

**STAKEHOLDERS' VIEWS ON MAINTAINING A SUSTAINABLE LIVING  
ENVIRONMENT: A COMMUNITY EDUCATION PERSPECTIVE**

by

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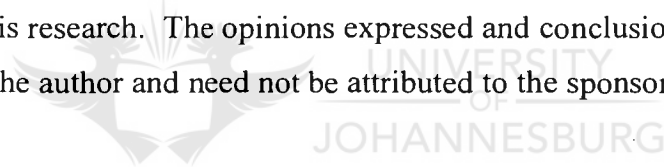
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## 1. INTRODUCTION

Literature portrays a gloomy picture about the state of the living environment in some parts of the world (Gates, 1999: 138-143; Mhlathuze water, 2000: 44; Yeld, 1993: 48-52). Some of the environmental problems commonly cited include global warming, depletion of the ozone layer and massive loss of bio-diversity (Yeld, 1993:48). Many of these environmental problems are caused by human actions and they pose a serious threat to the living environment. There is a link between environmental problems threatening the environment in various parts of the world because environmental destruction in one part of the world can also affect other parts of the world. For example, pollution created by the burning of the fuel fossils in power stations in the Mpumalanga highveld also affect remote areas such as Swaziland by damaging the environment and consequently affecting the health, lifestyles and farming activities of the people in those areas negatively (Sowman & Urquhart, 1998:82).

Environmental threats can be categorised into two main classes, those common in developed countries such as industrial air pollution as well as those commonly experienced in developing countries. The latter category includes threats such as population explosion, poverty, housing shortage, deforestation and increasing desertification, among others (Delport, Pillay & Dalton, 1999: 144). According to Hanselman, Raghunathan and Sarabhai (1990:115), the major causes of all the problems related to the threats of the living environment are associated with human behaviour. South Africa experiences a combination of the problems experienced in both developed and developing countries. The sustainability of the living environment of this country is however threatened by a variety of factors which can be locally or regionally categorised, the most common of which are deforestation, competition for scarce resources, high population growth and excessive consumption of resources (Yeld, 1993:4). Some of these factors are a common threat to the sustainability of the living environment in the low-cost housing units in South Africa. Examples of such problems include air pollution, soil erosion, littering, illegal dumping, poor water management, overcrowding, diminishing vegetation, unemployment and poverty. These problems cannot be left to continue unchecked, but have to be addressed in order to maintain the sustainability of the living environment. Although there may be other ways of attempting to maintain the sustainability of the living environment, there is consensus among various authors that education can play a significant role in this regard

(Department of Environmental Affairs and Tourism (DEAT) (1998); Gates 1999; Gough 1994; Sowman & Urquhart 1998; Yeld 1993).

There are a host of factors threatening the sustainability of the living environment and these factors differ from one situation to another. For the purposes of this study illegal dumping, littering, poor water management, air pollution, soil erosion, eradication of nearby vegetation, overcrowding and poverty within a low-cost housing unit will be discussed and dealt with. This research report also forwards the view that education, particularly in the form of community education programmes can help address these problems. To this end examples of community education programmes or projects, which have played a role in trying to solve these problems, are cited.

The first part of the essay presents an orientation to the problem being investigated followed by the aim of the study. The second part presents the literature review, which focuses on a brief overview of community education and the factors associated with threatening the sustainability of the living environment. Then it details the research strategy and methods, which were used in this study. The last section presents and discusses the findings and concludes with recommendations to empower the community of the low-cost housing in maintaining the sustainability of their living environment.

## **2. PROBLEM STATEMENT**

Literature (DEAT, 1998: 78; Yeld, 1993: 15) emphasises that every individual is responsible for the maintenance of a sustainable living environment. Therefore, all sectors of the South African community are expected to contribute towards maintaining a sustainable living environment. The obligation to maintain a sustainable living environment emanates from the fact that we share the living environment as human beings and have a mutual responsibility towards one another (Yeld, 1993:26). Moreover, our actions also have a great influence on the environment because we have the potential to change the environment either positively or negatively. The proper care of the environment will ensure its sustainability. The problem of this study originates from the continuing threat to the living environment in the low cost-housing unit of Thubelihle Township.

It is also important to emphasize that the township where this study was conducted is located in the former Eastern Transvaal highveld area, now part of Mpumalanga province.

This area has the reputation of being prone to environmental destruction. The susceptibility of this area is caused by the predominance of the mining activities. According to Lupton and Wolfson (in Main & Williams, 1994: 113) and Hanselman et. al (1990: 74) mining is not environmental friendly, but destructive. The Mpumalanga highveld area was also once among the worst air pollution producers in the world. According to Sowman and Urquhart (1998: 82) and Yeld (1993: 12), the vulnerability of this area can be attributed to the presence of many power stations. Sowman and Urquhart (1998: 82) consider the concentration of power stations like Kriel, Matla, Komati, Hendrina, Khuthala, Camden and Duvha within a radius of 150 kilometres of the highveld area as having a negative effect on the natural environment, and its human inhabitants. The high population density of this former Eastern Transvaal area is, according to Yeld (1993: 12), an additional threat to the living environment.

In addition to the afore-mentioned threats in the wider sphere, environmental degradation is threatening the sustainability of the living environment of a specific unit in Thubelihle. The factors posing a serious threat to a sustainable living environment in this area include littering, illegal dumping, poor water management, air pollution, soil erosion, eradication of nearby vegetation, as well as, overcrowding and poverty.

In view of the preceding background, the main research question guiding this study is:

**What are the views of stakeholders from the Thubelihle low-cost housing unit on their role in maintaining a sustainable living environment?**

### **3. AIM OF THE STUDY**

The aim of this study is to understand the views of stakeholders in the Thubelihle low-cost housing unit on their role in maintaining a sustainable living environment.

### **4. ASSUMPTIONS AND PRESUPPOSITIONS**

Before I begin the study I think it is proper to declare my assumptions and presuppositions about this study. Through my experience of involvement at Thubelihle as a teacher in a school in the low-cost unit, I believe the residents have some views pertaining to their role in maintaining a sustainable living environment. There may be a reasonable awareness and

concern about the deteriorating living environment among the residents. There is however no joint participation in trying to address the problems. It is my belief that some of the community members contribute significantly to the destruction of the environment. The residents may on average appear to be more concerned about the health and appearance of their home-yards as compared to that of their entire living environment. From the informal discussion with the residents there is also some uncertainty about proper individual actions to take in maintaining the sustainability of the environment. It seems as though the residents are too dependent on the councillors and the municipality in maintaining the sustainability of the living environment, whereas they do not act responsibly enough to save the environment, because some of the problems continue to exist even after being reported and the refuse removal service is not satisfactory.

I am also convinced that the residents are not conversant with their rights and responsibilities because they do not demand their right to a clean and healthy environment inspite of living in the dusty and bad smelling environment. They are also afraid of initiating any activity that can contribute positively to the sustainability of the living environment because they fear that by so doing they can be interpreted as challenging the elected political leaders in the area.

## **5. LITERATURE REVIEW**



### **5.1 Introduction**

The aim of this study was to find out what the views of stakeholders in the Thubelihle low-cost housing on their role in maintaining the sustainability of the living environment are. The main argument of this study is that stakeholders in a community have an important role to play in maintaining the sustainability of their living environment. In addition I argue that community education programmes play a significant role in promoting the awareness and actions of stakeholders in this respect. I shall discuss the effect of some selected factors associated with threatening the sustainability of the environment. This discussion will be followed by the discussion of community interventions through community education programmes to address a similar or related problem in a particular environment. I shall first discuss the effect of water in a living environment and the measures undertaken to address the related problem in a particular setting. The discussion of air pollution, littering and illegal dumping, eradication of vegetation, overcrowding and poverty will



follow this. Finally I will discuss soil erosion as a threat to a sustainable living environment.

## **5.2 Community education**

The main argument in this section is that community education can be used as a tool for community development in a variety of ways. Firstly it is my contention that community education helps in creating awareness with community members about issues and problems that affect their lives. I shall be citing various sources and examples of community education programmes that have been successfully implemented to create environmental awareness in some selected communities. Secondly I believe that community education has the potential to help empower such communities to find solutions to their identified problems and actively work towards realising these. Again I will draw on examples of such programmes especially in the South African context in doing so. In addition I will argue that community education also enables community members to realise the effectiveness of working together and collectively solving societal or community issues. In the case of the Thubelihle community, in which this research has been done, I propose that community education would be a suitable vehicle for promoting awareness of environmental issues and aiding community members in determining and fulfilling their obligations in terms of caring for their immediate environment.

The concept 'community education' is not easy to define. Its definition must take into consideration the meaning of the concept 'community', a term often used to define a group of people who share a common interest (Cunningham, 1996:904) and the concept of 'education' which means "...the total process of human learning by which knowledge is created, faculties trained and skills developed" (Farrant, 1991: 18). In fact an examination of the literature adds to this dilemma because it reveals a number of different ideas about what community education is, depending on the perspectives of those defining it.

According to Cunningham (1996: 902), one view of community education is propagated by the wealthy countries of the Northern Hemisphere that defines community education as "... a participative educational process based within a local public school or occasionally a community college or other adult education institution". This definition becomes applicable when the school becomes available for use by the entire community for academic, social, recreation and other purposes.

Perhaps the most important distinction in defining community education in relation to formal education lies in the views of Lombard (1991: 84) who sees community education as “the primary goal of the social education model” which sees community education as more than the institutionalised education system focusing only on the acquisition of the reading, writing, numeracy and other technical skills. It thus is also focused on issues like environmental management, problem solving, unemployment and poverty. Martin (1987:24) extends this definition by contending that community education also encompasses lifelong learning whereby members of the community can learn new information about their issues and its concomitant problems as well as finding solutions to these on an on-going basis.

Community education in the United Kingdom often assumes the form of community-based education. The Association for Community Based Education (in Cunningham, 1996:901) defines this concept as education “... responding to the undeserved populations by carrying out a range of activities that include economic development, housing rehabilitation, health services, job training, adult literacy, and continuing education programs”. The main premise of community-based education is that education is always linked to the culture and the communities in which it takes place and is committed to change in the community by aiding development and empowerment. This form of education can be organised around a special population or an environmental, health, etcetera concern.

Community education can be used as popular education to solve problems (Cunningham, 1996: 902). Popular education is also known as community-based education in North America. It is essentially rooted on the fundamental principle of the work of Paulo Freire (Cunningham, 1996: 903). It is defined as a social behaviour situated within a framework that is beside education and is inclusive of other aspects of life. It strives to make persons self-aware political subjects and is based on understanding and interrogating a person’s own oppression. Popular education is always connected to a particular context and action must be organically related to the context. Popular education assumes that knowledge is socially generated, that there are persons possessing intellect in a high degree in all social classes and that the groups without power can produce their own knowledge and prepare it for use to oppose the official knowledge of the dominant group (Cunningham, 1996: 903).

Kerensky (in Cunningham, 1996: 900) defines community education as “an educational and community development process for the development of human potential and participation in the local decision making process”. This definition is very much in line with that of Poster (1996: 910) who contends that “community education is not the dispensing of education to the community, but involvement of the community in the content and style of its education” so that it becomes about movements that empower the people, not about leaders”. Community Education programmes can thus differ from community to community depending on the needs of the particular community. In the case of the community in which the research focuses this will mean firstly giving the community an opportunity to discuss and then plan for what they do know and would like to know about how they and their environment are intertwined and how their perceptions and actions in relation to the environment can change positively.

The definitions offered earlier by the various authors such as Cunningham (1996: 902); Kerensky (in Cunningham, 1996: 900); Lombard (1994: 84) and Poster (1996: 909), and the above discussion illustrate that because community education is an ambiguous concept, it is difficult to reach consensus on a unanimous definition. Part of this dilemma emanates from the manner in which Community education is represented in the literature. According to Martin (1987:24) there are three dominant trains of thought in terms of examining community education and these can generally be divided into three models, which are the universal, reformist, and radical models.

The universal model of community education is based on the premise that there is homogeneity and basic harmony of interests in the community (Martin, 1987: 24). This model also assumes the existence of co-operation and participation in all spheres of the community. It is further characterised by age-inclusive educational offerings; recreational programmes which maximise the use of available resources and vocational training (Cunningham, 1996: 902).

This model of community education plans and uses integrated approaches such as family education and age-mixed events to overcome the separateness of modern age groupings (Cunningham, 1996: 902). The initial focus of this model is the secondary school or community college. The twentieth century origins of this model can be traced to the Cambridgeshire and Leicestershire community colleges. The various dominant themes in this model include lifelong learning, integrated provision, openness and access,

decompartmentalisation, rationalisation, co-ordination, voluntarism, neutrality and co-operation. It uses a top-down structure and its programmes are formal and institutionally based (Martin, 1987: 24).

The reformist model of community education as presented by Martin (1987: 24), targets low-income communities and aims for positive discrimination and considers the society as being in a state of pluralism. This model is based on the premise that there is heterogeneity and inter-group competition within social groups. It uses selective intervention strategies to assist people discriminated against and deprived areas without an inadequate provision of important necessities such as water, electricity and sanitation system. Its initial focus is on primary school, home and the neighbourhood. Its twentieth century origin can be traced to Plowden Report (1967) and Educational Priority Areas (Martin, 1987: 24). The prominent themes of the reformist model are positive discrimination, decentralization, participation, social relevance, home-school links, pre-schooling play, informal adult education, self-help and partnership (Martin, 1987: 24).

The radical model of community education implies the existence of conflict. The initial focus of community education in the radical model is on the local working class and action groups (Martin, 1987: 24). This model assumes the existence of class structure, inequality and powerlessness in the community. Its twentieth century origins include community development projects and innovative adult education and community work. The dominant themes in this model are centred on redistribution or equal opportunities, community action power, redefinition of priorities, learning networks, structural analysis, solidarity and collaboration. It uses a bottom-up local leadership structure. It is also an informal process that is local-based and pro-active. When using the radical model, community education focuses on issue-based education, equal opportunities and social action.

All of the above have had an influence on the definition of community education that I would like to adopt for the purposes of this study. Aspects of a definition I feel are most suitable for this study are “an educational intervention strategy aimed at assisting in creating environmental awareness, acquiring research and problem solving skills, enhancing assertiveness and promoting the co-ordination of activities that will enable communities to realise and overcome the problems they experience especially in regard to the environment and related issues”. Community education can work in the South African context because according to Poster (1996: 908) it employs diverse, methods and

techniques to communities and also recognises the knowledge, skills and experience of the various community members. It can also work because it comes as a natural response to local conditions whereby people have to act in response to the identified issues irrespective of their literacy status. Community education also strives to provide cultural and vocation education while it empowers people to recreate their cultures.

Community education in the South African context is a suitable tool as it can also work in a semi-literate community because literacy is not a requirement for it to operate. Moreover, it assumes equality among all people and addresses their concerns. Poverty, overcrowding, littering and dumping, soil erosion, water pollution and air pollution are some of the concerns that are commonly experienced in the low-cost housing units and need to be addressed (Sowman & Urquhart, 1998: 82-83). Community education can also work in the low-cost housing units because it can, according to Poster (1996: 908), be used as a forum. Stakeholders need a chance to voice out their wishes, hopes, plans, and disappointments about the environment. The forum provides them with the opportunity to do this.

Accordingly, in order to be successful the low-cost housing, community education will be required to assume the form of community-based education whereby the members of the community will have to use intellectuals within their community to produce social knowledge that will enable them to “read and understand their world”. In other words the community will have to be given the opportunity to identify their own needs, set their own objectives, and work on solutions but with guidance where necessary from community educators and organisers. Community-based education can be used as a means to address problems experienced in actual situations, which in the case of this study can include factors such as unemployment, poverty, overcrowding and poor water management, among others. This education can be centred on environmental concerns such as the eradication of trees, soil erosion and air pollution. The relevant activities can encompass water conservation education, grass and tree planting to prevent soil erosion, clean up campaigns to reduce and prevent land pollution, protests and marches against air pollution, insufficient sewage system and other forms of environmental destruction. The continuing education programmes can include learning about natural systems, resources and human systems. The community-based education process can also attempt to provide answers to clarity seeking questions on why the people in the low-cost housing units are crowded in small

houses and rendered poor services in terms of refuse removal and the provision of water and electricity.

Some of the members of the low-cost housing community may be aware of the growing environmental problems such as air pollution, soil erosion and the eradication of vegetation. They might even wish to educate the other members of the community about these problems and their possible consequences, only to be prevented by lack of knowledge on how to go about to achieve this aim. Community education can play a crucial role in this respect by giving advice on how the community can be educated. Communities can also plan and agree on certain actions to be taken to solve environmental problems such as littering and dumping by for example deciding to punish the offenders. Community education intervenes in such a situation by giving advice about the acceptable alternatives to problem solving and their applicable consequences. According to Swanepoel and De Beer (1996: 33) this is important because the people know what they want to achieve but may not be certain of the way in which they can attain their objective. This will require that the community be guided so that they can overcome any obstacles along the way.

According to Burkey (1993: 50) the community needs to have confidence in using their own knowledge and skills to achieve their goals and the community organiser is in a better position to assist in this respect. Community education can also work if the communities are given advice about the available choices they can make and their possible results. A member of the community or an expert who possesses more information is in a better position to guide other members of the community in choosing what can be applicable to their situation. Community education can also enable the people to do so (Swanepoel & De Beer, 1996: 34). This can be achieved by creating a situation that is conducive for the people to be empowered. Community education can work best through the process of facilitation because the facilitator can assist the communities to identify their needs, search for resources, make decisions about their aims and goals and choose the best alternatives to attain them (Swanepoel & De Beer, 1996: 34-35).

Change in attitude and behaviour toward the environment in or surrounding a low-cost housing unit can save it from destruction. This means changing from environmentally destructive behaviour to environmentally supportive behaviour such as planting trees and grass instead of destroying them. The change in behaviour can manifest itself by discouraging littering and dumping, but supporting and participating in anti-pollution

campaigns and other protests against environmental abuse. Since community education is about change, it can also create an awareness that can lead to change in the way in which the low-cost housing community relates to their environment. In the case of the low-cost unit Community-based education can be centred on themes such as fighting poverty, unemployment and starvation. The community can use educators and other knowledgeable, skilled and experienced persons among their members in creating environmental awareness. This can be made possible by the fact that community education can be organised around a local education institution and use the available and suitable human resources to solve problems and ensure that the community functions, as it should (Kerensky in Cunningham, 1996: 901). This is the type of community education I am advocating for in South Africa because it uses elements associated with the radical model of community education. I consider the model befitting the South African context because class structure, inequality and powerlessness still play a major role in the allocation of resources in the community. Community education in the form environmental education can be used to assist the community to identify problems and share information, knowledge and skills in solving them. This can be made possible by the fact that community education encourages communities to deal with the problems they experience in real life by using their knowledge, skills and experiences. This study has for example focused on a poor low class community within the South African context.

### **5.3 Factors associated with threatening the sustainability of the living environment.**

The sustainability of the living environment is determined by a number of factors of which according to Van Rooyen (1999:7), the biophysical elements consisting of water, air, soil, plants and human beings form the core.

#### **5.3.1 Water**

A sustainable living environment requires among other things the availability of essential resources such as air and water. Water shapes the surface of the earth, and has a determinant role in the functioning and continued existence of all living creatures on earth (Gates, 1999: 61; Hanselman et. al., 1990:30; Yeld, 1993:33). The availability, quality and management of water are important components in maintaining the sustainability of the living environment because a clean, safe and reliable supply of water enhances the quality of life. Human beings need a certain amount of water to remain alive. Plants also survive only in the presence of water. Plants are essential in the maintenance of a sustainable living

environment because of the important role they play in contributing to a healthy environment (Hanselman et.al., 1990: 30-32; Sowman & Urquhart, 1998: 96). According to Yeld (1993: 32) the availability of water plays a crucial role because it promotes the sustainability of the living environment while its scarcity limits growth and future development. Contaminated water is one of the major causes of death in poor communities (Urban Management, 2000: 23).

There are numerous factors threatening the sustainability of clean water in South Africa. For example the country receives a low amount of rainfall per annum and therefore suffers from a serious shortage of water as a result. The low average rainfall of 646 millimetres received per annum makes South Africa a dry country (Delpport, Pillay & Dalton, 1999:118). The distribution of the general rainfall pattern is uneven while at the same time the country has a few aquifers (Urban management, 2000: 2; Yeld, 1993:32). Other factors include the falling water tables, depletion of underground acquifiers, shrinking lakes, drying wetlands, pollution of rivers and streams (Urban management, 2000:44). Population explosion however constitutes the most serious threat to the availability of clean, safe and healthy water as required for a sustainable living environment. It is allegedly responsible for both the doubling of the demand for water every twenty-one years, as well as the pollution of some of the available water resources. The country is threatened by a possible irreversible drought by the year 2020 if the present irresponsible management of water resources continues (Urban management, 2000:44). Poor water management is a problem and an increasing liability to the country because millions of rands are used to make water available in the country only for it to be managed irresponsibly (Urban Management, 2000:24).

Inspite of all these problems community education can play a significant role in empowering the various sectors of the South African community to save lots of water by equipping the residents with the necessary skills to address the causes of the loss of water and thus minimise its disastrous consequences. This could possibly be addressed through community education as a problem solving mechanism where a community has to identify problems and attempt to solve them (Cunningham, 1996:907). Evidence of the claim that community education can help to solve the problem of poor water management is borne out by the successful implementation of community education by Rand Water to solve the problem of water loss that was experienced in Thembisa.



From the middle of the 1980s to the early 1990s, the community of Thembisa had to pay huge water bills following the loss of vast amounts of water through leaking toilets, taps and many old pipes that had burst. Informal discussion among the residents culminated in the refusal to pay the high water bills that resulted from the loss of water due to plumbing that was not properly maintained. Rand water implemented a community education strategy by forming a committee comprised of its employees and community members to investigate how the community could be involved in solving the problem created by the loss of water (Jacana Education, 1998:20). The involvement of the community in trying to find solution to the problem is an example of how community education involves people in finding solutions to their own problems (Cunningham, 1996: 902). Community education helped the community seek a solution to this problem when the elected committee discovered that the community could not pay for the lost water. Rand Water and the community therefore agreed to initiate a community project to solve the problems of non-payment and the increasing water loss. They concluded that training some of the residents of Thembisa to fix leaks and install new toilets that could save water could help solve the problem. The committee also successfully recommended the implementation of training programmes for supervisors and assessors from the community. According to Schuftan (1996: 262) the training of community members is an important human resource development component of community education because it promotes local generated solutions to problems and sustains results of empowerment projects. Select members of community underwent a four-week training programme in which they learned how to fix water leaks, to fit water taps, replace old pipes and install new toilets. All the trained community members received certification upon completion of the training programme. The trained community members were expected to serve as community education facilitators by imparting the plumbing skills to other community members (Jacana Education, 1998:20).

I therefore argue that the above-mentioned community education initiative helped the community as the community learnt to save water because the residents could attend to the loss of water after the training they received from Rand Water. In addition, some of the community members received plumbing skills that they also passed on to other residents in Thembisa. The relevant environmental education projects can also assist in creating jobs, which according to Schuftan (1996; 262) is one of the aims of community education and which in the case of this community was achieved. A number of community members are now in a position to offer their services at a fee for plumbing and so generate an income.

Furthermore, community education programmes created the awareness that the community can save money if it is environmentally responsible (Jacana Education, 1998; 20).

### **5.3.2 Air Pollution**

Fresh, clean and unpolluted air is a very important requirement for life and the sustainability of a living environment because good quality of air enhances longevity (Gates, 1999:139). According to Hanselman et.al (1990:108) there is a reciprocal relationship between the health of residents and the quality of the environment. This implies that the health of human beings reflects the quality of their living environment while at the same time healthy citizens can contribute to the maintenance of a sustainable living environment. On the contrary polluted air creates an environment that is not conducive to human settlement and thus threatens the sustainability of the living environment. Air pollution endangers human life in a number of ways, which include creating health problems such as lung cancer, respiratory difficulties and leukaemia (Hanselman et.al., 1990: 108; Sowman & Urquhart, 1998: 82; Yeld 1998; 30). It further creates problems by destroying natural resources, degrading the land, causing acid precipitation, interfering with photosynthesis and other physiological functions and even in extreme cases reducing farm produces. In addition to endangering the life of living organisms, air pollution also affects them externally. It reduces vision and can severely destroy material objects. It can corrode and tarnish soil, erode, weaken, discolour and destroy useful materials. Air pollution can also lead to the formation of acid deposits that can damage plants, animals and buildings (Gates, 1999: 139-140).

I argue that community education can make a significant contribution to addressing the problem of air pollution because as a process community education can be organised around a specific environmental concern such as air pollution (Cunningham, 1996: 902). Testimony to this claim can be found in the action that was taken by the community of Merebank, south of Durban in Kwa Zulu-Natal in response to a community education initiative, which was aimed at addressing the air pollution problem in its neighbourhood.

The community of Merebank had a long history of serious air pollution, which it was not in a position to protest against successfully. The community education initiative started with an awareness raising strategy in which a Durban morning newspaper published the results of a survey that reflected alarming levels of the seriousness of cancer in Merebank.

According to this report the levels of air pollution in Merebank were so high that the rate of leukaemia in children in Merebank was twenty-seven times higher than in those not staying in the area. The report also revealed that children in Merebank were also four times more prone to be attacked by other forms of cancer because of the exposure to such critical levels of air pollution (Sowman & Urquhart, 1998: 73).

A phase of community action emerged from this process when a group of American researchers who were investigating the problem of air pollution in the area, invited some community members around Merebank to participate when they collected samples of polluted air. The samples collected testified to the seriousness of the levels of air pollution in that particular area. Following the publication of the results of their research by the morning newspaper, Mercury, detailing the seriousness of air pollution coupled by the findings of the American scientist's survey the community was enraged. A local NGO took up the case on behalf of the community and a meeting was organised between them and the refineries, which were responsible for the air pollution. The meeting was not well attended by all refineries and those present indicated that they wanted to set standards for the extent to which they could control air pollution levels. The NGO felt that it was unacceptable for those causing the pollution to be responsible for setting the standards without the community having a say.

The NGO then lobbied to raise awareness of the problem in Merebank and about the even-handedness of the standards-setting procedures, which the refineries wanted to implement. The NGOs organised a workshop to ensure that the community of Merebank was made aware of the seriousness of the critical levels of air pollution and its impact on their lives and were given an opportunity to discuss it with each other. As a result hereof, the NGOs and the residents therefore refused to enter into an agreement about the levels of air pollution that some of the refineries were prepared to adhere to. They refused because they felt the set levels were still very high and therefore still a serious risk for the resident's lives. The residents then started massive protests against the high levels of air pollution in Merebank. The protests have recently drawn the personal attention of the minister of the Department concerned with controlling environmental management and an agreement has also been reached between the polluters and the Department of environmental affairs and tourism that the pollution level will be controlled (Cairne, 2000: 11).

It is my belief that community education programmes like the one expanded on above can empower communities by raising the awareness of the residents about their situation and their rights. They can also raise consciousness about environmental programmes that enable people to know and understand the environmental problems affecting their lives (Schuftan, 1996: 262-263). Community education can therefore assist the community of the low-cost housing in Thubelihle to understand what appropriate action they can take to address their pollution problems.

### **5.3.3 Littering and illegal dumping**

The sustainability of the environment also depends on the presence of resources such as soil, water and air. Littering and dumping endangers the environment by destroying these resources. Littering and dumping contaminate the soil through the deposition of oil and other harmful chemicals that destroy the soil upon contact with it. The damage is transferred to other areas when the waste is eroded. Littering and dumping are detrimental to the environment because they promote water pollution. In rainy days water erodes some of the dumped material and deposits it in water sources such as rivers, streams and wells. The soluble parts of the waste contaminate underground water sources when it is dissolved and infiltrated into the soil (Avery et. al., 2000: 81).

Dumping reduces the productive capacity of the soil because its presence consumes the space that can be used for other activities such as building of houses, recreational facilities, community gardens and social forestry which can all benefit the community and alleviate the pressure exerted by the lack of these resources. Irresponsibly disposed waste kills some of the vegetation and animal species located in the sites where it occurs. Some of the content of the waste such as oil and harmful chemicals kill plants, animals and insects upon contact with them thus depriving the environment of the role played by the existence of these important components of a sustainable environment (Gates, 1999: 149-150). Littering and dumping promote the spread of diseases because the decaying dumped material attracts flies and other insects that spread germs from some of the decomposing objects (Avery et. al., 2000:81).

Littering and dumping also damage the environment by creating visual pollution that removes the aesthetic component of the environment that enhances its quality for human occupation. The bad smell created by the exposure of the dumped material to the

atmosphere causes air pollution that is detrimental to the environment because it can cause and worsen chest related problems and contribute to breathing difficulties (Potts in Main & Williams, 1992:209).

Community education can enhance the sustainability of the environment by ensuring that communities have the capacity to manage waste properly. An example of such a community education outreach is evident in the programmes run by the Keep Durban Beautiful Association (KDBA). This organisation decided to create awareness in the community about the significance of a clean environment after noticing an increase in the amount of litter in various community areas such as parks, taxi ranks and residential areas (Parson, 2001: 1). The KDBA designed a number of programmes in order to raise awareness about waste management among the residents. The association used radio and various local newspapers to highlight key issues about poor waste management and the problems it was creating in the environment. This initiative took the form of an environmental awareness competition run by KDBA on Ukhozi FM for a period of ten days. The programme presenter read a message dealing with the importance of a clean environment and other waste management topics and asked a question related to the subject thereafter. Listeners had to phone in and answer the question but they also had to suggest strategies on how further land pollution can be best prevented by the communities (KDBA, 2000:1). This programme raised the level of the awareness of the listeners and offered them the opportunity to debate, share ideas and reach consensus about proper community action pertaining to some of the environmental matters. Besides the radio programme, KDBA also developed and distributed awareness-raising materials such as posters, umbrellas and leaflets to create and sustain public awareness of the need to eliminate environmental destruction through littering and dumping. The community was therefore empowered in waste management because it thereafter initiated and supported effective clean up campaigns (KDBA, 2001:2).

Another example of a community education programme conducted by KDBA is the “Adopt A spot” competition in various developing areas such as Ntuzuma and Umlazi. In this programme families choose an unused open space that can be classified as problematic because of being used as an illegal dumping site. Each family is then taught by the promoters of the competition how to conduct research about the nature of waste in that spot so that it can generate knowledge about the polluters, time and reasons for polluting and working out the strategies to solve the waste problem. The cleanliness of that spot becomes

the responsibility of that particular family thereafter. The chosen spots are thereafter evaluated for cleanliness by the KDBA. The owners of the cleanest spot in the various areas win a prize. The huge interest that has been shown by families in this competition has successfully inculcated the ethic for a clean environment among communities of most of the developing residential areas in this area. The spots adopted by the Mkhize and Jali families at Ntuzuma E-section and Umlazi J-section respectively are reportedly exceptionally well maintained (KDBA, 2000: 1). Through this form of community education, participating families learn skills such as research, problem-solving mechanism and project management, among others. The education received also promotes a sense of community ownership for the initiative taken, which Schuftan (1996:262) regards as one of the effective ways of capacitating communities.

Illegal dumping is one of the most serious environmental degradation factors in Thubelihle. I therefore argue that the community of the low-cost housing can benefit a lot by learning and practising some of the activities undertaken by the residents of the area referred to in the foregoing paragraphs. The community education programmes can empower the residents of this residential area because they can learn how they can develop their place through community participation. They can also learn that working together can be productive because it makes learning the skills needed to manage projects and solve problems easier than it would be if done separately (Cunningham, 1996: 900). According to Schuftan (1996: 263) community education can persuade and convince the community to do what is obligatory for them for environmental sustainability. Community education can also empower the residents of the low-cost housing unit to change their irresponsible behaviour towards the environment because it can assist people to change their personal habits and practices (Schuftan, 1996:262).

#### **5.3.4 The destruction of vegetation.**

The presence of vegetation plays a crucial role in the sustainability of the environment. Suitable vegetation species such as trees, grass and shrubs perform numerous vital roles that are essential in the environment. They provide habitat to some of the burrowing animals that help in the formation of the soil (Hanselman et. al, 1990:34). Trees play numerous important functions. They reduce noise pollution and clean the air by filtering the pollutants contained in it. They also provide shade to human beings and other living creatures while protecting the loss of other valuable resources such as soil and water

(Sowman & Urquhart, 1998: 162). Some tree species are important because they provide nutritious food, which in principle, contributes to healthy human bodies. Besides the protective functions, trees also perform the important role of regulating temperature, for example conserving heat at night. In hot days, trees regulate temperature by their cooling effect. Some of the activities associated with trees can create job opportunities. Small-scale tree planting can assist members of the community to generate some income from selling the fruits gathered from trees. Trees can also provide wood for sale in some communities. Organised tree planting can play a crucial role in the maintenance of the environment by increasing environmental awareness, contributing to better understanding of surrounding and improved quality of life among community members. The removal of the various vegetation species means a disruption in the ecosystem that existed in the area before. It also means an interruption of some of the ecological processes that are essential in any environment. The disruption or interruption of an ecosystem is a violation of one of the principles for maintaining a sustainable environment (Yeld, 1993: 16). The absence of trees is therefore a threat to the sustainability of the living environment.

I want to argue that community education can make a significant contribution in creating the awareness of the importance of the presence of vegetation among community members and help those members eventually develop an understanding of the need to prevent its destruction. Evidence of the effectiveness of community education programmes in creating awareness about the importance of the presence of trees and the prevention of their destruction is among others borne by the development that took place at Mizamoyethu near Houtbay in the Western Cape following the need for upgrade the residential area. The development project to upgrade the residential area required that most of the trees be destroyed. The management of the development project realised that the extermination of too many trees was going to have a negative affect on the environment and its ecosystem and therefore decided to consult the community on this issue. The developers consulted the residents in order to reach a consensus on the approximate numbers of trees to be left. The latter demanded that all the trees be destroyed basing their reasoning on the misconception that the trees were a fire hazard and dangerous to their own lives because the huge branches could break off and fall on their houses. The residents also felt that the tree trunks were too big and thus consuming a bigger part of their sites while the shade fell on someone else property. The community was given an opportunity to reconsider their decision of eradicating all the trees but there was no change when researchers were sent to investigate the validity of the claim that the residents wanted all the trees destroyed. The developers

and the researchers requested a meeting with the community and permission was granted. They further requested the community to allow them to hold workshops with them to discuss the importance of keeping trees in flood-prone areas like Mizamoyethu.

After a series of workshops and informal discussions dealing with the importance of trees in a human settlement, the interdependence of the various components of the biosphere and the important functions that trees can perform, the community came to the realisation that they needed the trees and through this process they were made aware of the role that trees enhance the appearance of their place. The community eventually took a joint decision to save as many trees as possible because they could see the need for the trees (Sowman & Urquhart, 1998: 62). The effect of community education can be seen in the environmental awareness it created, changes in the views of the community about the existence of trees as well as the joint decision to save the trees.

The community of the low cost-housing unit at Thubelihle has plenty to learn from the Mizamoyethu community because it has already lost a large number of trees without replacing them. The trees that existed in Thubelihle and its neighbourhood have been destroyed and there is as yet no substitute vegetation. This leaves the environment vulnerable to destructive elements like soil erosion and extremes of weather conditions.

I contend that a community education programme targeted specifically at factors like these can help to develop the understanding of the important role played by the presence of trees and other forms of vegetation species. One possible effective measure to redress the disappearance of trees is community participation in events such as the Arbor week. Taking a leaf from the tree planting culture or the entire greening project of the only secondary school in the low cost housing unit area can also be helpful. The environment Radio programmes such as the SAFM Green update and Ecowatch can offer valuable lessons. The Environment T.V programmes such as the SABC 2 50/50 Nature and Environment Programmes and the e-Tv and M-Net/DSTV Ad hoc Environmental Programmes, according to September (2002: 15) can expedite the development of environmental awareness. This can eventually assist a lot toward performing the roles pertaining to maintaining a sustainable living environment.



### **5.3.5 The environmental threats associated with overcrowding and poverty as contributing factors to environmental destruction.**

Overcrowding threatens the sustainability of the living environment in the low-cost housing unit because it means extra people for limited resources. An increase in the number of people has a negative effect on the environment because human beings can radically change the environment. This action can result in changing important systems and cycles of the biosphere (Hanselman et.al, 1990: 116; Yeld, 1993: 20).

Overcrowding is a threat to the maintenance of a sustainable living environment because it is closely linked to environmental threats. In the low-cost housing unit of the township there are already existing environmental problems such as soil erosion, veld deterioration, high pollution levels in air, water and the land, deterioration in health. According to Gates (1999: 138), problems such as waste disposal, littering and air pollution usually increase as the population increases. Mhlathuze water (2000:44) warns against the serious threat that population increase poses for vital resources such as water and air.

The combination of population growth and overcrowding constitutes a serious threat to the sustainability of the living environment because they are linked to sanitation problems in the low cost housing unit which are in turn linked to health problems such as typhoid, dysentery, cholera, diarrhoea, and hepatitis. Inadequate sanitation in the form of the constant spilling sewage is also a serious problem in the area of this study. It needs to be addressed as a matter of urgency if the concept of maintaining a sustainable living environment is to be achieved. Overcrowding threatens the living environment because it is associated with the likelihood of promoting the frequency of measles, tuberculosis, meningitis, influenza, mumps, upper respiratory tract disease, diphtheria and whooping cough among others. Overcrowding hinders making and maintaining even hygienic standards for food preparation (Potts in Wains & William, 1994:209).

Community education can serve as a vehicle for maintaining a sustainable living environment. This can be done by imparting the skills that are essential to solve environmental threats that are associated with overcrowding as it happened when the Botshabelo settlement in the Free State found itself with a population of about 250 000 people within one year. Most of those people were unemployed and the settlement experienced environmentally-threatening issues associated with overcrowding such as

littering, lack of basic services like water and electricity, poor sewage systems and uncontrolled dumping of household waste (Jacana Education, 1998:12).

Through community education the residents of Botshabelo managed to transform their derelict environment by overcoming the problems they experienced. The residents in the various sections of the settlement called numerous meetings to address the deteriorating environmental situation. The residents highlighted the problem for the conscientisation of the other members of the community and eventually agreed on what they considered to be treated as priority projects to save their settlement from being destroyed by the effects of overcrowding. Some of the community members addressed the residents on the importance of community participation and support for the success of any community projects they wanted to initiate. Through the meetings community education created awareness and promoted community participation.

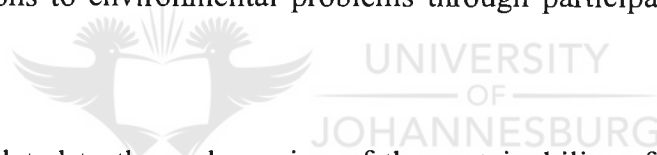
The community education process in Botshabelo also included training programmes about economic development whereby the residents were taught job creation skills such as making bricks, fences, candles and handcrafts that they could sell. The acquisition of these skills alleviated overcrowding and poverty because they enabled some of the residents who were not employed to earn an income. Job creation is according to Cunningham (1996:901) one of the aims of community education.

The community discussed and agreed on what they considered to be their responsibility in terms of creating and maintaining a healthy environment and were also taught the various strategies through which they could improve their natural environment. The facilitators emphasised the planting of trees to prevent soil erosion in both windy and rainy days as well as for the supply of fruits and provision of shade. The lessons further encouraged the starting of both family and community gardens to create jobs for the unemployed and supplement their diet.

Community education in Botshabelo also promoted the sustainability of the living environment by facilitating the acquisition of waste management skills among the community members. The facilitators taught the community how they could turn some of the waste materials like glasses, tin and wood into new useful material through recycling. The residents were also advised to overcome the problem of irregular garbage removal by considering forming groups to collect it from door-to-door. Community education about

waste management in Botshabelo has resulted into the establishment of Waste Management and Recycling Industries (Sowman & Urquhart, 1998:178) which collect garbage, turn scraps of wood into furniture, make compost from organic matter and manufacture wine glasses from bottles. These activities promote a healthy environment and enable some of the members of the community to generate some income from the sale of the products they manufacture from the garbage they collect.

The residents of the low-cost housing in Thubelihle can learn much from programmes like that of the Botshabelo community action projects because the two communities share similar problems such as overcrowding, dumping of household waste, littering, sewage related problems as well as poverty and unemployment. The Botshabelo community was empowered by community education because it learned skills such as project management, income generation and financial management through community education. The community also learned that working with others is important for the success of attempts to improve the environment. They acquired the knowledge to support community development and conservation of natural resources and reaching locally generated sustainable solutions to environmental problems through participation (Jacana Education, 1998: 12-13).



Many practices related to the endangering of the sustainability of the living environment are related to poverty, which can either be the cause or result of destroying the environment. The possibility however exists that poverty can be a combination of both the cause and the result of environmental destruction (Yeld, 1993: 21).

Poverty is a serious threat to a sustainable environment for a number of reasons. Firstly, it occupies the mind of its victims such that they become mainly concerned with ways and means of surviving irrespective of the results of their actions to the environment. For example, poor people often overuse the non-renewable resources in their priority struggle to survive (Jordan in Sowman and Urquhart, 1998: v). This action violates the principle of sustainable living, which requires lessening the depletion of non-renewable resources (Yeld, 1993: 19-20). Poverty further threatens the sustainability of the living environment because poor communities are usually discriminated against in the provision of services because they are poor. Poverty determines whether services will be provided for or not. It also dictates the quality of service if provided. But it also happens that poor people are denied some of the services because of their low income. For example poor households

usual lack essential facilities such as water and electricity and experience problems with refuse removal, wait very long to have any damage repaired and sometimes have to live with dysfunctional toilets. Their position eventually force them to resort to environmentally destructive actions such as destroying trees to make fire, dumping their household waste and using open spaces to respond to the call of nature. Both the provision of a lower standard of services or their complete denial threatens the environment because they negatively affect the social life and health of the affected people (Sowman & Urquhart, 1998: 82-83). The denial of services to an area where it is due is contrary to improving the quality of life as one of the requirements for sustainable living (Yeld, 1993: 12-16).

Community education can also assist communities in alleviating poverty by teaching them job-creation skills that can also eventually help in solving some of the environmental degradation problems. A successful example of a community education empowerment process is the one-man-contract system, which is driven by the community involved in the refuse removal initiative in Setswetla. It is aimed at reducing litter while at the same time creating jobs. The one-man-contract system emerged from community effort to improve waste management in Seswetla. The residents of the informal settlement held meetings to discuss the various problems they encountered, including littering. They finally agreed on the one-man-contract system as the best means to reduce litter that was created by the frequent absence of regular waste management in their living environment. The community thereafter tasked some of their members to seek sponsors for this system, which was implemented immediately in 1994 when sponsors were found. The communities were then taught through workshops, how they could implement the system in a harmonious way and still get the best results out of it. The implementation of this system required that an area be divided according to a community-agreed number of dwellings whereby one unemployed person is contracted to collect domestic waste. This is done on foot. The waste is also collected from streets and open spaces. The one-man contract is supervised initially and is only integrated into the community service of the local authority if it is considered successful by the assessors after rendering a satisfactory service to the community (Sowman & Urquhart, 1998:176). According to Poster (1996: 908), community education provides skills to work out solutions to problems such as those that were experienced in Setswetla. The success of the community to work out a locally generated solution to their problem is an indication for the success of community education as a tool in promoting the action of stakeholders in maintaining a sustainable living

environment. The system is successful in Setswetla because it provides employment and is also community based (Sowman & Urquhart, 1998: 176).

The residents of the low cost-housing unit in Thubelihle can possibly benefit from implementing a similar system that can be devised according to the specific needs of that community. The decrease of littering and dumping accompanied by job creation can alleviate some of the problems that are being experienced now.

### **5.3.6. Soil erosion**

The availability of soil is one of the main anchors of a sustainable living environment because it plays a number of important functions. Soil is the main source of food for humans, plants, insects and animals because if it is suitable it allows plants to grow by providing them with water, air and nutrients. Besides supporting plants by providing them with water, soil serves as a source of water by retaining it so that it can be available for use by human beings and all other living creatures (Gates, 1999: 3; Hanselman et.al, 1990: 122; Johnson & Morrel, 1988: 58).

In addition to making other resources available for use, soil provides a habitat for the burrowing animals whose presence contributes to soil formation ( Hanselman et.al, 1990: 122). Suitable soil is used as sites for building houses for human beings. Soil erosion however, depreciates sites and endangers the lives of human beings by eroding the foundations of houses thus making them a risk for the lives of their occupants.

The importance of the soil is further strengthened by the fact that it provides raw materials for building. Moreover, soil is on its own a building material. For example, sand, is the most commonly used building material. Soil also serves as a source of other building material such as wood, grass and cement (Johnson & Morrel, 1988: 58; Sowman & Urquhart, 1998: 146; Yeld, 1993: 28). A well cared for soil also contributes to the aesthetic component of the environment because it enhances the beauty of the place.

Soil erosion threatens the maintenance of the living environment by eroding and blowing away the fertile topsoil, which leads to a decrease in the productivity of the soil (Johnson & Morrel, 1998: 58). A decrease in soil productivity creates problems such as inadequate food supply, which can lead to hunger and other malnutrition-related diseases (Johnson &

Morrel, 1988: 58; Sowman & Urquhart, 1998: 146; Yeld, 1993: 28). The removal of productive fertile soil also decreases the chance for effective small-scale farming and gardening and consequently increases poverty among poor people. Those in the low-cost housing suffer most because they have to spend their little earnings in buying products such as fruits, vegetables and other crops they would have planted themselves if they were not prevented by soil erosion. It thus impoverishes the poor even further. It also endangers the life of the residents because it causes dust, which may contain harmful pollutants (Johnson & Morrel, 1988: 58; Sowman & Urquhart, 1998: 146; Yeld, 1993: 28). Soil erosion is an impoverishing process that also depreciates the quality of life and cost the environment vital resources in the form of the soil that is lost (Dalton et.al, 1999: 119; Yeld, 1993: 16).

In Thubelihle the possible results of the soil erosion if it continues unabated will among others be the siltation of the only water stream in the South -West direction of the township because siltation of streams, rivers and dams is one of the common results of soil erosion. The loss of soil also expedites the diminishing of important natural resources such as water sources, thus promoting the already existing problem of water shortage on some parts of the country (Sowman & Urquhart, 1998: 146).

I argue that community education can serve as a vehicle for maintaining a sustainable living environment by empowering the community to prevent the loss of valuable resources such as soil. In the first, place community education can create an awareness of the problem among the community. It can also assist the community to understand the underlying causes of soil erosion and lastly, create the opportunity for the community to create the knowledge that is essential to overcome the problem. Community education can achieve all of these because according to Cunningham (1996:901) it is among other processes, a problem-solving mechanism. It involves citizen participation in the identification and solving of problems and also encourages that solutions to problems be found within the community where the problems occur.

The reclamation of forestry project in Herschel is testimony to the fact that community education can assist in maintaining the sustainability of the environment through combating soil erosion. The community of Herschel, a rural area in the Eastern Cape became worried when it realised there were no longer enough pastures for stock grazing, water resources were becoming scarce and trees were also diminishing. This became a community concern and the residents started informal discussion among themselves, which eventually

culminated into a series of community meetings to discuss the problem. There was still no certainty of what was to be done to solve the causes of the problems that were experienced until the agricultural extension workers intervened. These workers encouraged the community to discuss what their problems were before they could set any project to combat their causes. Through their guidance in the form of workshops and discussions, the community realised that it was losing pastures for the stock and the water resources were drying up because of soil erosion (Sowman & Urquhart, 1998:150).

Community education created the awareness among the residents that soil erosion was the cause for the other problems that were experienced. Through guidance again from the extension workers, the community worked out a plan that was to be used to combat soil erosion. The plan required building stonewalls across the dongas to slowdown runoffs. The plan also included fencing springs to protect them from trampling by livestock. The plan also suggested ways in which how the material that was going to be use could be obtained (Sowman & Urquhart, 1998: 150).

Community education assisted in many respects in this community project. It started by creating awareness of the community about the effects of soil erosion. It provided the community with the opportunity of discussing problems, and finding a solution by participating through the project and by so doing allowed the community to learn from each member. It also improved the condition of the natural environment by preventing further soil erosion and protecting the sources of water from complete destruction. In addition, community education enabled the community to provide for its present needs without further damage to the environment thus making provision for future needs also possible.

A similar community action can surely help to reduce soil erosion in Thubelihle where the problem is fuelled by the lack of vegetation cover that includes windbreaks in the form of trees on the boundaries of the township and along the roads. Grass in the form of lawn in the home-yards, shopping complex and sport-grounds can also reduce soil erosion. The process of community education empowers communities to become aware of community problems and encourages them to participate in solving them. It also assists residents to improve their living environments (Cunningham, 1996: 901).

## **6. RESEARCH ORIENTATION AND METHODS**

The research methods that were used for this study are discussed next.

### **6.1 Research orientation**

There are various research paradigms that can be followed in conducting research. Merriam (1998:4) mentions the three kinds of such paradigms as being the interpretative, positivist and critical paradigms. I have chosen the interpretative paradigm because it seeks to analyse and interpret reality as experienced by those who construct it. Such a description of research orientation concurs with the study because it was aimed at finding out what the stakeholders' views are on their role with respect to maintaining a sustainable living environment. My duty as a researcher was thus, to interpret parts of the multiple realities that were created by the participants in this study.

### **6.2 Sampling**

Sampling in educational research can take the form of either probability or non-probability sampling. I opted for the latter because it is frequently used in qualitative research and is aimed at producing dependable results (Merriam, 1998:61- 62; Silverman, 2000: 61). This is in line with the aim of this study, which was to gain an understanding of, and insight into the views of the stakeholders on their role in maintaining a sustainable living environment. I used purposeful sampling to identify information-rich cases for in-depth study as recommended by (Patton, 1990:174,180). The focus of the study played a crucial role in choosing the information rich-cases. I chose participants based on the following elements, the duration of stay in the low-cost housing area, election for leadership by the community and the closeness of the illegal dumping site or spilling sewage point. Another factor, which played a role, was whether the stakeholder owned property or not.

I could not stipulate in advance both the exact number and identity of the possible interviewees, but a minimum of twelve interviews was considered. I would stop interviewing once the data became saturated. For the purpose of this study it sufficed to select two of the first residents to settle in the area because they have seen the changes that have taken place. I chose two community leaders because of the wealth of information a person in the leadership position should have and their ability to influence others. I conducted four interviews with persons chosen because of their closeness to illegal



dumping sites and the spilling point of the sewage. I also conducted two interviews with persons renting properties owned by others because of the nature of their status could influence how responsibly they acted in terms of their living environment. About a third of the interviewees were women because they are the majority of the owners of houses in the area in which the research was conducted. Women in this township are usually at home and more directly affected by the factors threatening the sustainability of the living environment.

### **6.3 Context of data collection**

The living environment in the low-cost housing at Thubelihle is threatened by a series of factors. These factors include poor water management, air pollution, littering, illegal dumping, and destruction of vegetation, soil erosion as well as urbanisation and overcrowding. I shall briefly discuss these factors respectively. I know the context of data collection because I stayed in Thubelihle and have been a schoolteacher in the low-cost housing unit for the past eleven years. I was also a supervising teacher for the Adult Education and Training Centre in Thubelihle. I have participated in all the general elections held in Thubelihle. My relationship with the councillors, parents, learners and other stakeholders gave me the advantage to know the place even better. I also attend community meetings whenever possible.

The low-cost housing unit of Thubelihle Township is the housing unit of the Reconstruction and Development Programme of the government. The owners of the houses are predominantly comprised of residents who previously stayed or worked in the farms, mines and electricity generating power stations. They migrated to Thubelihle when the low-cost houses were made available to those classified as poor and unable to afford to provide their own decent accommodation.

The majority of the house owners are illiterate and unemployed although a few of them are still employed in the farms. The majority of the employed women are domestic workers in the neighbouring small town of Kriel. Some of the house owners have extended their houses by erecting shacks so that they can use as rooms to rent.

There is one primary and one secondary school in the low-cost unit of Thubelihle. There is no hospital. The social workers visit the local clinic on Thursday only.

Poor water management is a serious problem at Thubelihle because lots of water is lost even before it is used. Water is lost through leaking water taps and pipes. Air pollution is another environmental threat experienced in the low-cost housing unit at Thubelihle because the township is usually engulfed by air pollution emanating from a variety of sources like the constant spilling sewage, the dust from uncovered home yards, untended sports grounds, the neighbouring farms and mine. The domestic burning of firewood, coal, paraffin and candles for domestic purposes such as heating, cooking and lighting also causes air pollution.

Littering is a serious problem in the living environment at Thubelihle because it creates visual pollution. It also makes the place untidy and unhealthy. The material that is commonly littered includes papers, plastics, tins, and pieces of glass, bottle and feathers among other things. The largely affected areas with respect to littering encompass roadsides, immediate school surroundings, the shopping complex area as well as the unused spaces and the sport-grounds.

Dumping is becoming a serious problem as unwanted household goods, ash and coal remainders from stoves and fire blazers, carcasses of dogs and cats and even human faeces in some occasions are irresponsibly disposed. The illegal disposal sites are all close to the low cost housing and their proximity to such puts the lives of the occupants of those houses in danger of contacting diseases. This also signals a lack of respect for the natural environment and the lives of other people.

The sustainability of the living environment in the low cost housing at Thubelihle is seriously threatened by the increasing eradication of trees and other forms of suitable vegetation. The presence of vegetation in an environment performs some protective functions whereas its absence leaves the living environment vulnerable to adverse factors such as air pollution, soil erosion, and the extremes of weather conditions

Soil erosion is a serious threat to the sustainability of the living environment at the low cost-housing unit in Thubelihle because it is depriving the area of its fertile soil by moving away its top layers. It is also adding to the problem of air pollution by loosening the soil

thus releasing dust particles containing pollutants, which are harmful to human life. The condition of the soil has deteriorated drastically for the last ten years due to its exposure to negative elements such as soil erosion and the extremes of climatic conditions.

Poverty is a common factor among the residents of the low-cost housing unit in Thubelihle. It forces the poor people to engage in activities that to destroy the living environment while trying to meet their cooking, heating and lighting needs by engaging in activities such as over-use of coal, firewood and paraffin to meet their cooking, heating and lighting needs.

An ever-increasing population in Thubelihle creates another threat to the living environment because it is associated with many other problems like the eradication of vegetation, consumption of agricultural land, soil erosion, overcrowding, littering and dumping. There is also a remarkable increase in the pollution of water and air.

#### **6.4. Data collection methods**

There are various data collection methods that can be used in the field of educational research. Examples of such methods include the questionnaire, observation, active participation and the interviews among others. The aim of this study is to find out what the views of stakeholders are on their role in maintaining a sustainable living environment. This question requires the views of stakeholders. I used the interview method specifically making use of semi-structured in-depth questions as the main instrument to collect the data for this study. My primary reasons for using the interview technique to collect data included the following: First, interviews were the most likely to use to obtain the required information, because I took cognisance of the limited literacy levels among my target population which might be so low that it could not allow the use of any research technique that would for example require the ability to read and write. The use of the interview also put me in a better position to clarify questions and probe further during the interviews if necessary. The interview could also allow me to address the problem that could possibly be created by the fact that different languages are used for communication in my intended research site. The kind of data needed to answer my research questions necessitated personal interaction with the interviewees. According to Merriam (1998: 72), the interview research technique allows the researcher entrance into the interviewee's perspectives.

## **6.5 Data analysis**

For the purpose of data analysis of this study I used the constant comparative method of data analysis as presented by Maykut and Morehouse (1994:126-144). I recorded all the interviews on audio-micro cassettes and thereafter transcribed each interview. I analysed the transcripts by searching for recurring themes and patterns. The data analysis process used in this study is described in section 8.

## **6.6 Provisions for trustworthiness**

The importance of validity and reliability in any research cannot be over emphasized and this is according to Merriam (1998: 198) a requirement to be met by qualitative research studies as well. Reliability has to do with the dependability of the research results whereas internal validity measures the extent to which researchers are actually measuring what they think they are measuring.

To enhance the reliability of the results of this study, I started by clarifying my assumptions and presuppositions from the beginning of the study. This is important for the dependability of research findings (Merriam, 1998: 205) because it helps the researcher to make his/her biases known, before the results of the research findings emerge.

To increase the internal validity of the results of this study, I implemented what Merriam (1998: 204), Maykut and Morehouse (1994: 147) call member checks, by taking the data and its interpretations back to the interviewees so that they could ascertain or verify if the interpretation of the interviews was a correct portrayal of their experiences. I also attempted to build an audit trail for this study as advised by Maykut and Morehouse (1994: 146) and Merriam (1998; 207), by keeping a research journal, the original tape recordings and transcripts and field notes. I also described in detail how the categories were formed.

Finally before embarking on the interviews I conducted a pilot interview as indicated in appendix C, in order to ascertain if the participants would be able to understand my questions and provide answers relevant to the question of the research study. According to Merriam (1998: 75), the pilot interview gives direction to the purpose of the study. In principle with this recommendation I wanted direction as to whether the questions I would ask could eventually provide the answer needed for the purpose of my study, that is to find

out, what the views of the stakeholders are on their role in maintaining a sustainable living environment.

### **6.7 Provisions for ethical considerations**

Before conducting the interviews, I tried to put all the interviewees at ease by doing the following. I introduced myself as a student at the Rand Afrikaans University and proved that by showing them my confirmation of registration. I informed the participants that the purpose of the study was to obtain their views on their role in maintaining a sustainable living environment. I told them that they were chosen to participate because they were in a position to provide information that was relevant for the purposes of this study. I further asked for permission to tape-record the interviews so that I should not miss any important information and could also be in a position to transcribe it for analysis. I also requested to take notes during the interviews so that I could capture some of the important observations like people's gestures, body language that could not be taped. I guaranteed the confidentiality of the interview to the participants by promising them to use pseudonyms instead of their actual names and surnames in order to ensure their anonymity. I informed all the participants that they were free to use the language they could easily communicate in because I can speak five of the languages commonly used in that area. I promised the participants that the outcomes of the research study would be made accessible to them. The participants were allocated the pseudonyms. A consent form was signed. This is included as appendix B.

## **7. DATA ANALYSIS AND PRESENTATION OF DATA.**

The constant comparative method of data analysis as discussed by Maykut and Morehouse (1994:34-48) was used for the data analysis of this study. This method involves category coding and simultaneous comparison of units of meaning of all categories, the refinement of categories, exploration of relationships and pattern across categories (Maykut & Morehouse, 1994: 134 – 135).

I used the “hands on approach” technique to analyse the data as recommended by Maykut and Morehouse (1994: 136-148). Using this technique allowed me to do data collection and analysis simultaneously. It also allowed me to apply information received from

previous interviews into those that were still going to follow and to get up close with my data

The data gathering and analysis process took place simultaneously as recommended by Maykut and Morehouse (1994; 134), in the sense that during the recording of the interviews I wrote down all the recurring ideas, concepts, themes and remarks that emerged. This process was repeated with all twelve interviews. I thereafter carefully re-read my data with the aim of identifying emerging themes in that data.

I generated an array of all the recurring aspects and wrote them on a larger piece of paper and pasted it on the wall. I also taped my focus of inquiry as written on piece of paper next to my discovery sheet and thereafter started preparing the data for further analysis.

I transcribed the recorded interviews verbatim in a dialogue format. I coded the data to its source by writing the pseudonym of each interviewee and the number of the page on the top right of each page. For example T/Joe/1 refers to a transcript (T) of the interview with (Joe), page one (1). I read through the transcript several times until I could identify individual units of meaning. I separated one unit of meaning from the rest by drawing a line across the page and wrote a phrase carrying the meaning of that unit of data in the margin. I coded each unit of meaning to its transcript, interviewee and page number. For example when I asked Joe what role he thinks he should be playing in maintaining a sustainable living environment he, responded by saying that: “In 1999, myself and another teacher from the nearby school started an environment club where we involved learners and other community members. So we are busy teaching people about the environment to create awareness”. I separated this extract as a unit of meaning and phrased it as of “creating awareness”. I coded this unit of meaning as T/Joe/4 to indicate that it is from the transcript of the interview with Job on page four.

I cut out each unit of meaning I had identified from the transcript and pasted them onto cards so that it would be easier to handle them. I thereafter transferred the data cards to my discovery sheet. The process of grouping data cards containing similar concepts, ideas, words and themes followed this. This process culminated in the formation of provisional categories. For example from the interview with Joe eight provisional categories emerged as listed in table 7.1 below.

Table 7.1 Provisional categories from the interview with Joe.

<ul style="list-style-type: none"><li>• Creating awareness</li><li>• Involving other stakeholders</li><li>• Conserving resources</li><li>• Creating job opportunities</li></ul>	<ul style="list-style-type: none"><li>• Discouraging irresponsible behaviour</li><li>• Respecting nature</li><li>• Providing knowledge and skills</li><li>• Beautifying the environment</li></ul>
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After formulating the list of provisional categories, I started classifying each identified unit of meaning to a corresponding provisional category, using what Maykut and Morehouse (1994:136) refer to as “look/ feel alike criteria.” During this process I also put aside all the data cards that could not be classified into the provisional categories already formed. I later used of these cards that did not match those in the provisional categories to generate new categories.

After gathering six to eight cards within one category I formulated a rule of inclusion based on the characteristic of cards under a particular category. This later served as the means to include or exclude subsequent data cards in the category as advised by Maykut and Morehouse (1994: 139). I later wrote the rule of inclusion as a propositional statement which Maykut and Morehouse (1994: 139) define as a statement carrying the meaning of the content of cards under a category name. All further data cards were allocated to categories on the basis of the rule of inclusion. I used this process to analyse all the interviews.

Table 7.2 below is an excerpt of a provisional category (working together) with units of meaning, rule of inclusion and quotes from interviews.

Excerpts from a provisional category (working together) with units of meaning, rule of inclusion and quotes from interviews.	<p><b>Rule for inclusion</b>  <b>Stakeholders' feel that in order to maintain the sustainability of the living environment, the community must work together in various activities for the benefit of the environment.</b></p>
Planning for action	<p>T/Tsepo/2  We need to come together and decide on what it is that we can do to protect our environment. We also have to decide on how and when to do that.</p>
Involving others	<p>T/Joe/3  Schools, Churches, politicians farms owners and power stations must also be involved because they can play a significant role in preserving our environment and its resources.</p>
Solving problems	<p>T/Math/3  We need to work together to solve the problems that we are already experiencing and to prevent their occurrence in future</p>
Initiate projects that will assist to alleviate environmental destruction.	<p>T/Sbu/3  As community members we need to start projects that will create jobs, provide food and vegetables and also assist in keeping the environment clean and healthy.</p>

## 8. FINDINGS

### 8.1 Introduction.

The aim of the study was to gain an in-depth understanding on what the views of the stakeholders in Thubelihle low-cost housing are on maintaining a sustainable living environment. I asked questions that enabled me to obtain first hand information that was useful in providing the understanding I needed from the stakeholders.

After the analysis of the data a number of categories and sub-categories emerged and served as a basis for the outcome of this study. They are given in table 8.1 below in order of their importance. The research findings will be discussed briefly. In this section I shall



analyse and discuss the research findings. I shall start by focusing on the role of creating environmental awareness among the community members. Discussing the strategies for community participation as vital to maintaining the sustainability of the living environment will follow this. I shall thereafter give a summary of the findings and make some recommendations before concluding.

**Table 8.1**

A table of categories and sub-categories and their outcome statements derived from the process of data analysis.

<b>Category and sub categories.</b>	<b>Outcome statement.</b>
Creating awareness about environmental problems. <ul style="list-style-type: none"> <li>• Teaching environmental literacy</li> <li>• Educating people about the environment</li> <li>• Role of various persons in creating environmental awareness</li> <li>• Role of church</li> <li>• Complaining about problems</li> <li>• Addressing environmental problems in community meetings</li> </ul>	The stakeholders feel that creating awareness is a vital strategy in laying the foundation for the maintenance of a sustainable living environment and suggest the means by which this can be done.
Strategies for community participation are vital to maintaining the sustainability of the living environment. <ul style="list-style-type: none"> <li>• Planning what to do</li> <li>• Involving others</li> <li>• Solving existing environmental problems</li> <li>• Preventing further environmental destruction</li> <li>• Initiating projects</li> </ul>	The stakeholders emphasise the importance of community participation in a variety of forms in addressing the factors posing a threat to the environment.

## 8.2. Discussion of findings.

The analysis of the results indicated that the stakeholders interviewed considered their responsibility to maintain the sustainability of the living environment as revolving around the two important categories, which are creating awareness and using strategies for community participation.

The ensuing section discusses a version of the interpretation of the interviews conducted to determine what are the stakeholders' views on their role in maintaining a sustainable living environment. The analysis of the data collected culminated in the emergence of these prominent roles that the participants viewed as the responsibility of the community to maintain a sustainable living environment. These roles are creating awareness about environmental problems and using strategies for community participation. I shall start by discussing creating awareness about environmental problems perceived by the interviewees as their role. This will be followed by the discussion of using strategies for community participation as their other role.

### **8.2.1 Creating awareness about environmental problems.**

Creating awareness is a very important component and starting point of the responsibility of all human beings to care for the environment and is therefore by virtue of this fact a responsibility for all the sectors of the community. Evidence of this came out during the data collection process when most of the stakeholders interviewed stated that they considered creating awareness about environmental problems among the community members as an important role that could be played in order to maintain the sustainability of the living environment. Schools, business, churches, politicians, professionals, ordinary citizens and experts in various fields were cited as significant role players in this respect. For example during the interview one participant, Joe singled out a number of sources he felt could play a significant role in creating environmental awareness among various community members. He said “schools could teach the learners about importance of the environment and still do the same for other educators. Business people can encourage their clients not to litter and explain to them how litter damages the environment. They can educate them about recycling and its value to the environment. Politicians can also help in creating environmental health awareness by encouraging their supporters to take part in campaigns against littering and other forms of environmental abuse. They can use the vast support of the people they command for the benefit of the environment. Power stations can conduct community educational environmental awareness lessons. Churches can teach about the importance of the environment by referring to trees, grass, soil and water quoting from the Bible. So churches can play another major role in creating the awareness that can be helpful in maintaining the sustainability of the living environment.” (*Izikole zingafundisa abafundi ngokubaluleka kwe environment. Zingabuye zifundise othisha ngakho lokhu kubaluleka. Abamabhizinisi bangagquguzela abathengibabo ukuba*

*banganukubezi inhlalo. Babuye futhi babachazele ukuthi imfucuzisa isona kanjani isimo senhlalo. Bangabafundisa ngerisaklingi. Amapolitishiyeni angasiza ekuqhwashiseni kwenhlanzeko yesimo senhlalo ngokugqunguzela abalandeli bawo ukuba babambe iqhaza emikhankasweni yokulwa nokungcoliswa kwendawo okuhlalwa kuyo kanye nezinye izindlela zokunukubezwa kwesimo senhlalo. Bangasebenzisa ubukhulu bokwesekwa kwabo ukuze ienvironment izuze. Amapower steshi wona angaqhuba izifundo eziphathelene nokuqhwashisa nge environment emiphakathini. Abamasonto bangafundisa ngokubaluleka kwesimo senhlalo ngokuthi bathinte izihlahla, utshani, inhlabathi, namanzi babe bacaphuna eBhaybheli. Ngakhoke amasonto nawo angadlala enye indima ebalulekile ekwakhweni lokho kuqhwashisa ngesimo okungasiza ekulondolozweni kokuqoqeka kwesimo senhlalo.)*

Professionals like teachers can also play an important role in the creation of the knowledge, provision of skills and imparting the values that are important in creating environmental awareness. Teachers can teach in, for and about the environment, and by so doing create awareness of the environment and environmental threats. Teaching and educating the various sectors of the community about environmental literacy can be used as an important strategy to create environmental awareness. Community education can be used as the best method to create environmental awareness because it can be design to cater for all the age group (Cunningham, 1996: 903). During the interviews Joe confirmed the possibility of this approach by referring to what they had already started doing when he disclosed that, "In 1999, myself and another teacher from a nearby school started an environmental club where we involved learners and other community members. So we are busy now teaching people about the environment to create awareness. We are concerned about the degradation of the environment. We hope to create an understanding of the causes of environmental abuse in our township. We also hope that our environment club will eventually enable the community to participate better in the protection of the environment if they are environmental literate. Our club aims to promote changes in the poor way in which people treat the environment." (Ngonyaka ka 1999 mina nomunye uthisha ofundisa esikolweni esiseduze saqala iqembu le environment lapho sambandakanya khona abafundi kanye namanye amalunga omphakathi. Ngakhoke simatasatasa okwamanje sifundisa abantu ukuze sibaqhwashise nge environment. Sikhathazekile ngendlela yokuthunazwa kwe environment. Sethemba ukuthi sizokwazi ukuzwisisa imbangela yokuhlukunyezwa kwesimo senhlalo kule Township yethu ebantwini. Sethemba ukuthi le enviornment club yethu izokwazi ukwenza ukuthi ekugcineni umphakathi wethu ubambe iqhaza elingcono

*ekuvikelweni kwesimo senhlalo uma usufundisiwe ngaso . I club yethu ihlose ukuqhubela phambili izinguquko endleleni abantu abadlelana ngayo ne environment.)*

Sbu concurs with Joe that creating awareness about the environment is important by saying Yes. There is a role I can play. I have to teach the community about the importance of the environment in their entire life. *(Yebo. Ikhona indima engingayidlala. Kufanele ukuthi ngifundise umphakathi ngokubaluleka kwendalo empilweni yonke.)* Math felt that the assistance of knowledgeable people could help toward creating awareness when he stated that “We need to get the assistance of those who are knowledgeable so that they can see how the community can be educated with respect to environmental related matters.” *(Kufanele sithole usizo lwalabo abanolwazi ukuze babone ukuthi umphakathi ungafundiseka kanjani. Odabeni olumaqondana nenhlalo.)*

Joe and the other teacher are engaged in a form of community education that is aimed at raising awareness in the community about the environment. The actions of Joe and his friend concur with the views of Cunningham (1996: 901-902) that community education can bring about change, empower communities and encourage working out solutions to problems within the community.

Creating environmental awareness is an important role in the endeavour to maintain the sustainability of the environment because awareness plays a crucial role in understanding environmental problems and their actual causes. The awareness of the environmental problems and issues can lead to successful environmental management because the understanding of the causes of some of the difficult environmental problems is a prior requirement to solve them. Non-formal education can play a vital part in creating the kind of environmental awareness that can make citizens realise their waywardness. The public awareness of the relationship among the various components of the environment can therefore promote action to maintain the sustainability of the living environment. Moreover, communities need to be enabled through environmental literacy to take good care of their living environment. Teaching and educating communities in, for and about the environment can play a vital role in creating environmental awareness because sometimes people endanger the future of their environment through ignorance. Math echoed those points during the interview when he emphasised that “People have to be educated on how to make their township look like others that are on befitting level instead of destroying it”. *(Abantu bafanele bafundiswe ukuthi bangasinqoba kanjani isimo esingathandeki*

*ababhekene naso . Badinga ukufundiswa futhi ukuthi bangalenza kanjani futhi ilokishi labo ukuthi lifane namanye amalokishi asesimeni esifanele kunokuba balenzele phansi).*

Environmental awareness can be created by using a variety of strategies such as informal discussions, formal meetings, campaigns, and reporting problems to relevant authorities among others. Math considered reporting problems to relevant authorities as one of the strategies to create environmental awareness by asserting “We have to report the problems we encounter here and ask for assistance so that others can realise that we have some difficulties. It is our responsibility to report the problems that we have because we cannot solve all of them. And by so doing, other community members become aware of such problems”. *(Kufanele sibike izinkinga esihlangabezana nazo lapha sibuye sicele usizo, kungumsebenzi wethu ukuthi sibike ukuthi sinezinkinga ngoba singeke sikwazi ukuzixazulula zonke. Ngokwenze njalo namanye amalunga omphakathi ayaqala azibone lezinkinga.)*

Complaining and protesting about problems that inconvenience the living environment can be an effective means to alert others. Khab felt that complaining about problems among neighbours and in community meetings could be another effective way of creating community awareness. She stated “I am going to complain about it in the meeting I wish that it could be addressed in a meeting so that others can get to know the different problems we experience as individuals in our communities. Some of the community members may realise the seriousness of this and maybe come up with solutions.” *(Ngizoya emhlanganweni ngiyokhononda khona, ngifisa ukuthi idingidwe emhlanganweni ukuze nabanye bazi ukuthi sihlangabezana nezinkinga ezehlukene kulo mphakathi wethu. Amanye amalunga angabese ebubona ubunzima esibhekene nabo. Hleze eze nesixazululo)* This statement conforms to one of the aims of community education that is, to help people to come up with solutions to their own problems as cited by Cunningham (1996:903).

Community meetings had proven to be useful tools for creating awareness of environmental problems and trying to solve problems in numerous occasions. The members of the community of Merebank for example successfully drew a nation-wide attention to the problem of air pollution in their residential area by calling community meetings and involving the NGO to guide the community on the appropriate community action to take.

The residents of Botshabelo used community education to create awareness of environmental problems in their settlement and shared ideas on how they could solve those problems. That created a learning opportunity for the members of the community because they were made aware of the situation, as they were not before.

Again, it was through community education that the community of Herschel came to realise that soil erosion was the underlying cause of the destruction of their environment and its resources. The community also learned that the environmental problems could be solved through their involvement and active participation.

The findings of the study indicated that creating environmental awareness is a very important component of caring for the living environment. The responsibility of empowering others is the starting point of fulfilling the obligation of all human beings to care for the environment. It also emerged that all the sectors of the community can make an important contribution towards performing this responsibility and there are also various mechanisms through which this role can be executed.

### **8.2.2 Strategies for community participation are vital to maintaining the sustainability of the living environment.**

Some of the stakeholders interviewed stated that they considered forming an alliance for the benefit of the environment as a role they could play in maintaining the sustainability of their living environment. They thought it would be good for the sustainability of the environment if they could implement community strategies that could enable them to discuss what they had to do and try to find solutions to the problems experienced. They could also plan how they could build and maintain co-operation among themselves, negotiate for the elimination of the threats to the living environment and involve other residents. Mas, who sounded fully convinced about the value of working together however, lamented the lack of co-operation in her community in these words. “I can say we don’t work together in this community. The way it is right now there is no co-operation in the first place between the community and the councillors. The way things are happening is not good. It will be better if one person can complain to another of any wrongdoing. This would make correcting mistakes very easy. Some people do not like to be objected to whatever they are doing. This creates problems.” (*Ngingathi kasisebenzisani*

*kulomphakathi. Indlela isimo esingayo alukho ubambiswano endaweni yokuqala phakathi komphakathi namakhansela. Ayilunganga lendlela izinto ezenzeka ngayo. Bekungabangcono uma umuntu abengakwazi ukuyokhononda komunye maqondana nanoma yini engalungile. Lokho bekuzokwenza ukuthi kube lula ukulungiswa kwamaphutha. Abanye abantu abathandi ukuphikiswa kunanoma yini abayenzayo. Lokhu kudala izinkinga.)* According to Erasmus (1995: 1) collective action at the grassroots level is a form of empowerment because working together encompasses the right and ability of stakeholders to make proper decisions that can lead to undertaking caring responsibility. Some of the community members realise the importance of working together, but also acknowledge the existence of problems hindering it.

The views expressed by Mas and Erasmus about the importance of working together for the benefit of the environment emphasise the important role that community education can play in maintaining a sustainable living environment. The process of community education can take the form of participative learning where planning and training is done jointly by the participants. This process is also characterised by horizontal relationship between the facilitators and participants. Community education further encourages generating community-based solutions to local problems (Cunningham, 1996: 901-903).

Math confirmed this by saying “There are people who can help in this community. There are those who can assist in solving the problems we are faced with. We need to work together to be successful in our efforts to improve our living environment. Even the councillors who stay in this community have to be involved because if they are left behind it is not going to be easy to find help in a proper way. The councillors can also help because they are members of this community”. (*Kukhona abantu abangasiza kulomphakathi. Kukhona labo abangasiza ekuxazululeni lezinkinga esibhekene nazo. Futhi nalamakhansela ahlala kulomphakathi kufanele ambandakanywe ngoba uma eshiywa ngemuva angeke kube lula ukuthola usizo ngendlela efanele. Angasiza futhi ngoba angamulunga omphakathi.*)

The emphasis of working together for the benefit of the environment is important for other reasons as well. Community participation makes the problem solving process easier and affords other community members the opportunity to acquire problem-solving skills. Choguill and Choguill (1996: 83) and Coetzee (1995: 1) agree that working together through consulting and involving others contributes to the welfare and health of the community and their living environment. Stakeholders according to Keyter (1995: 1), need

to realise that they are obliged to play an important role if the sustainability of the environment is to be maintained.

Nzi emphasised the importance of working together to avoid further environmental destruction through littering and dumping by stating “We have an important role of discussing with other stakeholders so that we can clean this place and keep it in an acceptable state. We also have to talk to those littering and tell them to stop it.” (*Sinendima ebalulekile kakhulu esingayidlala engukuthi sibonisane nabanye ababambe iqhaza kulendawo ukuze sivikele ukuqhubeka ngokusaphazwa kwezibi nokulahlwa kwenkukhuma, siyigcine isesimeni esemukelekile. Ukuze siyihlanze, kufanele futhi ukuthi sikhulumisane nalabo abalahla izibi ngokungafanele sibatshele bakuyeke lokho.*) Planning together to achieve a shared goal forms a good foundation for the activities that are to be performed to attain the set goal. Tsepo testified to this by saying the following about planning and working together for the sustainability of their living environment: “We can discuss what it is that we have to do as neighbours to clean our township. We have to do discuss maybe we can come up with a solution to these problems.” (*Singabonisa njengomakhelwane ukuthi yini esingayenza ukuze sihlanze ilokishi lethu. Kufanele sikhulumisaneni sibonisane hleze sithole isixazululo kulezinkinga ezisikhungathile.*) Working together for the environment can be implemented as an effective way to demonstrate disapproval of the environmental abuse. This is verified by Math who contends that “We need to work together to refuse that our place be used as a dumping site”. (*Sidinga ukuthi sibambisaneni singavumi ukuthi indawo yethu isentshenziswe njengendawo yokulahlela inkukhuma.*)

Teams and groups can also be more successful if they resolve to work together for the benefit of the environment. Joe supported this notion by referring to the role that can be played by the school governing bodies (SGB) if their members can work together to create environmental awareness by stating “The SGB is comprised of parents, teachers, workers and learners. If ever they can work together and promote the awareness of the importance of the environment. He thought they could be playing a major role by so doing. He went on to justify his claim by elaborating on how that could be implemented

Even the workers who are members of the non-teaching staff can help controlling the healthiness of the environment. They can engage learners to stop littering”. (*I –SGB yenziwe ngabazali, othisha, abasebenzi kanye nabafundi. Uma nje amalunga amaSGB angasebenzisana ukuqhubela phambili ukuqhwashisa ngokubaluleka kwesimo senhlalo , ngicabanga ukuthi angabe abambe iqhaza elibalulekile kakhulu. Nabasebenzi abangewona*



*amalunga alaba abafundisayo angasiza ekulawuleni isimo senhlalo esinempilo. Bangeza ukuthi abafundi bangasaphazi ukungcola.)*

Stakeholders can also work together on a number of activities such as starting projects like organised tree planting, brick making, sewing, and cleanup campaigns that can benefit the environment in more than one way. For example a tree-planting project can initially provide job opportunities and later prevent soil erosion while enhancing the beauty of the living environment. The trees can eventually serve as a social forest whose availability can help to reduce or even stop the unacceptable practice of cutting trees unnecessarily. Math concurred when he brought forward the idea of starting projects to address some of the community needs by saying, “We have to look at other projects that can help the community to solve some of their problem. There can be among the community those who know where and how assistance for some of our problems can be found”. (*Kufanele sibheke amanye amaprojekthi angasiza umphakathi ngoba kungenzeka kube khona phakathi kwawo labo abaziyo ukuthi usizo lokuxazulula ezinye zezinkinga zawo lungatholakalaphi futhi kanjani*). Sbu said job creation project had to be initiated to address the unemployment problem which in turn will reduce environmental destruction. (*Kufanele kusungulwe amaprojekthi angasiza ukubhekana nenkinga yokungabikho komsebenzi lokhu okungenza kwehle nezinga lokucekela phansi isimo senhlalo.*) Mazi concurred by bringing forward the importance of working together in establishing community gardens when she stated that “The unemployed adult males and females in the township can come together and form groups to initiate community garden project to ensure that they provide for their own fruits and vegetables. They can also earn some money even if that will not be enough to satisfy all their needs.” (*Labo abesifazane nabesilisa asebekhulile kodwa bengasebenzi abaselokishini kufanele bahlangane benze amaqembu azoqala amaprojekthi ezivande zomphakathi ukuze baqinisekise ukuthi bazihlinzekela ngezithelo namavejitable futhi ngaleso sikhathi babe bekwazi ukungenisa imadlane engakwazi ukubasiza ukufeza ezinye zezidingo zabo yize ingezukwenela nje.*) Nca supported the idea of the possibility of the huge success that can be achieved by joint participation in the community projects when she proposed that “Males and females had to form groups and start making bricks to elevate the problems of overcrowding in the houses as well as unemployment.” (*Abafazi namadoda kudingeka ukuthi enze amaqembu abese eqala ukwenza izitina ukuze ehlise izinga lokugcwala ezindlini kanye nokungaqashwa kwabantu.*)

Community education can play a role by empowering those involved in the various initiatives by creating the opportunity for learning through continuing education programmes such as gardening and small scale farming project management and business management skills. This form of education can be facilitated by the presence of some of the community members who more knowledgeable in these fields because of their learning or experience gained through involvement. The necessary knowledge can be created through workshops and community meetings among other ways. Facilitation of this nature can ensure the existence of a horizontal relationship between the facilitators and learners as well as the involving of the community in designing their own education. According to Poster (1996:910) the involvement of the community in making decision about the content and style of their education is practising community education.

The findings of this study confirmed that working together for the environment is very important because it can be of benefit to the environment in various ways. It can for example, easily address the need to create the skills and confidence needed within communities for the implementation and management of long term sustainability of essential services. Community education can help people to work together because according to Poster (1996:910), it is a participative process where the communities are involved in making decisions about the content of what they want to learn as well as the how they want to do it.

The findings of this study also revealed that the maintenance of the environment could be better executed as a joint responsibility. Various important role players in maintaining the sustainability of the living environment were mentioned and their responsibilities were outlined.

Working together is a very important action towards the sustainability of the living environment because it can benefit it in various ways. (Sowman & Urquhart, 1998: 83). A number of authors such as Coetzee (1995: 1); Choguill and Choguill (1996: 83); DEAT(1998: 143-144); Erasmus (1995: 6); Jacana Education (1998: 12); Hanselman et.al (1990: 147); Keyter (1995:1); Sowman and Urquhart (1998: 83, 98); Yeld (1993: 23) agree that joint public participation is crucial for the sustainability of the living environment. Hanselman et.al (1990: 147) and Jacana Education (1998:12); concur that when individuals with similar goals work together for the environment they are more effective and productive than single individual action and participate action can greatly enhance the

sustainability of the living environment. The proper management of the environment through appropriate decision-making requires capacity building, which according to DEAT (1998: 143-144) can be easily promoted by working together. Hanselman et.al (1990: 147) echo the importance of joint participation in matters relating to the environment by citing the fact that working together can also promote environmental awareness among the participants and also afford others the opportunity to learn from others. Moreover, environmental problems such as the degradation issue at Thubelihle can be handled by the joint participation of the various stakeholders. Sowman and Urquhart (1998: 14) consider the active involvement, of the public in identifying and prioritising the need before projects for development are implemented as important but also acknowledge will however not be possible without the willingness of the participants to work together. Community education promotes working together among members through involving them in activities such as participatory research, protests, planning of learning activities and the methods to be used for learning. Through working together community members learn from one another (Poster, 1996: 909). Community education can enhance capacity building because it deals with movements that develop the human resources (Poster, 1996: 909). The members of communities differ in terms of the knowledge, skills and experience they possess about the activities that can be undertaken towards maintaining a sustainable living environment.

Some of the residents who were interviewed stated that they considered the conservation of resources as their joint responsibility in maintaining the sustainability of the living environment. They mentioned conservation of water, soil and trees as very important. They recommended that the use of these important resources should take into consideration that they would still be needed in future. They indicated awareness of what other stakeholders had to do to conserve the resources by mentioning the actions they considered to be important. The stakeholders were also unanimous in recognising that the loss of some of the resources can be attributed to a combination of factors such as irresponsible human actions and natural occurrences that can be curbed. Tsepo gave credence to this when she stated that “to prevent soil erosion and dust I can plant grass. They (stakeholders) can also plant grass even outside their yards. Trees can also help”. (*Ngingahlanyela utshani. Nabanye (ababambe iqhaza) bangabutshala utshani nangaphandle kwamagceke abo. Kanti futhi nezihlahla zingasiza.*) She went on to point out that soil is also lost as the result of the rain and human action by highlighting that. “When it is raining and when we sweep outside the houses the soil is eroded”. (*Uma kuna imvula nangesikhathi sishanela*

*(amagceke) ngaphandle kwezindlu inhlabathi iyaguguleka.)* This view is relevant to the community of the low-cost housing in Thubelihle because the lack of soil cover causes significant soil erosion in the windy and rainy days. If this view can be shared with other community members and be practised thereafter, it can make a major contribution towards preventing soil erosion. Community education also manifests itself as a process of identifying problems and attempting solution to them (Cunningham, 1996: 902), which is exactly what Tsepo is confirming here.

Besides the conservation of the soil other important resources such as trees and water also have to be conserved because they play a vital role in the sustainability of the living environment. Joe endorsed the importance of the obligation of every human being to conserve these resources by stating that “People must try to respect nature. They must not cut the tree but instead try to conserve water and plant grass to avoid the dust problem in August etceteras.”

*(Abantu kufanele bazame ukuhlonipha indalo. Akufanele bagawule izihlahla kodwa kufanele batshale ezinye. Futhi kufanele ukuthi bazame ukonga amanzi, batshale notshani ukuze bakwazi ukuvikela izintuli ngenyanga ka August njalo njalo.)*

Protecting resources from destruction by human beings can be another effective strategy for protecting environmental destruction. For example, Joe felt that negotiating with some of the serious polluters in his vicinity could be an effective protective measure in conserving the resources. He said “I think we can talk with the people, the farmers, the power station managers, the families who are using coal stoves and the smokers. We have to teach them about the importance of life and clean environment. I think if ever we can clearly explain the damage they are causing to the environment, they can reduce air pollution”.

*(Ngicabanga ukuthi singakhuluma nabantu, abalimi, abaphethe amapower stations kanye futhi nalemindeni esasebenzisa izitofu zamalahle kanye futhi nalabo ababhemayo sibafundise ngokubaluleka kwempilo nokwendawo enhlanzekile. Ngicabanga ukuthi uma singabacacisela kahle ngalomonakalo abawenzayo bangasebenzisana nathi. Singazama ukunciphisa ukunukubezeka komoya.)*

Sometimes people destroy the environment out of ignorance. The view expressed by Joe here augurs well with the fact that community education can create an awareness of the damage people cause to the environment because of ignorance. Community education empowers and encourages communities to identify problems and generate solutions for

them within the community (Cunningham, 1996: 902). If this idea can be implemented, the community can benefit because a clean and healthy environment could be created while the unemployed could also earn some money.

Besides conserving resources by preventing their complete destruction or loss, another way of maintaining their importance is preventing actions that can result in compromising their productivity. Adding non biodegradable material like some types of plastics, tins and pieces of glass in the soil for example does not necessarily lead to the loss of the soil but to its reduced productivity. By the way of another example, water sources such as wells are not necessarily taken away but rendered obsolete by siltation. So, the prevention of the occurrence of activities such as adding unwanted material in the soil and ignoring siltation other forms of conservation measures that stakeholders can successfully incorporate in their conservation plans. The majority of stakeholders supported this fact. Mahl, Maz, Mas, Sbu, Tsepo, Pungi and Joe all advocated for the preservation of the productivity of the soil and water resources. They even suggested punitive actions against littering, dumping and polluting water resources. Khab even contended that preserving the vitality of some resources could also be used to solve other environmental threats. She recommended "The community can use this opportunity to create a job opportunity for the unemployed by asking them to prevent any form of improper waste management and pay them for that thereafter". (*Umphakathi ungasebenzisa lelithuba ukusungula ithuba lomsebenzi kulabo abangasebenzi ngokuthi bacelwe ukuba bavikele ukuphatha kwenkukhuma ngokungafanele ebese ubakhokhela ngokwenza njalo.*) Community education can play a significant role here because it can be used to create an awareness of the ways in which problems can be solved and needs be satisfied without causing unnecessary damage to the environment.

The findings of this study demonstrated that the conservation of resources is a very important responsibility towards the sustainability of the environment. Its importance centres on the fact that the availability of some resources forms the backbone of the concept of sustainability. The availability of those resources enhances the capability of the environment to provide for the needs of the present generation without compromising its ability to provide for the needs of the future generations. The conservation of resources is compliance to the obligation of all human beings to care for the environment. It also emerged that the core elements of the environment to be conserved include both a-biotic and biotic factors that are comprised of soil, water, and air as well as plants, animals and human beings respectively. It also came out that there are many ways to conserve these

important components of the environment but these entire ways centre on protecting them from extinction and abuse. Some of the resources also require the preservation of their productivity.

### **8.3 Summary of the findings.**

During the interviews most of the stakeholders felt that their living environment was not up to the acceptable level for human settlement. They felt that a number of factors such as soil erosion, air pollution and dust among others were threatening their environment. Some of the stakeholders felt that continued existence of the threats in their living environment was a serious danger to its future. They stated that as stakeholders they felt that they had a responsibility towards the sustainability of their living environment. They were interested in having the living environment improved. They however, sounded over- dependent on the councillors and municipality, both of which they regarded as not helpful, in helping to improve their condition of the environment. Stakeholders expressed anger over destructive actions such as overuse of coal stoves and the cutting of trees by some of the community members. They were also very unhappy about the cutting off of water supply to the families who could not afford to pay for that service. Almost all stakeholders were disgruntled about the unbearable smell of the constant spilling sewage because of the failure of the authorities concerned to pay proper attention to it. Some of the stakeholders even believed that I was going to bring solutions to the problem they were experiencing.

My general impression of the stakeholders I interviewed is that they are aware of the threats to their environment and could play a significant role in educating other community members about them. They also have bright ideas of what can be done to ameliorate the situation but are only hampered by the lack of action and fear of being misinterpreted as contesting for political leadership positions if they could initiate action even if it could benefit the community. I also realised that there was still a lot of uncertainty on their part about the manner in which they could implement the ideas. It is my belief that community education can play a significant role in maintaining a sustainable living environment because it can create awareness of threats to the environment and empower the communities to deal with the problems endangering the environment.

The two categories that emerged as a result of the analysis of the data collected for the study were discussed in this section. These categories are centred on creating awareness

about environmental problems and using strategies for community participation in maintaining the sustainability of the living environment. Each category had sub-categories. I used quotes from the discussions with the stakeholders as well as references from literature review to backup the views I forwarded.

## **9. RECOMMENDATIONS**

Following the analysis of the data on the views of the stakeholders about their role in maintaining a sustainable living environment, I make the following recommendations.

In the first place, I recommend that community education programmes with a specific emphasis on Environmental Education be thoroughly planned and vigorously implemented by the stakeholders. I think it will be proper if the programmes can be planned in such a way that they can be meant to create awareness. They also need to empower the various sectors of the populations of the low-cast housing residential area at Thubelihle to identify and address the factors that are threatening the sustainability of their living environment.

I further recommend that the planners of the recommended Environmental Education also ensure that the community education programmes address a variety of topics. These can include conservation of resources such as water, fresh air and, soil. Discussion of the effect of air pollution in the life of human beings as well as the natural, health, social and built environments should form an integral part of the community education programmes. The programme must also address the topic of environment health. I will consider it befitting that the entire community be specifically addressed and acquainted with all the principles for sustainable living as elaborated on by Yeld (1993: 14-27) and Hugo et.al (1997: 186). This can be made possibly by the fact that community education can be used to address members of different age groups.

I also recommend that the stakeholders be fully educated or at least be informed through community education on the rights and responsibilities of inhabitants towards the environment. It is worrying that only two of the participants interviewed implied the existence of rights to the environment but could not say anything further than that.

I further recommend that the residents be encouraged to join organisation working towards the health of the environment. This will afford them the opportunity to learn more about the environment and thus enhance their environmental awareness.

It will also be to the advantage of the environment if the community of low-cost housing can form an alliance with other townships to learn what residents elsewhere are doing towards the sustainability of their own living environments. These may be applicable to both solving threatening environmental problems and preventing the occurrence of others with the potential of destroying the environment or threatening its future.

The residents of the low-cost housing possess some skills, knowledge and experience they acquired and generated elsewhere before settling at Thubelihle. There are also a few of them who are employed by the municipality, local farmers, mines and the electricity generating power stations in sections dealing with the natural environment and its protection. I therefore recommend that, they be encouraged to share the information they possess so that others can learn from them what they can do to maintain the sustainability of the living environment. Cunningham (1996: 903) emphasises that there are specialists among all societies who can assist in facilitating the generation of social knowledge. So the residents of the low-cost housing unit in Thubelihle can contribute to the sustainability of their living environment by utilising the human resources they have irrespective of whether they are literate or not.

## **10. CONCLUSION**

The focus of this essay has been on the views of a sample of stakeholders in the low-cost housing in Thubelihle about their role in maintaining a sustainable living environment. The first part discussed factors associated with threatening the sustainability of the living environment in general. Attention was also paid to the context of data collection in terms of water management, air pollution, waste management, soil erosion, poverty and overcrowding.

The study exposed that community education can play a significant role in maintaining a sustainable living environment. It also found that stakeholders viewed their role in maintaining a sustainable living environment as centred on creating awareness of environmental problems and implementing community participation strategies for the



benefit of the environment. A serious attempt needs to be made to address the low level of environmental awareness among the sectors of the population. Factors hindering effort towards the sustainability of the living environment have to be addressed appropriately. The present state of the environment requires to be treated as a matter of urgency if the situation is to be saved from a complete collapse. Advantage should be taken of the presence of the residents who are willing to work towards the improvement of the living environment and its sustainability. It will be proper if the entire community of the low-cost housing can be workshop on their obligatory role in maintaining a sustainable living environment.



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## **APPENDICES**

### **APPENDIX A**

#### **REQUEST FOR PERMISSION TO INCLUDE YOU IN MY RESEARCH**

I am an M.ed student at RAU, my studies require that I conduct research on a topic of my choice. My research topic is: The views of stakeholders on their role in maintaining a sustainable living environment: A community Education perspective. The aim of the research is to find out what stakeholders view as their role in maintaining a sustainable living environment. The outcome of this research may be published but all participants are guaranteed of their anonymity for participating in this study. I thus wish to conduct an interview with you.

I have chosen you as a participant because I think you can provide important information relevant to this study. You are free to participate and you may withdraw at a later stage if you feel the need to without giving me a reason. I shall be ready to answer questions you may have about your participation. I am asking for your written consent if you agree to participate.

With thanks

NDHLALA B.B

Student

**APPENDIX B**

**CONSENT FORM**

I ..... here-by agree to participate in this research study voluntarily.

I was consulted and the purpose of the study was clearly explained to me. I was given enough opportunity think about my participation as well as to ask questions. It was also made clear to me that I can withdraw at any time if I so feel. It was also explained that the results of this study may be published but my anonymity will be guaranteed.

\_\_\_\_\_  
**Signature of participant**

\_\_\_\_\_  
**Witness**



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\_\_\_\_\_  
**Date**

## APPENDIX C

### A TRANSCRIPT OF THE INTERVIEW BETWEEN BHEKI (B) AND ISAACK (I)

B : “Following my request to come and talk to you about the maintenance of a sustainable living environment, I would like to thank you for keeping your promise by availing yourself.”

I : “Okay, thanks.”

B : “I would like us to start without any further waste of time. I request to ask you the questions around which our discussion must revolve.

I : “No problem.”

B : How do you see your role in contributing to a sustainable living environment?”

I : I don’t need to be alone. We need to come together as the community so that we can identify those things we want to fight and present to the government. I mean things such as education and our living environment, I am worried about the kind of life we lead in our homes.”

B : What worries you about your living environment?”

I : It is because crime has increased so much that they even confiscate your property in full view of everyone present, leaving you helpless. So, in that way there is no safety where we are?”

B : “How is the situation about the degradation of the environment?”

I : “It is bad. You find that underage children are allowed into tarvens. That makes life not pleasant at all. I am also worried about increasing littering. We received rubbish bins from the municipality, but they are too small to accommodate all the refuse generated. We therefore choose to throw away the rest such as grass.”

B : “So you are saying there is a problem about handling unwanted material because of the lack of the necessary resources?”

I : “Yes, the problem is serious.”

B : “How do you see your role in solving this problem?”

I : “There, I think we have to criticise the municipality because they are responsible for providing the bins. They provided some bins or drums during the clean up competitions but took them back immediately after. That happened once over since we came to stay here.”



- B : “What role do you think other community members can play in contributing to a sustainable living environment?”
- I : “Home owners must know their homes and tell themselves they are not going to tolerate any action or activity that degrade their environment. Then, next are the councillors. They need to be good examples. We need to work together with them in solving the problems we experience. Teachers must teach children about cleanliness from the onset or at the younger age so that they can grow knowing. That will help to prevent such problems in future. The youth must play a significant role because they are in the thick of things. Although I cannot blame the youth much because they do not have the resources or facilities for extramural activities, they still have a very important role to play in keeping our environment sustainable. There are no recreational place like libraries at all.”
- B “ Do you mean the place is dying?”
- I “Very much so”
- B “What can be done to rescue it from dying?”
- I “They need recreational facilities such as libraries and soccer fields?”
- B “What role do you think others have to play in saving the environment?”
- I “There, I have to be an example. I have to negotiate with the business owners. They seem not to care about the wellness of others. The tarvens for example, give their neighbours sleepless night by the noise they make during the night. That is not good for others. I think the Christians can also play an important role because they are often respected when they address the community. I think it can be good if they can also actively participate in the community effort to improve the place.”
- B : “What can the churches do because they allegedly do not drink alcohol?”
- I : “They can involve themselves in cleaning up campaigns and ensuring the availability of facilities such as pre-schools. The other problem is the dust caused by the neighbouring farms. When the farmers plough, the dust is blown to our houses. So, therefore it will be good if they can discuss with the municipality how this one can be solved because the dust affects people lives causing them illnesses. Erosion of the soil is another worrying factor.
- B : “What is the community doing about the soil erosion problem?”
- I : “Our community is silent about this even if they are worried.”
- B : “What may be preventing the community from addressing such a problem?”
- I : “I think they do not know who to report this to? Some do not even know the

results of soil erosion. They feel it is okay as long as they live.

B : “Just tell me more about other worrying issues. I am still interested in knowing the human actions you consider as jeopardising the sustainability of the living environment.”

I : “The people in our community?”

B : “Yes, that is what I mean.”

I : The renting problem. House owners extend their houses and yards. That gives the place an untidy appearance. Any person including those who do not work at all rent rooms and some stolen goods are kept into the houses. These stolen goods are sold to the community.

B : “Are there unemployed people renting rooms?”

I : “Yes, there are. But they pay the rent. That is worrying because we suspect how they get the money as some of them do not work during the day.”

B : “Thank you for your time and allowing me to interview you. I am going to transcribe the content of this interview and will come back to let you see if my interpretation of the transcription will be a true reflection of what we discussed.

Thanks.

I : “Okay.”



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## APPENDIX D

### UMBHALO WENKULUMO NGQO PHAKATHI KUKA BHEKI (B) TSEPO (I)

- B “Ngiyabonga ithuba lokukhuluma nawe maqondana nalendaba yokuphatheka kwendawo lana. Ngizocela ukuba ukhululeke uma kukhona engizokubuza ongakuzwa usho ukuthi lana kawuzwa uzofuna ukuthi ngikuchazele. Ngicela ukhuthi uma ungiphendula, unginikeze lokho okucabangayo kanginayo impendulo okuyiyonayona kodwa okufanele ngikwenze ukuthola ukuthi njengobambe iqhaza uthi wena ubona ukuthi kufanele kwenziweni nomsebenzi wabanye futhi uwubona uyini. Singaqala?”
- I “Yebo. Inkinga yokuqala ukuthi izibi zilahlwa isinoma kanjani eduze kwemizi. Kufuna basibekele idustbin enkulu lapho sizofaka khona lezibi.”
- B “Uthi ubona inkinga enkulu kuyilena yezibi wena?”
- I “Inkinga enkulu yilena yezibi, dust, yiswireji?”
- B “Inkinga enkulu yilena yesibi, dust, neswireji?”
- I “Yebo, amanzi lawa achithekayo?”
- B “Kunamanzi achithekayo futhi?”
- I “Ukuguguleka kwenhlabathi ngenye inkinga kukhona futhi enye inkinga yokugcinwa kwemfuyo.”
- B “Kunemfuyo phakathi elokishini?”
- I “Ikhona. Kunephunga elibi futhi.”
- B “Make ngizwe ngaleninga yokuchithwa kwezibi. Ngokwakho ukubona qhaza lini ongalibamba ekusombululeni lenkinga.
- I “Maqondana nokulahlwa kwezibi, ngicabanga ukuthi kungangcono ukuba sihlangane sibonisane nabanye ababambe iqhaza ebese siya kumasipala ukuze asihlinzeke ngalomgqomo omkhulu wokugcina inkukhuma.”
- B “Niwudingela ukuba nikwazi ukuthatha ukungcola nikugcine kuwo?”
- I “Ngicabanga kanjalo.”
- B “Awungitshela okwamanje, iyini inkinga ngokusakazeka kwezibi? Kwenzeka kajani ukuthi kube nokusaphazeka kwezibi lapha?”
- I “Imbangela ukuthi abantu balahla inkukhuma eyandayo uma behlanza amagceke abo. Okufana namaphepha namaplastic kupheshulwa ngumoya kubuye futhi kungene amagcekeni emizi yethu.”
- B “Njengomuntu obambe iqhaza, ucabanga ukuthi yini ongayenza engaholela

ekutheni kutholakale isisombululo kulenkinga yokusakazeka kwezibi? Ngisho indima eqondene nawe. Ngikuzwile ukhuluma ngomasipala.”

I “Kungaba yindima yokuthi sibonisane nabanye ababambe iqhaza ukuze sikwazi ukuhlanza lendawo. Kufanele sikhulumisane nalabo abangcolisayo sibatshela ukuthi bayeke ukwenza lokho.”

B “Amaphepha ayabuya...?”

I “Ayabuya avinjwe futhi agcine elenga efenisini. Sithanda indawo yokuhlala ehlanzekile.”

B “Uthe yini inkinga ngesewage?”

I “Ngesinye isikhathi amaphayiphi ayaqhuma bese ukungcola lokhu kuqala ukugeleza esitaladini kwenze iphunga elibi kakhulu. Kuyacasula futhi izingane zidlala nomaphi zibuye zidlale futhi ngalamanzi anokungcola okuyinto engazenza zedlulelwe ukugula.”

B “Endabeni yesebage, ucabanga ukuthi iyiphi indima ongayidlala ekulondozeni inhlalo engakwazi ukuqhubekela phambili.”

I “Ngakulohlangothi, angazi”

B “Ingabe lokho kusho ukuthi lesimo kufanele siqhubekela phambili?”

I “Ngenye yezinto okufanele sibhunge ngazo nomasipala ukuze sibone ukuthi yini esingayenza ngaloko.”

B “Ngokwakho, kuze kube manje yini oseayenzile noma ocabanga .....”

I “Ngicabanga ukuthi kufanele siyibike ukuze sibone ukuthi ayikho yini into abangayenza ngalokho.”

B “Ake ungitshela, ubale ukugcinwa kwemfuyo”

I “Yebo”

B “Hloboni lwemfuyo olugcinwe lapha?”

I “Kukhona izinkomo, izingulube, izinkukhu, nezimbuzi.”

B “Ubale izinkomo, izingulube, izimbuzi nezinkukhu, ingabe ziyinkinga kulendawo yenu yokuhlala?”

I “Ziyinkinga ngoba uma kushisa, zibanga izimpukane ezisuka zingene ezindlini.”

B “Ngakho-ke, ucabanga ukuthi ingaxazululeka kanjani lenkinga?”

I “Kufanele bathole indawo efanele lapho bengazakhela khona izibaya.”

B “Ucabanga ukuthi eyakho indima ingaba yini ekufezeni lokhu?”

I “Kufanele sibhunge nomasipala akhele labantu izibaya noma abanikeze indawo lapho bangakha khona izibaya basuse lezinto lapha eceleni kwethu.”

B “Ziyinukubeza kanjani izinkomo lendawo?”

- I “Zibanga izimpukane. Ngezinsuku lapho kunetha khona imvula ukunuka okuvela esibayeni kuza ngakithi futhi lokho kusenza singazizwa sipatheke kahle.”
- B “Izinja?”
- I “Izinja zingcolisa amajalidi ethu ngokuzikhululeka nomaphi.
- B . Uma nibonisana nabanikazi balezilwane ozibale ngokwehlukana kwazo bathini? Bangakwazi ukuzwelana nani?”
- I Angeke kube khona into efana naleyo ngoba uma usho lokho kubo, bakutshela ukuthi ufake amagede ukuze impahla yabo ingakukhathazi.”
- B “Ubale futhi nothuli, luza kanjani lapha?”
- I “Uma kunemvula, amanzi akhukhula inhlabathi ayilahle ezindleleni. Angeke usasibona nesikontile kwezinye izingxenye ngenxa yenhlabathi. Ngezinsuku zomoya lenhlabathi iyaphephuka ibange uthuli.”
- B “Ngiyabona. Lunikhathaza kanjani-ke uthuli?”
- I “Lusikhathaza ezindlini nange washini elayinini.”
- B “Lwenzani?”
- I “Lungcolisa impahla yethu kubuye kufuneke siwashe futhi.”
- B “Ngasohlangothini lothuli, ucabanga ukuthi yiliphi iqhaza ongalibamba ekugcineni ukulondolozeka kwenhlalo kulendawo?”
- I “Ngingahlanyela utshani.”
- B “Utshale utshani?” Kwenzekeni ngalaba abanye ababambe iqhaza?”
- I “Nabo futhi bangatshala utshani nangaphandle kwamajalidi abo nezihlahla futhi zingasiza.”
- B “Zingahlanyelwaphi?”
- I “Emalajalidini.”
- B “Uthe futhi nenhlabathi iyaguguleka?”
- I “Kunjalo.”
- B “Kwenzeka nini lokho?”
- I “Uma kuna imvula noma sishanela ngaphandle kwezindlu egcekeni inhlabathi iyaguguleka.”
- B “Ubona ukuthi ukushanela amageceke kudala inkinga enkulu?”
- I “Kakhulu”
- B “Ubale futhi... Mhlawumbe ungangikhumbuza.”
- I “Intuthu evela ezitofini zamalahle.”
- B “Kusekhona labo abasebenzisa izitofu zamalahle lapha?”

- I “Kukhona abaningi babo.”
- B “Ngoba besebenzisa izitofu ezindlini zabo kukukhathaza kanjani lokho?”
- I “Intuthu iphephetheleka ezindlini zethu ukunuka kwayo kusikhathaze kakhulu.”
- B “Asishiyelane ngemibono. Awusisebenzisi isitofu lapha endlini yakho, kodwa usububonile ubunzima esibudalayo, ucabanga ukuthi kufanele wenzeni kuloludaba?”
- I “Akukho engingakwenza maqondana nezitofu ngoba kukhona injongo eziyifezayo njengoba kubanda ebusika izitofu ziyadingeka. Ngingaba naso nami ebusika. Ngakho-ke, akukho engingakusho.”
- B “Ayikho into ongayenza ngentuthu?”
- I “Kunjalo nje.”
- B “Uthe intuthu yezitofu iyinkinga enkulu ebusika
- I “Yebo. Umsizi unamathela ezimpahleni kakhulu futhi uma kukhona umoya ovunguzayo ebusika.”
- B “Ngiyezwa lokhu kunuka okhala ngakho, kuvelaphi?”
- I “Kubangwa yile swiliji kanye nalemfuyo.”
- B “Kuvela kuswiliji kanye nemfuyo. Ubale futhi ukuthi kukhona enye indawo lapho abanye abantu bechitha khona izibi ngokungemthetho ngaphandle kokuzisaphaza nje.”
- I “Yebo. Kayikho into esingayenza ngoba kasinayo indawo lapho singagcina khona impahla engadingekile.”
- B “E...”
- I “Iyona inkinga.”
- B “Kaninayo enye indlela yokulahlwa kwezibi?”
- I “Kasinayo.”
- B “Enye inkinga amanzi alahlekayo. Yini ebangela lokhu?”
- I “Amanzi alahleka ngoba amaphayiphi ayaqhuma futhi noma uwabika kuthatha isikhati eside ngaphambi kokuba alungiswe. Inkinga ukuthi angeke sikhone ukuzilungisela wona ngokwethu. Asazi ukuthi yini eyenziwayo ukuze kwenziwe lokho.”
- B “Ngiyezwa, kodwa isifiso sokuthi amaphayiphi lawo alungiswe ngendlela efanele sikhona nawe futhi uyasibona?”
- I “Yebo, Sikhona futhi siyasibona.”
- B “Manje kawazi ukuthi ingenziwa kanjani?”
- I “Singazenzela ngokwethu.”

- B “Ningazenzela nina ngokwenu?”
- I “Uma kungaba khona umuntu ongasibonisa ukuthi singawulungisa kanjani lomonakalo ngokwethu. Okwamanje angeke sizibandakanye.”
- B “Phakathi kwalezinkinga ozibalile ukhulume ngezibi, ukulahlwa kwazo, uthuli kanye nesweliji, manje usubala namanzi alahlekayo. Uthe nenhlabathi iyaguguleka okubangwa ngamanzi emvula, umoya ovunguzayo kanye futhi nani uma nishanela. Ukhononde futhi ngokugcinwa kwemfuyo phakathi elokishini. Ukhononde ngenthuthu nephunga elibi. Kafuphi uma uthi lezinkinga kufanele zibhekisiswe, uthi yiziphi okungakhonakala ukuthi zilungiswe futhi yiziphi okungekhonakale ukuthi zilungiswe.”
- I “Singakhona ukusebenza ngeyezibi.”
- B “Ningayikhona lena?”
- I “Singayikhona futhi nalena yothuli.”
- B “Eyeswiwiji yona angeke niyikhone?”
- I “Cha, angeke siyikhone, singakhona lena eyamanzi alehlele kuyo uma nje singaboniswa ukuthi ingaphathwa kanjani.”
- B “Senike nazama ukucela kubo ukuthi yini eningayenza?”
- I “Asikaze.”
- B “Kunjani ngokuguguleka kwenhlabathi?”
- I “Leyo singayiphatha ngokutshala utshani ukuze sehlise izinga lokushanela.”
- B “Uthini ngaleliphunga?”
- I “Akukho esingakwenza.”
- B “Lutho?”
- I “Akukho”
- B “Ngicela ukuthi wengeze uma kusekhona okunye osukukhumbulile uma kungekho ngicela imvumo yokubuya kuwe sizobhunga ngalenkulumo engiyiqophile. Ngemuva kokuyibhala ngizobuya kuwe ukuze uqinisekise ukuthi ngibhale lokho esikukhulumile.”
- I “Ungabuya noma ngasiphi isikhathi. Ngizocabanga okungenzeka ngibe ngikushiyile ngibuye ngikubhale phansi.”
- B “Ngingabuya nini? Noma ngasiphi isikhathi?”
- I “Nomanini.”
- B “Kulungile. Ngiyabonga.”

## APPENDIX D

### A TRANSCRIPT OF THE INTERVIEW BETWEEN BHEKI (B) AND TSEPO (I)

B “Thank you for this opportunity to talk to you about “the views of stakeholders on their role in maintaining a sustainable living environment”. I will like to ask you some questions. I request you to tell me if there is anything you will like me to clarify. I shall also ask for clarity from what you say whenever necessary. I am asking for your personal views on this discussion because I don’t have answers to my questions. Can we start?”

I “Okay”

“The problem here is that some of the residents just litter. They throw litter outside the yard as they please. I think we have to be provided with the big containers where we can put the unwanted goods.”

B “You are saying there is a problem and the big one is littering?”

I “The major problems are littering, sewage and water that is wasted.”

B “Oh! There is water that is wasted?”

I “Soil erosion is another problem. There is also the problem of stock keeping.”

B “There is also stock keeping in the township.”

I “There is, there is a bad smell as well.”

B “Let me hear about the littering problem. In your own view, what do you see as your role in solving this problem?”

I “About littering, I think it will be better for us to discuss with other stakeholders and approach the municipality so that it can provide us with the big container.”

B “You need it so that you can take the waste and put it there?”

I “I think so.”

B “Tell me, for now what is the problem with littering. How does it happen that there is so much littering around here?”

I “The cause is people throw away the waste accumulated when they clean their yards. The likes of papers and plastics are blown away and re-enter our home yards.”

B “As a stakeholder, what do you think it is that you can do that can lead to a solution to the littering problem? I mean the direct role you can play, I heard you mention the municipality.”

I “The role of discussing with the other stakeholders so that we can clean this place. We have to talk with those littering and tell them to stop it.”



B “The papers come back...”

I They do and get blocked and eventually keep hanging on the fence. We like a clean living environment.”

B “What about the sewage?”

I “Sometimes the pipes burst and the garbage start flowing in the streets giving a very bad smell. It annoys and children play everywhere. They even play with the contaminated water and that can infect them.”

B “In the case of the sewage, what do you think your role can be to maintain the sustainability of the environment?”

I “In that case I don’t know.”

B “Does it mean that the situation must continue?”

I “It is also what we have to discuss with the municipality so that it can see what to do with it?”

B “On your own, what have you done so far or you think...”

I “I think we have to report it so that we can see if there is nothing they can do about it.”

B “Tell me, you mentioned, stock farming or keeping.

I “Yes”

B “What type of stock is kept here?”

I “There are cattle, pigs, poultry, goats.”

B “You mentioned cattle, pigs, goats and poultry are they also a problem in your living environment?”

I “They are troublesome because when it is very hot, they cause flies, and these flies get into the houses.”

B “So, how do you think this problem must be solved?”

I “They have to find a suitable place for the stock. Where they will even build the kraals.”

B “What do you think your role can be to achieve this?”

I “We must discuss with the municipality to build kraals for these people or so that it can give them a site where they can build the kraals and remove those things in our neighbourhood.”

B “How do the cattle degrade the living environment?”

I “They cause flies. In rainy days the smell from the kraal come to us and that does not make us feel good.”

B “The dogs?”

I "Dogs makes our yards untidy by relieving themselves anywhere."

B "When you discuss with the owners of the various animals you have mentioned what do they say?" Can they compromise?"

I "There can be no such because if you mention that to them, they tell you to fit a gate so that their property can not trouble you."

B "You also mentioned dust, how does it come about here?"

I "When there is rain, water will erode the soil and deposit it in the roads. You can no longer see the tar in some parts because of the soil. In windy days that is blown and cause dust.

B "I can see, how does the dust trouble you then?"

I "It troubles us in the houses, with the washing on the line."

B "What does it do?"

I "It makes our washing dirty and compels us to redo the washing."

B "In the case of dust, what do you think has to be done to maintain the sustainability of the living environment?

I "I can plant grass."

B "Plant grass? What about the other stakeholders?"

I "They can also plant grass even outside their yards. Trees can also help."

B "Where can they be planted?"

I "In the yards.

B "You also said the soil is also eroded?"

I "That is right."

B "When does that happen?"

I "When it is raining and when we sweep... outside the houses in the yards, the soil is eroded."

B "You feel sweeping the yards causes a serious problem?"

I "Very much."

B "You also mentioned... may be you can remind me."

I "Smoke from coal stoves."

B "Are there still those using coal stoves here?"

I "There are many of them."

B "Because they use the stoves in their houses, how does the smoke trouble you?"

I "The smoke is blown into our houses and the smell troubles us a lot."

B "Let us share ideas, you do not use the stove in your house but have seen the difficulty it causes, what do you think have to be done in this respect?"

I “There is nothing I can do about the stoves because they serve a specific purpose as it is cold in winter. Stoves are needed. I can also have it in winter. Therefore in that I cannot say anything?”

B “There is nothing you can do about smoke.”

I “Definitely”

B “You said the coal stove is a serious problem in winter?”

I “Yes. The soot sticks on our washing they use coal stoves a lot and there is wind in winter.

B “I understand, the smell you complain about? Where does it come from?”

I “It is caused by the sewage and the smell from the stock.”

B “It is from the sewage and the livestock”

I “Yes”

B “You also mentioned that there is also a place, where other people are illegally dumping beside littering.”

I “Yes”

B “You are saying there is nothing you can do about illegal dumping?”

I “There is nothing we can do because we have nowhere to place the unwanted material.

B “E”

I “That is the problem.”

B “You don’t have an alternative to dumping?”

I “We do not.”

B “Another problem is wasted water? What cause that?”

I “The water is wasted because pipes burst and even if you report, it takes time before the damage is fixed. The problem is that we cannot be able to repair the damage on our own. We do not know what is done to do that?”

B “I understand, but the wish to have the pipes properly fixed is there and you are aware of it.”

I “Yes, It is there and we see it.”

B “You just do not know how it can be done?”

I “We can do it on our own”

B “When can you do it on your own?”

I “If there can be someone to show us how we can fix the damage on our own for now we cannot involve ourselves.”

B “Among the problems you mentioned you spoke about littering, dumping, dust and

sewage and now you have mentioned wasted water. You also said that soil is being eroded and water, wind as well as yourselves cause that when sweeping. You complained about stock keeping in the township. You complained of smoke and the bad smell. In short if you say these problems must be attended to, say which you think you can and cannot.

I “We can manage to deal with littering.”

B “You can manage this one.”

I “We can also manage the dust one.’

B “The sewage one you cannot?”

I “No, we cannot we can manage the one about wasted water only if they can show us how to handle it.”

B “Have you tried to ask from them what you can do?”

I “We haven’t?”

B “What about soil erosion?”

I “That we can handle by planting grass as to reduce the rate of sweeping”

B “What do you say about the smell?”

I “There is nothing we can do.”

B “Nothing?”

I “There is nothing.”

B “I am asking you to add if there is any other thing you have remembered and if not I am asking for permission to come back to you to discuss the speech I have taped after transcribing it. I shall come back to you so that you can verify if I have written what we discussed.”

I “You may come back anytime. I shall also think about what I have omitted and write it down.”

B “When can I come back? Anytime”

I “Anytime”

B “Okay, thank you”.