find a replacement.

Another limitation of the study is the question of representativity of respondents who can not reflect the general view or provide absolute truth about the challenges of implementing environmental policy requirements in low-cost housing. Though the study chose key respondents who are involved in the low-cost housing, generalisation of research findings are limited.

### 3.4. Summary

In chapter three major issues were described: one is the context of the research which is Msunduzi Municipality and the Ambleton area. The geographical context of the study is the low-cost housing development experience in the Msunduzi Municipality where the Urban Ecosystem and Human Health project operates, in which the researcher and student of CEAD has been involved. Also discussed was the methodology used to collect information. The methodology was based on extensive experience by the researcher, in the project of Urban Ecosystem and Human Health, as a participant observer. Quality information from key informants was acquired in low-cost housing and environmental policy requirements in South Africa. The methodology used in-depth interviews for key informants, as well as document review. Finally, the limitations of the study were discussed based on the research experiences. Limited time, limited number of respondents, and difficulties in setting up appointments for interviews were the main research challenges.

# Chapter Four: Research Findings and Analysis

## 4.0. Introduction

The research findings and analysis are divided into three sections: in the first the research findings are discussed and in the second the interpretation of the findings are presented. The third section explores the way forward by looking at a stronger implementation system of environmental policy requirements of the Housing Policy and NEMA in low-cost housing. The data analysis used four themes of the research which are understanding of environmental policy requirements of NEMA and Housing Policy, institutional capacity, conflict of values, and budget constraints.

## 4.1. Profile of Respondents

The research used interviews with key informants and the participants were chosen based on their strategic job position. The following is the list of their profiles, their positions and experiences where possible.

1. **Respondent 1**. The Manager for Environmental Management of the KwaZulu-Natal Provincial office of the Umgungundlovu District Environmental Services and compliance Section. The respondent has worked in this position for four years, and previously worked 19 years for the housing department.
2. **Respondent 2.** The Provincial Deputy Director and Project Manager of KwaZulu-Natal Housing Department. The respondent has occupied this position for the last 7 years.
3. **Respondent 3.** The Manager for Conservation and Environment in the local government. The respondent has worked for the municipality for 16 years.
4. **Respondent 4.** The Manager of Housing in local government's Business Unit infrastructure services facility. The respondent worked in the City Planning Department until the housing directorate was created as a separate entity in 1994, and she was appointed its head.

5. **Respondent 5.** The Environmental Health Practitioner in the Msunduzi Municipality for six years. The respondent is in charge of the Ambleton area.
6. **Respondent 6**. The Councillor of Ward 18 and the Speaker of the Msunduzi Municipality Council.
7. **Respondent 7**. The Managing Director of Dezzo Holdings Company. The respondent was appointed Project Manager by Unocor Pty Ltd during the time of the housing development in Ambleton.

### 4.1.1. Selection of Respondents

The respondents were selected from among key people who implement housing and environmental policies at provincial and local government levels, the developer, and the Ambleton community Councillor. Respondents were selected because they interpret policy and they come from various departments which could provide a good understanding of the subject under study. They were selected also because of the information they have concerning the environment in low-cost housing, especially in Ambleton. The researcher's observation and involvement in Urban Ecosystem and Human Health in Mzunduzi Municipality also contributed to the study.

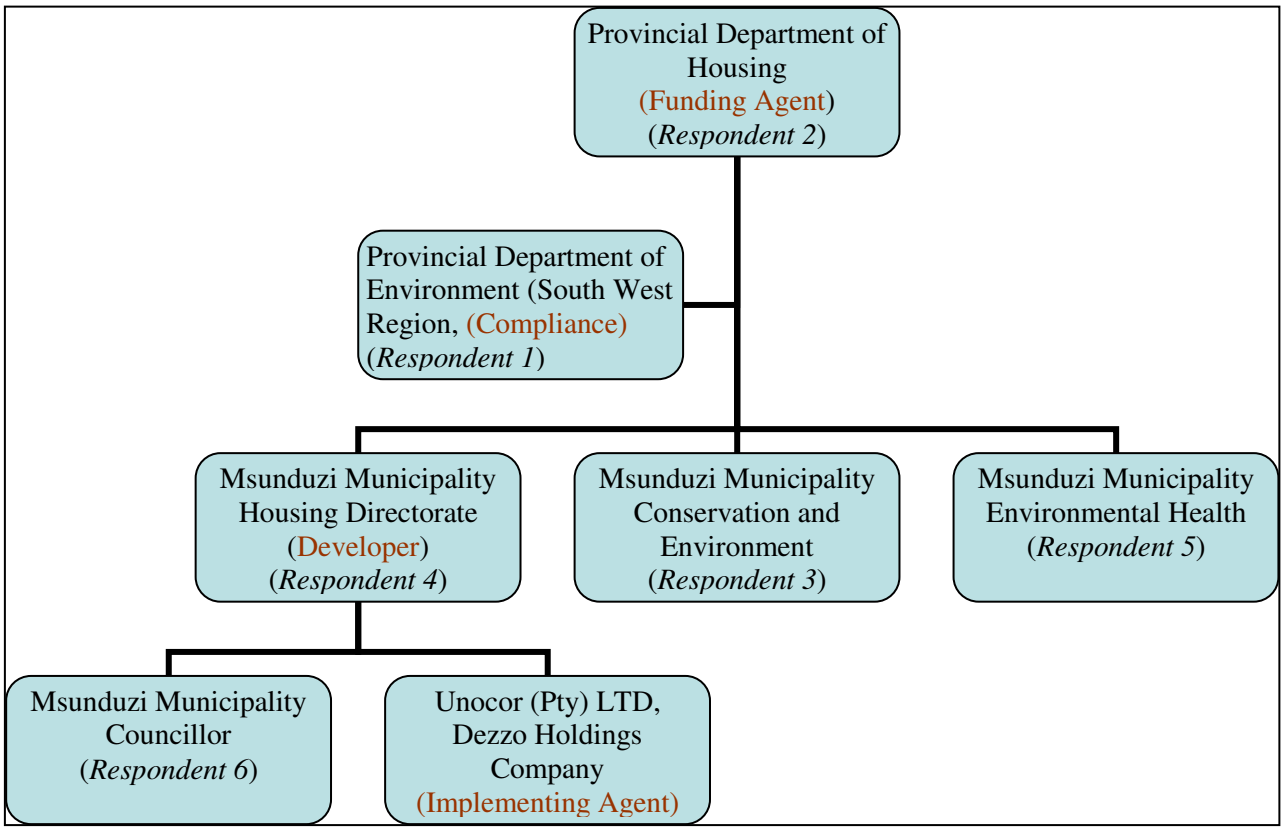


***Figure 4:*** *Organizational chart institutional context of respondents*

## 4.2. Research Findings

### 4.2.1. Views of Participants

The views of respondents have been organized in accordance with the identified four challenges of implementing environmental policy requirements in low-cost housing. Respondents expressed their views on their understanding of environmental management policy requirements, the institutional capacity, conflict of values, and budget constraints.

#### 4.2.1.1. The Challenge of Understanding Environmental Policy Requirements

All the participants expressed their views on their understanding of environmental policy requirements in the Housing Policy and NEMA. Respondent 7 indicated that during the Ambleton housing development, NEMA was not clear to him. He believed that, like most policies, housing policy and NEMA were not very explicit on what was required from him (Oral Interview, 31/10/2006). Respondent 2 recalled that during the Ambleton development, environmental assessments were not required. This Respondent understands that her department is subject to NEMA (Oral Interview, 19/12/2006). Respondent 1 indicated that NEMA principles were good, and that she does not have problems with them. However, this interviewee stated that if one looks carefully, there are some areas within the policy that are not clear. Respondent 1 does not know the Housing Policy environmental requirements at all and chose not to comment on them. This respondent believed that NEMA offers a good framework for undertaking development while protecting the environment. The respondent goes on to say that NEMA is supposed to be the overarching framework that everybody should subscribe to. Although, she believed that unfortunately people tend to forget about it (Oral Interview, 02/11/2006).

Respondent 1 maintained that low-cost housing was not a listed activity in NEMA. Therefore, due to the reality and interrelationship of the problems of the housing backlog and the lack of funding, the Housing Department has decided to reduce the environmental requirements in low-cost housing. As there was no procedure, checklist, or guidelines for low-cost housing development, she suggested that the development be approved on the basis of the consultant's report, making sure there is enough information for making an informed decision. Such information includes checking biodiversity assessment, public participation, and the environmental management plan. When asked about compliance in Ambleton, Respondent 1 suggested that there had been no environmental audit done in Ambleton (Oral Interview, 02/11/2006).

When asked how they assess the application in terms of the environmental policy, Respondent 1 said the policy did not list every activity. She also did not think it was possible to get those policy details in any primarily legislation. Rather, she believed those are obtained in policy guidelines, manuals, and checklist documents which were not available to her department. Therefore, Respondent 1 said "I am not sure if the housing development meets environmental requirements of NEMA standards, and when the housing people say they have an environmental report, I suggest that we should sign acceptability of those reports if they meet our standards" (Oral interview, 02/11/2006).

The fact that there was no one in DAEA who was in charge of environmental compliance in low-cost housing development during Ambleton housing development, means that it is difficult to enforce compliance. Almost all respondents felt that they have been addressing the environment in low-cost housing. These include Environmental Impact Assessment section, compliance and monitoring section, pollution and waste section, environmental planning section, and advisory services section. Respondent 1 believed that there was nobody specific for housing projects, but again, everybody was responsible but in different ways (Oral Interview, 02/11/2006).

To Respondent 3, the biggest challenge of implementing environmental policy requirement is that "the municipality does not have an approved environmental policy for the municipality and therefore environmental issues are *ad hoc*, [and] are not guided by policy". He was certain that NEMA is an overreaching legislation and there is need to comply with that. He admits that he is not familiar with the Housing Policy. NEMA is very broad and is not specific but tries to make sure that environmental issues are address in low-cost housing. Respondent 3 believed that all stakeholders do not understand environmental policy requirements. Stakeholders' understanding of policy requirements is limited and on top of that they do not consult it regularly. To enforce compliance, Respondent 3 believed that there is a need for EMP for the construction phase and EMP for the operational phase. Respondent 2 also felt that stakeholders do not understand environmental policy requirements, and that is why her department chose to use consultants to conduct environmental studies (Oral Interview, 19/12/2006).

Respondent 7 believed that Housing Policy sets broad guidelines, and there are no specific guidelines or procedures for implementing environmental policy requirements (Oral Interview, 31/10/2006). Respondent 5 believed that the environmental policy is explicit in what is required from him, though he could not remember some of the requirements in the Housing Policy and NEMA, including the steps undertaken to implement them. He believed that stakeholders understand environmental policy requirements (Oral Interview, 6/11/2006). Respondent 6 discussed his views regarding understanding Housing Policy and NEMA from a political perspective because he acknowledged his ignorance about these policy documents. He maintained that there are technical experts who are paid to conduct environmental studies and are the ones who know the policy, and no matter what is the understanding of policy, the housing backlog has more priority in political decision making (Oral Interview, 14/11/2006). Respondent 1 argued that it is difficult to say that stakeholders understand environmental policy requirements, but thought that officials and councillors are very aware of environment issues. Some might be strong in one component and weak in the other components (Oral Interview, 02/11/2006). The views of Respondent 7 on the understanding of environmental policy requirements by stakeholders are that it is very poor. Because of his poor understanding of environmental policy requirements, his company appoints consultants who understand better environmental policy requirements. He contended that understanding of all the various components of policies is very difficult (Oral Interview, 31/10.2006).

After the above findings on understanding environmental policy requirements in the Housing Policy and NEMA, the results are further assessed using the Likert scale from Very Limited, Limited, Fair, Good, and Very Good. The table below illustrates the number of respondents in each category from very limited, limited, fair, good, to very good understanding. Respondents were asked to provide their rating by saying how much they understood environmental policy requirements using this scale.

The term 'limited' in this context means that there is little understanding of environmental policy requirements. 'Fair' means that understanding is average, and 'good' means that the understanding is slightly above average.

**Table 4.1.** Respondents' views on understanding environmental policy requirements

| **Respondents** | **Understanding Environmental Policy Requirements** | | | | |
|---|---|---|---|---|---|
| | **Very Limited** | **Limited** | **Fair** | **Good** | **Very Good** |
| Respondent 1 | | | | **X** | |
| Respondent 2 | | **X** | | | |
| Respondent 3 | | | **X** | | |
| Respondent 4 | | **X** | | | |
| Respondent 5 | | **X** | | | |
| Respondent 6 | **X** | | | | |
| Respondent 7 | **X** | | | | |
| **TOTAL** | **2** | **3** | **1** | **1** | **0** |
| **Percentage** | **28.5%** | **42.8%** | **14.2%** | **14.2%** | **0%** |

The respondents representing 42.8% or 3 people out 7 have the view that their understanding of environmental policy requirements is limited. Only two respondents said that the understanding is very low. There was one respondent who said understanding is fair and one said it is good. None of the respondents said the understanding of environmental policy requirements is very good.

#### 4.2.1.2. The Challenge of Institutional Capacity and Cooperation

Respondent 1 stressed the fact that the municipality is mandated by the Constitution and national departments to implement environmental policy legally in terms of the law. She said that the DAEA provides the Municipality with what it needs such as technical assistance, authorisations, a Record of Decision (ROD) from the department, and tells them not only how they should do their housing projects, but if they fail to comply how they are liable (Oral Interview, 02/11/2006). Though there are good guidelines, capacity

issue has been a challenge for implementing environmental policy requirements on all levels and from all stakeholders. Respondent 2 questioned the independence of consultants and suggested that there is a challenge of institutional capacity and cooperation. She believed that her department does not have a capacity problem, but that the DAEA and the Municipality struggle to implement environmental policy requirements (Oral Interview, 19/12/2006). Respondent 3 suggested that they are complying retrospectively because of the lack of institutional capacity. Other examples were given by Respondent 7 that housing development in Ambleton was approved in six months and up to date there had been no environmental audit (Oral Interview, 31/10/2006). He recalled that the process in Ambleton was flawed in terms of processes and compliance, though there was a scoping report done for Ambleton. Although among the requirements in the ROD there is an EMP and up to that point it was not yet finished (Oral Interview, 1/11/2006). Respondent 3 argued that there is poor ecological planning and as a result, stormwater affects the housing down stream (Oral Interview, 1/11/2006). From my observation and field visits at the Ambleton these issues were evident. The way houses were built (Figure 6) where a toilet was built on shale and during the time of our visit it smelt bad. Respondent 7 confirmed that there was no audit in Ambleton apart from the one his company did (Oral Interview, 31/10/2006). Respondent 4 indicated that there was a one-day visit at the site by the DAEA and UDIDI consultants, who were appointed after the environmental audit, though this was not properly done. Those on the site visit complained about environmental irregularities in Ambleton saying that an EMP was not done.

The institutional capacity was expressed in three aspects which are skills, physical capacity, and cooperation.

#### 4.2.1.2.1. Skills

The 'Skills' are defined as intellectual and professional experience that a staff member acquires which enable him or her to successfully perform duties assigned to him or her. Respondent 1 suggested that there are skills but that they are limited. She complained that they have a lot of issues to deal with and yet they only have two staff for outreach (Oral

Interview, 2/11/2006). Respondent 5 believed that there are skills but physical capacity is not enough because of a shortage of human resources. He also acknowledged that though skills are there, they are limited. He believed that the overall responsibility for implementing environmental policy requirements is the responsibility of the Municipality and it is under-resourced (Oral interview, 6/11/2006). Respondent 7 pointed out that the municipality is the developer and implementing agent for low-cost housing. He believed that the overall responsibility to oversee environmental policy implementation is the DAEA (Oral Interview, 31/10/2006). Respondent 6 stated that the Municipality struggles to get good skilled staff because they require high salaries which the council cannot afford, and they often leave (Oral Interview, 14/11/2006).

#### 4.2.1.2.2. Physical Capacity (Human Resources)

'Physical capacity' refers to the number of people which can be regarded as the capacity of an institution to deal with environmental problems. Respondent 7 believed that the delays and shortcomings in the implementation of environmental policy requirements can to some extent be attributed to lack of physical capacity which results in not getting the work done, and lack of effective monitoring capacity. Despite this, he believed that available skills are good (Oral Interview, 31/10/2006). Respondent 1 suggested that there are a limited number of people in her office and therefore it is difficult to do environmental monitoring and audits on time (Oral Interview, 2/11/2006). Respondent 3 maintained that the fact that he is the only staff member in charge of the environment for the Municipality is an indication of limited physical capacity (Oral Interview, 1/11/2006). During our field visits, student and researchers realised that there was a shortage of staff to cover all the areas where low-cost housing was being built. Figure 5 below shows how understaffing affected community education, monitoring of environmental issues such as waste management, water runoffs, and soil erosion. The soil erosion in the picture demonstrates improper drainage, poor waste disposal, and the road is now impractical.

***Figure 5:*** *A view of a road in Ambleton with impending soil erosion, drainage, and waste challenges emerging (Source: R.J. Fincham)*

#### 4.2.1.2.3. Cooperation Among Stakeholders

'Cooperation' refers to established formal and informal networks that build the strength and capacity of an institution to perform its duties. Respondent 5 believed that other constraints in implementing environmental policy requirements involve lack of cooperation among stakeholders. He emphasised that there is little cooperation between housing beneficiaries and the housing department. As a result, the beneficiaries do not feel a sense of ownership and responsibility over their environment, and this has huge implications for the environment because people wait for the municipality to fix their problems without much of their involvement. Respondent 6 believes that the level of cooperation among stakeholders is low (Oral Interview, 14/11/2006). Respondent 1 indicated that the level of cooperation between DoH and DAEA has always ensured a good working relationship. Nevertheless, she stressed that these relationships are difficult at the individual level. This cooperation is improving because the area of DAEA operation has shrunk (decentralisation). District offices have improved their effectiveness in terms of environmental management due to the decentralisation of DAEA. She

suggested that these relationships are individual-based not institutionalised. As result of lack of cooperation, she suggests that some people have been doing EMP in a fragmented way (Oral Interview, 02/11/2006). Respondent 5 argued that there is no cooperation at all, "because housing department make decisions without involving Environmental Health Unit, and call us only where the problem occur in the community". He believed the level of cooperation to be very poor and said "the problems that are there should have been solved" (Oral Interview, 6/11/2006).

After the above summary of the findings concerning the views of the key informants on the institutional capacity to implement environmental policy requirements of the Housing Policy and NEMA, the Likert Scale was used in the results analysis in the table below to illustrate the number of respondents in each category from very low, low, fair, high, to very high institutional capacity. 'Low capacity' means that the institutional capacity to implement environmental policy requirements has many gaps. Fair means that the capacity is at the average level of what is required. High means that the capacity is slightly above average.

**Table 4.2:** Respondents' views of institutional capacity

| **Respondents** | **Challenges of Institutional Capacity** | | | | |
|---|---|---|---|---|---|
| | **Very Low** | **Low** | **Fair** | **High** | **Very High** |
| Respondent 1 | | **X** | | | |
| Respondent 2 | | | **X** | | |
| Respondent 3 | | **X** | | | |
| Respondent 4 | | | **X** | | |
| Respondent 5 | | **X** | | | |
| Respondent 6 | | **X** | | | |
| Respondent 7 | **X** | | | | |
| **TOTAL** | **1** | **4** | **2** | **0** | **0** |
| **Percentage** | **14.2%** | **57.1%** | **28.5%** | **0%** | **0%** |

The majority of respondents, representing 57.1% or 4 people out 7, have the view that the institutional capacity to implement environmental policy requirements in low-cost

housing is low. Only two respondents said that the institutional capacity is slightly there and one said it is very low. There was no one who said that the institutional capacity is high or very high.

#### 4.2.1.3. The Challenge of Conflict of Values Among Stakeholders

The research examined the challenges of implementing environmental policy requirements and how different preferences and priorities combine either to delay the implementation or to hamper it. Most of the time this conflict of values is difficult to explain and, as Respondent 3 has pointed out, people do not look at the environmental impact when they are comparing with something else. Respondent 3 argued that the need for producing housing has taken precedence over other concerns (Oral Interview, 1/11/2006). Respondent 1 pointed out that people hold different values on environment as a whole. The environment values are also a political item. She said that politicians or decision-makers play a role using fund allocation and housing budget as a political decision and reflect values of people over the environment. Respondent 2 suggested that the conflict of values is evident in policy formulation where greater attention is placed on one thing more than the other. Conflict of values over environmental policy requirements arise between the stakeholders during the course of implementation (Oral Interview, 19/12/2006). Respondent 6 indicated that the council does not have enough money to meet all the community needs. Therefore, the council makes decisions based on the priority and some projects are cut down not only because of budget, but also how people value different items on the agenda. Environmental issues do not feature among the priorities of the political decisions though they recognise their importance (Oral Interview, 14/11/2006). Respondent 7 identified a conflict of values between the Housing Policy itself and the needs of the community which are not met. He believed that in the low-cost housing, the trade-off is the environment and that the environment is losing out. He asserted, “we are creating a problem that is going to come back to us because we are not addressing those environmental issues efficiently” (Oral Interview, 31/10/2006).

Respondent 7 suggested that a special budget needs to be put in place to address environmental policy requirements in the Housing Policy and NEMA. According to him, all the pressure should not be placed on the DoH for their subsidy to address these issues. Possibly the DAEA should bring in a subsidy that links with low-cost housing. Different departments should put in their subsidies: education, arts and culture, DAEA, water affairs, and other important issues (Oral Interview, 31/10/2006).

Respondent 5 believed the conflict of values lies within the way the Housing Department prioritises the number of houses only and makes the environment last on their list. He says, ”they look at the number of houses, not the quality”. He believed that this conflict of values hampers implementing environmental policy requirements because people/beneficiaries do not perceive ownership of the house and the place, therefore they do not care for their environment. He strongly believed that communities should be involved in the low-cost housing from the inception phase (Oral Interview, 6/11/2006).

Respondent 1 appealed for managing conflict of values between stakeholders through public education and establishing closer links between departments and the municipality. She also raised the challenges of fragmentation of the department, in that each department has its own priorities which are different from the others. She said “our performance is measured against what we have done” (Oral Interview, 2/11/2006). The Housing Department is measured against the quantity of houses they deliver. It is again idealistic to think that Housing Department will be in the race against time and yet care for all the environmental needs. It requires a high value of the environment to address environmental issues in low-cost housing. Respondent 1 believed that there should be some kind of a Memorandum of Understanding between stakeholders (Oral Interview, 2/11/2006).

The three top priorities of participants about environmental issues differ and Respondent 3 listed biodiversity, open space, stormwater management (1/11/2006). For Respondent 5 top priority was, sanitation, refuse removal, and water (6/11/2006), while Respondent 1 listed pollution as the priority (2/11/2006). Respondent 7 grouped environmental

priorities into two categories because of their importance and the first was roads, water, sanitation and the second was clinics and transport (31/10/2006).

After the above discussion of the findings concerning the views of the key informants on conflict of values in the course of implementing environmental policy requirements of the Housing Policy and NEMA, the same application of the Likert Scale was used to weight how respondents perceived environmental values. The table below illustrates the number of respondents in each category from very low, low, fair, high, to very high concerning conflict of values.

**Table 4.3.** Respondents' views of stakeholders' value of the environment

| **Respondents** | **Views of respondent on the way stakeholders value the environment** | | | | |
|---|---|---|---|---|---|
| | **Very Low** | **Low** | **Fair** | **High** | **Very High** |
| Respondent 1 | | **X** | | | |
| Respondent 2 | | **X** | | | |
| Respondent 3 | | | **X** | | |
| Respondent 4 | **X** | | | | |
| Respondent 5 | | **X** | | | |
| Respondent 6 | **X** | | | | |
| Respondent 7 | | **X** | | | |
| **TOTAL** | **2** | **4** | **1** | **0** | **0** |
| **Percentage** | **28.5%** | **57.1%** | **14.2%** | **0%** | **0%** |

Respondents with the percentage of 57.1%, or 4 people out 7, are of the view that the value placed on the environment is low. Only two respondents said that it is very low and one said it is fair. There was no one who said that the environment is accorded high or very high value.

#### 4.2.1.4. The Challenge of Budget Constraints

'Budget constraints' refer to problems related to budget availability to implement environmental policy requirements in low-cost housing. A budget, being a financial prediction of an activity, can be adequate or inadequate for different reasons which include income capacity, grants, and aid. It can also be inadequate depending on the magnitude of the problem to be addressed. 'Adequate' in this context means availability of enough funds to meet environmental policy requirements as stated in the NEMA.

The research has also examined the challenge of budget constraints and how these affected the implementation of environmental policy requirements. It was noticed that all respondents perceived the budget for low-cost housing to be insufficient. Respondent 2 indicated that the budget for low-cost housing is fixed within the Housing Policy framework and that it is a political decision (Oral Interview, 19/12/2006). Respondent 4 argued that the breakdown of low-cost housing subsidy covers six environmental services which are: environmental studies (Scoping), water reticulation (including meters), sanitation reticulation, roads, storm water control, and street lighting (2/11/2006). But according to Respondent 7, who is the Service Provider, there is a difference between what is provided in the housing policy and what is actually happening on the ground. He said that the price of the house and the price breakdown leaves money only for three environmental services namely roads, water, and sanitation. He also confirmed that the reason for the crowding of low-cost housing is because of budget constraint. He maintained that "all goes back to subsidy, and we cannot afford to allow space between houses because services connection is very expensive". He said that from the housing subsidy, they take all necessary money for a house, then, with the leftover of the money they ask the Housing Department what can be done with it (Oral Interview, 31/10/2006).

There is hope that the situation will improve because, as Respondent 4 pointed out, in the new budget from Housing Department, there is a provision for an environmental subsidy for the municipality to address remaining environmental issues in low-cost housing such as storm water control, street lighting, and environmental studies. It is unrealistic to think that the new budget will solve all the problems, and Respondent 4 indicated that the

municipality will have to dedicate funding to deal with environmental issues (Oral interview, 2/11/2006). Respondent 3 shared similar sentiments that it is a critical issue for the Municipality to find more money to fund environmental concerns in Ambleton that are not funded by the low-cost housing budget. He supported this statement by saying that even at the time of housing development in Ambleton, there was a debate at the Municipality on whether the environmental branch should budget for a scoping report or whether this would come from the project to be funded (Oral Interview, 1/11/2006). Respondent 6 said that the Msunduzi Municipality has a financial backlog of one billion Rand and it is difficult to address Ambleton's environmental needs. He reiterated that the council has to select which activities should be funded within the available financial resources (Oral Interview, 14/11/2006).

There is a concern that if funding for a Scoping Report is uncertain, then, what happens to the environmental management in low-cost housing after housing development? Respondent 3 understood that with low-cost housing, DoH agreed to fund environmental assessment up to the scoping report. The problem is that the record of decision from DAEA to build Ambleton came with conditions such as an EMP and there were no funds committed for this activity. He concluded that environmental studies are not funded and implementation is not funded. He is unsure of where the money will come from for the implementation of the upcoming EMP for Ambleton. He cites examples of activities that need to be done such as landscaping, stormwater management, and waste removal (Oral Interview, 1/11/2006).

Respondent 1 did not know what the funding for low-cost housing covers and what is allocated to environmental issues. She said the total funding is from the Housing Department, and there is no reason why her department should subsidise environmental issues in low-cost housing because it is a local authority issue. She did not see it as the DAEA responsibility. For example, refuse collection and other issues are a municipal responsibility. She believes that low-cost housing funding and associated environmental issues are the responsibilities of the housing department and municipality (Oral Interview, 2/11/2006). Respondent 2 argued that her department fully implements the

mandate in terms of environmental issues and the rest should be done by the DAEA and the Municipality. She acknowledged that the municipality is under-resourced to meet all the environmental management policy requirements (Oral Interview, 19/12/2006). Respondent 6 acknowledged that implementation of environmental management policy requirements is the council's responsibility, but stressed challenges of capacity and budget constraints (Oral Interview, 14/11/2006). Respondent 5 believed that there is a budget constraint in implementing environmental policy requirements in the low-cost housing because if it was not a problem, they could have introduced waterborne systems in the houses. He did not know how much money was allocated to the house units and the environmental issues, but he understood that some of the things that were not included in the housing policy were given to the municipality to take care of. These include for example indoor air quality, water runoffs, and waste disposal (Oral Interview, 6/11/2006).

Regarding the discussion of the above findings concerning the views of the key informants on the adequacy of the budget to implement environmental policy requirements of the Housing Policy and NEMA, the data analysis grouped responses together into five scales using the Likert Scale measurement. The scale analyses the adequacy of budget in implementing environmental policy requirements using responses of, totally unacceptable, inadequate, adequate, more than adequate, and excellent budget. The terms 'acceptable' and 'adequate' in this context mean the budget that can meet the minimum environmental policy requirements in low-cost housing. 'Excellent' means that the budget covers everything that is recommended by the environmental policy in South Africa.

The majority of respondents, representing 71.4% or 5 people out 7, believed that the budget is totally unacceptable. Only one respondent said that the budget is inadequate and one said it is adequate. There was no one who said that the budget is more than adequate neither excellent.

The findings analysis was done by grouping responses into key words according to the research themes. In Table 4.5. below, the summary is provided of those responses regarding understanding of environmental policy requirements in Housing Policy and NEMA, institutional capacity, conflict of values, and budget constraints.

**Table 4.4.** Respondents views on budget allocation

| **Respondents** | **Budget Allocation for Implementing Environmental Policy** | | | | |
|---|---|---|---|---|---|
| | **Totally Unacceptable** | **Inadequate** | **Adequate** | **More than Adequate** | **Excellent** |
| Respondent 1 | **X** | | | | |
| Respondent 2 | | | **X** | | |
| Respondent 3 | **X** | | | | |
| Respondent 4 | | **X** | | | |
| Respondent 5 | **X** | | | | |
| Respondent 6 | **X** | | | | |
| Respondent 7 | **X** | | | | |
| **TOTAL** | **5** | **1** | **1** | **0** | **0** |
| **Percentage** | **71.4%** | **14.2%** | **14.2%** | **0%** | **0%** |

In the above section, the focus was on the views of respondents on the challenges of implementing environmental policy requirements in low-cost housing. In the next section, respondents' views on how best environmental policy requirements can be addressed will be dealt with. The following section of data analysis will form a basis for the proposed stronger implementation system.

## 4.3. The Respondents' Views of a Better Implementation System

Section Four of the interview schedule comprised of questions regarding the way forward where respondents expressed their views on possible improvements (See Appendix 1). Respondent 1 speaking from her department's point of view, said that they need to have a consistent policy, checklist, and guidelines about how one assesses environmental issues in low-cost housing projects because there are none at the moment. She said that she feels uncomfortable with how they apply or interpret environmental requirements in housing

projects (Oral Interview, 2/11/2006). This was confirmed by Respondent 3 and he could not recall any detailed document. He gave four priorities for improving implementation of environmental policy requirements: budget, approval of policy, strategic planning, and detailed assessment of biodiversity (Oral Interview, 1/11/2006).

**Table 4.5**: General summary of research findings

| Respondents | Respondents' views on understanding environmental policy requirements | Respondents' views on institutional capacity | Respondents' views on conflict of values | Respondents' views on budget constraints |
|---|---|---|---|---|
| Respondent 1 | -NEMA is fine though it is set in broad terms<br>-No idea about environmental requirements in Housing Policy | -Shortage of staff<br>-Limited skills<br>- Fragmented stakeholders | -Little Political will<br>-Priorities of each department come first | -Municipality is mandated to do it<br>-Political priority is not on the environment |
| Respondent 2 | -Housing policy is fine<br>-Broad understanding of NEMA because it is DAEA's responsibility<br>-DoH appoints environmental consultants | - Limited skills<br>- Lack of cooperation among stakeholders | - Lack of Political will<br>- Little community participation in environmental protection | - Municipality are under resourced |
| Respondent 3 | - No idea on Housing Policy<br>-NEMA not very clear that is why there is a need for local environmental policy | -limited skills<br>-shortage of staff<br>-fragmented among stakeholders | - Different priorities of stakeholders | -No budget for conceptual and operational phases |
| Respondent 4 | - Broad understanding of NEMA | - Shortage of staff | - Different priorities of stakeholders | - Limited housing budget |
| Respondent 5 | -Little understanding of NEMA<br>-No idea of Housing Policy | Fragmented stakeholders | - Different priorities of stakeholders | - Lack of cooperation among departments |
| Respondent 6 | - No idea of both NEMA and Housing Policy | - Shortage of staff<br>- Lack of cooperation among departments | - Political decision does not put environment as a priority<br>-Communities' priority different from environment | -Municipality has no financial capacity<br>-Community unable to contribute |

| | | | | |
|---|---|---|---|---|
| Respondent 7 | - Broad understanding of environmental policy because it is the consultant's job to go into details | - Shortage of staff<br>- Insufficient resources | - Stakeholders' conflict of interests | - No subsidy for environment<br>- Municipality unable to do it |

Respondent 7 declared that the process of environmental impact assessment will become even more lengthy and extremely complicated in the new Environmental Act that is coming out soon (Oral Interview, 31/10/2006). He could not explain what he meant by 'soon' for the new Environmental Act to come out, but believed it would be soon after our discussion.

All respondents emphasised the need for capacity building for the communities in order to be fully responsible for their own environment. Respondent 1 suggested that improving and empowering communities is of paramount importance to address environment issues. She suggested that the Council should employ an Environmental Control Officer at the Municipal level. Respondent 4 confirmed that the housing budget has included the salary for the new Environmental Control Officer. Respondent 7 suggested increasing capacity within the municipality by recruiting more manpower for environmental monitoring, but recognised the budget limitations (Oral Interview, 31/10/2006). Respondent 1 wondered how the budget can be improved. She saw the process as a political issue whereby the budget is determined in a political arena (Oral Interview, 2/11/2006). She does not believe that there is a budget problem. Rather he blamed poor planning and lack of communication (Oral interview, 6/11/2006). Respondent 7 argued that the budget is necessary for implementing environmental policy requirements because low-cost housing has no mitigation plan; therefore, nothing comes back into the community.

All respondents felt the need to improve coordination and cooperation among departments. Respondent 2 believed that environmental issues should be built into tertiary education and the public education (Oral Interview, 19/12/2006). Respondent 5 saw improvement in involving all stakeholders to provide their views starting from the

planning stage. He also believed that communication can make a difference in improving skills and capacity. He suggested that DoH must stop ”chasing target” and instead look at quality. On the question of what can be done to improve the financial constraints, he argued that there should be a method of looking at things in a holistic way.

About reducing conflict of values in the stakeholders with regard to the implementation of environmental management policy requirements in low-cost housing, Respondent 1 suggested the need for a mindset shift when people can understand the importance or benefits of environment. Respondent 5 suggested that another way to improve the implementation of environmental policy requirements is to involve an independent monitor to provide a neutral view (Oral Interview, 6/11/2006). The environmental audit and monitoring would be participatory and be able to build the capacity of different stakeholders involved in the implementation of environmental management policy in low-cost housing.

Concerning the possibility of a Housing Policy review and the incorporation of more environmental concerns in housing delivery, Respondent 2 argued that there are existing channels for complaints and suggestions. She strongly believed that there are little environmental challenges in low-cost housing in that it is too early to think of policy change. She thought that there should be convincing evidence that there is a problem otherwise the policy cannot change. Her department still awaits to see convincing facts from researches and reports with tangible evidence of threats, incidences of deaths, and substantiated reasons why they should change the policy (Oral Interview, 19/12/2006).

Regarding the interpretation of results, the discussion will be guided by the research themes which include the understanding of environmental policy requirements, the institutional capacity, the conflict of values, and budget constraints.

## 4.4. Interpretation of the Findings

In this section, there is an exploration of the implications which can be drawn from the research findings and do analysis in relation to environmental policy requirements in low-cost housing. The interpretation seeks to provide a critical view on the implications of identified challenges on environment in low-cost housing. The analysis is in line with what the South African Minister of housing wished to happen in low-cost housing. In her speech, she expressed the desire for the government of not only to provide houses in a big quantity, but the housing delivery should consider health living environment (Mahanyele, 1999).

This section examines the implications in the four themes of the study which include understanding environmental policy requirements, institutional capacity, conflict of values, and budget constraints.

### 4.4.1. The Implications of Limited Understanding of Environmental Policy Requirements

The study has found that stakeholders have a limited understanding of environmental policy requirements in the Housing Policy and NEMA. The respondents raised issues that the policies set broad guidelines only, and that sometimes they were difficult to apply when dealing with application and implementation. According to Hessing and Howlett (1997: 173) “translating policies into practice is not as simple as might first appear”, and this seems true for compliance with environmental studies in this case. The DAEA lessens the requirements for approving housing development based on individual judgment of what he/she feels is enough for making an informed decision. Respondent 3 believed that stakeholders do not understand environmental policy requirements well. He shared the same sentiments with Respondent 7 that current understanding of policy is not enough. This was also what I observed during field visits and research and through interaction with the people of Ambleton and with key informants. However, Respondent 1 and Respondent 4 believed the stakeholders understand the policy to some extent. All participants called for policy guidelines, procedures, and checklists and this is an

indication that policy as it stands now, is subject to different interpretations. Also, it indicates that people are not confident in applying NEMA and Housing Policies.

Respondent 7 mentioned that the environmental policy suggests that the EIA process and getting approval takes three months, but for Ambleton apparently it took longer than six months. He added that one can even say that the EIA is not yet complete after three year since 2003 until now 2006 because of lack of EMP (31/10/2008). Respondent 2 believed that DAEA delays their housing development because application for environmental studies takes more than 9 months. Contradictions among stakeholders were evident. Respondent 3 argues that the process of low-cost housing is lengthy because it involves geotechnical studies, planning layout, engineering studies, and environmental studies. However, Respondent 4 believed that the process of environmental studies is quick and there is no problem about it. Housing policy does not mention steps which should be taken to implement environmental policy requirements. Kingdon (1995) pointed out that there are sometimes complexities in policy implementation partly because of limited understanding and perspectives among stakeholders. The fact that respondents showed different levels of understanding of environmental management policy requirements could result in individual interpretation of policy.

With regard to the environmental assessment in Ambleton, the process of environmental policy requirements was not followed and now the municipality is trying to act retrospectively which Respondent 3 confirmed. There is contradiction even over the kind of environmental studies that were conducted in Ambleton with some stakeholders saying studies are EIA, others scoping, and others do not even know what was done. Respondent 1 (2/11/2006) could not recall the name of the file for Ambleton because they deal with hundred and hundreds of EIAs while Respondent 2 argued that there were no environmental studies required during the Ambleton development.

There might be a danger of compromising environmental policy requirements in low-cost housing due to limited understanding of environmental policy. In this context, Respondent 1 suggested that DAEA tried to reduce the environmental requirements for

low-cost housing development because they know that there is a huge social problem for people who need houses. Although, this should be done carefully because it can lead to more problems than answers in terms of land use, sustainable settlement, and ecosystem protection. It can also endanger human health, and disturb habitats for species.

Asked whether there are procedures or checklists of what they follow in reducing environmental policy requirements to approve development activities, Respondent 1 said that once they get an assessment report from the consultant and get necessary information for making an informed decision, they feel satisfied. Based on what they check in the simplified assessment report, there is a need to monitor and make sure that there is compliance. There are three important things according to Respondent 1 they consider for making an informed decision: public participation, biodiversity assessment, and an EMP.

### 4.4.2. The Implications of Low Institutional Capacity and Cooperation

It was revealed in the study that there is a contradiction regarding land use and environmental assessment which brings into question the institutional capacity. Respondent 4 believed that land the DoH buys for building low-cost housing is already degraded. Although Respondent 3 and Respondent 1 suggested that Ambleton was a high biodiversity area. Another concern, as Respondent 5, Respondent 1, and Respondent 3 highlighted, is the fact that Ambleton was incorrectly located in an area of high flood levels, land slope, with stormwater and water runoff as problems that have been a challenge to the area causing soil erosion and posing risks to the community. Respondent 2 suggested that environmental studies were not required for Ambleton, and yet there is a scoping report done by UDIDI Consultants. Figures 2 and 5 show the lack in environmental studies especially geotechnical study and as result Ambleton is built on shale, on a slope, and this was observed during field visits and research.

The other uncertainty is with compliance and environmental monitoring and audit. There was a visit to the site on 4 September 2003 by Mr Y. Raja of the DAEA and by UDIDI consultants, who re-emphasised the need for an EMP and raised a concern of the lack of

soil erosion measures. This visit recommended community education for their homes and the environment. Respondent 4, Respondent 3, and Respondent 1 believed that there was no audit in Ambleton, but Respondent 7 suggests that there was no audit apart from the one his company did. A Service Provider cannot do a neutral, objective, and critical Environmental Audit on the site he has built unless it is an internal audit.

In the study, it was found that there is a challenge of institutional capacity and cooperation in implementing low-cost housing. In terms of skills, Hessing and Howlett (1997) state that policy decisions involve varying degrees of technical difficulty during implementation, some being more difficult than others. A case in point is the technical difficulty which occurred with sanitation in the Ambleton area where the DoH had to change the sanitation system. The type of soil which is shale was not appropriate for sanitation system according to Respondent 5, and the new system of pit latrines was introduced. Although, there are still sanitation problems and they will replace the sanitation system with a waterborne system according to Respondent 6.

***Figure 6*: *The RDP house with an external toilet built on shale (Source: R. J. Fincham)***

The institutional capacity in terms of physical capacity is reflected in the inability to ensure compliance. The examples of limited monitoring and audit are indications of limited institutional capacity. Respondent 1 acknowledges that there is not enough staff to enforce compliance, and Respondent 3 is the only staff in the Municipality in charge of conservation and environment.

Institutional capacity in terms of cooperation raises a concern because it is based on individual relationships. Respondent 2 acknowledged that there is no cooperation between departments. When one staff member changes position, it may affect the synergy of implementation. This has been the observation of Kingdon (1995) that when the major individual participants change position it may change the relationships stakeholders have with one another and as a result affect the implementation of a policy. There have been changes and restructuring of departments which, I believe, have created challenges to the implementation of environmental policy requirements. People who had understanding leave and new ones come thus creating an institutional memory vacuum. Respondent 3 was not dealing with the environmental section when Ambleton was developed and Respondent 4 was in the City planning section. The Directorate of Housing within local government was instituted in 2004 because before there was no such separate office as it was incorporated in City Planning Section. Respondent 5 did not recall what happened, but he views whatever happened to have been as result of poor assessment and lack of involvement of other stakeholders. Respondent 3 has been in the position he occupies as Manager of Conservation and Environment for about one year. Respondent 1 has been in the position she occupies for four years. In fact, there are a limited number of people, limited skills, and limited cooperation.

### 4.4.3. The Implications of a Limited Budget

It was revealed in the study that it is uncertain who should finance the implementation of environmental policy requirements. For example, the EMP has still not been done because no department is ready to fund it. There is skepticism about who will implement

the Ambleton EMP, and even the Msudunzi Municipality that is mandated to implement it is under-resourced. While the new funding from the DoH is to recruit one more staff member who will be in charge of environmental policy requirements, the remaining environmental issues like waste removals, water runoff, etc, are not funded.

The research revealed that there is a challenge of budget constraints in implementing environmental policy requirements. Hessing and Howlett (1997) believe that many environmental programmes with complex aims encounter limitations of financial resources. Most stakeholders believe that there is limited funding to address all environmental policy requirements in low-cost housing as the study has shown. There are divergent views of who should finance environmental issues because even those who think that the responsibility belongs to the municipality do not show where the funds will come from. Respondent 7 called for an environmental subsidy from the DAEA, but the rest of the respondents believe that the whole responsibility of environmental policy implementation falls under the municipality. The challenge is that the municipality does not have resources for such activities. Although Respondent 5 felt that the problem is not the budget, but rather poor planning and wanting to achieve the targets for a certain number of houses.

The low-cost housing is designated for low-income communities whose resources are limited. Hessing and Howlett (1997) maintain that the economic resources of target groups also affect the implementation of policies because their participation is limited while their environmental impact is high. It has improved according to Respondent 4 because the DoH has increased the environmental subsidy and it may be that there will be changes in the near future. Although this would be implemented in new sites, Ambleton would not qualify for the new kind of funding.

Funding the implementation of environmental management policy requirements needs strong political support that will push the environmental agenda forward. This implies that budget allocation should consider environmental issues as an important and require urgent intervention. The study revealed that there is belief that budget constraints can be

mitigated by community education and mobilization which can increase community participation in the implementation of environmental management policy requirements in low-cost housing in South Africa.

### 4.4.4. The Implications of Conflict of Values Among Stakeholders

The study also reflected on the implications of conflict of values among various stakeholders on the implementation of environmental policy requirements. Kingdom (1995) believes that it is important to consider different preferences and different interests when implementing a policy. It was evident that different departments and stakeholders put effort into their own areas of interest to get their priorities done first. The research found that the DAEA needs to enforce compliance with NEMA especially the implementation of EMP in low-cost housing. The Housing Department focuses mainly on meeting its target of delivering a large number of houses. Respondent 5 was concerned with health issues. The Service Provider needs to make sure that he makes a profit. The community wants sanitation, water, and a healthy environment without pollution. To bring all these interests together has been a challenge in the low-cost housing. Respondent 1 advised that there should be a mindset shift from the leadership to the community. Respondent 7 argued that the trade-off is to the detriment of the environment which suffers most. Respondent 2 indicated that education of stakeholders is very important and that dialogue and consultations can influence political decisions over environmental issues.

It was noted that budget allocation to environmental management policy requirements in the low-cost housing is determined by political factors. It is against this background that environmental issues get considered; issues are not based on technical realities but rather on political interests. It becomes a challenge when some decision-makers may not know the benefits of an open space, or the function of an ecosystem. Even though, those who acknowledge the importance of the environment may struggle to balance environmental protection and housing development, especially when under pressure to deliver speedily. Quick development that overlooks the environment is not sustainable, and low-cost

housing development should manage well these conflicts of values so that compliance is guaranteed.

The problem with conflict of values among stakeholders is that environmental policy involves many other policies. It interacts with policies on land, water, health, road and transport, etc. Whyte (1995: 23) argues that the result of "fragmentation of environmental policy is that it cannot be effectively demarcated to its own domain. It touches on all other areas of policy and public administration". There was a serious concern of how the municipality would try and involve all other players who were not involved when Ambleton low-cost housing development was designed. Political will must be mobilized to ensure that there is concern for the environment. The DoH needs to abide by the NEMA even if it results in building only half of what they are presently providing. Speed will not solve the housing backlog in the near future. Kingdon (1995) recognises the challenge of the number of participants whose preferences have to be taken into account during the process of policy implementation.

The above section explored at a great length the research findings, data analysis and the researcher's interpretations. The discussions centred around four themes that are being assessed in light of the challenges of implementing environmental policy requirements in low-cost housing. In the following section, the lessons learnt in the previous chapters and parts of this research will be explored and a stronger implementation system will be proposed. The stronger implementation system builds on what was suggested by respondents on best practices. It also seeks to fill the gaps that have been identified in assessing the challenges of implementing environmental policy requirements in low-cost housing.

## 4.5. Stronger Implementation System

In this section, a stronger implementation system is proposed that would effectively and efficiently address environmental policy requirements in low-cost housing. Among many areas that could be proposed, five areas are proposed that need to be addressed which will

help: to increase the stakeholders' understanding of environmental management policy requirements in Housing Policy and NEMA, to strengthen the institutional capacity, to effectively implement EIAs, and to foster strong coordination and cooperation.

I strongly believe that successful implementation of environmental management policy requirements in low-cost housing must take into account the attitudes of people, resources, constant learning, and institutional capacity. It is therefore imperative to do this kind of research to identify gaps. I suggest that there should be learning from experience by all the stakeholders. It requires learning from past experience with low-cost housing development and improving where there are shortcomings. Compliance with housing and environmental policy is very important in that government can make sure the housing development takes care of the environment. One of the critical aspects of environmental policy is to follow EIA and enforce environmental monitoring and audit. Though EIA requires funding and technical skills that are challenges for the municipality, it offers positive results for present and future generations.

The Housing Policy should also make explicit, in its environmental section, what the environmental requirements are. This would make stakeholders aware of the process and the content of environmental requirements. The second implication is that environmental issues in low-cost housing can form an integral part of housing development instead of being regarded as someone else's problem.

There is a need to learn to plan together, implement together, and monitor and evaluate together. Kingdon (1995) maintains that it is absolutely essential for all policy community to actively participate in order to achieve a successful implementation of a policy,. Forging strong cooperation and coordination will contribute to solving most of challenges of implementing environmental management policy requirements in low-cost housing. It requires skills and capacity to establish networks and integration where departments and the municipality could work together to solve potential problems. As Kingdon (1995) pointed out there should be a harmony between policies rather than contradictions which would avoid crashes and blockage. It calls for sharing vision,

budgets, and signing a memorandum of understanding where applicable. It involves understanding one another and learning from one another as all seek better lives for the people of today and the future.

Discussion follows of five critical areas proposed which may result in a stronger implementation system that would reduce the challenges of implementing environmental policy requirements of housing policy and NEMA.

### 4.5.1. Increase of Stakeholders' Understanding of Environmental Policy Requirements

The process of learning should begin with the understanding of NEMA and environmental policy requirements and should do away with uncertainties of how the policies should be applied when providing low-cost housing. The process should be participative and educative in such a way that policy guidelines, procedures, and checklists are clear, and owned by stakeholders. This step would also help with environmental compliance where EIAs and EMPs are timely and genuine for low-cost housing development. Kim (2004: 34) argues that "operational learning represents learning at the procedural level, where one learns the steps in order to complete a particular task."

### 4.5.2. Institutional Capacity Strengthening

The second critical area is to improve institutional capacity building which would enable provincial and local government departments and partners to effectively implement environmental management policy requirements in low-cost housing. Institutional capacity includes knowledge and skills in the different areas of environmental assessment, planning, implementation, and monitoring/audit. All these would make stakeholders play their roles well as Kim (2004) indicates that when the base of shared meaning in an organization expands, it increases the organization's capacity for effective policy implementation. It would be ideal to have stakeholders with similar environmental

values and that can have a positive impact on the environment in low-cost housing. There is a need in institutional capacity to constantly manage changes in the process of implementing environmental policy requirements.

### 4.5.3. Effective Implementation of EIA

Environmental compliance is an area of concern and a stronger implementation system requires environmental law enforcement. This implies an effective implementation of EIA. The Msunduzi Municipality has not done any major review at Ambleton according to Respondent 4. However, it is important to constantly monitor and audit low-cost housing projects and assess the state of the environment. Respondent 3 admitted that the Msunduzi Municipality does not have proper monitoring systems in place. He said that he is still waiting for an environmental policy that will guide or appraise the environmental activities.

### 4.5.4. Strong Coordination and Cooperation

The interorganizational context in which the implementation of environmental management policy requirements takes place calls for effective coordination and cooperation. Kim (2004: 45) believes that "very decentralised organisations that do not have the networking capabilities to keep the parts connected are also susceptible to fragmented learning." The Environmental Health Officer highlighted that for him the cost of environmental issues in low-cost housing in South Africa can be reduced by a better coordination and cooperation which can to some extent improve environmental conditions in low-cost housing. The coordination in this sense would reduce duplication of efforts among stakeholders and cooperation would increase participation of all partners in the implementation of environmental policy requirements.

### 4.5.5. Mobilization of the Community for Environmental Management

There is a need to mobilize and sensitize the community, especially beneficiaries to enhance their financial and other contributions in the implementation of environmental policy requirements. Public education and participation should also include politicians who have influence in budget allocation. The effort would seek to win their understanding and political will on environmental issues in low-cost housing. This can be achieved through showing them the economic value of the environment, and the health benefits for the community. This can be done through workshops, writing pamphlets, and research.

## 4.6. Summary

In conclusion, in this chapter the research findings which represent the views of respondents on the four key areas that have been focused on in this study were discussed. All seven key informants articulated their understanding of environmental policy requirements in the Housing Policy and NEMA, their evaluation of institutional capacity, of budget constraints, and their perceptions on conflict of values over the environment and development.

It was realised that the majority of respondents had little understanding of environmental policy requirements which are stipulated in the Housing Policy and NEMA. Most respondents felt that there is low institutional capacity in terms of skills, physical capacity, and cooperation in implementing environmental policy requirements in low-cost housing. The research also revealed that there was little support for the environment when the study assessed the conflict of values among stakeholders. Finally, almost all respondents agreed that the budget to implement environmental policy requirements in low-cost housing is not adequate.

It was suggested in this chapter that a strong implementation system that would increase the stakeholders' understanding of environmental policy requirements is necessary. It was also suggested that strong implementation would enhance institutional capacity strengthening which can be critical for policy implementation. The other suggestion to

achieve a new and stronger implementation system is to effectively implement EIAs which calls for environmental law enforcement. The component of coordination and cooperation in the stronger system was mentioned as being important for implementation of environmental policy requirements in the Housing Policy and NEMA in low-cost housing. Lastly, community mobilization was also mentioned and the participation of beneficiaries is considered to be very important in the process of addressing environmental policy requirements in low-cost housing.

# Chapter Five: Conclusions and Recommendations

## 5.0. Introduction

The recommendations consist of seven key issues that the study revealed which should be tackled. The conclusion provides a summary of the study on the challenges of implementing environmental policy requirements in low-cost housing

Housing development needs to comply with environmental policy requirements (NEMA) as it sets the guidelines for the country's environmental management principles. The challenges of implementing environmental policy requirements in low-cost housing are interrelated and overlapping. Institutional capacity impinges on budget setting and coordination as well as understanding of environmental policy requirements. They are discussed separately to analyse the process and implications of each of the four challenges this study has identified among other challenges of implementing environmental policy requirements in the low-cost housing.

## 5.1. Recommendations

The challenges of implementing environmental policy requirements in the Housing Policy and NEMA show that there is a need for a stronger system. The stakeholders should comply with South African environmental policy requirements that are stipulated in the Housing Policy and NEMA. The most important aspect is the effective implementation of EIAs. To close the gap the study has found, the following seven recommendations are made.

### 5.1.1. Improve Environmental Policy Guidelines, Procedures, and Checklists

The study has revealed that the level of understanding of environmental policy in the Housing Policy and NEMA is low. In the previous chapter, it was discussed how there is

the danger of different interpretations of policy due to the fact that people who are supposed to implement it do not understand it well. Respondents 1 and 3 pointed out that the impact of low institutional capacity, and conflict of values can be reduced to some extent by these policy guidelines. Respondents expressed their desire to have detailed policy guidelines, procedures, and checklists which could help them to address environmental issues especially in low-cost housing. These policy tools would help all stakeholders to understand what is required from them while performing their roles. More especially, DAEA can use them when evaluating applications for development. The policy guidelines, procedures, and tools are very important for implementation of EMPs, and environmental monitoring and audit. Proper policy guidelines would increase the understanding of stakeholders, avoiding different interpretations of the policy, and reduce the possibility of compromising environmental issues.

### 5.1.2. Increase the Budget for Environmental Components in Low-cost Housing

The budget for implementing environmental policy requirements in low-cost housing is unacceptable according to most respondents. The majority recommended that there should be the political will to consider the environment in decision-making and allocate more money to it. Failure to allocate more money may cause more problems which will have effects later on the ecosystem and human health.

As much as there is a need for numbers of house units, it is also important to consider the quality of houses and their surrounding environment. This implies that there is a need to allocate of more money to environmental management in low-cost housing. The money also would help to implement environmental policy requirements such as environmental studies, and the EMP which is currently pending.

### 5.1.3. Ensure Environmental Compliance

The compliance with environmental policy requirements is of paramount importance in low-cost housing. The environmental policy has been enacted as legislation which needs to be respected. In the previous chapter, critical gaps in implementing environmental policy requirements in Ambleton were revealed. The EIA should be followed as it is required by NEMA. Whether Basic Assessment, Scoping, or full EIA, all should follow proper procedures, guidelines, or checklists of what is recommended by the environmental regulation. The only way sustainable development can be achieved is by taking care of environment, development, and health.

### 5.1.4. Strengthen the Consultative Process Among Stakeholders

There is a need for consultation among all stakeholders and for discussion of the challenges of implementing environmental policy requirements in low-cost housing. The DoH, DAEA, Msundunzi Municipality, Health Officer, Services Provider, and other interested parties such as community representatives need to come together and find a common understanding of what should be done to improve environmental conditions in low-cost housing. Such consultation would help to reconcile conflicting values among stakeholders over the environment. It is necessary to build strong networks among all stakeholders and make sure that all concerned parties fulfil their roles well. The study also revealed weak coordination and cooperation among stakeholders. This could have contributed greatly to the challenge of implementing environmental policy requirements in Ambleton. This kind of consultation would address the uncertainty of who should finance the implementation of environmental policy requirements in low-cost housing.

### 5.1.5. Encourage Community Education and Participation

There is a need to mobilize and sensitize the community especially beneficiaries to enhance their financial and other contributions in the implementation of environmental policy requirements. The study has revealed that environmental issues are not one

person's problem, therefore, the community must be educated and encouraged to participate. Community education and participation should also include politicians who have power in budget allocation. The effort would seek to win their understanding and political will on environmental issues in low-cost housing. This can be done through showing decision makers and people with influence the economic value of the environment, and the health benefits for the community. This can be done through workshops, writing pamphlets, and research.

### 5.1.6. Enhance Public-Private Partnership for Environmental Management

The public-private partnership is necessary to try to address the environmental issues in low-cost housing. In the previous chapter, shortcomings were noted in institutional capacity which can be addressed through public-private partnerships. There is also the problem of funds as the Msunduzi Municipality has a one million Rand financial backlog, and the idea of public-private partnership can be a way of raising more money. Community education should help the community to be responsible for their own environment. The private sector also needs to be engaged for financial and technical support. A good example is the role of the University of KwaZulu-Natal, the Centre for Environment, and Agriculture and Development (CEAD) in the Msundunzi Municipality. This partnership has implemented successfully environmental research and projects together.

### 5.1.7. Conduct Further Research on the Environment in Low-cost Housing

It is recommended that further research is done. Respondent 2 supports research such as this which can convince the decision makers that there are environmental problems which need consideration and policy change. She believes that the policy can only change when the policy makers and political decision-makers are given evidence of the negative effects caused by improper implementation of environmental policy requirements. The following issues are recommended for further research. The research:

- would look into issues of governance, ecosystems, and settlements, and,
- would investigate the impact on human health because of non-compliance with environmental policy requirements in low-cost housing.

The above recommendations, if implemented, and although somewhat broad, would add value to the suggested stronger implementation system. The next and last section of the study is the conclusion which provides a robust summary of what has been discussed in this document.

### 5.2. Summary

The research into the challenges of implementing environmental policy requirements in low-cost housing was conducted in the Msunduzi Municipality, at Ambleton, and the aim was to establish how speedy delivery of houses might compromise environmental management policy requirements. It has been proved that current housing development is not sustainable and poses threats to human health and the environment. For example, part of Ambleton is built on sloping land, which is shale, without proper storm water management, with no proper refuse removal system, and no proper sanitation system, etc. These are indications that implementation of environmental management policy requirements has faced challenges.

The challenges of implementing environmental policy requirements in the housing policy and NEMA are many, but the study discussed four important issues: understanding of policy, institutional capacity, budget constraints, and conflict of values among stakeholders. The study was limited to government officials who interact with policies as managers and implementers of national policies. It has focused on Ambleton where 2000 low-cost housing units that were built in breach of environmental policy requirements.

There has been a shortage of physical manpower to carry out implementation of environmental policy requirements and there is also evidence of limited skills. The understanding of policy requirements poses a huge implementation challenge because

there are no clear steps to be followed in approving record of decision and in implementing and monitoring environmental processes.

Limited coordination has been identified as another challenge because there are contradictions between the respondents' views on environmental issues in low-cost housing and the reality. Conflict of values among stakeholders was seen in the allocation of funds, the desire to meet the target of numbers of house units and the sparse attention given to health and environment. The housing subsidy includes only three environmental issues which are sanitation, water, and roads. Other issues are given to the under-resourced municipality to deal with it without guarantee that there will be funds to implement all environmental policy requirements. Regarding community participation, it was not clear if there was any at all. Lack of community participation is attributed to the historical background of apartheid that resulted in poor knowledge and limited income. This should not be an excuse for not doing anything because the community has much to offer in terms of caring for the environment. For instance, waste management is something the community can practise to contribute to making the community tidy.

There are potentials for improvement in the implementation of environmental policy requirements in low-cost housing in South Africa. What is needed is to take further steps to put the policy into practice, forge strong cooperation among stakeholders, public ensure private-partnership, and enforce compliance with relevant legislation. To take this second step, there is a need for strong institutional capacity that will ensure a better implementation of environmental management policy requirements in low-cost housing.

# References


Aldrich, C. B. and Ranvinder, S. S. 1995: *Housing the Urban Poor: Policy and Practice in Developing Countries*. London, Zed Books.

Appiah, O. S. 2005: *The Need for Indigenous Knowledge in Environmental Impact Assessment. The case of Ghana.* Quenston, The Edwin Mellen Press.

Babbie, E. R. 1990: *Survey Research Methods*. Belmont California, Wardsworth.

Bebbie, E. and Mouton, J. 2004: *The Practice of Social Research*. London, Oxford University Press.

Bell, J. 1999: *Doing Your Research Project: A Guide for first-time Researchers in Education and Social Science.* Buckingham-Philadelphia, Open University Press.

Bell, J., Crankshaw, O., and Parnell, S. 2002: *Uniting divided City: Governance and Social Exclusion in Johannesburg.* London, Earthscan Publications Ltd.

Blancher, M.T. and Durrheim, K. (Eds). 1995: *Research in Practice*. Cape Town, Cape Town, University Press.

Biswas, K. A. and Agarwala, S. B. C. 1992: *Environmental Impact Assessment for Developing Countries*. Hardwar, Butterworth Heinemann.

Bouma, D. G. 1996: *The Research Process*. Third Edition. Oxford, Oxford University Press.

Busha, H. C. and Harter, P. S. 1980: *Research Methods in Librarianship Techniques and Interpretation.* London, Academic Press.

Canter, L. W. 1996: *Environmental Impact Assessment*. New York, Mc Graw-Hill.

Chanda, R. R. 2005: *Designing an Instrument to Measure Quality of Life in Low-cost Housing Settlements.* Unpublished Masters Thesis. University of KwaZulu-Natal, Pietermaritzburg.

Colebatch, K. H. 2002: *Policy, Second Edition*: Philadelphia, Open University Press.

Considine, M. 1994: *Public Policy: A Critical Approach*. Melbourne, McMillan Education.

De Vaus, A.D. 1986: *Survey in Social Research*. London, George Allen and UNWIN Publishers.

Dewar, D. and George, E. 1979: *Low Income HOUSING POLICY in South Africa*. Cape Town, University of Cape Town.

Duchin, F. and Glenn, M. L. 1994: *The Future of the Environment: Ecological Economics and Technical Change*. New York, Oxford University Press.

Fuggle, R.F. and Rabie, M.A. 1992: *Environmental Management in South Africa*. Ndabeni, The Rastica Press.

Freund, B. and Padayachee, V. 2002: *Durban Vortex: South African City in Transition*. Pietermaritzburg, University of Natal Press.

Gilpin, A. 1995: *Environmental Impact Assessment*: *Cutting Edge for Twenty First Century*. Cambridge, Cambridge University Press.

Guindo, O. and Campen, W.V.1994: Strengthening Environmental Management Capacity by Action and Training: CMDT experiences in Southern Mali, in Bakema, J.R. (Eds), *Local Level Institutional Development for Sustainable Land Use*. Amsterdam, ICG Printing – Dordrecht. Pp 45-61.

Halvorsen, E. K. and Hugh, S. G. 2006: Onsite Sewage System Regulation along the Great Lakes and the US EPA "Homeowner Awareness" Model, in *Environmental Management*, 37, (3), 395-409.

Hardoy, E.J., Mitlin, D., and Satterthwaite, D. 2001: *Environmental Problems in an Urbanizing World*. London, Earthscan.

Hart, T. 1992: Socio-Political Factors, in Fuggle R.E and Rabie, M.A (Eds). *Environmental Management in South Africa*. Cape Town, Juta & Co. Pp 53-63.

Hawley, A.H. 1984: *Human Ecology: a theoretical essay*. Chicago, University of Chicago Press.

Hessing, M. and Howlett, M. 1997: *Canadian Natural Resource and Environmental* Policy. Vancouver, UBCPress.

Hill, M. and Hupe, P. 2002: *Implementing Public Policy*: London, SAGE Publications.

Huchzermeyer, M. 2001: *Housing for the Poor: Negotiated Housing Policy in South Africa*. Cape Town, University of Cape Town.

Jorgensen, E.S. 1991: Environmental Impact Assessment, in Hansen, E.P and S. E. Jorgensen, *Introduction to Environmental Management*. Amsterdam, Elsevier. pp 367-376.

Kamp, V. I., Leidelmeijer, K., Marsman, G., and Hollander, A. (Eds). 2003: Urban Environment Quality and Human Well-being; Towards a Conceptual Framework and Demarcation of Concepts; a Literature Study. *Landscape and Urban Planning,* Elsevier. 65, 5-18.

Kim, H. D. 2004: The Link between Individual and Organizational Learning, in Starkey, K., Tempest, S., and McKinlay, A.(Eds). *How Organisations Learn: Managing the search for knowledge. Second edition*: London, Thomson. 29-50

Kingdon, W. J. 1995: *Agendas, Alternatives, and Public Policies*. New York, HarperCollins College Publishers.

Kohl, A. 2000: States and Sovereignty: Introduction, in Pamela S. Chasek (Ed), *The Global Environment in the Twenty-First Century: Prospects for International Cooperation*. Tokyo, United National University Press, 26, (4), 291.

Loeber, S. M. and Kammen, V. B. W. 1995: *Data Collection and Management: A Practical Guide*. London, SAGE Publications.

Mupimpila, C. 2000: Sources of sustainable Development in Southern Africa, in Jim Whitman, *The sustainability Challenge for Southern Africa*. Cambridge, Global Security Fellows Initiative.

Modac, P. and Biswas, A. K. 1999: *Conducting Environmental Impact Assessment for Developing Countries*. Tokyo, United Nations University Press.

Mahanyele, M. S. 1999: *Speech by the Minister of Housing at the Institute for Housing in South Africa Conference*, Nelspruit, Mpumalanga, 19 October 1999.

Nagel, S. S. 1994: *Encyclopaedia of Policy Studies*. Second Edition; Revised and expanded. New York, Marcel Dekker.

Nash, C. and Bowers, J. 1988: Alternative Approaches to the valuation of environmental resources, in Kerry Turner. *Sustainable Environmental Management: Principles and Practice*. London, Belhaven Press. Pp 118-140.

Neuman, K. 1986: Personal Values and Commitment to Energy Conservation in *Environment and Behaviour*, 18. (1), 53-74.

Oberholzer, B., Dayson, P., and Young, G. 1994: The Future of Landscape Architecture in South Africa in *Environmental Planning and Management*, 5, (4), 4-11.

Oxman, R. and Carmon, N. 1986: Responsive Public Housing: An alternative for Low-Income Families, in *Environment and Behaviour*, 18, (2), 258-284.

Pamela, L. A. and Settle, B. 1995: *The Survey Research Handbook. Second Edition.*

*Guidelines and strategies for conducting a survey*. New York, McGraw-Hill.

Republic of South Africa, 1991: Memorandum for the Executive Committee: Pietermaritzburg. Unpublished paper.

Republic of South Africa, 1994: *Housing Policy.* Pretoria, Government Printer.

Republic of South Africa, 1997: *Housing Policy*. Pretoria, Government Printer.

Republic of South Africa, 1998: Department of Environmental Affairs and Tourism. *The National Environmental Management Act, 1998*. Pretoria, Government Printer.

Republic of South Africa, 2001: *Housing Policy*. Pretoria, Government Printer.

Republic of South Africa, 2003(a): *Letter of Record of Decision by the Department of Agriculture and Environmental Affairs*, Pietermaritzburg, Government Printer.

Republic of South Africa, 2004: Department of Environmental Affairs and Tourism. *Overview of Integrated Environmental Management*. Information Series. Pretoria, Government Printer.

Republic of South Africa, 2006(a): Government Notices No. R. 385. Department of Environmental Affairs and Tourism. *List of Activities and competent Authorities identified in terms of section 24 and 24D of the National Environmental Management Act, 2006.* Pretoria, Government Printer.

Republic of South Africa, 2006(b): Government Notices No. R. 386. Department of Environmental Affairs and Tourism. *List of Activities and competent Authorities identified in terms of section 24 and 24D of the National Environmental Management Act, 2006.* Pretoria, Government Printer.

Republic of South Africa, 2006(c): Government Notices No. R. 387. Department of Environmental Affairs and Tourism. *List of Activities and Competent Authorities identified in terms of sections 24 and 24D of the National Environmental Management Act, 2006.* Pretoria. Government Printer.

Ribeiro, A. 1999: Institutional Development for Community – Based Resource Management Research, in Ferraz Bernardo and Barry Munslow, *Sustainable Development in Mozambique*. Oxford, James Curry.

Rust, K. and Rubenstein, S. 1996: *A Mandate to Build: Developing Consensus around a national housing policy in South Africa*. Johannesburg, Ravan Press.

Ryding, S. O. 1992: *Environmental Management Handbook: The Holistic Approach – from Problems to Strategies.* Amsterdam, IOS Press.

Salant, P. and Dillman, A. D. 1994: *How to Conduct your Own Survey*. New York, John Wiley and Sons.

Saunders, M., Lewis, P., and Thornhill, A. 2000: *Research Methods for Business Students.* London, Prentice Hall.

Schwella, E. and Muller, J. J. 1992: Environmental Administration, in Fuggle R.E and Rabie, M.A. *Environmental Management in South Africa*. Cape Town, Juta & Co. Pp 53-63.

Sheate, R. W. 2005: *Environmental Assessment: Institutional Challenges for EIA Implementation in China: A case Study of Development versus Environmental Protection*. Environmental Management, 36, (1), 125-142.

Sheate, W. 1996: *Environmental Impact Assessment: Law and Policy. Making an Impact* II. London, Cameron May.

Shlay, B. A. 1985: Castles in the Sky: Measuring Housing and Neighbourhood Ideology, in *Environment and Behaviour*, 17, 593-626.

Smith, L. G. 1993: *Impact Assessment and Sustainable Resource Management*. Harlow, Longman Group UK Limited.

Spearman, V. 2006: Personal Communication, Pietermaritzburg.

Stewart, W. D. and Kamins, A. M. 1993: *Secondary Research. Information Sources and Methods (Second Edition).* London, SAGE Publications.

UDIDI Project Development Company. 2002(a): Environmental Scoping Report: Proposed Ambleton Housing Development, Pietermaritzburg. (Unpublished).

UDIDI Project Development Company. 2002(b): Ambleton Environmental Scoping Report, Pietermaritzburg (Unpublished Paper).

United Nations. 1990: *Post-Project Analysis in Environmental Impact Assessment*: Report prepared by the task force on Environmental Impact Assessment. New York.

United Nations. 1991: *Policies and Systems of Environmental Impact Assessment*. New York (UN Taskforce).

Wasilewski, A. 2004: Land Conversion for Suburban Housing: A study of urbanisation around Warsaw and Olsztyn, Poland, in *Environmental Management*, 34, (2), 291-303.

Wei, T. 2006: Urban Environmental Management in Shanghai: Achievements, Problems, and Prospects, in *Environmental Management*, 37, (3), 307- 321.

Whyte, V. A. 1995: *Building A New South Africa: Environmental, Reconstruction and Development*. Ottawa, International Development Research Centre.

Wilkinson, P. 1998: *Housing Policy in South Africa. Habitat International*, 22, (3), 215-229.

Wood, C. 1995: *Environmental Impact Assessment: A Comparative Review*. Harlow, Longman Scientific & Technology.

World Bank, 1991: Policies, Procedures, and Cross-Sectoral Issues in *Environmental Assessment Sourcebook*. Environmental Department, Washington, D.C. 1.

World Commission on Environment and Development (WCED). 1987: *Our Common Future*. Oxford, Oxford University Press.

## Internet

Joffe, H. 2006: Nation in the Making Demands: We Take a New Look at Housing. http://allafrica.com/stories/200606270132.html. Downloaded on 16 November 2006.

Kotsoane, I. 2007. Housing Backlog at 2.4m units. www.internafrica.org/2007/03/housing-backlog-at-24m-units.html. Downloaded on 29 May 2008.

Lefebvre, B. 2004: Low-cost housing. http://www.arch.designcommunity.com/post-8176.html. Downloaded on 16 November 2006.

Morkel, M. 2005: Research into housing supply and functioning markets. www.banking.org.za/documents/2005/december/rep6housingsup.pdf. Downloaded on 15/11/2006.

Republic of South Africa. 1950: Group Area Act. www.britannica.com/EBcheched/topic/247103/Group -Areas- Act. Downloaded on 29/May/2008.

Robinson, A.J. 2008: Apartheid, Social and political of racial segregation and discrimination enforced by white minority governments in South Africa from 1948 to 1994. www.africaencyclopedia.com/apartheid/apartheid.html. Downloaded on 29 May 2008

Rust, K. 2003. *No shortcuts: South Africa's Progress in implementing its Housing Policy, 1994-2002.* Institute for Housing of South Africa: Auckland Park, South Africa, Available at http://housingstudies.wits.ac.za/publications.htm. Downloaded on 15 November 2006.

Sisulu, N. L. 2006: *Keynote Address at the First Annual Govan Mbeki Housing Awards*. Johannesburg, Centre Court, Emperor's Place. Http://www.housing.gov.za . Downloaded on 12 November 2006.

## Newspapers

McClead, F. 2006: *Ministry aims to trash green Laws*. March, 17, 2006. Mail and Guardian.

Letter to the editor, 1984: *Government is facing housing challenge*. Pietermaritzburg, Natal Witness.

Letter to the editor, 1995: *The thin end of the wedge*. Financial Mail, 135, 67.

## Interviews

Respondent 1. Department of Agriculture and Environmental Affairs. (Official). 2 November 2006. Oral Interview.

Respondent 2. Deputy Director of Provincial Department of Housing. 19 December 2006. Oral Interview.

Respondent 3. Msunduzi municipality Conservation and Environment. 1 November 2006. Oral Interview.

Respondent 4. Msunduzi Municipality Hosuing Directorate. 2 November 2006. Oral Interview.

Respondent 5. Msunduzi Municipality Environmental Health Officer. 6 November 2006. Oral Interview.

Respondent 6. Ward 18 Councillor and Speaker of Msunduzi Municipality Council. Oral Interviewed, 14 November 2006.

Respondent 7. Service Provider or Implementing Agent. 31 October 2006. Oral Interview.

Municipal Manager for the Msunduzi Housing Directorate. 15 November 2006. Personal Communication.

# Appendix. 1.

## Interview schedule

My name is Pascal Karemera, I am a student from the Centre for Environment, Agriculture and Development (CEAD) at the University of KwaZulu-Natal, Pietermaritzburg. I am doing research on the challenges of implementing environmental policy requirements in low-cost housing. The study focuses on Ambleton area. I would appreciate hearing about your experience with regard to this topic by asking you to respond to the questions that I have prepared.

The questions are focused on the challenges of implementing environmental policy requirements in low-cost housing has four subsections: understanding of the policy, budget constraints, institutional capacity, and priorities of different stakeholders. I am also interested in your suggestions on how to improve the implementation of environmental policy requirements in low-cost housing.

Two things I would like us to clarify before we start

- I would like to use the Tape Recorder if you don't mind because it will help me recall what we have discussed, and save us time. The only people who can access our discussion are me and my supervisors at the University.
- I would also like you to tell me how you would like to be referenced may be by name, title, or anonymous

The interview is intended to take up to 45 minutes

**Section A. Identification of Respondent**

Name of Respondent ……...
Organisation ……
Dept …….
Position: ……
Years of service in this position: ……..

**Section B. General Questions**

1. Have you been involved in one way or the other in low-cost housing in Ambleton?

2. What are general challenges in your opinion of implementing environmental policy requirements in low-cost housing and National Environmental Management Act (NEMA)?

3. Are there requirements at the municipal level which have to be followed when implementing low-cost housing?

**Section C. Procedural Issues**

1. Under what conditions does an EIA need to be written when developing low-cost housing?

2. Ambleton Case Study: why needed, who did it, how long did it take?

3. What happens after the EIA is written? (auditing, monitoring/evaluation/other follow-up procedures- who does them?)

**Section D. Challenges Implementing Environmental policy requirements in low-cost housing and NEMA**

***Theme 2: Understanding the Environmental policy requirements in low-cost housing and NEMA***

1. In your view, is the housing policy explicit on what is required from you about the environmental policy requirements? In other words, how do you rate your understanding of environmental policy requirements in Housing Policy and NEMA?
    a. Very Good
    b. Good
    c. Fair
    d. Little
    e. Very little

2. What are some of the environment issues raised in the housing policy?

3. Where would you get information about the environmental policy requirements? (is there a document, go to the policy, to a person?)

4. What steps does the policy say should be undertaken to make sure that environmental policy requirement in low-cost housing are implemented?

5. Who is responsible in your organisation for implementing the environmental policy requirements in low-cost housing?

6. Do you think stakeholders understand environmental policy requirement in the housing policy and NEMA?

7. Can you comments on your answer?

***Theme 3. Budget constraints that influence the achievement of environmental policy requirement in low-cost housing***

1. Do you think there are available financial resources to implement the environmental policy requirements as highlighted in the low-cost housing?

2. What does the funding for low-cost housing and environmental policy requirements covers from the inception to completion?

3. How do rate the budget availability to implement environmental policy requirements in low-cost housing?
    a. Excellent
    b. More than adequate
    c. Adequate
    d. Inadequate
    e. Totally unacceptable

***Theme 4. Conflict of values between stakeholders over implementing environmental policy requirements in low-cost housing?***

1. According to your experience, what do you consider top 3 environmental policy requirements that need to be addressed?

2. How do you evaluate the priorities of different stakeholders in terms of budget allocation? Do you think they support the allocation of funds for implementing environmental policy requirements?

3. How do you think different priorities of stakeholders affect the implementation of environmental policy requirements in low-cost housing and NEMA?

4. How do you rate the level of conflict of values over implementing environmental policy requirements in low-cost housing and NEMA?
    a. Very high
    b. High
    c. Fair
    d. Low
    e. Very low

5. How do you think these should be managed to make sure that environmental policy requirements are implemented in due course?

***Theme 5. Institutional Capacity and cooperation***

1. How do you rate the skills and capacity of your department in the implementation of environmental policy requirements in low-cost housing?
    a. Very high
    b. High
    c. Fair
    d. Low
    e. Very low

2. Whose overall responsibility is the implementation environmental requirements? (DAEA, DoH)

3. How do you evaluate the level of cooperation/coordination among different stakeholders?

4. What are the causes of the delays if any?

5. What are other constraints of implementing environmental policy requirements in low-cost housing?

**Section E. Developing a stronger implementation system of environmental policy requirements in low-cost housing**

***Theme 6. Strategies for improvement***

1. What do you think can be done to improve the implementation of environmental policy requirements during the delivery of housing?

2. What do you think need to be done to improve the skills in the area of implementing environmental policy requirements in low-cost housing?

3. What can be done to speed up the process of implementing environmental policy requirements in low-cost housing?

4. What can you suggest to address this financial issue in such a way that environmental policy requirements are implemented fully? (If the answer is to have more money, what else can you suggest?)

5. From your viewpoint, what are the top four priorities for improving the implementation of environmental policy requirements during the delivery of housing?

6. Do you see people learning from experience in this particular field? If so, how?

7. Any other comments.

Thank you,

# Appendix. 2

**Table 12**: Summary of respondents and dates for interview

| Name of Informant | Department | Date for Interview | Venue |
|---|---|---|---|
| 1. Respondent 1 | Provincial Department of Agriculture and Environmental Affairs | Thursday 2 November 2006 11h00am | Cascades Environmental Management Office |
| 2. Respondent 2 | Provincial Housing Department | Tuesday 19 December 2006 | Provincial Department of Housing |
| 3. Respondent 3 | Environmental Policy. Local Gov. | Wednesday 1 November 2006 At 14h30pm | 411 Boom Street |
| 4. Respondent 4 | Housing, Local Gov. | Thursday 2 November 2006 At 14h15pm | 333 Church Street Chetty Building 5 Flow |
| 5. Respondent 5 | Environmental Health | Monday 6 November 2006 9h30am | Municipality Office 333 Church Street 3 Flow |
| 6. Respondent 6 | Ward 18 Ambleton | Wednesday 8 November 2006 11h00am | Municipality Council Office |
| 7. Respondent 7 | Service Provider | Tuesday 31 October 2006 At 8h00am | New Germany |