

**PERCEPTIONS OF LOCAL COMMUNITIES ON LEGISLATION
GOVERNING THE USE OF NATURAL RESOURCES IN COFFEE
BAY AND HOLE IN-THE WALL, MQANDULI, EASTERN CAPE,
SOUTH AFRICA**

by

NELISWA JOYCE MAHLANGABEZA-PILISO

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SUPERVISOR: MR Q PALISO

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DECLARATION

I hereby declare that the study entitled PERCEPTIONS OF LOCAL COMMUNITIES ON LEGISLATION GOVERNING THE USE OF NATURAL RESOURCES IN COFFEE BAY AND HOLE IN-THE WALL, MQANDULI, EASTERN CAPE, SOUTH AFRICA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

SIGNATURE

Neliswa Joyce Mahlangabeza-Piliso (MRS)

DATE

DEDICATION

This research is dedicated to Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) for paying my studies.

ACKNOWLEDGEMENTS

I hereby express my sincere gratitude to my supervisor Mr Q Paliso for his time, professional guidance and support. I appreciate the advice and constructive criticism he gave me throughout this research project.

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- Mr Luyolo Mahlangabeza, my brother, for his support and constructive criticism
- Mr Asabonga Mngeni, for taking time to assist me with the statistical analysis of the data
- last, but not least, my family for understanding when I had to work extra hours to do the research

Above all, I thank Jehovah, the true God Almighty, for His mercy, wisdom and peace, and for giving me strength to persevere in writing my dissertation.

ABSTRACT

The study was aimed at assessing perceptions of local communities on the use of coastal natural resources in Coffee Bay and the “Hole in-the Wall” area. The environmental impact caused by non – compliance with environmental legislation was also assessed. Data was obtained through interviews conducted with members of 50 households chosen randomly and questionnaires that were distributed to government departments in charge of the resources. The study found that due to high illiteracy and unemployment in the area, people were compelled to use the available coastal natural resources to satisfy their basic needs. About 70% of them were aware of the legislation but felt they could not comply with it since they had not been consulted. The study’s recommendations are that the community should be consulted on legislation, more environmental awareness campaigns should be conducted and government plans should be aligned in terms of service delivery.

Key terms: Natural resources, Environmental legislation, Community – based Natural Resource Management, Sustainable use, Awareness sessions, Alignment, Planning, Coastal Conservation Area, Communities, and Consultation

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LIST OF ACRONYMS AND ABBREVIATIONS

CBNRM	community-based natural resource management
CCA	coastal conservation area
DEA	Department of Environmental Affairs
DEAET	Department of Economic Affairs, Environment and Tourism
DEAT	Department of Environmental Affairs and Tourism
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DRDLR	Department of Rural Development and Land Reform
EIA	environmental impact assessment
EMP	environmental management plan
GIS	Geographical Information System
IDP	integrated development plan
IEAM	Integrated environmental assessment and management
IPLRA	interim protection of informal land rights act
KSDLM	King Sabatha Dalindyebo Local Municipality
MLRA	Marine Living Resources Act, 1998 (Act No.18 of 1998)
NEMA	National Environmental Management Act (Act No.107 of 1998)
NGO	non-governmental organisation
ORTDM	OR Tambo District Municipality
PAJA	Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000)
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
SPLUMA	Spatial planning & land use management act
TFCA	Transfrontier conservation area
WCTDP	Wild Coast Tourism and Development Policy

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 Introduction

This research is aimed at assessing the perceptions of legislation governing the use of natural resources by the local communities at Coffee Bay and the Hole in-the Wall area. The fact that human beings are dependent on nature for their survival is undisputable. Scholars follow two ideologies to describe the relationship between human beings and the environment. The first one is the ecocentric philosophy, which suggests that current trends in population growth, environmental deterioration and resource consumption cannot be allowed to continue if life on Earth is to be sustainable (Technikon SA 2007). The second one is the technocentric philosophy, which is based on the belief that modern man has the scientific knowledge and expertise to solve any environmental problem (Technikon SA 2007). If the consumption of resources continues unabated, non-renewable resources will be depleted and human will suffer.

In order to achieve sustainable development, human beings must live in harmony with nature – the natural resources on which they depend (Yeld 1997). This is because we depend on the Earth's resources to sustain ourselves, from basic requirements such as air, water and food to materials for shelter, transport and recreation (Yeld 1997). South Africa has its own unique history of exploiting natural resources and its own political framework (Yeld 1997). Sustainable development is directly linked to the availability of natural resources. According to Yeld (1997), three basic objectives must be met to ensure the sustainability of the planet:

- (1) Essential ecological processes and life support systems must be maintained.
- (2) Biological diversity (biodiversity) must be preserved.
- (3) Natural resources must be used sustainably or, where not possible, wisely (as is the case with non-renewable resources such as minerals).

Yeld (1997) argues that most of the world's population live on the coastal areas. It is estimated that six out of 10 people live within 60 km of coastal waters and two-thirds of all the cities with a population of 2.5 million or more are located near estuaries (Yeld 1997). It is projected that the Earth's population will double within the next two to three decades (Yeld 1997). Considering these facts, it is no wonder that the coastal areas are exposed to severe pollution associated with development and the exploitation of natural resources. Using natural resources is vital for South African coastal communities, who have a long historical relationship with these resources (Atkinson & Clark 2005). The research will focus on coastal natural resources. In coastal areas, there are opportunities for sand mining, fishing, forestry and tourism. Local people's livelihoods are made up of government welfare grants, income from limited tourism-based jobs, crop and livestock farming, and the utilisation of natural resources (Wynberg, et al, 2011).

There is also a rapid population expansion at the wild coast (Atkinson & Clark 2005). Most of the South African public, especially coastal stakeholders, are becoming increasingly aware of the value of the coast and therefore would like to have properties in coastal areas (Atkinson & Clark 2005).

Attaining sustainability in South Africa is not an easy task. This is because of the historical background of the country. There is a huge backlog in infrastructure, especially in historically disadvantaged areas. Development is key to uplifting the standard of living of people in most of the rural areas of the country. Economists define development in terms of the gross domestic product, which is the total value of what is produced in the economy of a country (Technikon SA 2007). Development is therefore about change. Environmentalists use the term "sustainable development" for development that does not compromise our natural resources (DEAT 2004).

In simple terms, sustainable development is the development that meets the needs of the present generation without compromising the ability of future generations to meet their needs (DEAT 2004). However, it is estimated that currently about two-thirds of the world's population live at or within 200 km of the coast (DEAT 2004). If this trend continues, it is estimated that by the year 2025, about three-quarters of the world's population will live at the coast (DEAT 2004). Coastal areas generate many goods and services, and have sites for the development of ports and harbours; locations for fish industries, minerals and oil; and amenities for tourism and

recreation. In addition, they provide a wide range of benefits that are harder to quantify, including aesthetic, cultural, educational, scientific and spiritual benefits for people. Most importantly, coastal systems protect coastal communities against the potentially harmful effects of storms, hurricanes and other ocean-related natural hazards (DEAT 2004).

Coastal resources are rich and diverse, thus providing important economic and social opportunities and increasing reliance on coastal resources for food and recreation (DEAT 2007). According to a United Nations report, quoted in the White Paper for Sustainable Coastal Development in South Africa, coastal management is a continuous and dynamic process (DEAT 2000). It unites the government and the community, science management, and sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystem resources (DEAT 2000). According to Yeld (1997), “environmental, political, social and economic issues are inextricably connected”. This means that to ensure the sustainable use of natural resources, an integrated approach has to be adopted.

The Department of Environmental Affairs and Tourism (DEAT 2004) emphasises that achieving sustainable development involves simultaneously promoting ecological integrity, social harmony, cultural vitality, economic vitality and effective governance. The following illustration is used to show why we should use the Earth’s natural resources sustainably:

Money invested in a bank provides the investor with a return on investment based on the interest rate. The investment represents a stock of capital that yields income. One can receive income indefinitely if the capital is left intact. However, if the investor starts to use the capital, the income will decline and eventually there will be no money in the bank. The same principle applies to human beings’ use of natural resources. The Earth’s essential ecological processes and life-supporting systems are natural capital and achieving sustainable development requires that we learn to live off the income that is generated without depleting the capital.

However, Yeld (1997) argues that it is not possible to give a definition of sustainable development that will meet the approval of all people. We will always have to make hard choices and there will always be trade-offs and compromises as we strive to optimise potential benefits while minimising costs – and these will result in negative impacts that damage the environment.

Proponents of sustainable development emphasise that the international goal of conservation cannot be achieved if development does not lead to the alleviation of poverty and misery that have been endured for a long time. One of the factors that may lead to the depletion of natural resources is poverty. Poverty exists when people cannot feed, house and clothe themselves, resulting in their physical weakness, vulnerability and defencelessness (Technikon SA 2007).

1.1.1 Role of government in achieving sustainable use of coastal natural resources

The DEAT focuses on poverty relief programmes to try and alleviate the problems associated with poverty. One of the social responsibility programmes is Working for the Coast, which is a part of the government's broader Expanded Public Works Programme. The programme provides short-term and long-term job opportunities within the context of sustainable development priorities. Communities are employed to clean beaches, remove alien plant species and so on. People receive training and certificates on environmental management issues. The DEA has also put in place tools for managing the seaward edge of developments in the admiralty reserves, 100 m coastal buffer zones and site development restrictions. Tools have also been put in place to ensure compliance with environmental legislation, including Integrated Development Plans (IDPs). Each municipality is mandated to develop an IDP document to address environmental issues and a Spatial Development Framework (SDF) document to guide development in the particular municipality (DEA 2012). Developments should be aligned and should comply with environmental legislation.

In coastal and estuarine environments, setback lines are recommended for protecting nearby developments from natural disasters like flooding that may be caused by sea level rise. (DEA 2012). This is done to protect developments from damage due to natural hazards such as tsunamis, flooding, erosion, sand drift, cliff collapse and slumping of steep slopes (DEAT 2004). Protecting ecological functioning (including dune dynamics in estuaries, wetlands and swamps) should be prioritised in coastal areas. It is also important to prevent public access to coastal land. The development of sites by land owners must conform to the standards set by the legislation. In some cases, this may include protecting the natural vegetation and restricting the extent of areas around dwellings. (DAET 2004).

1.1.2 Management of the coastal area

The coast is where coastal users interact with the people and organisations involved in, and follow the procedures for, the governance, planning and management of the coastal areas (DEAT 2004). It is where different spheres of government carry out different responsibilities ranging from local authorities to international bodies and where different departments carry out a range of sector-specific functions, such as those governing fishing, mining, economic development, nature conservation and public works (DEAT 2004). The following reasons show that an integrated approach is needed to solve the various problems of coastal residents (DEAT 2004):

- The coastal area is one of the areas where the different branches of government interact.
- Politicians frame the policies and laws that govern the coast.
- Government officials seek to implement these policies and laws.
- Prosecutors and judges seek to ensure that those who contravene these policies and laws are fairly and properly penalised.
- This is where civil-society organisations exert an influence on the private sector, non-governmental organisations (NGOs), community-based organisations and coastal research communities.
- In this area, coastal interests and activities collide or reconciled, and disputes between and within user groups are addressed.
- Education and research is done extensively in these environments.
- Access to and the use of natural resources therefore determines the social interactions that are dominant in the community.

There is therefore a need for horizontal integration between sectors and governmental agencies that influence the planning and management of coastal systems and resources. Another challenge is the lack of political and institutional integration (DEAT 1998). Attention should be given to vertical integration between spheres of government (from local level to national level) and also between institutions in government, civil society and the private sector which influence the

planning and management of coastal ecosystems and resources. Integration should furthermore be done across disciplines (DEAT 1998). Because coastal systems are multifaceted, dynamic and complex, the consequences of coastal management decisions are often uncertain. This makes it difficult – if not impossible – to determine the cause and effect of such relationships and to predict accurately the potential impacts of human activities (DEAT 1998). This means that it is not easy to predict for the future and hence plan properly. There is therefore a need to learn from the natural and social sciences, the humanities and the design professions (including engineering, planning and architecture), and to integrate the knowledge gained (DEAT 1998).

Above all, scientific research must be integrated with other information, including the indigenous knowledge of the coastal communities and the users of natural resources (DEAT 2004). There is also a need for policy, management and research integration. The fact of the matter is that in order to manage coastal ecosystems and resources for the benefit of current and future generations (including existing policies, management practices, and educational and applied research) an integrated approach is needed (DEAT 1998). According to Wenning (2010), integrated environmental assessment and management (IEAM) is aimed at bridging the gap between scientific researches and using science in decision making, regulation and environmental management. IEAM is part of the nexus of climate change adaptation. From indications such as rising sea levels and altered weather patterns, it is clear that climate change will continue to significantly alter coastal and inland environments (Wenning 2010). Coupled with uncertain predictions, such as storm frequency and intensity, changes in land use generate significant environmental management and planning challenges (Wenning 2010).

This has led to significant resources being invested in efforts to predict the potential consequences of climate change (DEAT 1998). However, emphasis should be placed on finding rational approaches to guide decision making in the midst of the uncertainties surrounding climate change (DEAT 1998). The risk assessment and environmental management communities have to refine the available methods for developing and comparing the performance of alternative environmental and social adaptive strategies within an overall management framework. While efforts to mitigate the effects of climate change should continue, plans must be developed to adapt to climate change and the risks it poses to human beings, infrastructure and ecosystems

(DEAT 1998). Attention should also be given to interconnections between land and sea environments, which can extend over vast distances (*Ibid*). Activities such as those that cause pollution far inland may have negative impacts on coastal areas. The coastal environment is significantly affected by the cumulative impact of individual decisions and actions of resource users and the government (DEA 2012). There should be integration across sectors and human activities that are taking place at the coast, like in agriculture, commerce, fishing, forestry, industry, mining, nature reserves, recreation land and residential development, subsistence resource use, tourism and transport infrastructure (*Ibid*).

Effective land use management is necessary, especially along the coast. Land use management at the coast needs to be particularly effective, as land use pressures on the coast are intensifying and coastal development is occurring at a significant pace for agricultural, industrial, residential and recreational purposes. The impacts of these developments on the natural systems and quality of life at the coast should to be considered (DEAT 1998). Over the years, poor management decisions and lack of guidelines on land use have led to the degradation of coastal areas (DEAT 1998). Land use management uses a range of tools at municipal level to manage the way in which land is used and developed. Tools that can be used include land use schemes, which are essentially plans that specify what activities are permitted on a piece of land and the shape, size and position of the structures that may be erected (DEA 2014). By-laws, licensing arrangements, rates and general property information can also be included (DEA 2004).

Land use schemes let everybody know what can be done on a particular piece of land. Compliance can be achieved by ensuring that municipalities adhere to the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), which provides that every municipality in South Africa should prepare an IDP (DEAT 2004). The municipality's SDF is a significant part of the IDP and shows how the municipality plans to expand and grow in future. The municipality should also have a land use management system that describes the activities required to manage the use and development of the land (DEAT 2004). Coastal dunes are often associated with beaches. According to the DEAT (2004), they are easily recognised as hills, mounds or ridges consisting of wind-blown sediments (in most cases sand). Dunes form where sand is deposited onshore by the sea and at river mouths, or where it is blown inland by the wind.

The size and extent of the dunes depend on the strength and direction of the wind (DEAT 2004). One of the factors that readily distinguish dunes from beaches is the presence of vegetation.

Dunes have a number of important ecological functions and provide a range of benefits to people. They provide habitat to a range of plants and animals (DEAT 2004). They are also an important element of littoral active zones, which are areas that are exposed to erosion. Dunes function as buffers with great capacity for energy absorption and self-renewal. In addition to their recreational and tourism value, dunes provide an important protective barrier for coastal property and infrastructure against stormy seas and spring tides (DEAT 2004). However, dune vegetation is highly sensitive to human disturbance. Disturbing dune vegetation can expose unconsolidated sand that is readily moved by wind and waves, resulting in dune blowouts or slumping (DEAT 2004). Stabilising a dune can result in beach or shoreline erosion. All these activities can cause disaster and loss of lives. Unregulated sand mining is one of the key activities that lead to the loss of sand dunes and dune forests on the Wild Coast.

In the light of the above facts, coastal management can also be achieved by effectively implementing legislation through continuous engagement with affected stakeholders (DEAT 2004). As mentioned before, the Wild Coast is mainly rural and has spectacular scenery and high biodiversity (KSDLM 2008). Poverty and unemployment are rife in this area. Because of the poor road network and lack of proper sewage and water services, it is very difficult to access places of interest like the Hole in the Wall. Lack of alignment and weaknesses in government structures have been allowed to continue uncontrolled and natural resources are often used illegally. The Wild Coast Strategic Environmental Assessment showed that there was a strong demand from holidaymakers from all over the world to improve holiday facilities (KSDLM 2008).

There is increasing demand for a better understanding of the social dimensions of natural resource management by policy makers, practitioners and academic researchers (Broderick 2005). Community involvement is needed for sustainable natural resource management (DEAT 2004). In many instances, communities' claim that the reason for not complying with government legislation is because of lack of knowledge (DEAT 2004). But this is not always the case;

sometimes communities do not agree with a particular piece of legislation because its provisions do not address their needs. There is therefore a need to constantly review legislation so that they address ever-changing natural and sociocultural needs.

Lindeque (2004) conducted a study to assess the effectiveness of environmental management principles in the environmental policies and law of South Africa. The results showed that environmental law and policy reform had no impact at grassroots level. This may have been due to failure to implement it at grassroots level. However, this was not specified and hence the current research looked at the extent to which environmental awareness was promoted by government departments. It was hoped that the study would lead to a better understanding of how coastal communities in the study area perceived different legislation and how to better working relations with them. The research was also aimed at assessing whether community members were aware of the applicable environmental legislation. The researcher also looked at the extent to which environmental damage was caused by non-compliance with the legislation.

1.2 Background

Coastal residents in Coffee Bay and the Hole in-the Wall area have a long historical relationship with natural resources (KSDLM 2008). Their livelihoods are made up of government welfare grants, income from limited tourism-based jobs, and crop and livestock farming. The Government Gazette (RSA 1992) defines a coastal conservation area (CCA) as an area that is 1000 m from the high-water mark or a tidal river/lagoon, excluding a national park, a national wild life reserve and a municipal sea-side resort. A CCA is a sensitive area and therefore there have to be proper plans on how to utilise it. Coffee Bay and the Hole in the Wall are affected by the Environmental Conservation Decree, 1992 (Decree No.9 of 1992). The fact that most people are affected by poverty and the only way to make a living is to use natural resources poses a threat to the CCA. Traditional leaders play a major role in exacerbating the problem. They give people sites without telling them to approach the relevant government departments, where legal documents for land ownership can be obtained. They claim that they are not aware of the legislation governing CCAs.

The highest level of authority in the traditional hierarchy in ward 24 is the chief and there are four administrative authorities under his leadership; one ward councillor works with the ward committee members (see figure 1.1).

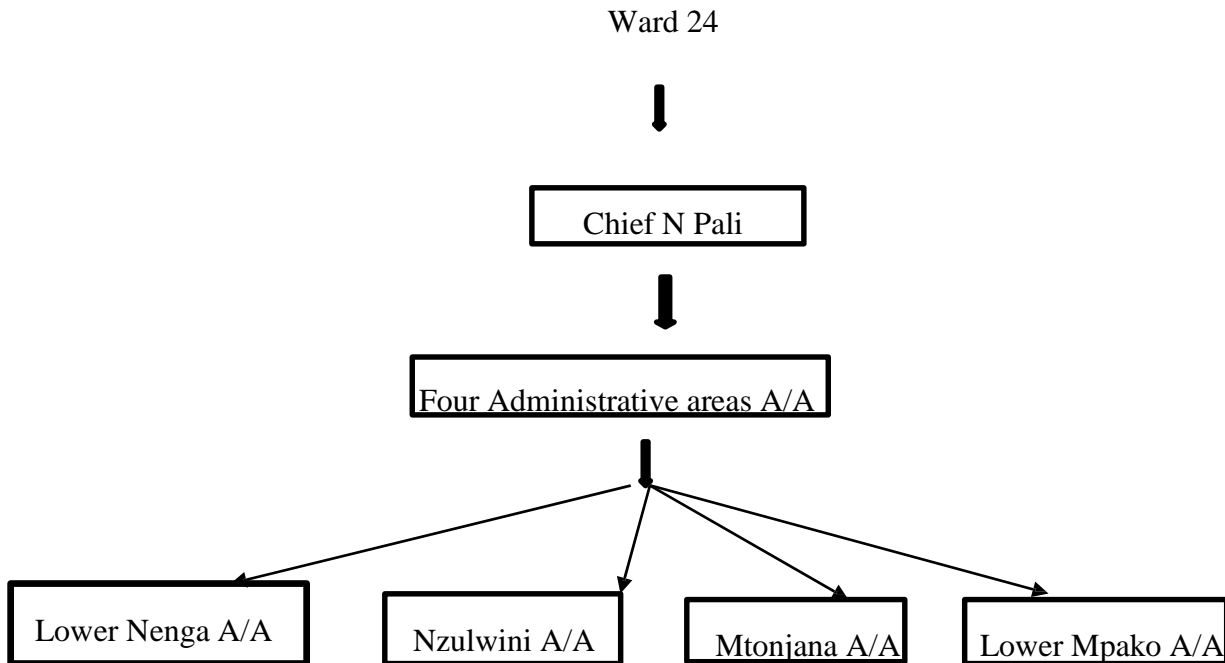


Figure 1.1: Leadership structure (Source: KSDLM 2008)

The Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) conducts environmental awareness sessions throughout the Wild Coast. Anyone who is found building in the CCA without prior authorisation from the DEDEAT faces legal action. This causes a lot of misunderstanding between communities and government departments mandated with ensuring the conservation of coastal natural resources. Communities claim that decisions about communal land reside solely with traditional leaders. They claim the land belongs to their forefathers and no piece of legislation can change the way they utilise it. Sand mining is another big problem. Communities watch people from different places taking

away the sand without compensating them. Sand mining is not properly managed at Coffee Bay and the Hole in- the Wall. Truck drivers are fined for illegal sand mining by the DEDEAT. This also poses challenges because there are no authorised areas for sand mining. Communities claim that they have approached the Department of Mineral Resources (DMR) to address these problems without any success.

There is also a problem with the tourism industry since it has been proposed that Coffee Bay become a town. Businesspeople are now interested in establishing accommodation facilities like hotels and other tourism-related businesses in the area. The number of applications submitted to the DEDEAT for purposes like these has risen. Another problem is tourists driving vehicles off demarcated roads to access fishing spots or cottages. Organised fishing clubs and individuals flock to Coffee Bay and the Hole in-the Wall area, especially during holidays. According to the researcher's observation, the number of off-road vehicle permits processed by the DEDEAT has risen drastically in the past three years.

Although much research has been done along the Wild Coast on the use of natural resources, nothing has been done to evaluate how people perceive legislation governing the use of these resources. The role that communities can play in development is unclear. The role played by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) in ensuring sustainable development seems to be lowered by the resistance received at these communities. These issues will be addressed in this research project.

1.2.1 Statement of the problem

The South African government promulgated NEMA. This was done so as to ensure that conservation of natural resources for the benefit of the present and the future generations is prioritized. It has been noticed that in many cases most of legislation being used in conservation were formulated prior 1994 and as a result of that people at grassroots level were not consulted. There is also lack of consultations within government departments. The result is that people are violating the laws and therefore end up in court. On the other side there is lack of environmental education, or failing which, people listen to what they want to hear only.

There is irreversible damage being caused on the environment along the coast because of continuous exploitation of the coastal natural resources for economic and social gain. There is an urgent need to come up with achievable strategies so as have effective sustainable management of natural resources for the benefit of future generations.

1.2.2 Aims of the research

The research was aimed at

- establishing whether there is any sustainability in the use of natural resources at Coffee Bay and the Hole in the Wall area
- ascertaining the perceptions of the communities on the legislation governing the use of natural resources
- determining the extent of the exploitation of natural resources in the study area

1.2.3 Research objectives

The objectives of this research are as follows:

- Determine whether these communities are aware of legislation that govern land use in their areas
- Determine extent of alignment of the Municipal Plans and the Department's legislation governing the use of coastal natural resources in the study area.
- Determine environmental damages that has been caused by illegal activities taking place in the study area.
- Develop strategies that will assist the DEDEAT to have better working relations with the coastal communities.

1.2.4 Study area

The study area for this research is located in the King Sabatha Dalindyebo Local Municipality (KSDLM) which falls under the OR Tambo District Municipality (ORTDM) in the eastern part of

the Eastern Cape Province along the Indian Ocean coastline of South Africa (see Figure 1.2). It is bordered by KwaZulu-Natal on the north and by the Western Cape on the south. The OR Tambo region is located in the former Transkei area of the province, which falls within latitude 30° 00' and 34° 15' south and longitude 22° 45' and 30° 15' east (Mngeni 2014).

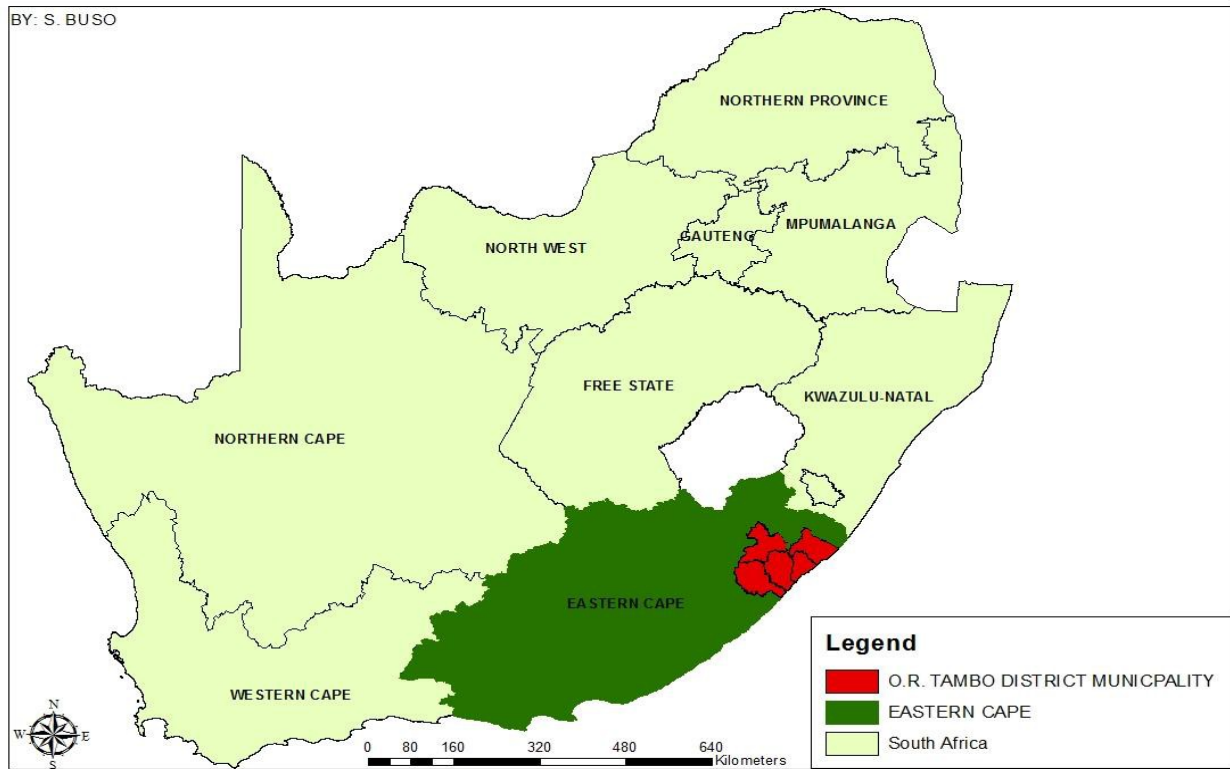


Figure 1.2: Map showing the location of O.R. Tambo District Municipality (Source: Mngeni 2014)

The OR Tambo region is a coastal region in the sense that four-fifths of the local municipalities are bounded by the sea. According to the DEAT (2004), the coast is the place where the land meets the sea. This is where people, land, water (both salt and fresh) and air interact. It is thus a distinctive area that gets its character mainly from the direct interaction between land and sea. It can be regarded as a place of ecological, social, cultural, economic and governance significance (DEAT 2004). Coastal areas are rich in ecosystems and landforms such as reefs, beaches, dunes, rocky headlands and shores, estuaries, coastal wetlands and sometimes islands. It is rich in flora and fauna such as seaweeds, grasses, dune creepers, coastal forests, shellfish, octopus, fish birds, sharks, turtle seals, dolphins and whales (DEAT 2004).

The OR Tambo region is mainly rural, with spectacular scenery and a lot of indigenous forests with high biodiversity (DEAT 2004). Its coast is called the Wild Coast because it is untapped and undeveloped (Refer to Fig 1.3) There is a low level of infrastructural development, with few towns and resorts (DEAT 2004). The poorly developed infrastructure makes access very difficult. As a result, many tourists visit the area for 4x4 vehicle rides and enjoy hiking trails stretching from Port St Johns to Coffee Bay. Most coastal communities live in extreme poverty and have high unemployment. Most of the people depend on government grants and the income of migrant labourers who work outside the region. Development in this area is limited due to the fact that there is tribal tenure system which limits access to land. As a result, government structures are weakened and people are reluctant to adhere to legislation. This has resulted in uncontrolled and often illegal use of coastal natural resources by residents and visitors.



Figure 1.3: Photo showing untapped and undeveloped state of the Wild coast (Source: own research findings)

Agriculture, forestry and tourism are the main income-generating sources for the coastal villages

in the OR Tambo region. The key management issues that were raised during the process of formulating the Coastal Management Policy were (DEAT 2004):

- Local people experienced difficulties in entering the fishing and tourism markets.
- People in the area felt that the quota allocation was discriminatory.
- The majority of the people believed they did not benefit from local coastal natural resources.
- There was confusion about ownership rights due to land restitution issues, causing delays in development.
- Lack of appropriate sewage infrastructure caused pollution of coastal waters.
- Many areas have a high natural heritage value, for example the natural hole in the wall found in the study area.

Sand is a coastal natural resource found in the OR Tambo region. In terms of the Marine Living Resources Act, 1998 (Act No.18 of 1998) [MLRA], no sand mining should occur without consent or a permit from the municipality and is subject to National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and authorisation by the Department of Mineral Resources. It is proposed that if sand mining is to take place on communal land, written authorisation should be obtained from both the relevant traditional leader and the Department of Rural Development and Land Reform (DRDLR) (DEAT 2004). The approval will be subject to the reinstatement or rehabilitation of the site to the satisfaction of the competent authority in accordance with the Environmental Management Plan. All development within the 1:100 year flood line should address the issue of storm water run-off to the satisfaction of the competent authority and natural means of attenuation should be used where possible (DEAT 2004).

There is a problem of waste management in the study area. In terms of the National Environmental Management: Waste Act, (Act No. 59 of 2008) [NEMWA], waste is “any substance, whether or not that substance can be reduced, re-used, re-cycled and recovered, that is surplus, unwanted, rejected, discarded, abandoned or disposed”. Where the dumping of waste is concerned, no land in any zone may be used for the purpose of the permanent or temporary deposit of waste material or refuse, tipping, dumping, a scrapyards, a motor graveyard or any similar purpose unless there is approval for such activity. Currently the permitted dumping

zone in the area is in Mqanduli, which is about 40 km from Coffee Bay (DEAT 2004). This leads to garbage bags being left next to the main road instead of being disposed of properly. The over-use of coastal natural resources leads to their depletion, particularly intertidal resources. People in the area have raised concerns about governance and capacity building. Another concern is the lack of structures for public participation (DEAT 2004). There is no coordination or integrated development planning between local authorities and the local people, and this result in problems where development opportunities are concerned.

The role of traditional leaders in the management of the land is unclear (DEAT 2004). Traditional leaders claim that they are the legal custodians of the land; they do not approach government departments dealing with land tenure rights when allocating sites. The relationship between local communities and nature conservation agencies is problematic (DEAT 2004). There is a lack of ability within local government to deal with conflicts on land use, as was demonstrated by the Heath Commission's investigation on illegal coastal developments (DEAT 2004). Inadequate knowledge on legislation gives rise to conflict between government officials and the local people. Communities and officials need to be capacitated to enable them to participate more meaningfully in the management of coastal natural resources.

Coffee Bay and the Hole in the Wall area is in ward 24 under the KSDLM in Mqanduli town in the ORTDM in the Eastern Cape province of South Africa. Ward 24 is made up of 40 villages. For the purpose of this study, only five (5) villages are selected. These are the villages that are located within 1000m mark from the high water mark of the sea. These are Rhini, KuJonga, Madakeni, Mthonjana, and Mathokazini (See Figure 1.4). These are the villages that are along the coast. According to the Wild Coast Tourism and Development Policy (WCTDP 2002), the area is identified as a First Order node. This means that this is an area which in terms of low environmental sensitivity and existing infrastructure can accommodate intensive development. It can be considered for formal town establishment.

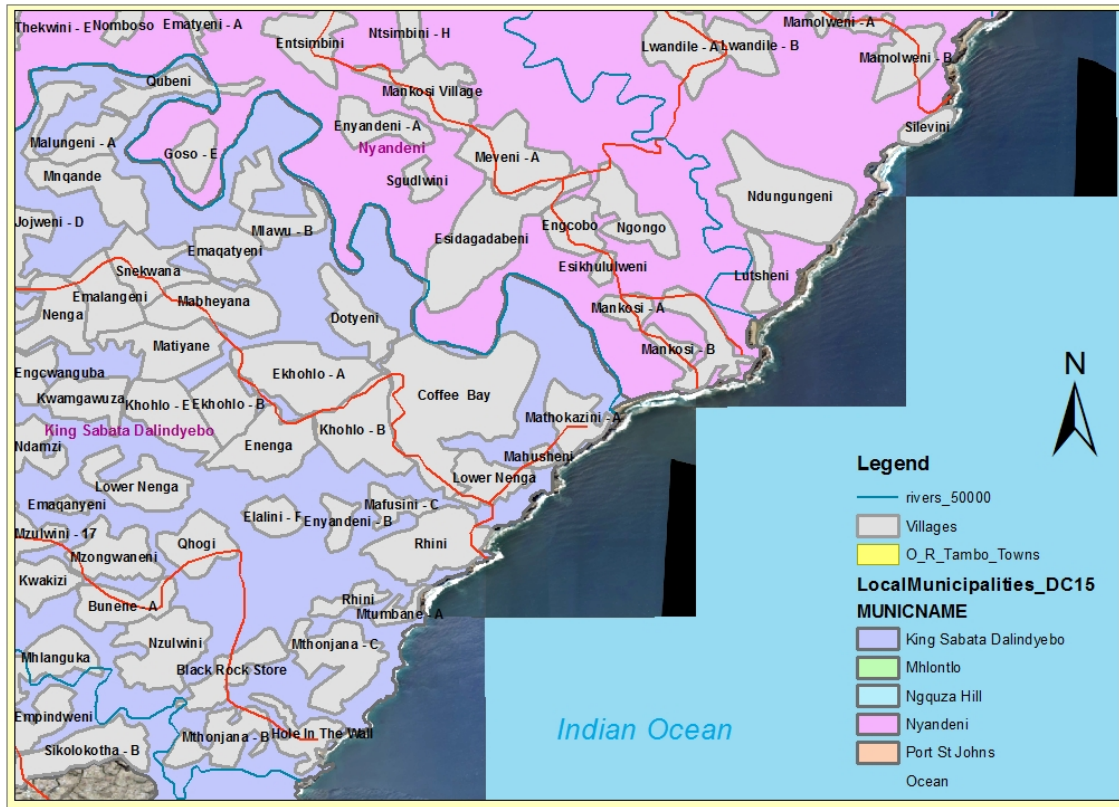


Figure 1.4: Map showing Coffee Bay and Hole in the Wall villages (Source: O. R. Tambo DM 2016)

According to the KSDLM’s IDP, it is identified as an important development node. This is due to the fact that it has high tourism potential. Figure 1.4 below shows tourism facilities found in the study area.

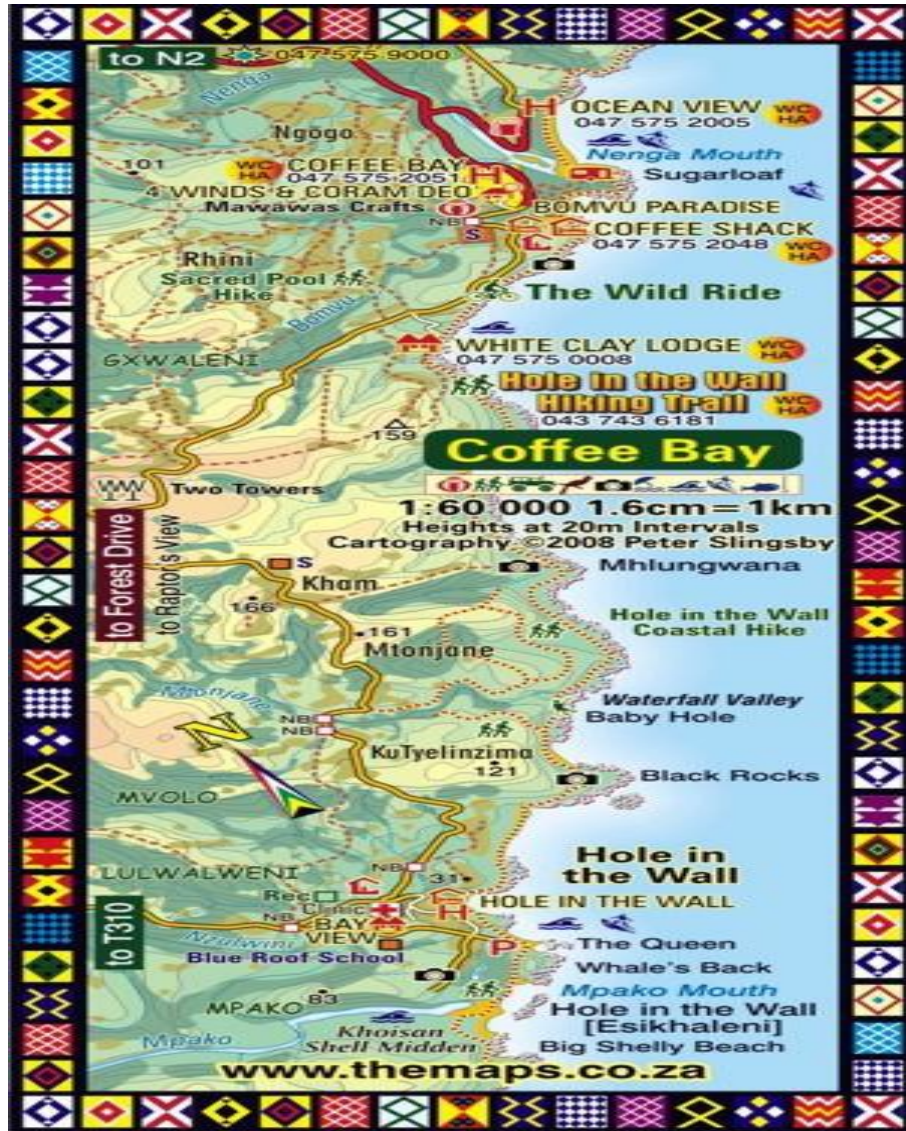


Figure 1.5: Map showing tourism facilities in the area (Source: www.themaps.co.za {Retrieved 11 April 2012 from <http://www.wildcoast/Coffee Bay>})

Access to Coffee Bay along the N2 from Viedgesville /N2 intersection is along DR18031 which is a surfaced road. DR0832 to Hole in the Wall is in a poor state and the area can be accessed via Coffee Bay. Rivers that run through this area are mainly Nenga, Bomvu, Mpako and Mncwasa. According to the KSDLM (2008):

- Coffee Bay has comparatively high average rainfall, with the coastal and mountain regions receiving over 1000 mm per annum.

- Snow is uncommon at high altitudes in winter. Summer rainy season are sub tropically warm and pleasant.
- Winters are mild and fine.
- The geology of the area is alternating beds of bluish – grey fined sandy soils. There are some dolerite intrusions.
- Wind is easterly and westerly winds.
- The vegetation of the area is coastal forests and thornveld with valley bushveld.
- There are coastal dunes at Coffee Bay which are in danger of being permanently lost due to sand mining.

According to KSDLM (2008), the Hole in- the Wall is a unique structure with a huge detached cliff that has a giant opening carved through its centre by waves (see Fig 1.6). During certain seasons and during water conditions (high tide), the waves clap is such a fashion that the concussions can be heard throughout the valley. According to the results of the 2011 Census, the population of the five villages that form the study area is 3514 of which 1529 are males and 1988 are females. There is high illiteracy in the area. According to Statistics SA (2011 Census), educational status of the people in this area is that about 727 people have no schooling. About 5032 people fall under grade 8- 10. According to Statistics SA (2011) employment rate is low. There are only 136 people employed and 330 people are unemployed. Sanitation is the problem in this area. This is because there is no formal municipal sanitation system.



Figure 1.6: Hole in-the Wall (Source: Own research findings)

Hotels and cottage owners in this area use septic tanks. According to the KSDLM (2008), O. R. Tambo DM provides a vacuum tank service to empty septic tanks when required. The KSDLM is responsible for solid waste removal. One truck per week is responsible to uplift the waste from hotels (Ibid). Waste is transported to Mqanduli landfill site which is not a licensed site (Ibid). According to the KSDLM (2008), ESKOM (Electricity Supply Commission of South Africa) is in the process of upgrading electricity in the area. Ward 24 is served by one formal water supply facility called Coffee Bay regional water supply scheme. Land in ward 24 has not been surveyed. It is a communal land held in trust by Department of Rural Development and Land Reform. Forestry land is owned by Department of Forestry and Fisheries. Land ownership is a major concern as people of this area are not sure of how communal land can be facilitated for development. There is currently no form of land ownership documents issued by Rural Development and Land Reform (DRDLAR) as the custodians of community land. The vacuum space left as a result of this has created confusion in as far as administration of land is concerned in the rural areas. Sites are allocated without any proper planning and some are in environmentally sensitive areas.

1.3 Conclusion

This chapter has highlighted the problems faced by people of Coffee Bay and Hole in- the Wall area with respect to the legislation governing coastal natural resource use. It has also shown how different spheres of government interact with each other to fulfil their mandates. Sustainable development has also been explained to give light to its use in management of coastal natural resources. This chapter also gave the background of the study area.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will focus on the relevant literature for the use of coastal natural resources by the local communities in the study area falling within one kilometre from the high water mark of the sea. This area is referred to as Coastal protection zone (DEA 2008). It will also look at various studies that have been conducted in the past and establish how they are related to the sustainable use of coastal natural resources in Coffee Bay and the Hole in-the Wall area. Sustainable use of natural resources is a challenge that needs to be addressed as a matter of urgency. This is due to the fact that our environment is changing hence we talk of climate change and green economy. There is a need to have Natural Resource Management (NRM) strategies that seek to address social needs of the people at grass root level. According to Broderick (2005), there is a growing recognition that if NRM strategies are to be successful there must be wide and more inclusive view of affected communities. Although the communities and government may be aware of the fact that there is a need for joint involvement, the transition of policy into practice is not easy to achieved.

The transition between the land and sea is one of the most fragile, complex and a productive ecosystem (Sawale et al, 2011). It has a potential for recreational and also source of wave and wind energy, accelerated and unscientific development activities have induced catastrophic results (Ibid). In order to optimally utilize and reap benefits, without hampering the fragile balance, it is necessary to adopt coastal management strategies based on solid scientific foundation that allow for multiple use of the resources without causing serious damage to the environment (Ibid). According to Mathe et al (2011), the South African coastline can be described as having an energetic wave climate and is typically steep due to absence of a wide flat coastal terrace. Indigenous people living in coastal settlements are unaware of the dangers that are associated with rise in sea level; hence this research will establish their level of

understanding in the matter. Much literature tends to dwell more on the use of natural resources in general, but this research will focus basically on the perceptions community members have in as far as legislation governing the sustainable usage of coastal natural resources.

It has been noticed that coastal regions and communities are most vulnerable to climate changes and its consequences (Ninam et al, 2009). This has direct impacts on their livelihoods and also the quality of life they live (Ibid). In a study that was done in South-western Cameroon, it was found that fragile ecosystem is stressed by rising population, unstable resource use, habitat change, pollution and spread of invasive species (Ibid). These changes force people to change their mind-set on how they use natural resources. Climate change is also a threat to coastal settlements (Ninam et al, 2009). Communities report changes in specie composition that affect goods provided by mangroves (Ibid). The further loss of protective and regulatory functions of mangroves, lagoons and estuaries leave coastal communities more vulnerable to extreme climatic events (Ibid). Climate change is a reality and if it not given the priority it deserves in terms of funding it will result in irreversible damages to the environment.

Development may alter the nature of the environment. According to DEA (2012), terrain, soil contamination, ground strength to support foundation, soil and ground permeability are possible impacts that need to be considered when development is being proposed. Geomorphologic, geological and geotechnical studies should be done to avoid any avoidable negative impacts that may be associated with a particular development (Ibid). Waste disposal sites for example, are perceived to have health risks, leading to loss of aesthetic appeal and are also associated with odours (Ibid). On the other hand power and industrial plants may lead to community stress from influx of work force coming to seek jobs. Pressure on infrastructure of the area is also created in the process. A life cycle assessment which will deal with the estimates of the total environmental impacts will help in producing sustainable development (DEA, 2012).

2.2. The value of natural resources management in coastal areas

The coastal areas of South Africa are very rich and diverse thereby providing the country with economic and social opportunities for the rapidly growing population. Coastal communities are

strongly dependent on the natural coastal resources for recreation, and also financial gain. Human and environmental pressures on South African coastal environment have also resulted in changes in the structure of many marine communities, with instances of uncontrolled or mismanaged use of coastal resources leading to over-exploitation, degradation or decline (Lara et al, 2005). This is true if one looks at the fact that the rate of unemployment has risen in the past years. Retrenchment of mine workers from mining cities back to their villages has resulted in many males being unemployed. Many families have been forced to find alternative ways of feeding their children. On the other side pressure for development in coastal areas has also risen. Areas that used to be pristine environments are now faced with developmental pressures either by government or private investors. This has been aggravated by the fact that people in the rural areas no longer depend on farming as they use to do in the olden days. Meallie fields are no longer cultivated and people no longer keep livestock. All these factors have led to increased environmental pressures especially in the coastal areas.

According to report by the Secretariat for Eastern African Coastal Management (SEACAM), coastal areas and their resources are vital to the development of coastal states and their people. Coastal and marine areas contribute to the livelihoods and welfare of 60 – 75% of population of Eastern Africa including the island states and coastal and marine resources are the mainstay of economic development in the region including coastal tourism (Ibid).

2.2.1 Defining coastal resources

Coastal resources are defined as the natural and human produced goods and services that are either dependent on the coast for their existence (DEAT, 2004). Natural resources are freely or naturally produced goods and services that are not made or manufactured by people. An example can be the forest. People use the forest to make fire woods. Non consumptive natural resources on the other side include scenery or whale watching. Resources can also be classified as renewable or non- renewable. Renewable resources are those that are self- generating, for example if a tree is cut it will grow again. Non- renewable resources refer to those resources that cannot be renewed. Sand for example can be regenerated over hundreds of years. Exploitation of sand through illegal sand mining can therefore be regarded as resource exploitation.

Human – produced natural coastal resources include holiday homes, jetties, and boat launch sites. A beachfront holiday resort can attract holiday makers to enjoy coastal benefits with easy access to the beach. Activities in the area immediately adjacent to a holiday resort can affect how these benefits are experienced. As an example neighbouring property development can either enhance or detract these benefits. Sewage coming from hotels can affect tourism business and lead to collapse of business for hotel owners. Activities far out to sea such as oil spill disaster can also affect the benefits experienced by holiday makers (DEAT 2004).

Biodiversity is the key indicator of a healthy planet and healthy society (O’Riordan & Stoll-Kleemann 2002). Sustainable and human communities advocate that both preservation of the best remaining habitats and enhancement of new bio- diverse habitats are critical to ensure that they cope with human impact, climate change and alien species invasion (Ibid). According to Jennifer (2006), the growing inequality globally and the increase in the population experienced by developing countries like South Africa play an important role in causing over exploitation of coastal resources (Ibid). Resources are thought to be finite, and pollution and environmental deterioration are considered to be inevitable consequences of industrial development (Ibid). Development and conservation are generally seen as two incompatible processes (Ibid).

According to Strydom and King (2009) coastal zone management has been done in fragmented approach as a result of past dispensation. Little coordination and integration of efforts and approaches between government Departments, line functions and administration took place (Ibid). This approach in turn leads to a situation where no clear authority or responsibility for coastal management existed (Ibid). The context within which environment and development are being used is changing rapidly, requiring continuous re- evaluation of the meaning of sustainable development as presented within a particular school of thinking and major international summits (Strydom & King 2009).

Indication from interviews conducted reveal that communities in the study area depend completely on the environment for their existence. The term environment is broad and encompasses physical, biological, resources, economic, human health and also cultural needs

(DEA 2012). Physical natural resources refer to water, land, and air whilst biological resources refer to flora, fauna and ecosystems (Ibid). Houses are built from materials from the soil, for example sand for plastering and bricks made out of the loamy soil. Trees from the nearby forest are used as a source of timber for roofing purposes. According to Lara and Clark (2005), many projects have studied this close relationship with the environment but poverty remains alarming proportions in the developing countries where such relationships prevail. This is due to the fact that climate change affects plant growth, rainfall amount and therefore people can no longer depend solely on farming. Coastal planning and development need to diversify coastal economic and sustainable livelihood opportunities, to alleviate coastal poverty, retain the quality of the coastal environment and landscape (Ibid). A challenge that is experienced all over the world is how to maintain a balance between all the environmental issues. Environmental impact assessments (EIAs) were created to solve the problem.

2.2.2 Environmental impact assessments

The fact that development has direct impact on the social status of the people is undisputable. Road and other linear developments usually result in dislocation of people. According to DEA (2012), it also affects the demographic nature of the area. Population composition, recreational users, temporary migrant labour are all associated with development (Ibid). It also causes a change in institutional arrangement (Ibid). The reality is that leadership structures, both political and administration laws changes with time. Land tenure or access to land changes from traditional uses (DEA 2012). Economic and cultural factors are also changing with time. There will be new patterns of employment that may lead to marginalization of older or poor residents of an area by the new and educated generation (DEA 2012). Customs, obligations, values and language of the area changes as new business people become in control of the area (Ibid). Environmental changes that may occur include land use, habitat destruction, reduced wild species, hydrological changes and also soil erosion (Ibid).

Economic assessment is another assessment that needs to be done. This assessment includes public finance, infrastructure and accommodation supply and demand for goods and services (DEA 2012). In coastal areas this assessment is very critical as business people are interested in

developing the coastal areas and in the process claim to be bringing jobs to the communities without balancing the impacts that may be put to the sensitive coastal environments. Cost benefit assessment is done to compare various projects and especially alternatives for the same development. Lastly there is a need to assess the cumulative environmental impacts that may be caused by development. According to DEA (2012), there are two main categories of cumulative impacts. The first one is pure cumulative effects and the other one is the synergistic cumulative effects. Pure cumulative effects is referring to same impacts from either more of the same development or different development that the receiving environment is exposed to (DEA 2012). On the other side synergistic cumulative effects refer to different effects that multiply the effects of each other (Ibid). In such cases a threshold assessment will be able to assist to measure the severity of the impact (Ibid). Threshold will be able to determine the carrying capacity of the receiving environment. Geographical Information System (GIS) software provides the computerized mapping system for spatial data allowing sophisticated planning for development.

2.3 Key factors that lead to the unsustainable use of natural resources

According to Swanepoel (1989) there are many obstacles to community development. He identifies these as being illiteracy, customs and traditions, dependency, apathy. People's poverty and their lack of self- sufficiency and self -reliance makes it very difficult to involve them in development efforts (Ibid). DEAT (2004) argue that local households and tourists benefit directly from coastal resources. For example they can use goods like fish, plant fibres and bait. Another factor is population explosion. Coastal cities have grown dramatically over the past 50 years and predicted to continue doing so for the near future (Lara & Clark 2005). There is also increasing purchasing of coastal homes (Ibid). Overall population growth and increased developments thus continue to pose severe threats to natural resources of the coastal zone as reported in the National State of the Environment Report. The population in Coffee Bay and the Hole in-the Wall area lives within 1000 m of the coast, resulting in substantial development pressure for infrastructure such as housing, roads, electricity and water.

According to the KSDLM (2004), Coffee Bay and the Hole in- the Wall area are earmarked for

huge developments as it is proposed that it is going to be a town. Most of the underdeveloped Wild Coast regions lie within marine / and or nature reserves, but there is too much pressure for development from investors all around the globe (Ibid). Loubser (2005) says that urban centres not only put stress on their immediate natural environment but also have enormous environmental footprints influencing and exploiting large non - urban environments. Many coastal towns have been dumping their wastewater in the sea for years (Ibid). Deforestation is also playing an important role in natural resource management. According to Loubser (2005), deforestation is described as the permanent destruction of indigenous forests and woodlands. Deforestation is dangerous because it can lead to irreversible effects on the ecosystem (Ibid). The carbon cycle is altered and that leads to climate change (Ibid). The water cycle is also tempered by deforestation because evaporation rates become less and therefore less rainfall (Ibid).

The loss of vegetation in turn leads to erosion. Animals that depend on the forest for survival lose their habitats and some may even become extinct. This process completely alters food chains. Sewage released into the marine system due to inadequate sanitation will cause the diseases to the zooplankton and phytoplankton. Fertilizer used in agriculture is washed away by rain and end up in the rivers leading to formation of algal bloom. Plastics in the sea cause death of marine animals. Poverty is also posing threat to coastal environments. Poverty is perceived by poor South Africans to include alienation from the community, food insecurity, crowded homes, usage of unsafe and inefficient forms of energy, and lastly lack of jobs (Loubser 2005). Poverty can lead to over exploitation of natural resources as people need to feed, clothe their families. Prevailing management efforts are failing to mitigate the impacts of coastal population growth and development intensification (Ibid).

According to Wearing (2009), other problems faced by coastal communities are associated with tourism. Ecotourism is defined as ‘travel, often to developing countries, to relatively undisturbed natural areas for study, enjoyment or volunteer assistance that concerns itself with flora, fauna and ecosystems of an area. Tourists also enjoy learning about other people’s culture and the relationship they have with their natural resources (Ibid). Low-impact tourism is a specific form of tourism that enhances our understanding of nature based ecotourism and focuses on

establishing indigenous natural resources management through private sector incentives and investment in rural villagers and rural area dwellers to take part in the tourism business (Ibid). This type of tourism is supply driven and takes only a limited number of visitors depending on the cultural and physical environment can cope with (Ibid). Wearing & Neil (2009) says there is a need to have regulations to protect the environment and the quality and integrity of tourism experience, the establishment of carrying capacity, a large number of small operators, value added tourism, and a sensitively developed infrastructure.

Non-adherence to government legislation is also another fact that leads to unsustainable use of natural resources. Legislation for example requires that a developer should have an environmental management plan (EMP) even if the activity does not trigger a listed activity. EMP ensures compliance with relevant legislation and guidelines. It is also used to verify environmental performance through monitoring (DEA 2012). In cases where environmental authorization is issued it ensures and provides evidence of adherence to conditions of approval. The law also states that one need to have mitigation measures in cases where environmental damage cannot be avoided (DEA 2012). Mitigation measures ensure that residual adverse impacts are kept within acceptable levels (Ibid). They also prevent the government to incur developmental costs that may be associated with the development (Ibid). The polluter pays principle comes in handy in such cases. The mitigation measures ensure that environmental impact costs are to be paid by the developer and places onus upon them to own the risk. The acid mine drainage in Gauteng for example cannot be tied to any particular person and is now an environmental problem that must be addressed by government.

2.4 Controlling development in coastal areas

The Constitution of the Republic of South Africa recognizes that a healthy environment is a basic human right (DEA 2012). The Constitution clearly stipulates that the government must prevent pollution and damage to the environment, promote conservation, and balance economic, social and environmental development (Ibid). The use of natural resources in South Africa is vital for local coastal communities (Ibid). This is because these resources hold significant value for a number of reasons. There are opportunities for sand mining, fishing, forestry and tourism

(Wynberg, et al, 2011). Coastal residents have a long historical relationship with these resources (Ibid). Local people's livelihoods are made up of government welfare grants, limited tourism- based jobs, crop and livestock farming, and also utilization of natural resources (Ibid). There is also rapid population expansion that is taking place in the wild coast. Among other causes of this expansion is the proposed N2 toll road to be built.

Traditionally, coastal management has been thought of as a specialized form of environmental management that is the primary responsibility of environmental conservation departments and natural resource management agencies (DEAT 2004). There is therefore a need to transform thinking in government, the private sector and civil society about what coastal management is therefore constitutes both a challenge in the need to change attitudes and ways of thinking as well as an opportunity – to integrate environmental and developmental imperatives that have typically been separated (Ibid). It is widely recognized that current institutions and procedures for enforcing the laws and regulations that have bearing on the coast and its resources are not working effectively (Ibid). For example the minister promulgated regulations aimed at banning the uses of 4x4 vehicles in coastal zone. The issue of complying with coastal policy and legislation is a big challenge especially to wild coast tourists. The involvement of provincial planning departments in the policy formulation process was an important step in ensuring that affected spheres of government who also have a coastal mandate are heard (DEAT 2004).

Poverty and affluence can both have negative impacts to the environment. Technikon SA (2007) say that environmental problems caused by affluence have a lot to do with pollution, waste and high consumption of resources associated with industrial production, intensive agriculture and high density populations caused by high living standards. On the other hand environmental problems caused by poverty are concerned mainly with the overexploitation of land. If people do not have access to economic and technological resources to make resources productive the result is environmental degradation (Ibid). Due to poverty, ignorance and socio- economic isolation, the rural poor people are characterized by powerlessness and defencelessness and have little opportunity to mobilize themselves into political groups (Ibid). This may result in political instability and service delivery protests (Technikon SA 2007). Intensified exploitation of natural resources leads to reduction in the land's productivity over time. The

land is thus said to be degraded and at this stage is unable to support people living on it.

It is a well-known fact that climate change is another environmental problem facing the world. It is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere which is in addition to natural climate variability over comparable time periods’ (O. R. Tambo Integrated Development Plan, 2013/14). Climate change is a serious threat especially to coastal areas. O. R. Tambo region is faced with more frequent and severe flooding as a result of higher intensity storm events (Ibid). This is likely to impact on human settlements, infrastructure and human health and place a burden on particularly poor communities (Ibid).

DEAT (2004) advises that environmental sustainability can be achieved if we keep the waste within levels that can be tolerated by the existing environmental conditions. We need to harvest renewable resources at a rate that allows them to renew themselves. We also need to use non-renewable resources at a level so that it is not depleted beyond their carrying capacity. There is an urgent need to use natural resources wisely. Research that has been done suggests that we have one planet but the rate at which humans use natural resources and produce waste exceeds the earth’s resource –production capacity (DEAT 2004). It is estimated that the planet has a total of 12.6 hectares of biologically productive land and sea (Ibid). The global population of 6 billion, our target should be for the average person to live within 1.9 hectares of biological productive land (Ibid). In South Africa, there will be a need for two planets to sustain our lives if everyone lived on average of 4.02 ha per person (Ibid).

According to van Linde (2006), sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations. On the other hand Loubser (2005) says that sustainable development means development that takes place in such a way that it does not compromise the needs of future generations. Shashi et al (2005) say that sustainability involves ensuring opportunities for a desirable quality of life for all future generations as well as for the present one. Sustainable development reflects the challenge

humanity now faces in managing our global natural resources in such a way as to sustain and enhance human welfare well into the future (Ibid). Sustainability is very difficult to achieve when one does not have the basic resource to live with as it is the case with the community of Coffee Bay and the Hole in the Wall area. Although development is necessary for human existence, environmental impacts associated with such development should not be underestimated. Rating or ranking of impacts can be done using qualitative, semi – qualitative and quantitative methods (DEA 2012). Baselines are essential for proper impact analysis (Ibid).

Environmental impacts differ in nature, duration, severity, frequency and probability (DEA 2012). Environmental impacts can have a significant or insignificant impact to the environment (Ibid). Indicators of significant impact include destruction of wildlife habitat, exceeding published environmental standards and limits, contamination of public water supply, loss of prime agricultural land and conflict with environmental plans and frameworks. Termination of substantial alteration of existing land uses, defacement or devaluation of a cultural resource, changes in community dynamics, traffic generation beyond the design capacity of existing structure and lastly resettlement of people are also indicators of significant impact. There is therefore a need to know and apply all legislation governing the use of natural resources in order to achieve sustainable development.

Biodiversity management has traditionally followed two contradictory approaches (DEAT 2004). One champions ecosystem protection through rigorous law enforcement and exclusion of humans (Ibid). The other promotes community based sustainable use of natural resources, participatory conservation, a major paradigm shift nowadays strongly guides the concept of UNESCO Biosphere reserves (BRs) (Ibid). Biosphere reserves refers to areas made up of terrestrial, marine and coastal ecosystems nominated by the national governments and they receive international recognition. Effective community participation is by no means easy to define or to achieve (Ibid). There are tremendous difficulties to effective implementation of CBNRM (DEAT 2004). Lack of financial, technical, human resources, critical power asymmetries between conservation institutions and local actors or structural obstacles such as poverty, corruption or weak governance are the main stumbling block in the implementation of CBNRM (Ibid).

Loss of biodiversity is also a challenge at Coffee Bay and the Hole in the Wall area. Aswathanarayana (2012) defines biodiversity as the variability of all life forms on the earth. Loss and fragmentation of natural habitats, over exploitation of plant and animal species, impact of exotics, industrial effluents, climate change and above all greed of man are some of the causative factors for erosion of biodiversity (Ibid). Many people especially those who are poor and living in areas of low agriculture productivity, depend heavily on generic diversity of the environment (Ibid). Loss of biodiversity is detrimental to the life supporting environment of the earth and disruptive of natural processes that are vital to support human existence (Ibid). Different pieces of legislations are being enforced by DEDEAT in order to minimise the over-usage of coasta natural resources in Coffee Bay and the Hole in the Wall area. These legislations are discussed in the following paragraphs.

2.5 Legislation governing the use of natural resources

The Constitution forms the basis of the legislation controlling use of natural resources. The government has a duty to promote conservation and also to secure sustainable development for the use of generations to come (van Linde & Feris 2010). On the other hand the government should promote economic and social development (Ibid.). In fulfilment of this constitutional mandate, government agencies have over the last decade revised and promulgated various laws pertaining to a range of thematic areas, including management; EIA; air quality; biodiversity; waste management; mining; forestry; and water management (Ibid). Not only has this inclusion resulted in a substantive revision of our body of environmental law, but also resulted (directly or indirectly) in greater enforcement strategies, and increased public participation in environmental decision making and also the further development of environmental jurisprudence through case law (Ibid). According to Section 24(4) (b) of the South African Constitution, there is a need to investigate, assess the potential consequences or impacts of an activity to the receiving environment (DEA 2012). Mitigation measures should also be explored (Ibid).

An IDP requires a careful linking of environmental concerns to developmental issues that are meaningful within the region. One of the critical requirements of the IDP is to develop strategies

that are aligned with national, provincial plans, frameworks and strategies (DEA 2012). Strategies developed should be based on sustainability principles (Ibid). Alignment with environmental legislation and sustainable development frameworks and strategies is critical in achieving sustainable usage of the natural resources (Ibid). Tools that can be used are Strategic Environmental Assessment (SEA), reviews of legislation, plans, frameworks and strategies (Ibid).

One of the NEMA principles states that environmental management place people and their needs at the forefronts of its concern, serve their physical, psychological, developmental, cultural and lastly social needs equitable (DEA 2012). Attaining sustainable natural resource usage requires minimization of disturbances to the ecosystem, and also avoiding loss of biodiversity (Ibid). Non- renewable natural resources must be used responsible, equitable and with awareness of the results of their depletion (Ibid). The use of renewable natural resources should not hinder their ability to renew themselves. In that regard, responsible, participative governance is the key. The principle of stewardship which states that the environment is a public resource and should be protected and managed in the interest of the public should be upheld (DEA 2012).

Another NEMA principle states that “sensitive, vulnerable, highly dynamic or stressed ecosystems such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subjected to significant human resource usage and development pressure”. The toolkit developed by the DEAT established that coastal development was being a serious threat to the coastal areas because this seems to be posing serious threat to the coastal environment (Strydom & King 2009). Several legislative attempts were made to impose additional controls on development occurring in coastal area inland of high water mark (Ibid). In 1986 coastal zone regulations were promulgated under the Environmental Conservation Act, 1986 (Act No. 100 of 1982) [ECA] (Ibid). These regulations demarcated a limited area consisting of a strip of land 1000 m wide bordered on the seaward side of the high water mark and prohibit the undertaking of certain proposed activities within this area, unless a special authorization has been granted (Ibid).

The regulation requires the authority responsible for deciding whether or not to approve the

activity to consider various principles and empowered the authority to require an EIA be undertaken to inform its decision (Strydom & King 2009). Unfortunately these regulations were not enforced, partially because it was concluded that in making these regulations the minister has exceeded the powers granted by the act and the regulations (Strydom & King 2009). A similar effect was successfully achieved in the former Transkei and Ciskei where CCA extended 1000 m inland of the high water mark were established (Strydom & King 2009). These provisions provided the legal basis for enforcement taken by DEDEAT against illegal cottages erected in the former Ciskei and Transkei (Strydom & King 2009).

According to Strydom and King (2009), NEMA requires that the potential impact on the environment of listed activities to be considered when an activity is to take place within 100 m from the high water mark. The listed activities referred to in NEMA are outlined in three EIA regulations (Ibid.). These are listing notice 1 for Basic assessment, Listing notice 2 for Scoping and an EIA and the Listing notice 3 for basic assessment of sensitive areas like CCAs and other protected areas. Allimendinge et al (2002) said that from early in 1970, integrated coastal zone management was introduced as part of an increasing recognition that successful environmental resource management is dependent upon an ability to achieve a shift away from sartorial management approaches towards structures which provide a greater degree of sensitivity to natural systems (Ibid).

According to DEA (2012), activities such as construction, mining, forestry, agriculture and coastal development affect soils and geological formations. On the other hand underlying soils and geological structures can affect the stability of structures like buildings, roads, bridges, land cover and land use are also crucial in establishing the affected environment for a proposed development. Land use establishes a direct link between land cover and the actions of people in their environment (DEA, 2002). It is very important to apply NEMA and EIA Regulations to assess developments that may or may not take place in Coffee Bay and the Hole in the Wall area. Developers usually exploit the poor financial status of local people and only focus on providing employment and economic activities. This is why EIA should be conducted so as to look at other impacts like health and safety impacts, solid waste management issues, loss of high potential agricultural land and loss of recreational and conservation zones.

The Wild Coast Development and Tourism Policy (WCDTP) was developed in 2002 by DEDEAT. This policy is intended to 'promote, facilitate and regulate tourism development along the Wild Coast' (DEDEAT 2002). Tourism development should ensure that a special quality experience for all visitors is promoted through ensuring that the carrying capacity of the region is not exceeded (Ibid).The controls employed by the policy aim to ensure that an appropriate type and form of tourism development is encouraged at a particular location. The policy has guidelines which refer to the fact that tourism development should be done in a nodal fashion. Provision of infrastructure is key in tourism development (WCDTP, 2002). An example made is that when certain levels of development are attained or planned they should be linked to the provision of a communal sewerage system, a suitable water supply system and a tarred road (Ibid). The Eastern Cape Parks and Tourism Board (ECPTA) is a government entity that is tasked to promote tourism development in the Eastern Cape Province.

Government is also putting more emphasis on cooperative governance. In this form of governance, the regulating authority and the group being regulated work together to set the rules and put monitoring and enforcement mechanisms in place. For example in an environmental forum, there may be officials from government departments, municipality and other role players. In this set up every member of each group will raise issues and therefore interests of each group are negotiated and protected. The major advantage of this group is that there is agreement upfront over how the law is applied. All the stakeholders understand its purpose and the way in which its application will benefit the group. Self -interest is a very powerful motivator for non- compliance (DEAT 2004). It can be motivated by greed (Ibid). An example of that is when traditional leaders give sites to people without advising them to apply to the competent authority. The fact that the person is going to pay some money to the traditional leaders so as to get the site promotes non-compliance.

Involvement of all stakeholders is important when dealing with environmental issues. The Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), [PAJA] says that fair treatment, meaningful involvement of all citizens in environmental decision making is not optional but a must (DEA 2012). Although public participation is not promoting consensus it

should not be avoided (Ibid). There are some guidelines that need to be adhered to so as to ensure that public participation yields the required results. Kaleo Consulting is one the company that specialises in public participation and they say that public participation should be a flexible process (DEA 2012). People should be consulted at a place, time that suites them. These consultants also argue that consultation process should be inclusive and not cater for a particular group of people. There should be an on- going feedback and acknowledgement of contributions by interested and affected parties. One needs to respect cultural diversity and language preference of the people. Consultation should be done according to ability and interest level of the targeted group of people (DEA 2012).

Another point being highlighted by Kaleo Consulting is that during the public participation process, special efforts for previously disadvantaged people should be made (DEA 2012). Communities that were affected by apartheid laws tend to be sensitive and are always having doubts about the legislation being imposed on them. This is why transparency, openness and honesty is important when dealing with such communities. There is a need to integrate public concerns into technical processes and finally into decision making (DEA 2012). The degree to which stakeholders are already empowered in regard to environmental issue and the level of understanding that exists within them should determine the consultative process to be followed (Ibid). It has been noticed that when people are not consulted on the issue that affect their area they tend to resist the change even if it will affect them negatively in the long run. Rural communities have a long history with their natural resources and any legislation aimed at controlling the way they use them should be properly communicated.

2.6 How communities use natural resources

According to Chitakira, et al (2012), there is a dramatic shift from exclusionary protected areas, where human use of land and resources was prohibited, to more inclusive strategies where utilization is considered an integral aspect of conservation. The emergence of trans-frontier conservation areas (TFCAs) occurred since 1990s. The main purpose of these TFCAs is conservation and sustainable use of biological and cultural resources at the same time prompting regional peace, co-operation and socio- economic development (Ibid). According to Chitakira, et

al (2012), the success of biodiversity conservation in TFCAs is dependent on local community empowerment through their active involvement in planning resource utilization and management empowerment is crucial to the sustainability of projects because communities get to do things themselves (Ibid). Poor rural communities rarely get opportunities to contribute to decision – making and development of policies affecting local natural resources (Ibid).

Chitakira (2012), further says that concerns from the communities are not addressed hence this anomaly requires policy adjustments for achieving community participation. Various organizations and projects have been formed in the Wild coast so as to promote environmental education. Wild coast Projects, for example was mandated to conduct such awareness campaigns in the study area. This was a project funded by DEA mainly focusing on the Wild Coast. Government can form partnership with communities in order to promote sustainable use of natural resources. According to Babin et al (1997), under Malagasy law, a rural community can enter into a contract for secure local resource management with the State. The contract provides for the management of a renewable natural resource within a demarcated community area by the rural community in return for secure land tenure (Ibid). The community is assisted in this process by a qualified environmental mediator chosen by the community (Ibid). The contracts are made for a trial period of three years but are renewable and access to the demarcated area is exclusive to the community making the contract, and the commune is required to enforce the contract (Babin 1997).

The above mentioned example demonstrates how improved security of tenure for local can create incentives for a longer-term perspective on resource utilization and can lead to more sustainable management practices (Ibid). Swemmer and Vermeulem (2011) in their paper, discuss three case studies on plant use in National Parks with regards to the development of criteria and indicators for monitoring resource use and the role of threshold of potential concern in measuring effectiveness of managing for sustainable use levels. Findings from this research show that platforms for discussions and knowledge sharing including research committees and community associations are critical in building good relationships, trusts and promote a shared vision of sustainable resource use between stakeholders (Ibid). They further say that there is a

need to have adequate incentives for local resource users to support sustainable use practices (Ibid). Improved law enforcement and graduated sanctions for offences that distinguish between the actions of registered and unlawful resource users can create this incentive for sustainable sour fig harvesting (Swemmer & Vermeulen 2011).

Community involvement in projects taking place in their areas is vital in ensuring sustainable resource usage (Terer et al, 2012). This is clearly shown in a study done on utilization of *Cyperus papyrus* L. (*papyrus*) harvesting patterns, threats and local management practices among Endorois community living around Loboï swamp in Kenya (Ibid). *Papyrus* is widely used in tropical Africa (Ibid). Increased human population and poverty has led to over exploitation and conversion of *papyrus* wetlands to agricultural fields (Ibid). According to Terer et al (2012) users of *papyrus* hold important local ecological knowledge and practices. They make sure that their practices on *papyrus* uses are compatible with management priorities of the swamp and a wider conservation framework (Ibid). This example clearly shows that investing in community participation may yield good results.

Coastal communities also use sand for both subsistence and commercial gain. Sand mining activities have adverse effects on the environment as it results to removal of sand dunes and mangroves. According to Diaz, et al, (2004), sand mining activities should be designed so as to minimize impacts to biological resources and to ensure the biological assemblage that recolonize a mined area functions in a similar manner to that present prior to mining. One must avoid total removal of surficial substrate and retaining small patches within the mined area (Ibid). The patches left would serve as refuges for established benthic species (Ibid). Sand mining can be detrimental in the environment even if it is done on a subsistence basis as it is the case Coffee Bay. Sand dunes and dune forests are being removed so as gain access to the sand.

Hostman et al (2011) revealed that an environmental basic act which has been enacted in 1994, considers participation of the local community in the EIA of the new projects. It is acknowledged that community participation is very limited and difficult to exercise, often resulting in frustration of the participants (Ibid). This may be caused by various factors. One of them would be imbalance of resources and knowledge among the majority of participating communities and project

proponents (Hostman 2011). Another one would be dominant interest of the central government in approving investment specifically in natural resources related projects which generate wealth and jobs (Ibid).

A natural resources atlas was developed so as to provide access to a comprehensive set of data and a framework for strategic planning at national and provincial levels (Shackleton 2009). This electronic atlas provides access to 63 national spatial layers of information on soils, climate, vegetation, terrain and land capacity (Ibid). The atlas is said to be implemented in the next five to ten years in co-operation with other national departments, provinces and municipalities (Ibid). According to Shackleton (2009), a Land Care programme was also established to promote productivity through sustainable use of natural resources. Land Care is a community-based programme. Doing development for the communities has been replaced by working with the communities in order to ensure the rehabilitation and sustainable management of resources (Shackleton 2009). Land Care awareness activities have played a major role in providing information in rural communities in the provinces so that they are aware of the value of nature conservation (Ibid). Wetlands used for agricultural purposes have been protected by improved management practices (Ibid).

Environmental education is sometimes lacking in rural areas. Thlagale (2004), in her research says people should take note of the fact that rural communities are not acting out of ignorance but out of the need to survive, thus putting the resources base under pressure. Environmental education is that component of education that enlightens and conscientizes people about their immediate environment (Ibid.). Principles and guidelines are set according to international standards but they need to be broken down and simplified in order to fit lifestyles, value systems, social systems and education of the people at grassroots level (Ibid.). Through such processes people will start to appreciate their own environment, to use it but handle it in a manner that will still enable future generations to benefit from the same natural resources (Ibid.). The question of effectiveness of environmental education is another issue that needs to be addressed.

Technikon SA (2007) lists some guiding principles for effective environmental education that were adopted at the Tblisi Inter-governmental Conference on Environmental Education in

Russia in 1997. These are that:

- one needs to consider environment in totality. This means that one need to look at economic, political, cultural, historical, moral and aesthetic factors.
- learners should be helped to discover the symptoms and real causes of environmental problems.
- environmental education should stimulate equality and respect for human rights involving democratic strategies and an open climate of cultural interchange so that communities regain control of their own destinies and not be treated like intruders in their own land.

Subsistence contribution of wild natural resources to rural livelihood is shown by two examples that depicts that millions of people make use natural resources for their basic needs (Hebinck et al, 2011). Household might turn to the temporary sale of wild resources on local and regional markets (Ibid). Natural resource managers seldom feature in rural developments, small enterprise development, poverty reduction policies and strategies or land reform programs (Ibid). This is due to the fact that the potential of the natural resources is often overlooked, particularly by government departments not dealing directly with the environment as well as the key stakeholders such as municipal authorities (Ibid).

According to Chitakira et al (2012) a useful technique to ensure local community involvement in development planning is community visioning. In this process a group of people come together to develop common ideas about what they would like their community to be like and their competences, encouraging ownership and creating an opportunities for communities thereby encouraging ownership and therefore creating opportunities for the communities to collaborate in developing shared priorities and actions (Ibid). The strategy has been used in the 1980's in Chattanooga Tennessee City in USA (Ibid). Ecological integrity of the earth's ecosystems therefore needs to be maintained. We all need healthy, productive and diverse ecosystems so as to live sustainable. On the other hand plant and animal species are today becoming extinct at a faster rate than ever before. Human activities are also altering biogeochemical cycles. Ozone depletion that gives rise to global warming is one example. Climate change is seriously becoming a threat to human survival. Natural capital supports all

economies and lifestyles. It provides humanity with many natural resources and includes the ability of the earth's ecosystem to dilute substances, dispose waste, control pests and recycle a variety of nutrients and materials. (DEAT 2004).

Various approaches have been adopted in the past in working with poor communities to develop and to eliminate poverty. Sustainable livelihoods approaches have been developed from lessons learnt from earlier efforts and it has challenged the traditional ways in which the development has been done in the past (DEAT 2004). The United Kingdom Department for International Development was one of the proponents of the sustainable livelihoods and it still continues to promote the model in other countries (Ibid). In South Africa, there are programs to promote sustainable livelihoods. One of them is the Sustainable coastal livelihood programme supported by the DEAT. Other agencies and NGOs around the world include United Nations Development Programme and the World Bank (Ibid). Livelihoods mainly focus on food, income and assets with a distinction made between tangible assets and intangible assets (Ibid). Tangible assets in this case refer to resources and stored goods whereas intangible goods refer to claims to the resources and access to a particular resource.

Sustainable livelihood approach has got its challenges (DEAT 2004). These challenges include lack of access to the natural resource, lack of sense of ownership to the resources and lastly lack of skills and capacity on how to manage the use of resources (Ibid). There is also a need to conduct awareness and education to community members so as to explain the need for sustainable use of natural resources. The above mentioned challenges can be overcome by promoting a win - win situation for poverty and for the environment (DEAT 2004). Focus should be given to vulnerable groups and also promotion of gender equality (Ibid). Another solution is to adopt a flexible lesson – learning approach (Ibid). This approach should be accompanied by on-going monitoring and evaluation. An example of the sustainable coastal livelihoods programme (SLCP) done in the Coffee Bay was that of integrating Mussel rehabilitation with agriculture and other income generating activities (DEAT 2004). The purpose of the project was to integrate the physical rehabilitation of the mussels with other food security and income generating activities in order to relieve pressure on the natural resources and make the rehabilitation efforts sustainable (Ibid).

According to DEAT (2004), the project had four core activities. First one being the provision of agricultural support for food security, second one was provision of experimental mussel culture system and the third one was mussel rehabilitation and lastly provision of training of tourist guides on mussel rehabilitation (Ibid). In Coffee Bay there are constraints that are encountered in implementing livelihoods. The most critical one is the slow pace of land restitution, redistribution and land reform (DEAT 2004). There are different groups of people with different interests and everybody wants to own everything (Personal Interview). This is evident in the fact that developmental committees have been formed in the past, but they will be dissolved before they start. There is a lack of infrastructure and basic services which leads to poor tourism development. The researcher's observation is that sewage problems and bad roads tend to chase tourists away. There is also limited community based tourism. Distance from the market, in this case Mthatha and Coffee Bay is also a challenge. Lack of regional planning is also a problem. Different government departments work in isolation and there is no integration of plans. There is also lot of red tape in as far as development is concerned. One needs to obtain lots of permits from different government departments in order to start any kind of development. Lack of skilled people in the area is also a challenge. This is due to the labour vacuum created by high migration rate from the area to big cities.

According to the DEAT (2004), the South African coast contributes about 35% to the gross domestic product. One way of getting an idea of how the coast contributes to the country's economy is by using a technique called environmental economics (Ibid). Environmental economics helps to consider the environmental consequences of our actions and identify opportunities by looking at the hidden values and costs and benefits associated with natural resource use (Ibid). It therefore enables one to be able to price the value of ecosystem goods and services. For example, opening a fish factory may increase job opportunities and other benefits, but in the same token it might involve a number of costs. These costs include cost of the land, equipment and labour. There are hidden costs of cleaning up water pollution that the factory might generate. Building a fish factory might also limit ecotourism activities in the area where the factory is built. Environmental economics helps us to identify the costs and benefits of different options so that one is able to make informed decisions and wise choices.

Human activities on the other hand have disruptive or destructive impacts on ecosystem services. These may eventually reduce or destroy the environment. We need to maintain the diversity, health and productive ecosystems in order to sustain and extend the flow of goods and services they provide (DEAT 2004). The challenge ultimately is to pursue development opportunities that retain ecological integrity, promote social harmony, cultural vitality and economic prosperity and build effective institutions for coastal governance (Ibid). Social capital is rooted in the norms and social networks that facilitate trust and cooperation between people. Social challenges involve promoting harmonious relationships between all stakeholders. Social trust tends to be to be self re - enforcing and cumulative whereas distrust tends to spiral down on itself, making co - operation increasingly harder to achieve (DEAT 2004). Overcoming the deep divides and mistrusts created by apartheid in South Africa poses huge challenges in obtaining trust from coastal communities (Ibid).

Some of the legislation being used is based on the former homelands. According to PAJA (2000), no population should suffer a disproportionate share of environmental burdens or be affected unequally by a decision taken (DEA 2012). A fair treatment, meaningful involvement of all citizens in environmental decisions should always be adhered to (Ibid). Communities should participate meaningfully in environmental conservation processes whose procedures and substance they understand (Ibid). Social setting needs to provide the atmosphere in which the tensions and conflicts arising from illegal development can be resolved (DEAT 2004). Moral capital on the other side is located in the deep – rooted set of values and beliefs that are drawn upon in grappling with ethical issues (Ibid). It involves deep rooted values and beliefs that determine how people will behave and how they will resolve matters involving clashes between their own personal interests and nature (Ibid). If there is mutual respect people can work together to achieve sustainable use of natural resources. One of the ways used in ensuring compliance with legislation is to conduct compliance monitoring. The following paragraphs are aimed at outlining ways of promoting compliance.

2.7 Promoting compliance

Non-compliance with legislation relating to use of natural resources can take many different forms. These include driving on the beach, building structures within the CCA without a permit, erecting fences thus restricting access to the public areas, contraventions with MLRA and Forest Act. There are many reasons that may lead to non-compliance. The first one is invisible policing (DEAT 2004). When people are aware that they are being watched they are more likely to comply (Ibid). For example a lot of beach driving occurs during the night. Sand mining in some areas also takes place at night. The second reason is the issue of commons (DEAT 2004). Commons refers to the absence of any automatic mechanisms or incentive to prevent the overuse and thus depletion of the commonly held resources by individual (Ibid). Commons exist whenever there are resource such as grazing land, fishing grounds, coastal zone which is open to public (Ibid). Individuals have the tendency to think that a common resource is unlimited and therefore their use and access to the area must not be refused. In most cases this attitude is motivated by self-interest.

It becomes a dominant force when the interests of the individual become more pressing or seem to be more important than the interest of others. If the individuals in a group are motivated by self-interest, the group cannot survive unless a way is found to make individual self-interest consistent with the rest of the group (DEAT 2004). If people act on the basis of their interests there are no restrictions on their behaviour, the result will not benefit the group (Ibid). There is therefore a need for a coordinated behaviour and elimination of conflicts amongst locals. DEAT (2004) argue that the problem of self-interest can be eliminated by establishing private – property rights that allow markets to develop. The sense of ownership encourages decision makers to consider all costs and benefits for their decisions. Another way is to have a strong central authority that regulates people’s behaviour and punishes lawbreakers. The DEDEAT has a sub-unit called Compliance and Enforcement which mainly focuses on dealing with law breakers.

Another reason for non-compliance is peer pressure (DEAT 2004). Most people want to be part of the group and feel included (Ibid). This means that when others in a group are breaking the law or being non-compliant an individual will feel pressured to do the same (Ibid). Researcher’s observation is that this behaviour is aggravated by the fact that they see law breakers being unpunished. Environmental crimes take are not given priority and hence a person who has

illegally built in a CCA without a permit may not even go to court for many years. Non-compliance occurs in various forms. This can vary from claiming ignorance of a rule or requirement, ignoring signboards and also confrontation with enforcement officers. Non-compliance can also be categorized according to the type of requirement that is being infringed. In the CCA for example there are planning laws, conservation laws, waste management laws and regulations and there are also general environmental laws and regulations (DEAT 2004).

Lack of proper consultation may also lead to non-compliance. Environmental issues are not understood by previously disadvantaged communities. They associate them with apartheid laws that prevented them in using their own natural resources (DEAT 2004). Proper consultation should be done to solve the problem. According to Kaleo Consulting, highly technical documents should be presented only to highly technical stakeholders whereas simplified documents should be presented to stakeholders that are not technical – minded (DEA 2012). This means that consultation process cannot be treated as one size fits all processes. Special briefing sessions may be organized to explain to groups of lay people before they will be able to contribute meaningfully in community meetings (Ibid).

There are various tools that can be used to promote compliance. The first tool is called command and control (DEAT 2004). This approach consists of a series of laws, rules or regulations that are enforced by a specifically designated and empowered group (Ibid). An example of that are designated Environmental Management Inspectors. In this tool the law is in place, there are no negotiations, perpetrators are arrested. They may be given an opportunity in court. Another tool is self-regulation (DEAT 2004). There may be certain legally stipulated minimum requirements, but beyond that point, people concerned see to the enforcement themselves. In the coastal context an example would be that of monitoring and application of effluent discharge standards by industries that are ISO 14000 certified (DEAT 2004). ISO 1400 standards provide a guideline for organisations to comply with environmental legislation and other legal requirements so as to improve their environmental management efforts.

Direct participation of the communities in ecotourism can also promote compliance. According to Technikon SA (2007), direct community participation can also be extended to include co –

ownership of private or state owned camping site or lodges. In this kind of partnership, local people participate directly in the business decision making process (Ibid). As a result of that they understand much more intimately the conditions under which the business is likely to flourish and those which may lead to collapse of the business (Ibid). The fact that they have a significant and direct stake in the profitability of the business, they are far more interested in creating and maintaining profitable conditions. Such joint ventures may also be linked with community capacity building programs. This entails exposing them to the business process and with training they can be able to be hands on in the business rather than just being unskilled labourers. Most literature on development view rural people as being irrational (Technikon SA 2007). They are seen to be slow, only interested in pursuing social goals rather than rational economic goals such as profit (Ibid). They are left out during consultation processes and they tend to resist any development in their area (Ibid). Their engagement is crucial especially in ecotourism ventures.

2. 8 Conclusion

One can therefore conclude that for sustainable use of coastal natural resources to be effective, there is a need to take all affected stakeholders on board. There are advantages of doing so. Firstly their participation in natural resource management has got potential to improve knowledge and understanding of environmental processes. This will result in them changing their perceptions on environmental issues. Secondly local people are able to share their indigenous knowledge and these can be incorporated to decisions and strategies formulated. If they feel that they form part of the solution it will be easier to implement government legislations. Economic up-liftment of rural communities should also be encourages so as to alleviate dependency only on natural resources only for survival. Proper planning by all government departments, NGOs and affected communities is vital so as to bridge gaps between their specific mandates. Alignment of the function of the different government departments will also result in proper use of resources so as to ascertain sustainable use of natural resources.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In any research there is a need to make it clear how the data will be collected and how will it be analysed. This will depend on the type of research methodology to be used. There are three methodological paradigms identified by Maree (2012). These are quantitative, qualitative and mixed-methods or action research (Ibid). This chapter discusses the author's methodology adopted for the study. It gives a detailed explanation on data collection processes that has been used to obtain data. The chapter clarifies the research designs and data collection instruments applied in the research process. Both primary and secondary data was collected and presented in tabular and in graphical format. The statistical Package for Social Science was used for quantitative data analysis. Qualitative research designs such as questionnaires and interviews were used to collect primary data. Background information was collected by observations during field visits, informant interviews and questionnaires. Secondary data was obtained from various books, journals and internet sources.

3.2 Research design

Research design simply refers to the way in which the research has been conducted. Qualitative studies may take a case study format whereas quantitative research is usually based on research designs such as experiments or a survey (Ibid). For the purpose of this research qualitative approach was used. A qualitative researcher gets ideas from people being studied (Madyise 2013). According to Kobus (2007), qualitative research is based on a naturalistic approach that mainly aims to understand the phenomenon in context. This means that the research is done in real life situation and not experimented (Ibid). In that case unobtrusive data gathering techniques like interviews and observations are dominant (Ibid). Sampling is a technique that is used when dealing with large data. According to Kobus (2007), sampling refers to the process used to select

a portion of the population for study. Sampling technique was used to choose fifty household out of the five villages chosen as study area.

According to DEA (2012), when using qualitative methods, statements, pictures or illustrations can be used to compare the impact of an activity versus the initial state of the receiving environment. An example of this may be that of establishing the social impact assessment using interviews to find out how residents feel about the mining site in their area whilst visual assessment uses photomontage to show how the views in the area will change (Ibid). These value-based opinions are very important for any EIA process and the challenge will be to balance the value – based inputs with technical information (Ibid).

3.3 Research instruments

Research instruments used for the purpose of the study are questionnaires, interviews, observations. Questionnaires were sent to local, provincial and national departments so as to establish their role, challenges, and their involvement with communities. Fifty questionnaires were sent to fifty households chosen randomly within the five villages that make up the study area. All the fifty questionnaires were filled. Observations were done by the researcher during site visits to the study area. Secondary data was obtained from government department's policies, legislation, books, journals, published and unpublished dissertations, internet and municipalities planning documents.

3.3.1 Primary data collection

Different forms of primary data collection were used in the research. Questionnaires were used to interview officials from the ORTDM. Questionnaires were also used to interview different Departments that are mandated to look after natural resources for example the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), Department on Mineral Resources; Department of Agriculture, Forestry and Fisheries and Department of Rural Development and Land Reform. These questionnaires were used to find out the legislation used by these Departments to fulfil their mandates. They were also used to determine whether the

communities were made aware of these legislations and also seek to find challenges encountered in enforcing legislation (Refer to Appendix J).

Data was also collected in the affected communities using questionnaires (Refer to Appendix I). A questionnaire survey was chosen because it allows participants to give their views anonymously reducing bias (Madyise 2013). Advantage of administering a questionnaire is that it is easy to test validity and reliability (Ibid). It is flexible and may be applied to many different populations within a short time and also same questions are repeated to get valid and reliable answers with minimal resources (Ibid). The researcher assisted community members in filling up the questions to avoid the loss of the questionnaires. The study area is composed of five villages. In each of the five villages chosen as a study area ten questionnaires were given to ten participants. Sampling technique was used to choose participants. According to Maree (2012) there are two general sampling techniques. The first one is random or probability and the second one is non- random (non- probability) sampling. The sampling technique used for this research was the random sampling.

Community members were asked questions and the researcher filled in the questionnaires. Questions were translated in isiXhosa which is the language that is used by most people in the area. This type of interview is called structured interview. Maree (2012) says that this type of interview is fixed in structure and uses predetermined order. It is used when dealing with large sample groups so as to ensure consistency and uniformity (Ibid). The questionnaires were used to determine the extent to which these communities are dependent on the coastal natural resources. They were also interviewed so as find out whether they are aware of government legislations applicable in these areas.

3.3.2 Secondary data collection

Secondary data collection involves the analysis of any material that contains information on the research topic. Written data sources may include published and unpublished documents, reports, administration documents, e- mail, faxes and newspaper articles (Kobus, 2007). Reference to secondary data sources, for example textbooks, scientific journals, internet,

dissertations from other scholars, municipality plans, information from Statistics South Africa were read and used throughout the research process. Kobus (2007) argue that when using documents as data gathering technique, one will need to focus on all types of written communication that may shed light on the phenomenon being investigated. Reports from the DEDEAT and the DEA were also used in the research. The DEDEAT and the DEA have engaged many research institutions to conduct research in the wild coast in the past years. Documents that reflect to research findings have been submitted to the Department. Amongst those, there is a research that has been undertaken by DEAT in 2004 in the O. R. Tambo region pertaining challenges faced by coastal communities on the Wild coast. Documents from the DEDEAT have been very useful in the research.

3.3.3 Observation

Kobus (2007) defines observation as a systematic process of reading the behavioural patterns of participants, objects and occurrences without necessarily communicating with them. Observation can be highly subjective because people perceive circumstances differently. Therefore, one needs to exercise caution when using observation. Observation was also employed in the study. The researcher observed the state of the environment of the study area. Through observations, the researcher was able to ascertain the extent of environmental damage. Photographs were taken during the process. The photos provide the extent of environmental degradation of the area. The researcher has also used information that has been gathered through the training courses that have been undertaken and attended in the work place.

3.3.4 Interviews

An interview is defined as a two-way conversation in which the interviewer asks the participants questions to collect data and to learn about ideas, beliefs, views, opinions and behaviours (Kobus, 2007). Semi-structured interviews were used in order to gather information on issues such as legislations used in natural resources management, the damages of the physical environment caused by illegal sand mining and illegal building in the area. Research questionnaires were to interview both the fifty community members chosen and also for government officials.

Research questionnaires used had closed and open ended questions so that the respondent is able to express him or herself fully. However, follow-up questions were asked so as to prompt and seek in-depth understanding of the impacts of sand mining on both the physical environment and livelihoods. An interview was held with Mr Noqwaka who is a member of development forum of Coffee Bay. According to Mngeni (2014), this method was used since it provides greater breadth and depth of information, the opportunity to discover the respondents experience and interpretations of reality and access to people's ideas, thoughts and memories in their own words rather than in the words of the interviewer.

3.4 Reliability and validity

Reliability refers to the way in which data is collected, sorted and classified especially if it is verbal (Maree, et al, 2012). The criteria for evaluating the reliability of data of qualitative data collection instruments are truth value, applicability, corresponds with internal validity, neutrality and also applicability (Ibid). Transferability of the data in qualitative research refers to the extent to which the results can be generalized to other context (Ibid). In this research both qualitative and quantitative techniques were used to determine how people perceive legislation and also looked at the extent of damage caused by human activities in the study area. Maree et al (2012) describe validity of a qualitative research design to include the degree to which the interpretations have shared meaning for the participants and researcher.

Validity can be done externally and also internally. External validity is when results obtained in a study can be generally used to other people and settings (Madyise 2013). On the other hand internal validity is used to measure a concept under study and to be able to measure it accurately so that there are no constant errors (Ibid). During the research questionnaires were used. They were sent to the Unisa Ethics Committee for consideration before they were used. Information gathered from various government institutions policies and legislations was used as a standard measurement to validate information gathered from questionnaires sent to various government departments.

3.5 Ethical considerations

3.5.1 Ethics

Each and every College and University has a set of guidelines relating to the protection of human participants in research. According to Maree (2012), these guidelines are derived from national standards and in many countries entities within governments are specifically mandated to supervise the ethical conduct of research. The ethical principles of the American Psychological Association (APA), are applied in most disciplines (Ibid). It is therefore compulsory for any researcher to abide by ethical principles where humans are used as a source of data. Researchers need to safeguard the welfare and rights of those with whom they interact professionally (Ibid). Researchers need to stay objective and should not do any harm to the participants. The researcher explained the purpose of the questionnaire to the participant before the questions were asked. It was also explained that a person has a right not to participate if he or she is not comfortable with any of the questions. As a result of that some of the questions were left unanswered by community members.

3.5.2 Permission for the study

Permission to conduct research should be obtained before proceeding with the research. Permission from traditional leader for the five villages was obtained from the chief. The ward councillor for the area was also approached and he had no objection to the study. Government departments were also approached so as to get approval letters to conduct the study. The letters were obtained and are all attached as appendices in the dissertation. Clearance letter from the ethics committee was also granted conditionally. The reference number of the letter is 2012/CAES/040.

3.5.3 Respect for human dignity

The researcher's scientific and professional judgments and actions may affect the lives of others, but they must at all costs avoid any misuse of their influence on the response of the person being interviewed (Maree, et al, 2012). This is especially important when the research is focusing on sensitive issues (Ibid). Researchers should be especially alert to the human dignity of participants in research and try to communicate this respect in all aspects of the research project (Ibid). Most of the community members interviewed were illiterate and the questionnaires were written in English. In such cases, the researcher translated the questionnaire in isiXhosa so that they don't feel embarrassed.

Most of participants were females due to the fact that males are working in metropolitan town. According to Maree et al (2012), black woman in South Africa have a history of being voiceless and of being mistakenly undermined due to black culture. During the research female participants were allowed to express their views freely.

3.5.4 Anonymity and confidentiality

Maree et al, (2012) argue that respect for the participants invoke a powerful set of ethical consideration. In South Africa where participants have poor grasp of English and low literacy levels, the informed consent procedure will often have to be verbal and in the participant's mother tongue (Ibid). In such a case student – researcher need to take special care that the information is clearly understood (Ibid). A consent form prepared by Unisa was given to respondents so that they could exercise their right of being anonymous. It was explained to the government officials that the information obtained will be used only for research purposes. This is extremely important because government departments deal with sensitive information some of which is not meant for public knowledge. At the end of the research, a copy of the research will be made available to those government departments that may show interest.

3.6 Data presentation and analysis

Descriptive data analysis was used to analyse the data. The data analysis statistical package for social sciences (SPSS) version 20 computer software was used to analyse demography, educational levels and also economic status of participants. The results were then used to produce graphs. This was done by reclassifying the data that was collected using questionnaires; data capturing was carried out after reclassification and data coding and the analysis produced pie charts and tables. Microsoft word was used to produce tables. The findings were analysed inductively and deductively because the research approach was both quantitative and qualitative. Photographs were used to show the extent of the environmental degradation that had taken place. The researcher used a digital camera to take photographs during the field trips.

3.7 Conclusion

The methodology employed in data collection process has been explained. The researcher also has used information gathered during site visit trips to determine the use of natural resources and also determine the extent of environmental degradation in the study area. This chapter also described fully the overall plan of how the whole research was carried out including research designs used, method of data collection and analysis of the results. Pie charts, tables and pictures are the outputs that were deduced from data analysis.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses findings based on the questionnaires that were distributed. Five coastal villages were selected for the purpose of the study. Fifty questionnaires were distributed in these villages. Governments departments that are mandate to look after use of natural resources were also given questionnaires. Human activities leading to the degradation of the environment was also examined. Photographs depicting environmental impacts have been used to show the extent of the damaged caused by exploitation of natural resources.

4.2 Demographic data of respondents

Respondents that were used for the study were males and females. The inclusion criteria for the questionnaires were males and females above 21 years of age who were at home during the survey. About 72% of the homesteads visited there were females. According to Henbick et al, a number of studies have indicated that among household headed by woman, natural resources often contribute significantly more to the total household income than is the case for household headed by men. This is due to the fact that women are able to collect and use natural resources to meet daily needs for energy, shelter, food and medicine (Ibid). In rural areas, it is uncommon that females are left at home to look after children whilst men are working in big towns. This is why it was necessary to have the next question that seeks to find the whereabouts of the males.

4.2.1 Gender

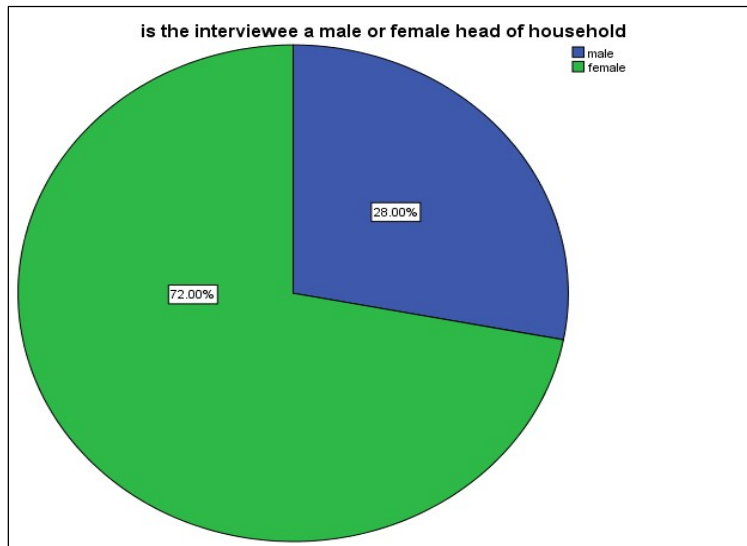


Figure 4.1: Population distribution by gender (Source: own findings)

The whereabouts of 40% of the males were not specified due to the fact that they are not heads of families but are depending on their mothers for living. Some of these males are supposed to be working but due to the fact that they left school early they cannot be employed. They spend their time in the local shops and liquor stores in the village. Figure 4.2 below shows the whereabouts of the males in the of the study area.

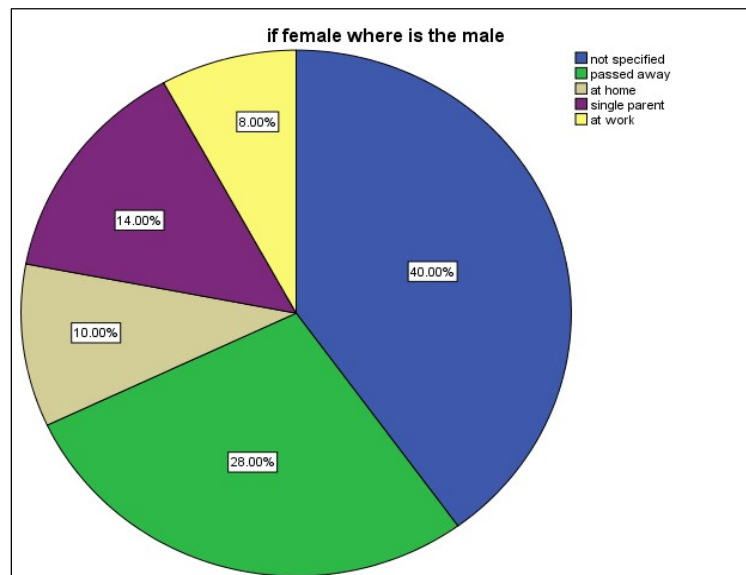


Figure 4.2: Absent males (Source: own findings)

4.2.2 Age

Table 4.1: Age structure

Population Category	Number (X = 50)	Percentage
Children	145	41
Adult males	111	31
Adult females	90	25
Elderly	12	03
Total	358	100

About 41% of the people in the study area are children. In many families there are three to five children per household. It is common to have high birth rate in rural areas because it may serve as an income generator. The more kids one have, the more the money in the form of children grant from government one gets.

4.2.3 Economic status

According to Henbick *et al* (2011), approximately seventy percent of South Africans are poor and they live in rural areas. About forty percent of rural households rely on cash hand-outs from the state. This has been found to be true in Coffee Bay and the Hole in the Wall area because most of people are unemployed and depend on grant. Table 4.2 below shows the results of the income for people interviewed. Odd jobs refer to part time jobs like doing gardening on particular days of the week.

Table 4.2: Sources of income

Sources of income	Number of respondents	Percentage
Odd jobs	6	12
Government grants	39	78
Work in the mines	5	10
Total	50	100

Economic prosperity relates to how much a society has of three interconnected forms of capital (that is, human, physical and financial capital) (Henbick *et al*, 2011). Human capital is based on knowledge, skills, health and ability of individuals to work productively (*Ibid*). In economic terms, physical capital includes production processes like buildings, machinery and computers that are used to turn raw materials into finished goods. It is founded on basic infrastructure and technology available. In the study areas there is land that can be used to cultivate maize. There is no nearby market where people can sell their produce hence one will notice that those farms are no longer used. Revival of farming in the area can be an alternative source of income. Financial capital is measured in terms of money used in starting a business. Financial capital includes the financial resources available to people, including savings, credits suppliers and regular remittances such as pensions. The main source of in income in the study area is grant (see Figure 4.3). If we are to attain sustainable use of natural resource, jobs should be created so that people do not have to rely on grant.

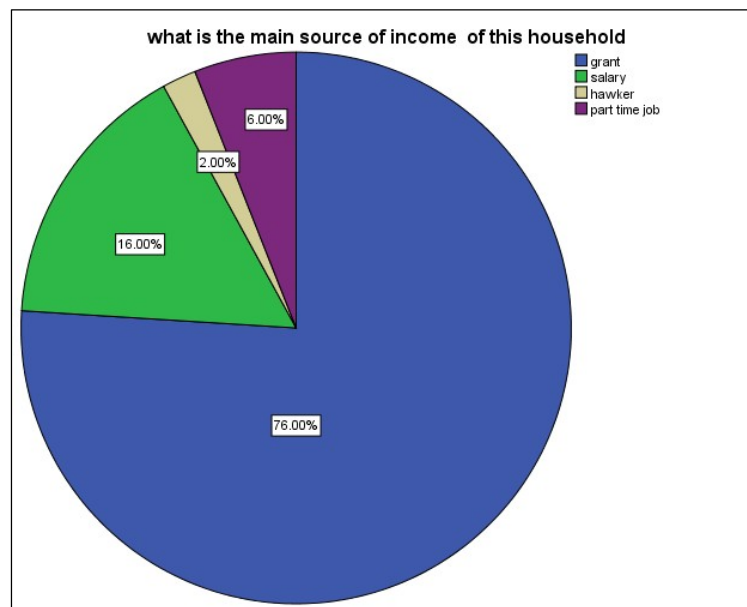


Figure 4.3: Main sources of income (Source: own research)

In a nut shell economic challenges involve overcoming extreme poverty and laying the foundation for all to live dignified lives and realize their potential that they have in their areas. Tourism can be boosted in the area so that people can be self - employed. This will require financial injection in the form of provision of capital from businesses and also skills transfer from

non- governmental organizations.

4.2.4 Knowledge of environmental legislation

There is a need to engage communities in decision making. There is also a need to align all government department plans when making or amending existing legislations. According to Kasperson et al (2011), decisions made on the management of on natural resources, economic development, community, training development initiatives and school curricular have the ability to reduce vulnerability to changing conditions. This may be done formally or informally from local level and should involve varying degrees of participation and input from local people (Kasperson, et al, 2011).

Table 4.3: Number of people who have knowledge of legislation governing the use of natural resources

Law governing	Number of respondents	Percentage
Forest	40	80
Sand mining	43	86
Building	35	70
Fishing	41	82

Table 4.3 above show that there is awareness sessions being done by various government department in making sure that community members are aware of legislation governing use of coastal natural resources in the area. The next question that was asked is how they got the information. Figure 4.4 below shows that about 76 percent of the respondents got the information on legislation in the community meetings.

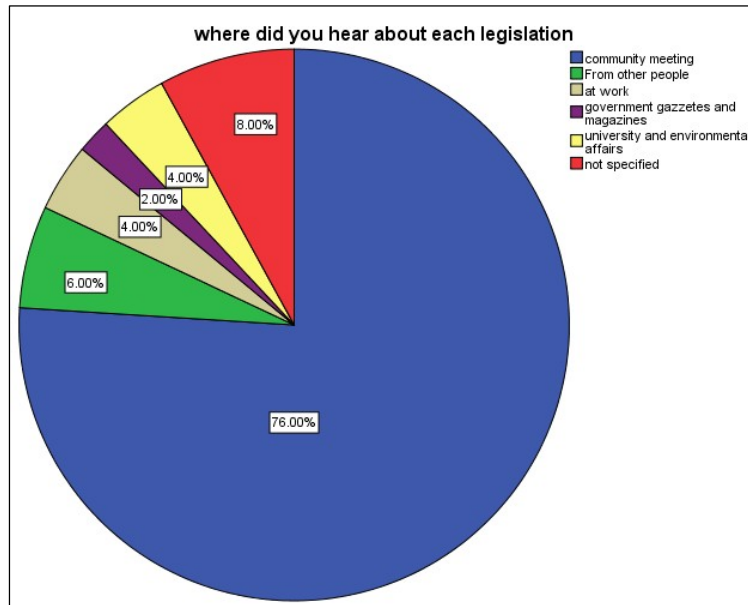


Figure 4.4: How respondents know of environmental legislation (Source: own findings)

4.2.5 Suggestions of respondents on how to attain sustainable use of natural resources

The table below captures suggestions made by local people so as to attain sustainability of the use of natural resources. From the responses gathered community members are not sure of the proper ways to be followed in obtaining sustainable use of coastal natural resources. It is vital that communities be consulted on the ways of achieving sustainable use of their natural resources.

Table 4.4: Suggestions of respondents on how to attain sustainable use of natural resources

Suggestion	Number of respondents	Percentage %
Community engagement	14	28
No use of permits	9	18
Proper monitoring	7	14
Improve infrastructure	6	12
Government to bring jobs	7	14
No suggestion	7	14

Total	50	100
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It is clear that most of the respondents feel that they are not consulted hence they feel that community engagements should be done more often. The use of permits is seen as a limiting factor to what they own hence 18% of them felt that they should use their natural resources without any limitations. This may be due to the fact that they don't know the value of these resources. They also think that they are infinite and there is no need to preserve them. Sustainable use of resource cannot be easily achieved if basic needs of the people are not met. Food, shelter are the basic needs for human existence. Fishing is a primary activity that is common in coastal areas. Locals have raised their dissatisfaction with the quota system. They feel that the limits set out in the MLRA do not satisfy their needs.

The results of the research show that economic needs, social needs of the study area should be given priority so as alleviate poverty and high dependency on the natural resources. Promotion of tourism can boost the economy of the area. Skills transfer on how to do eco – tourism can be of great assistance especially to youth in the area. Road improvements may also be considered so as to curb the problem of inaccessibility especially during rainy periods. Bulk infrastructure especially water and sanitation should also be prioritised as they pose negative impacts to the natural environment. Most importantly community engagements should be done using the bottom up approach so that people are able to own decisions taken and therefore are able to monitor their resources. This will reduce non- compliance and promote self- reliance.

4.3 Responses of government departments

Questionnaires were sent to government departments that are mandated to ensure sustainable use of coastal natural resources. These include the Department of Mineral Resources, Department of Agriculture Forestry and Fisheries, Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), Department of Rural Development and Land Reform, the ORTDM and KSD local municipality. One questionnaire was sent to each Department. The Department would then choose the relevant person to answer preferable an environmental officer. In KSDLM the questionnaire was answered by officials from planning Department because the municipality does not have an environmental officer in its current structure.

4.3.1 Role played by various Departments in use of coastal natural resources

The DMR is responsible for making provisions for equitable access to sustainable development of national mineral resources by issuing mining permits and mining rights. The Department of Agriculture, Forestry and Fisheries is made up of three sections i.e. agriculture, forest and fisheries. Questionnaire was sent to the fisheries section and another one sent to forest section. Fishery is mainly concerned with enforcing the MLRA. Their job relates to ensuring that fishermen are in possession of fishing permits. Permit holder also need to adhere to bag limits set out in the permit. There is subsistence and commercial fishing. The researcher focused on subsistence fishing for the purpose of this research. Forestry is mandated to enforce the National Forest Act 84 of 1998. The act assists in assessing, monitoring developments through forested areas.

The Department of Rural Development and Land Reform is responsible for the planning in communal land. The DRDLR is the custodian of the communal land. The role of ORTDM is mainly planning and also providing infrastructure to the communities. It provides environmental management plans which aim to minimize illegal sand mining. The role played by KSDLM mainly is that of planning of the spatial area. One of the responsibilities of the local sphere is to promote indigenous knowledge concerning land use management and land use planning. As per the Constitution and also the Municipal Systems Act, the local municipality is obliged to create policies for land use management for the entire municipal boundaries. The role played by the DEDEAT is to promote sustainable and shared economic growth and development by leading environmental management initiatives.

4.3.2 Processes engaged by Department in ensuring sustainable use of coastal natural resources and issues of consultations

The DMR does not consult locals in matters pertaining to sustainable use of natural resources. The onus rests solely on the applicant to consult community members and land owners on that proposed mining area. Fishery official claims to conduct road-shows, awareness campaigns

so as to expose community members on MLRA. This is done through community meeting and workshops. The institution has had some interactions with traditional leaders through environmental management forums. According to the official interviewed no consultation has been done with the community members in promoting sustainable development practices. The ORTDM ensures sustainable use of natural resources through rural development and land reform programmes. The KSDLM consults with local people through tender procedures for proposed developments. This means that if there is any development to be done in a particular area, adverts are sent to local newspapers so that people are aware of development proposals in their area. Partnership created by the municipality with indigenous people through rural development is only in planning collaboration. Community members, traditional authorities are informed on the municipal plans and can therefore make some inputs and suggestions to the plans. . This is done through a community based management approach, capacity building and also enforcing environmental legislation. The DEDEAT also convene conferences, provide guidelines on areas of development. Expanded Public Works Programme (EPWP) is a program funded by government to create job opportunities especially in rural areas. The DEDEAT has consulted communities on illegal developments and illegal sand mining.

4.3.3 Method of communication used for consultation processes

The DMR has not conducted any awareness campaigns in Coffee Bay. Patrols are also not conducted but depends on tip offs or complaints reported by people indicating that there is an illegal activity taking place at a particular area. In that case they conduct a site inspection to determine the extent of the damage. Fisheries conduct workshops and awareness sessions on MLRA. Forestry conducts awareness sessions in community gatherings. The OR Tambo District Municipality uses public platforms such as IDPs road-shows so as to ensure community participation in the use of natural resources. The KSDLM conducts road shows, present draft policies to the communities in community gatherings. The DEDEAT's consultation is done through community meeting, discussions with chiefs and also through enforcement of legislation. Legislation being enforced includes National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) [ICMA], NEMA and EIA regulations.

4.3.4 Challenges encountered by Departments

The DMR is faced with the challenge of dealing with unauthorized use of natural resources (illegal sand mining) by community members. This is due to the fact that they are unaware of any mining legislation. Most of these sites are left un-rehabilitated and no mitigation measures put in place to manage impacts on natural resources. Challenges being faced by the Fisheries Department are that in most cases, community members believe that they are owners of natural resources and nobody has a right to impose any sort of legislation on them. Another challenge is that of community members not adhering to the quotas stipulated to their fishing licenses. The ORTDM and KSDLM are facing challenges because there are more and more people approaching the municipality offices wanting to build hotels in Coffee Bay. Some people claim to have approached traditional leaders in obtaining land rights. DRDLR is faced with the challenge of land invasion. Challenges being faced by the ORTDM are that of resistance to comply with environmental legislation claiming that the natural resources belong to everybody.

Forestry Department is faced with illegal harvesting of indigenous trees. This is due to the fact that most people cannot afford to buy electricity, they use firewood as a source of energy. This results in deforestation. Sand mining is also a big challenge that has been highlighted by the ORTDM. Overpopulation increases the demand for natural resources thereby putting pressure on their use resulting in over exploitation thereafter. The KSD LM is facing another challenge in working with community members. The problem is caused by traditional methods of allocating land outside the planning policies. The DEDEAT challenges are that of people being interested in financial benefits more than environmental conservation resulting in sand mining, illegal development, sewage problems and destruction of wetlands.

4.3.5 How can participation of local people be facilitated in decision making?

In as far as engaging community members in land management and legislation formulation, the Department of Mineral Resources official feels that workshops should be conducted so as to familiarize the locals with legislation that govern the use of mineral resources. There are no

programs instituted to ensure community participation, but the Mineral and Petroleum Resources Development Act 28 of 2002 emphasizes that each mining application must take into consideration the views of interested and affected (IAPs) people and also obtains landowners permission.

The KSD LM has been involved in programs championed by the Walter Sisulu University for community gardens and also mussel rehabilitation projects. There is a huge demand for development in Coffee Bay. Prior to 2010, 22 applications for development were submitted for consideration by the municipality. This shows that before 2010 few applications were submitted to municipality for consideration, people would just build without obtaining permission. The area is lacking bulk water services and has huge sanitation problems. It is the responsibility of the ORTDM to provide such services but the challenge is that their representation in workshops is not good. The DEDEAT argue that participation of local people in land management can be facilitated through proper consultation. Local people should contribute fully and their views be considered in decision making. The ORTDM claims that traditional leaders and politicians should be involved in decision making processes because they have an influence on people. No comment was given by Fisheries on the matter. Forestry officials also emphasised involvement of traditional leaders in decision making.

4.3.6 Programs and partnerships instituted to ensure community participation

There are no programs conducted by the DMR in the study area. The Fishery Department has initiated some programs so as to alleviate poverty and unemployment which is rife in the area. Community members are encouraged to form cooperatives so as to formalize their business. There is also community partnership that has been established with the locals. Fishery officials participate in monitoring marine resource exploitation within their areas. Stakeholder participation is encouraged when projects are proposed. The Forestry Department is involved in the regulation of fires using the National Veld and Forest Fire Act 101 of 1998. This is done through fire awareness raising campaigns with communities and also by encouraging registered Fire Protection Associations. They also issue licenses to initiate community projects that involve cutting of trees within the indigenous forests.

Programs initiated by the Forestry Department in ensuring community participation in the use of natural resources include bee keeping projects. Another one is 'save trees for me to benefit the future generations' and Project management workshops. Projects in place include Working for Water, and Mzimbeet group for crafting. These projects involve creating of jobs by employing people to remove alien vegetation which uses too much water and replacing it with indigenous species. The DRDLR has planned programmes that deal with natural resources. These are Animal and Veld management programs for soil rehabilitation and greening of the environment. Land tenure policies that deal with land resolution are used to reach an agreement when there are disputes over land. Officials have engaged community members using the Interim Protection of Informal Land Rights Act, 1996 (Act No. 31 of 1996), [IPILRA]. Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013), [SPLUMA] is not yet in force. This act will be used in South Africa for land planning both in rural and in urban areas.

According to KSD LM Participation of local people in land management policies and legislation can be facilitated by making sure that local people know exactly what proposed land management plans mean. Recently the municipality and Traditional authorities engaged in an exercise to point out the proposed land uses physically. The exercise was quite a success and the Traditional leaders well received the initiative. According to the DEDEAT, a budget should be set aside for proper consultation. Community members should be included in policy development. Indigenous people have to contribute fully and their views should be fully considered in decision making. Government policies should encourage people to use natural resources sustainable. The Department has played a key role in curbing waste management and illegal dumping of waste in Coffee Bay.

The DEDEAT in partnership with the community members and traditional leaders of Coffee Bay have developed good relations in as far as ensuring compliance with environmental legislation is concerned. To be able to realize the dream of achieving sustainable use of natural resources, funds are needed to promote environmental protection plans, programmes and/or projects. Land use plans need to be developed to control improper land use.

4.3.7 Comments on exploitation of coastal natural resources

The DMR argue that community members use sand to meet their human needs, in fighting poverty while their actions contravenes the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [MPRDA] Forest official feels that illegal exploitation of resources can be achieved by enforcing legislation and also reduce forest gaps for alien infestation. Fisheries Department identify resource exploitation through scientific research and catch data monitoring programs. Forest guards should conduct patrols frequently so as ensure that deforestation does not take place. According to the DEDAT exploitation of natural resources is exacerbated by the increasing population in the coastal areas. Improper land use planning also contributes to environmental degradation. According to ORTDM exploitation of natural resources in the area is through deforestation, overfishing, sand mining, and illegal development. The DRDLR argue that land invasion is hampering land use management in the area.

4.3.8. Other comments

The DMR is faced with challenges in addressing the issue of illegal mining at Coffee Bay due to the fact of high illiteracy rate, poverty and high rate of unemployment. These are basic needs for survival and sand mining is their way of obtaining income. Mining is an expensive process, which most people in rural areas cannot afford until authorization is granted. The DEDEAT's additional comments are that people do not understand that natural resources are state owned. They feel that the state is robbing them of their resources. This is due to the fact that there are various process that need money need to be undertaken before a permit is obtained. One of them is to obtain Environmental Authorisation which require Environmental Impact Assessment to be undertaken.

4.4 Discussion

From the data that has been gathered in the study area, it is clear that most people are unemployed and depend on natural resources to make a living. They are also aware of the

government laws that govern the use of natural resources. They however feel that they are not consulted when these laws are made. According to Ninam (2009), negotiated agreements between local communities and state agencies concerning the management of natural resources have gained increasing importance in recent years. There is also a need to improve lives of the people so that they are not totally dependent on the natural resources. In communal areas, institutional weaknesses have resulted in some local contestation over who has access rights to a particular resource. Lack of provision of basic needs like water, electricity and sanitation are a concern in the study area.

A healthy, meaningful, productive and enriched life can be the result of living simply and wanting less in the way of material possessions. Freedom from extreme poverty and economic injustice need not only be promoted for its own sake. Excessive consumption of natural resources should be curbed because of its negative social and ecological consequences (DEAT 2004). Communities need to be educated about sustainable development. According to Roberts (2011), for a government seeking to implement a particular policy, getting individuals to change their behaviour is very difficult. He further says that this method is cheap because there is no expensive monitoring or enforcement required (Ibid). It has a potential to increase acceptability of particular action being taken and possible environmental action in general and may even promote popularity of the government by association (Ibid).

It has also been established that locals are not pleased with the permitting process when they need to build their houses. According to Henbick *et al*, say that the government should minimize regulatory barriers. In some cases the permit system which regulates the use of natural resources may be overly bureaucratic sometimes forcing locals to act illegally (Ibid). There is a need to provide flexible support to build the capacity of locals (Ibid).

Community facilitators who speak local languages and understand local customs must be used to involve previously disadvantaged communities (DEA 2012). Complex information must be summarized and simplified using concepts with which people can identify with (Ibid). The reasons that may lead to poor consultation are listed by Kaleo Consulting as being that of being a lengthy process, too expensive, it will stir up opposition, only educated people will participate,

it will raise expectations and lastly that people will not understand (DEA 2012). All these reasons, do not out- weigh the chaos that may be shown by dissatisfied stakeholders. People will be eager to comply with legislation if they know the issues clearly. Figure 4.5 below shows how sustainability can be achieved by bringing all stakeholders on board.

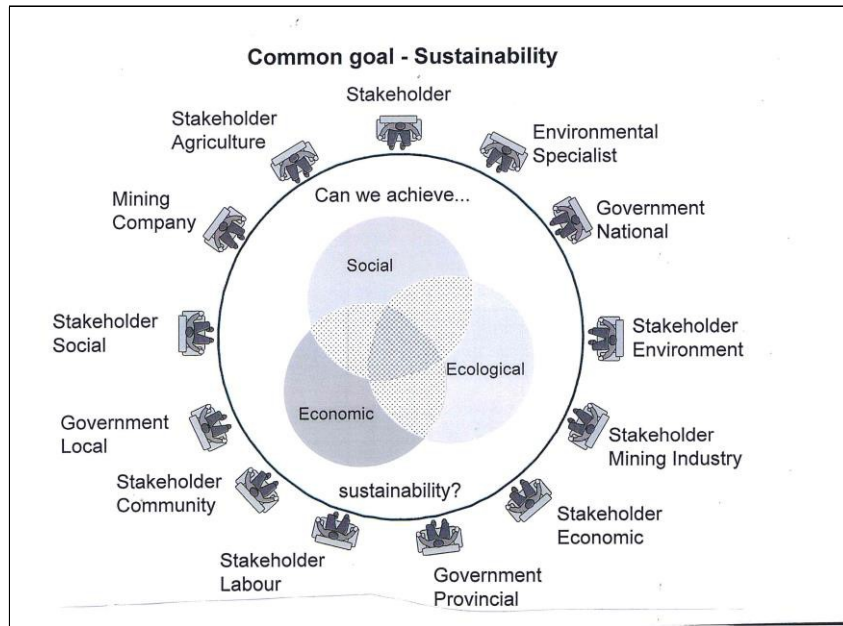


Figure 4.5: Stakeholders involved in efforts to attain sustainable development
(Source: DEA 2012)

Poor infrastructure in the area is also another problem that leads to over exploitation of natural resources. This is due to the fact that there was poor planning on the side of the local municipality. Economic assessment can help to expose and quantify infrastructure like roads, sewers, human medical care and also changes in rates income. As it is the case now, the KSDLM is unable to charge rates and services in this area due to poor state of infrastructure. It has also been noted that ORTDM is not attending workshops that are planned for the area. This creates a problem in planning and development initiatives

Another problem that has been noticed in the area is lack of intergovernmental co-operation. Section 24 O (2) of NEMA states that the competent authority needs to consult with every State

department that administers a law relating to a matter affecting the environment. According to DEA (2012), findings of the Maccsand court case held it was decided that it was legally required that holders of mining authorizations should also comply with relevant planning authorization requirements before undertaking mining activities. The court in Maccsand noted that there was a lack of co – operative governance. In this court case it was noted that sometimes the exercise of powers by government departments may overlap (Ibid). When this scenario takes place each sphere of government should exercise powers within its own competence and not intrude into functional area of another.

NEMA Section 24(4) (a) puts an obligation to all applications that need authorization to reflect co-operation and co- ordination between authorities. There is no exemption for public participation requirements. All this is done in a spirit of co – operative governance. Government departments may even plan awareness sessions together instead of each department having its own communication plan. Due to the fact that most of the people in the villages do not understand that there are different spheres of government, there is a need to inform, consult and empower them at community meetings. Another finding that has been noticed is that of more and more applications are being received by the KSDLM. One should bear in mind that whenever there is development which may have significant impacts on the environment, there is a need to weigh considerations of development. Decisions that are taken should strike a balance between environmental and socio – economic developmental factors or considerations. It is therefore not enough to only focus on the needs of the developer whilst environmental and societal needs are neglected.

The conclusion that can be drawn is that it is not proper to impose legislation on community members. Locals should be part of decision making processes. Public participation should be conducted before a law is enacted. This will promote compliance with environmental legislation. Laws should also be translated into vernacular language used by most people so as to have a clear understanding of the law. Workshops and more awareness session should be done consistently. Rural communities need to be taught of the gains that can be obtained through sustainable use of natural resources. The need for development cannot only be determined by its economic spinoffs but there is a need to also consider impacts on the environment and also social

and cultural needs. Government should improve infrastructure in the study area so that eco-tourism is promoted. Co-operative government should be promoted starting from the planning stages. Farming should be encouraged so that people should not rely merely on grants.

4.5 Damage caused through illegal activities

Damage caused by illegal activities can be very detrimental to the environment. Communities are in most cases sustained by goods and services provided by their ecosystems. Unsustainable use of natural resources tends to disrupt such ecosystems leading to disaster. Although some natural resources are renewable, if they are used above the climax level, irreversible damage may be incurred. Environmental impacts may be positive or negative. Removal of alien species and replacing them with indigenous plants for example can have positive impacts. Sand mining, pollution, illegal development and off road driving are some of the damages that may be caused by human activities on the environment. These activities are discussed further in the next paragraphs.

4.5 Sand mining

The use of sand mining by local people is controversial and needs to be addressed properly if one needs to attain desired results for both the environment and human use. Dune forests prevent water from the sea to reach the nearby developments. Sand dunes also tend to stop waves from damaging built areas. If these natural barriers are removed through sand mining activities, natural disaster like flooding will be the end result. This will result in loss of many lives and also destruction of buildings along the coastline. Due to sand mining activities taking place at Bomvu River, the manager of the backpackers lodge next to the Bomvu River was forced to put in boulders to prevent flooding of the area. Sand mining is also done at a smaller scale by community members to build their houses. They usually use donkeys to carry sand bags. Figure 4.6 below shows donkeys being used to carry sand bags at Coffee Bay.



Figure 4.6: Boys loading sand using donkeys (Source: own research findings)

Sand mining is one of the environmental problems prevalent in Coffee Bay. People come with trucks and TLB to load the sand from other villages around Mqanduli. Results of this activity can clearly depicted by Figure 4.7 below. Community does not benefit from the sand mining as it is done illegally. There is no permit issued by the Department of Minerals (DMR) to authorize anybody to mine sand in Coffee Bay. On the other hand locals use horses, bakkies and even wheel barrows to load sand. Environmental impacts caused by this are much lesser compared to the use of trucks. This is because of lesser volume of sand being taken than it would be the case if using TLB and trucks to load the sand. The sea is able to re-deposit the sand and in the process natural rehabilitating the area.



Figure 4.7: Trees uprooted due to sand mining (Source: own research findings)

DEDEAT received complaints from people in Coffee Bay community that, community members have discovered human remains in the sand mining area. They wanted government to assist them in an attempt to close access to the sand mining site. According to Mngeni (2014), the reasons why residents wanted the site to be closed is because it is not healthy to them and three times they have discovered bones of dead people on the site and they believe it is the miners that exposed those bones. They also are of the view that sand mining has caused the sea to come nearby. The head man reported the matter as he is shown pointing at materials deposited by the sea during high tide in Figure 4.8.



Figure 4.8: Illegal road to access sand mining site at Coffee Bay beach (Source: Mngeni

2014)

4.5.2 Pollution

Pollution due to a lack of proper disposal site for solid waste is also another environmental threat to the aesthetic appeal of the environment. The temporary storage site not properly managed by Local municipality and hence the rubbish will be seen lying all over the area. According to the ORTDM's IDP, the district municipality has an approved Integrated Waste Management Plan (IWMP). This document is used in promoting sustainable development and service delivery tool within the District (Ibid). The District Municipality has further developed a Sanitation Strategy in an effort to address its sanitation backlogs and challenges. The ORTDM has the mandate to manage the septic tanks but there are no proper arrangements in place to do that hence one will find that the septic tanks overflow. This affects the surrounding neighbours due to smell and water logging caused by the overflowing septic tanks. This results in artificial wetland being created. Figure 4.9 below depicts the status of the area as one drives through Coffee Bay.



Figure 4.9: Waste lying around near the road in Coffee Bay

(Source: own research findings)

Sewage is another environmental concern in Coffee Bay. Septic tanks are used by most of business people in the area. These septic tanks are not properly managed by the ORTDM which is mandated to provide water and sanitation for the region. Hotels in the area are facing serious sewage problems due to the fact of high demand for accommodation in the area. Figure 4.10 shows a pond from the septic in one of the hotels overflowing. Sewage is then pumped straight to the Nenga River which flows directly to the sea. Figure 4.11 below shows sewage forming a dam next to the road in Coffee Bay.



Figure 4.10: Pond overflowing from septic tank in Coffee Bay

(Source: own findings)



Figure 4.11: Sewage near Bomvu Lodge (Source: own findings)

In some cases the sewage results in the formation of an artificial wetland. The wetland affects the surroundings negatively due to smell that comes from the sewage. Figure 4.12 below shows the artificial wetland formed near one of the hotels in Coffee Bay.



Figure 4.12: Artificial wetland in Coffee Bay (Source: own research)

4.5.3 Development

Illegal development refers to the development that takes place within 1000m from the high water mark without a CCA permit issued by the DEDEAT. Building within the CCA requires a CCA permit as per Environmental Conservation Decree, 1992 (Decree No. 9 of 1992). According to NEMA Regulations (2010) as amended, any activity that takes place within 1000 m from the high water mark in rural areas requires environmental authorization. Figure 4.13 below shows construction that has taken place without any kind of authorization. The fence has been removed so as to access fishing spots.



Figure 4.13: Building of homestead in Mthonjana Village (Hole in-the Wall) prior to obtaining a CCA permit (Source: own research findings)

4.4.4 Off-road driving

According to section 40 of Transkei Decree (1992), driving off the demarcated road without a permit is illegal. The NEMA regulation on off-road vehicles also restricts driving on the beach and a person who needs to drive on the beach should acquire a permit. Hlungulwana is a popular fishing spot at Hole in the Wall. Tourists are fond of accessing the spot although it traversing

over a wetland and over a stream. The area is steep and the condition of the road becomes worse during the rainy season. The DEDEAT in its endeavours to promote awareness especially to tourists who may not be familiar with environmental laws erected notice boards in sensitive areas to warn people about illegal building and illegal driving. Figure 4.14 below shows cars being parked at the beach. Figure 4.15 and Figure 4.16 show notice boards that were erected in 2014. These notice boards were removed. This is a serious problem because it undermines government intentions of promoting access to information.



Figure 4.14: Cars parked at Coffee Bay beach (Source: own findings)

Public access to coastal areas refers to the ability for people to view, reach and move along the coastal zone of both the mainland and nearby islands (DEA 2014). There are mainly two user groups identified (Ibid). These are the pedestrians and vehicles such as cars or boats (Ibid). If one is to launch a boat to the sea, it must be launched at a permitted boat launch site. As per NEMA Regulations (2010), there are permissible uses that are listed in which a person can launch a boat without prior obtaining a permit. The preparation and approval of SDFs are very important in planning for coastal access. A permit is issued by the DEDEAT in order to drive off the demarcated road for various activities like accessing fishing spots. Anybody who is found driving off the demarcated roads is liable to a fine.



Figure 4.15: Noticeboard erected in Coffee Bay (Source: own findings)



Figure 4.16: Notice board erected in Hlungulwana (Hole in the Wall) board removed (Source: own findings)

The scenic beauty of the study area attracts tourists locally, nationally and internally. Tourism plays a major role in the economy of the area. Social impact assessment is useful not just for large projects but also critical when development will have large social impact. According to DEA (2012), social impact assessment can also give voice to those generally not heard. It can also provide a balance to the overpowering economic bias to decision makers (Ibid). It also increases equity, develop capacity building and focuses on poverty reduction (Ibid). Although

tourism can boost local economy, on the other side it can bring serious ecological impacts that will end up in reduction of the tourism potential of the area. Figure 4.16 below illustrates how development can impact negatively on tourism business.

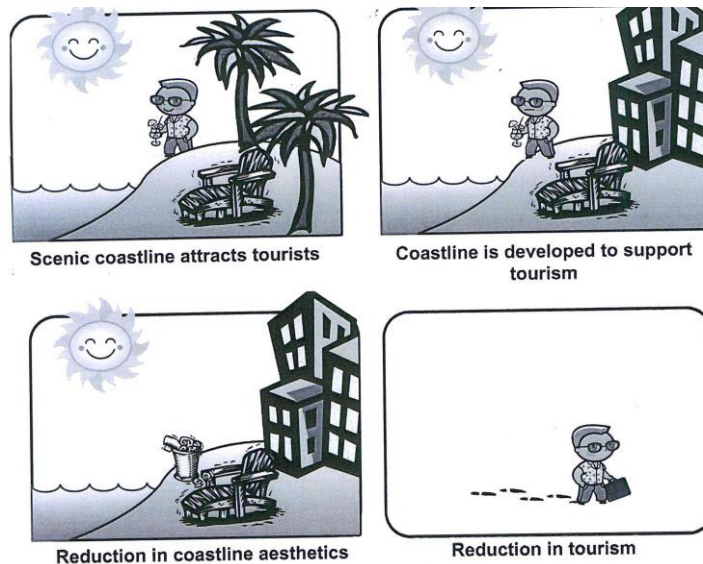


Figure 4.17: Impact of development on tourism (Source: DEA 2012)

4.6 Conclusion

Co-operative governance is governance that involves co-operation among various responsible authorities. This can be done by forming structures such as Provincial Coastal committees, Regional Environmental forums and other related forums. These meeting allow for discussions on management of the use of natural resources in that particular province or region. Co-operative governance mandated by Constitution of South Africa allows for transparent processes. Co-operative governance is a consultative approach unlike the top down implementation approach which usually causes resistance from the communities (DEAT 2004). Damage caused by exploitation of natural resources may be irreversible this is why it is important to act sooner than later.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter provides conclusions and recommendations on the perceptions of people of the study area on government legislation. The extent of damage that has been caused by over exploitation of natural resources was also determined and recommendations have been provided for various government Departments. The chapter also examines whether the research objectives have been met. The main objective was to determine whether communities are aware of legislation governing use of natural resources and determine damage that has been caused by illegal activities taking place in the study area. This chapter presents some concluding remarks followed by recommendations based on the study's finding.

5.2 Conclusions

The study on sustainable use of natural resources revealed that use of natural resources in Coffee Bay and the Hole in the Wall area has various challenges. It entails being able to resolve conflicts in natural resource uses by the beneficiaries. It also involves unlocking opportunities for sustainable of natural resources through benefit sharing. The research has revealed that lack of proper planning for Coffee Bay and the Hole in the Wall is the main cause of environmental degradation in the area. The area has a high potential to attract tourist due to its natural beauty. Infrastructure is not sufficient to meet the current demands of the population. This has a negative impact to the natural resources and the general nature of the environment of the area. Figures 4.5 to 4.13 show the extent of damage caused by use of sand, land pollution and problems caused by sewage in the area. Illegal building, illegal driving are also playing a big role in damage the scenic beauty of the area.

The study has revealed that political intervention is needed to make decisions that will be accepted by most people. The fact that most of the people interviewed agreed that they are aware of the government legislations that govern natural resource usage but are not complying with them is an indication with dissatisfaction with the law requirement. Community integration into development processes should be encouraged so as to empower locals to monitor use of natural resources in their area. Figure 4.14 shows a notice board put in place to make people aware of legislation but Figure 4.15 shows the same notice board being vandalized. The research revealed that the representation of non-economic interest such as environmental protection and sustainable development is usually a compromise with economic interests. This is clearly shown by the fact that traditional leaders are easily convinced to give out land to developers without considering the impacts the development will have on the environment.

Economic status of the people interviewed revealed high unemployment leading to poverty. The fact that seventy eight percent (78%) of household interviewed depend solely on government grants as a source of income result in people violating legislation so as feed their families. On the other hand tourism business can be used to boost the economy of the area needs financial injection and business skills that are not available in the villages. Villagers end up selling their land to business people as they are unable to make a living with what they have. Research findings have revealed that people need to be educated about the importance of using natural resources wisely. Community education has been done by various government departments including non- governmental organization through community awareness sessions.

The study has shown the importance of using effective ways of communication based on the level of education, background and also cultural needs of the people. The research has also revealed that land reform particularly in rural areas can make major contribution towards addressing unemployment. Openness, transparency and accountability in decision making is lacking. The survey would like to conclude that nationally uncoordinated development policies and strategies are to blame for the problems faced by people in the study area. The study would like to stress the need to encourage community participation from community members so as to achieve the desired outcomes and most importantly achieve sustainable use of coastal natural resources.

5.3. Recommendations

The researcher has made general recommendations that should be used so as to use our resources wisely for the benefit of future generations. Recommendations are also made to the different governments that are mandated to monitor use of natural resources. Lastly recommendations for further study are also made.

5.3.1. General recommendations

Based on the findings, the following is recommended:

- The community should be involved in decisions that pertaining the use of their resources.
- Traditional leaders should work hand in hand with government departments so as to achieve compliance.
- Continued awareness sessions with the communities on the importance of using coastal natural resources wisely should be prioritized.
- Eco-tourism should be promoted so as to promote development without compromising the scenic beauty of the study area.
- Land owners should be recognized thus enabling them to utilize their resources in a sustainable manner.
- The role being played by research community should extend further and include awareness, education, specialist advice and also active participation of key stakeholders in the process of policy making and implementation.
- Non-governmental organisations should actively take part in the management of natural resources by playing a meaningful co-operation, collaborative partnerships and benefit sharing that can only be achieved through voluntary participation.
- The types of questions asked in the questionnaires both for community members should be refined so as to assist the respondent to give an answer.
- Questionnaires for government departments should be revisited as it was found that it was difficult to analyze the data using charts and tables due to the nature of questions asked.

Some of the questions seemed as if they were seeking the same answer

5.3.2. Recommendations for government departments

- All spheres of government should have an effective institutional mechanism to ensure that planning and decision-making economic sectors and spheres of government are harmonized. There are serious challenges to be addressed in as far as alignment of mandates within different government departments are concerned.
- Tourism development agencies like Eastern Cape Parks and Tourism Agency are put on board to assist community members to make a living out of tourism business.
- Assistance should be provided by DEDEAT for co-operatives in the area to be registered in government department's database so as to create employment opportunities for the community members.
- The DEDEAT should make sure that EIAs being conducted in the area need to take into consideration the socio-economic, biophysical and cultural considerations.
- The Department of Environmental Affairs (DEA) should continue to fund projects that promote sustainable use of natural resources. The Wild coast project for example was a project funded by DEA and has made a significant impact to the lives of the people in the study area.
- The King Sabatha Dalindyebo Local Municipality (KSDLM) should produce spatial plans that set aside 'No Development Areas' so as to retain the natural state of some of the pristine areas.
- The OR Tambo District Municipality should assist by bringing in bulk water supply and proper sanitation in the area.
- The Department of Rural Development and Land Reform (DRDLR) should come up with strategies to solve land invasion crisis in the area.
- The Department of Co-operative Governance should ensure proper alliance of plans by all government departments. It is important therefore to make sure that policies for sustainable development incorporate the protection and enhancement of environmental, social and economic needs of the people at the ground.
- The Department of Agriculture, Forestry and Fisheries should continue to monitor and

enforce law in as far as the use of forest and harvesting of marine resources is concerned.

- The Department of Mineral Resources should assist community members in obtaining a permit for sand mining in the area. Monitoring of sand mining should also be done by officials.
- Traditional leaders also need to be capacitated enough so that they work hand in hand with government departments. Their role in allocation of sites as opposed to the role of the Department of Rural Development and Land Reform's role need to be defined clearly so that there is clear procedure to follow.

5.4 Further studies

The following recommendation can be made for further studies:

- To assess how poverty impact on the sustainable use of natural resources.
- Possible tourism project that can be done in the area.
- How Spatial Planning and Land Use Management Act (SPLUMA) will impact on land use management in the area.

5.5 Conclusion

The information gathered from the research has been used to analyse people's perception on the use of natural resources. General recommendations have been made to address environmental challenges. Recommendations have also been made to various government departments so ensure alignment of plans and also maximise use of government resources. Limitations to the research have been highlighted giving room for further studies.

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PERSONAL COMMUNICATION

Merry, MJ, 4 May 2015, Mthatha, Interview. Town Planner KSD Municipality.

Noqwaka, Z, 11 February 2015, Mthatha, Interview, Member of Coffee Bay Development Forum.

Lugetye, N, 1 November 2013, Mthatha, Interview. Environmental Officer, O. R. Tambo District Municipality.

**Appendix A: Study permit from the
Department of Rural Development and Land Reform**



rural development
& land reform

Department:
Rural Development & Land Reform
REPUBLIC OF SOUTH AFRICA

Umtata District Office
40 Blakeway Road, Mthatha, 5099
Tel: 047 532 5959

Private Bag X5213, Mthatha, 5099
Fax: 047 532 5968

REF: UNISA NP
Enq: N.G Matebese
Tel: 047 532 5959
Fax: 047 532 5968
Cell: 082 8276021

07 December 2012

Attention: UNISA

Dear Sir/Madam

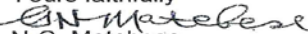
RE: PERMISSION FOR NELISWA JOYCE MAHLANGABEZA

This letter is a response to a requirement to conduct a research study under your institution (UNISA) by the above mentioned student at Coffee Bay. The study area shall be Coffee Bay and Hole in the Wall in the King Sabata Dalindyebo Municipality. The research topic is sustainable use of natural resources at Coffee Bay- Hole in the Wall in the Eastern Cape Province.

The Requirements for this permission:

- The student and her companions shall at all times observe the legislation applicable to their activities.
- Observe any other requirements as may be required by the authorities in the area of jurisdiction

Yours faithfully


N.G. Matebese

Deputy Director: OR TAMBO RSSC

**Appendix B: Study permit from
the Department of Mineral Resources**



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

Ref: UNISA NP

Enq: Miss BT Ngebulana

Tel: 041 396 3919

Fax: 086 7100 890

Cell: 082 521 8305

Dear Sir/Madam

RE: PERMISSION FOR NELISWA JOYCE MAHLANGABEZA

This letter is a response to a requirement to conduct a research study under your institution (UNISA) by the above mentioned student at Coffee Bay. The study area shall be Coffee Bay and Hole in the Wall in the King Sabata Dalindyebo Municipality. The research topic is Sustainable use of natural resources at Coffee Bay- Hole in the Wall in the Eastern Cape Province.

The Requirements for this permission:

- The student and her companions shall at all times observe the legislation applicable to their activities
- Observe any other requirements as may be required by the authorities in the area of jurisdiction

Yours faithfully

B. Ngebulana

Regional Manager

16/01/2013

Date

Appendix C: Study permit from
King Sabatha Dalindyebo Local Municipality (KSDLM)



P.O. Box 45
MTHATHA

Tel: 047 501 4299

TO WHOM IT MAY CONCERN

I councillor M.J Msakeni confirms
that Joice Neliswa Mahlangabega has
acknowledged me about the research
of Coffeybay Hole in the wall area.

I therefore give permission for
the research to take place.



**Appendix D: Study permit from
Department of Agriculture, Forestry and Fisheries**



**agriculture,
forestry & fisheries**

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Private Bag X5296, MTHATHA
PRD II Building, Sutherland & Durham St
Tel: 047-505 6421 Fax: 086 616 1436 Cell: 082 317 3654
Enquiries: Dinga M R. E-mail : MziwethembaD@daff.gov.za
2012/12/11

The Research supervisor
Unisa
Pretoria

Re: Acknowledgement of request to do research on sustainable natural resource management

This serves to confirm that Mrs Neliswa Mahlangabeza (7502090220986.....) has approached this office to be granted permission to carry research work within our establishment. This office wish to inform you that such permission has been granted subject to her adherence to the conditions that will be attached to it.

Yours truly,


M R Dinga

Assistant Director: Regulation and Support(Mthatha office)

Appendix E: Study permit from the Department of Economic Development,
Environmental Affairs and Tourism (DEDEAT)



Province of the
EASTERN CAPE
DEPARTMENT OF ECONOMIC DEVELOPMENT
ENVIRONMENTAL AFFAIRS & TOURISM

P/Bag X5029, Mth
5100, South Af
Phone: +27 (47) 531
Fax: +27 (47) 531
Web: www.deaet.ecprov.gc
eMAIL: Sizakele.gabula@deaet.ecape.gc

Ref.: UNISA NP
Enq.: Mr. S. Gabula
Tel. #: 047 – 531 1191
Fax #: 047 – 531 2887
Cell: 0824614128

Attention: UNISA

Dear Sir/Madam

RE: PERMISSION FOR NELISWA JOYCE MAHLANGABEZA


This letter is a response to a requirement to conduct a research study under your institution (UNISA) by the above mentioned student at Coffee bay. The study area shall be Coffee Bay and Hole in the Wall in the King Sabata Dalindyebo Municipality. The research topic is Sustainable use of natural resources at Coffee bay – Hole in the Wall in the Eastern Cape Province.

The Requirements for this permission:

- The student and her companions shall at all times observe the legislation applicable to their activities
- Observe any other requirements as may be required by the authorities in the area of jurisdiction

Yours faithfully

S. Gabula


Regional Manager

.....26/11/2012.....
Date:



Appendix F: Study permit from Chief Ngwenyathi

Nenga A/A

Mqanduli

05 October 2012

TO WHOM IT MAY CONCERN

The community of the above mentioned area has no objection in Ms N.J.Mahlangabeza undertaking study in this area. The research conducted in this area will help in analyzing the status of the environment in this area.

Yours faithfully

Chief Ngwenyathi



Appendix G: Consent form



CONSENTFORM

TITLE OF RESEARCH PROJECT

Sustainable use of natural resources at Coffee Bay –Hole in the Wall in the Wild Coast, Eastern Cape Province, South Africa

Dear Mr/Mrs/Miss/Ms

Date.....!.....!

NATURE AND PURPOSE OF THE STUDY

The use of coastal resources in South Africa is vital for local coastal communities. This is because these resources hold significant value for a number of reasons. There are opportunities for sand mining, fishing, forestry and tourism. Coastal residents have a long historical relationship with these resources. Local people's livelihoods are made up of government welfare grants, limited tourism based jobs, crop and livestock farming, and also the utilisation of natural resources. There is also rapid population expansion that is taking place in the wild coast. Amongst other causes of this expansion is the proposed N2 toll road to be built. There are many investors interested to invest in the area. Coastal communities are reluctant to abide by government legislations that govern the use of natural resources. The research will focus on the extent of the problem and establish how future relations can be established with these coastal communities.

RESEARCH PROCESS

1. 50 voluntary respondents are required who will be recruited from different research areas.
2. Five questionnaires will be sent to local cottage owners.
3. Questionnaires will be sent to the Department of Agriculture, Forestry and Fisheries in Coffee Bay the Department of Minerals and Energy; the Department of Rural Development and Land Reform; the KSD Local Municipality; the OR Tambo District Municipality; and the Department of Economic Development, Environmental Affairs and Tourism.
4. The duration of the research will be 3 months.
5. Traditional leaders will be asked for permission to distribute the questionnaires to the community members. Questionnaires will be sent to communities to fill in.
6. Participants will be adults, i.e. more than 18 years of age.
7. Questions will be translated in Xhosa, because most of the people are not educated.
8. Interviews will be conducted with various departments.

9. Photographs will be taken to establish the extent of environmental degradation.
10. Graphs will be used to plot results.
11. Analysis of data will be done and results drawn from that.

NOTIFICATION THAT PHOTOGRAPHIC MATERIAL, TAPE RECORDINGS, ETC WILL BE REQUIRED

Photographs will be taken in those affected areas.

CONFIDENTIALITY

Your opinions are viewed as strictly confidential. No data published in the dissertation will contain information from which you may be identified. Your anonymity is therefore ensured.

WITHDRAWAL CLAUSE

I understand that I may withdraw from the research at any time. I therefore participate voluntarily until such time as I request otherwise.

POTENTIAL BENEFITS OF THE STUDY

The research will be beneficial to the community in that when they are being interviewed, they will be able to ask questions and therefore awareness will take place. The feedback will assist the Department of Environmental Affairs to establish why there is resistance to government legislations. It will also help in reducing illegal activities taking place in the coastal areas. It will also help to promote better understanding between the Department of Environmental Affairs officials and the coastal communities. As is now, it is difficult for officials to enforce the legislations in these areas because of the resistance they are getting from the locals.

INFORMATION (contact information of your supervisor) CONSENT

I, the undersigned (full name) have read the above information relating to the project and have also heard the verbal version, and declare that I understand it. I have been afforded the opportunity to discuss relevant aspects of the project with the project leader, and hereby declare that I agree voluntarily to participate in the project.

I indemnify the university and any employee or student of the university against any liability that I may incur during the course of the project.

I further undertake to make no claim against the university in respect of damages to my person or reputation that may be incurred as a result of the project/trial or through the fault of other participants, unless resulting from negligence on the part of the university, its employees or students.

I have received a signed copy of this consent form.

Signature of participant:

Signed at on

WITNESSES

1

2

APPENDIX H: ETHICAL CLEARANCE LETTER

UNISA

Ref. Nr.: 2012/CAES/040

2012-11-11

To:
Student: Ms NJ Mahlangabeza
Supervisor: Mr Q Paliso
Department of Environmental Science
College of Agriculture and Environmental Sciences

Student number: 39146383

Dear Mr Paliso and Ms Mahlangabeza

Request for Ethical approval for the following research project:

*Sustainable use of natural resources at Coffee Bay – Hole in the Wall along the Wild Coast,
Eastern Cape province, South Africa*

The application for ethical clearance in respect of the above mentioned research has been reviewed by the Research Ethics Review Committee of the College of Agriculture and Environmental Sciences, Unisa. The application (Ref. Nr.: 2012/CAES/040) is **granted conditional approval**. Research may not continue until such time as the following matters have been clarified and presented to the Research Ethics Review Committee. A letter addressed to the Research Ethics Review committee should be submitted in which evidence of the following is attached and information provided with regard to:

1. The consent form is not correctly completed in terms of the research procedures that have been stipulated. These are the processes or procedures that will be applied during the gathering of the data and the participants' contribution at that point. Will the researcher first give an introduction, then the questionnaire will follow, thereafter the researcher will have a body break, then the research will commence with the completion of the second questionnaire etc.
2. The researcher needs to clarify if all the regions identified in the proposal fall under one community leader. If not a permission letter any other leaders attributed to the regions need to be submitted to the Ethics committee.
3. Permission from the government departments involved should be attached to the letter to the Ethics committee as these departments are required to approve the study under their jurisdiction.
4. The researcher should provide clarification regarding the use of photographs.

The research is requested to understand the complexity of the research environment in which the researcher will be entering and remain neutral at all times of the research project.

Please be advised that the committee needs to be informed should any part of the research methodology as outlined in the Ethics application (Ref. Nr.: 2012/CAES/040), change in any way. In this instance, a memo should be submitted to the Ethics Committee via Ms Marthie Van Wyk, in which the changes are identified and fully explained.

We trust that sampling, data gathering and processing of the relevant data will be undertaken in a manner that is respectful of the rights and integrity of all participants, as stipulated in the UNISA Research Ethics Policy.



University of South Africa
Pretter Street, Medunsa, Ridge, City of Johannesburg
PO Box 890 UNISA, 0001 South Africa
Telephone: +27 12 429 8111 Facsimile: +27 12 429 4160
www.unisa.ac.za

The Ethics Committee wishes you all the best with this research undertaking.

Kind regards,



Prof E Kempen,
CAES Ethics Review Committee Chair

To:
The Ethics Review Committee
Department of Environmental Sciences
College of Agriculture and Environmental Sciences
UNISA
5099

Neliswa Joyce Mahlangabeza
P.O. Box 829
Mthatha
5099
13 December 2012

Dear Madam/Sir

Re: REQUEST FOR ETHICAL APPROVAL FOR THE FOLLOWING RESEARCH PROJECT:

Sustainable use of natural resources at Coffee Bay - Hole in the Wall, Eastern Cape province, South Africa (Ref. No: 2012/CAES/040)

This letter is in response of the letter dated 09th November 2012. The researcher will introduce herself after that outline the purpose for the visit. She will then ask the participant to voluntarily help in filling in the questionnaire. The researcher will then ask questions; translate them in Xhosa if there is a need to do so. The researcher will fill in the responses. The participant will be thanked for the participation. If the researcher wants to fill in the questionnaire on his or her own, that will be allowed.

The regions where this research will be conducted fall under Chief Pali. He is responsible for the whole Upper Nenga Administrative Area (A/A). He is the legitimate overseer for the area. The research will focus on five coastal villages led by five headmen. They are responsible for the day to day activities of their villages and they report to the chief. These headmen will be visited and explanation given to before the research is conducted. A letter from chief Pali will therefore suffice. This letter was submitted to the Ethics Review Committee.

The letters from government departments are attached to this letter. A reviewed Consent letter is also attached.

Yours faithfully
Neliswa Joyce Piliso

Appendix I: Questionnaire for community members

UNIVERSITY OF SOUTH AFRICA

DEPARTMENT OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

TOPIC: USE OF NATURAL RESOURCES AT COFFEE BAY – HOLE IN THE WALL AREA, MQANDULI

QUESTIONNAIRE FOR COMMUNITY MEMBERS

RE: REQUEST FOR PARTICIPATION IN MY RESEARCH

I am Neliswa Joyce Mahlangabeza. I am a master’s student at the University of South Africa in the Department of Agriculture and Environmental Science. My research is aimed at investigating the sustainable use of natural resources in Coffee Bay – Hole in the Wall, Wild Coast, and area. Your departmental activities form part of the study. The information you will provide will be held confidential and ethical issues will be respected at all times. **This study is conducted for academic purposes only.** The questions are presented in order to explore your lived experiences and perceptions on the existing regulations/legislation and use of natural resource on the Wild Coast.

1. POPULATION

- 1.1. Is the interviewee a male or a female (head of household)?
- 1.2. If female, where is the male of the household?.....
- 1.3. How many people live in the household?.....
 - a. Children (under 16 years).....
 - b. Adults female).....
 - c. Adults (male).....
 - d. Elderly.....

2. INCOME

- 2.1. What is the main source of income of this household?.....
- 2.2. What are other sources of income?.....
- 2.3. How many people are unemployed in this household?.....

3. USE OF NATURAL RESOURCES

- 3.1. Are you aware of any government legislations that govern the use of: (Please tick yes/no.)
 - a. Forest.....yes.....no.....
 - b. Sand along the coast.....yes.....no.....
 - c. Building within the coastal conservation area (1 km from high-water mark)...yes.....no.....
 - d. Fishing.....yes.....no.....

3.2 If answer is yes from 3.1. ,state where did you hear about each legislation.....

.....

3.3 If answer is no from 3.1 what could be the reasons?.....

.....

.

3.4 Do you think that government is doing enough in involving community members in the use of natural resources in your area?.....

3.5 If answer is yes in 3.4. , state reasons.....

.....

.....

3.6 If answer is no in 3.4. , state the reasons.....

.....

.....

3.7 As a community do you think you are benefiting from natural resources found in this area?

3.8 If yes, state reasons.....

3.9 If No state reasons.....

.....

.....

.....

.....

3.10 What would be your suggestions to government departments so as to attain sustainable use of natural resources in your area?.....

.....

.....

(Adapted from Neliswa Joyce Mahlangabeza Honors dissertation 2005)

ENKOSI

ENKOSI

APPENDIX J: Questionnaire for government Departments

UNIVERSITY OF SOUTH AFRICA

DEPARTMENT OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

Dear Sir/Madam,

RE: REQUEST FOR PARTICIPATION IN MY RESEARCH

I am Neliswa Joyce Mahlangabeza. I am a Master’s student at the University of South Africa in the Department of Agriculture and Environmental Science. My research is aimed at investigating sustainable use of natural resources at Coffee Bay – Hole in the Wall, Wild Coast Area. Your Departmental activities form part of the study. The information you will provide will be held confidential and ethical issues will be respected at all times. **This study is conducted for academic purposes only.** The questions are presented, in order to explore your lived experiences and give perceptions on the existing regulations/legislation and use of natural resource practices in the Wild Coast.

INTERVIEW QUESTIONNAIRE FOR GOVERNMENT DEPARTMENTS ON USE OF NATURAL RESOURCES AT COFFEE BAY - HOLE IN THE WALL AREA

Date	
Department	
Name of the respondent	
Questionnaire number	

Please answer each of the following questions either in the space provided or on another paper.

1. What roles, if any, does your organization play in use of natural resources?

Promoting indigenous Knowledge	
Equitable land ownership	
Land use planning	
Land degradation and management measures	
Legislation and policy formulation	
Others (specify)	

Explain how? -----

2. What processes does your organization engage in to ensure sustainable use of natural resources at Coffee Bay area – Hole in the Wall area?

Promoting indigenous Knowledge	
Equitable land ownership	
Land use planning	
Land degradation and management measures	
Legislation and policy formulation	
Others (specify)	

Explain, as pointed out, -----

3. On what issues regarding use of natural resources did your organization consult with the local/indigenous people about their management practices?

Land tenure	
Stakeholders responsibility	
Policy formulation	
Others (specify)	

Explain, -----

4. (A) Through which of the following ways were rural communities (Coffee Bay) consulted or involved by your department in promoting sustainable development practices?

Community gatherings	
Rural elites	
Discussion with chiefs	
Non Governmental Organizations	
Was not consulted at all	

Writing	
Other (specify)	
All the above	

(B) What policies and legislations are in place to ensure sustainable use of natural resources in this area? Explain, -----

5. What challenges as an organization do you encounter in ensuring sustainable use of natural resources in the coastal area of Coffee Bay – Hole in the Wall area? Explain,-----

6. How can the participation of indigenous/local people in land management policy and legislation formulation and decision making be facilitated? Explain, -----

7. How the needs of historically disadvantaged communities (indigenous people in Coffee Bay- Hole in the Wall) are involved and met in the policy of maintaining one kilometer distance away from the coastline?

Equity	
Land alienation and ownership	
Heritage and cultural prestige	
Other (specify)	

Explain, -----

8. What programs has the Department instituted to ensure community participation in the use of the natural resources at Coffee bay – Hole in the Wall area?

capacity building	
public awareness	
Integrating indigenous knowledge with scientific management practices	

Other (specify)	
-----------------	--

Elaborate, -----

9. What partnership have you created with indigenous people ?-----

10. Illegal and exploitation of natural resources is a serious environmental problem in this area. What is your perception about it? Explain, -----

11. In what ways does your Department identify exploitation of natural resources? Explain, -----

12. What do you think could have caused unsustainable use of natural resources at Coffee Bay- Hole in the Wall area, if any? Explain, -----

13. Other comments-----

