UNDERSTANDING THE PRESENT AND HISTORIC FOREST RESOURCE USE OF THE NTABAMHLOPHE INDIGENOUS STATE FOREST BY RURAL COMMUNITIES

By

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Submitted in partial fulfillment of the academic requirements for the degree of Master in Environment and Development in the Centre for Environment, Agriculture and Development, School of Environmental Sciences University of KwaZulu-Natal

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November 2009

Pietermaritzburg

DECLARATION

“As the candidate’s Supervisor I agree/do not agree to the submission of this dissertation.”

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Signed: (Dr. M. Dent - Supervisor) Date

DECLARATION

I **Oscar Mpiyani Emmanuel Mthimkhulu** declare that:

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ABSTRACT

Ntabamhlophe indigenous state forest is the focus study area. It is one of the forests that are found along the Drakensberg mountain range in KwaZulu-Natal province in South Africa. It is a proclaimed forest of approximately 50ha in extent. The Ntabamhlophe indigenous state forest was formerly called Monk's Cowl State Forest, (Monk's Cowl State Forest - iNtabamhlophe) situated in central uKhahlamba Drakensberg Park World Heritage Site, KwaZulu-Natal, South Africa. This forest is located on communal land.

In many parts of the world, indigenous forests face growing threats and pressures. Internationally this has resulted in approximately 9.4 million hectares being lost by 1990. Indigenous forests play an important role in ecosystem processes. They are associated with a range of products and processes that support the livelihood of millions of people around the world. Forests cover more than 3 000 km^2 or 0.1% of the land surface of South Africa. Furthermore, due to the lack of appropriate management programmes, South Africa has contributed its share to indigenous forest loss. Approximately 76% (3240ha) of the Drakensberg Montane forest is formally protected South Africa's geographical positioning is such that it has historically had a smaller extent of forests. The future of South Africa's remaining indigenous forests depends partly on the values ascribed to them by local communities.

The study objectives were, (i) to understand the values and perceptions of the community towards the existence and future management of the Ntabamhlophe indigenous state forest, and (ii) to determine the different types of forest products and resources used by the community and their values to the users (cultural, spiritual or economic values).

To understand Ntabamhlophe community's indigenous forest resource use, values and perceptions, a qualitative survey method was used. This was conducted by using focus group techniques. The use of focus groups provided an insight into qualitative data. The technique combined both wise counsel and focus group workshops. The use of this technique aimed at drawing upon respondents' attitudes, feelings, beliefs, experiences and reactions. The

questionnaire design was based on the structures of other studies, on user attitudes and values relating to forest resources.

The study revealed that the community ascribes high values to the indigenous forest, however they do not have a proper forest management system in place. The following were regarded as the major threats facing Ntabamhlophe forest resources: crime, uncontrolled and excessive burning, uncontrolled harvesting of indigenous medicinal plant and fuelwood, deforestation (clearing forests for plantations, *e.g*. vegetable crops and *Cannabis sativa*). Illegal hunting, soil erosion, and inappropriate forest management systems (non-existence) were all considered by community representatives as serious threats to the survival of this indigenous forest.

The findings also revealed that there is a lack of capacity and skills, appropriate stakeholder representation and coherent community leadership to pursue Ntabamhlophe Mountain and forest conservation initiatives. Given the circumstances, there is an apparent lack of confidence on the part of the community to confirm their natural resource conservation priorities. The community representatives recommended that the current uncontrolled activities be prohibited. They also had a strong belief that the forest should be protected through a cooperative management system involving Ezemvelo KZN Wildlife, the Traditional Authority, the Department of Water Affairs and Forestry and Imbabazane Local Municipality. The focus group indicated that they had a very high future benefit expectation of activities such as education, water, cultural, biodiversity, spiritual upliftment, tourism, craft and free access (Table 6). They also indicated that gathering medicinal plants and fuelwood was very common. Educational benefit was regarded as the most important of all, followed by tourism and biodiversity conservation.

ACKNOWLEDGEMENTS

The completion of this mini-dissertation was due to many people. I would like to express my sincere appreciation for assistance, guidance and support given by the following:

Dr. M. Dent, Centre for Environment, Agriculture and Development, School of Applied Environmental Sciences University of KwaZulu-Natal for his supervision and guidance regarding the research presented in this dissertation. I warmly appreciate support and constructive critiques from Dr. N. Nyambe.

Many thanks to Ezemvelo KZN Wildlife staff, especially Mr. Steven McKean my co-supervisor, for his advice and reading of the manuscripts. I am grateful to Sindiswa Zamla for her assistance in data collection and the uKhahlamba Drakensberg Park World Heritage Site community conservation unit for their support. I am also grateful to Sonja Krueger, Duncan Heard and Karen Kohler for constructive critiques and reading of the manuscripts.

The cooperation received from the Ntabamhlophe community has been invaluable. I am thankful to the Ntabamhlophe community, and *iNkosi* Ndaba for organizing and providing a venue for all the meetings we held. A special note of gratitude goes to all the traditional healers, and cattle owners for their assistance during the field work and for sharing information.

I am indebted to my mother Ms. S'bongile Mthimkhulu for all my achievements in life. I am grateful to my family, my daughters, relatives and friends for their support and encouragement.

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ACRONYMS AND ABBREVIATIONS

CBD	Convention on Biological Diversity
CBNRM	Community –Based Natural Resource Management
CEAD	Centre for Environment, Agriculture and Development
CFM	Community Forest Management
DWAF	Department of Water Affairs and Forestry
EKZNW	Ezemvelo KZN Wildlife
FAO	Food and Agriculture Organization of United Nations
GIS	Geographical Information System
GPS	Geographical Position System
ICDPs	Integrated Conservation and Development Projects
IUCN	World Conservation Union
PFM	Participatory Forest Management
PRA	Participatory Rural Appraisal
SFM	State Forest Management
UDP WHS	uKhahlamba Drakensberg Park World Heritage Site
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCFSD	World Commission on Forests and Sustainable Developments
WWF	World Wide Fund for Nature
WRI	World Resource Institute

CHAPTER 1
RESEARCH INTRODUCTION

1.1 INDIGENOUS FORESTS AND COMMUNITIES

Indigenous forests play an important role in ecosystem in a variety of processes, such as carbon sequestration. They are also associated with a range of products, such as timber and non-timber resources and processes that support the livelihood of millions of people around the world (Walvekamp, 1999). The ecosystem service value of indigenous forests can be linked to their provision of environmental services like nutrient recycling and the maintenance of biological diversity in terms of habitat, species and genetic resources. However, the rate at which indigenous forests are being degraded, lost and transformed due to inappropriate land use, encroachment and deforestation, among others, is alarming. In many parts of the world, indigenous forests face growing threats and pressures.

The pressures on forests are in the form of encroachment, deforestation and a growing desire for land to support certain human activities such as ranching, mining and farming (Noss, 1997). Encroachment to provide for human settlement is a major sensitive and socio-political pressure (Babu and Hassan, 1995). An ever-increasing growing human population is also creating unprecedented demands for certain wood and non-wood products. Reports suggesting the reduction of once huge forests to mere patches are common (Natal Parks Board, 1997). Implications of the transformation and loss of indigenous forests straddle ecological, economic, political, biodiversity and many other imperatives.

Internationally deforestation has resulted in approximately 9.4 million ha being lost in 1990 (2.4 per cent of total forest) (Global Environment Outlook 3, undated). Between 1990 and 2000, Africa lost more than 50 million ha of indigenous forests due to land transformation. This was at an average rate of 0.7 percent per year (Global Environment Outlook 3, undated). South Africa has also had its share of the loss of indigenous forest (Roberston and Lawes, 2005 and Nomtshongwana, 1999). South Africa's geographical positioning is

such that it has historically had only a small extent of forests, but even this has been considerably reduced with time. South Africa's indigenous forest estate is categorised into eight forest types, Table 2 (Geldenhuys, undated). Each of these forest types is associated with particular features and biodiversity. Some of these forest types have been severely transformed and reduced to patches in the critical domain (Macfarlane, 2000).

The future of South Africa's remaining indigenous forests, like those of other natural resources, partly depends on the values ascribed to them by local communities. Unless the local people find forests useful and beneficial, and they feel empowered enough to make decisions about how those forest products are utilised, the likelihood of encroachment, deforestation and other vices will continue. Drawing on Nomtshongwana (1999) and Phadima (2005), notes that the resulting loss of the forest habitat, disturbance of ecological values and even the threats to livelihoods can come as an undesirable consequence to all forms of life.

1.2 PROBLEM STATEMENT

According to Mucina and Rutherford (2006), forests cover more than 3 000 km^2 or 0.1% of the land surface of South Africa. KwaZulu-Natal has a number of indigenous forests, it contains approximately one-sixth (1 185km^2) of the indigenous forest biome in South Africa. Drakensberg Montane forest covers approximately 4,863ha in total and they occur along Drakensberg mountain range. These forests are highly fragmented with high number of them less than 2ha (patch size) whilst the largest patch is 150ha (Forest Biodiversity Research Unit 2005).

The Ntabamhlophe forest is located in the KwaZulu-Natal province of the Republic of South Africa (Figure 1). Ntabamhlophe is one of the forests whose management status is unclear. This is due to human perception, because it is considered to be conserved and yet in reality is not managed in such a manner. Although declared a State Forest in 1927, evidence clearly shows that the forest is not being managed to achieve conservation goals (Bainbridge, 1988). Years of uncertainty about its designation on the part of

local communities, exacerbated by lack of adequate management operations on the ground, have exposed the forest to abuse (*Pers. Observation* 2006). Fields of crops, uncontrolled fires, hunting of small game and the collection of both wood and non-wood products are some of the activities taking place in the forest.

Continuation of these activities unabated could be a serious threat to the forest, particularly if continued at what is believed to be unsustainable levels. This forest is already in the critical category as it is only 50 ha in extent (Macfarlane, 2000).The continued existence of the forest is partly depended on values and perceptions held by the local communities. Furthermore, the forest ownership dictates the extent of use. This is also depended on different forms of forest resource use and products.

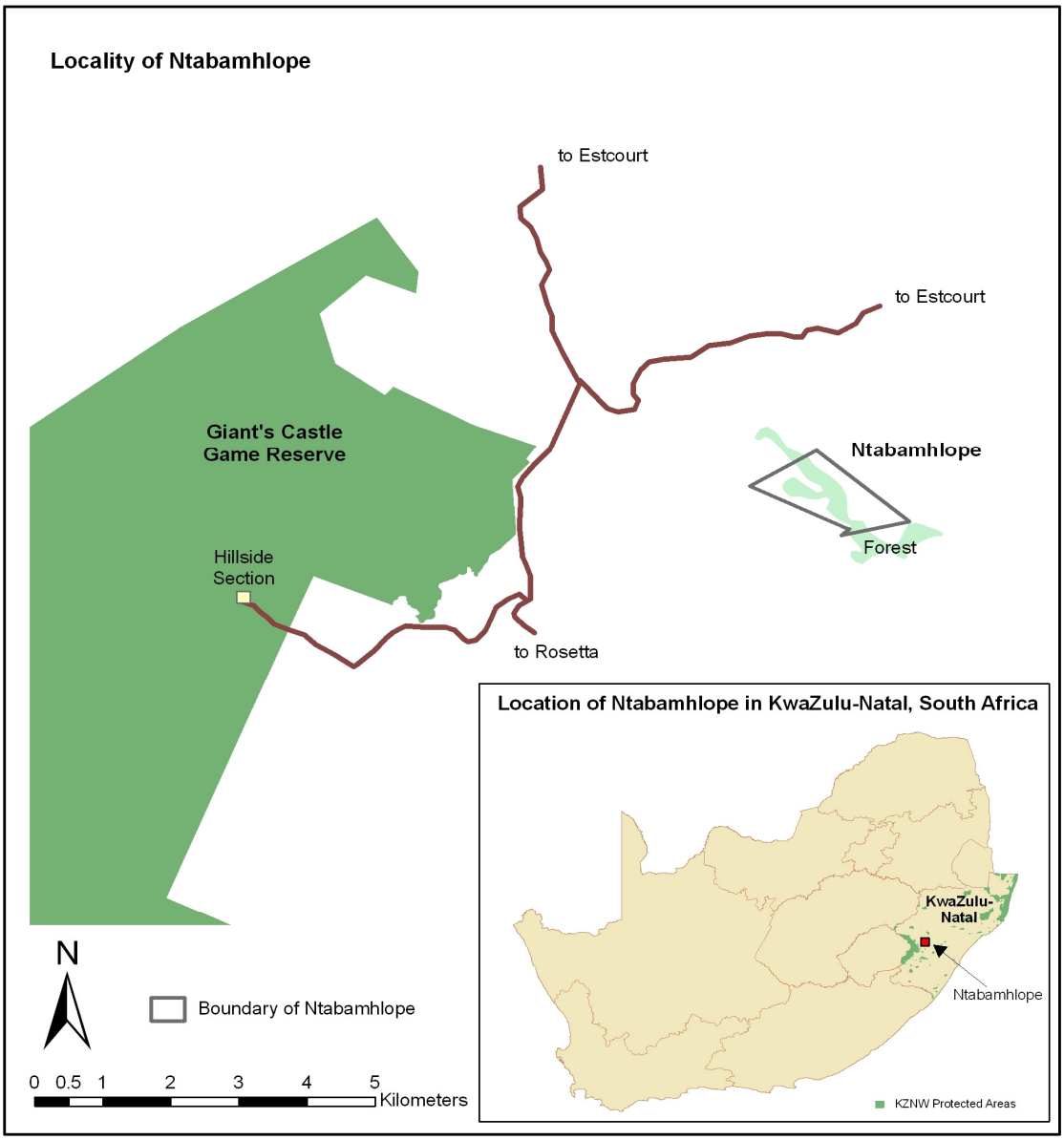

Figure 1: Locality map of Ntabamhlophe indigenous state forest (Adapted from: Ezemvelo KZN Wildlife, Biodiversity Conservation Division, 2008).

1.3 OVERALL OBJECTIVE OF THE STUDY

The overall objective of this study is to aid management insights into the needs of the Ntabamhlophe community by examining the present and historic forest resource use and the perceptions of the local community towards the forest.

1.4 SPECIFIC OBJECTIVES

- To understand the values and perceptions of the community towards the existence and future management of Ntabamhlophe indigenous state forest.

- To determine the different types of forest products and resources use by the community and their values to the users (cultural, spiritual or economic values).

1.5 RESEARCH METHODS

A qualitative survey method was conducted by using focus group techniques. According to Nomtshongwana (1999), the use of focus group techniques provides an insight into qualitative information. This study combined two tools; wise counsel and focus groups. The use of focus group methods enabled the researcher to draw upon respondents' attitudes, feelings, beliefs, experiences and reactions towards aspects of forest resource use. The questionnaire design was based on the structures of other studies on user attitudes and values related to forest resources (Phadima, 2005, Robertson and Lawes, 2005 and Nomtshongwana, 1999).

Based on pilot survey results, social dynamics were used to refine the focus group approach. At Ntabamhlophe, most community members are illiterate, hence a face-to-face approach was preferred because it allows people to respond verbally. Before conducting the survey, the Traditional Authority was approached for permission to engage community members. A presentation, to explain the research objectives, was carried out for both the Traditional Authority Council and community members. Subsequently focus group members were identified through relevant community working structures, such as development committees, the traditional authority, stock owners, local municipality and other relevant stakeholders. The identification of focus group members was undertaken by the Traditional Authority.

1.6 RESEARCH STUDY: CHAPTERS' OVERVIEW

Chapter 2 deals with challenges of managing forests, environmental and socio-economic values, pressures and threats and implications for the sustainable management of indigenous forests. Chapter 3 deals with the description of the forest location of Ntabamhlophe forest and biophysical characteristics. Chapter 4 deals with research design and methods. This chapter gives an overview of the focus group research method as the preferred and appropriate research method. Chapter 5 deals with analysis of results and presents the research findings. Chapter 6 presents the discussion and conclusions. It looks at local community perspectives on forest management, community dynamics and challenges faced by the community with reference to local livelihoods. It also gives an account of the different types of forest products and resources used by the community and their values to the users.

CHAPTER 2

INDIGENOUS FORESTS: SIGNIFICANCE, THREATS, PRESSURES AND CONSERVATION EFFORTS - LITERATURE REVIEW

2. 1 CHAPTER OVERVIEW

This chapter contextualises the plight and challenges that forests face, and examines the role of forest protected areas within this context. The chapter comprises two major parts. The first contextualises the challenge of managing forests, starting with a global synopsis of the forest crisis. Incorporated in this section is a discussion of environmental and socio-economic values and the growing pressures and threats faced by indigenous forests. The second draws implications for the sustainable management of indigenous forests by community and conservation authorities and the role of protected areas. Due to the fact that there is limited literature on the study area, Ntabamhlophe Forest situation will be related to the global situation.

2.2 INDIGENOUS FORESTS – A THREATENED RESOURCE DEFINED

The United Nations Food and Agriculture Organisation (FAO) defines a forest as a land area of more than 0.5 ha, with a tree canopy cover of more than 10% which is not primarily under agricultural or other specific non-forest land use (Food and Agriculture Organisation, 2000 cited in Convention on Biological Diversity, 2005). Alternatively, a forest may be defined as a continuous stand of trees at least 10m tall, with interlocking crowns and a generally multi-layered vegetation unit dominated by trees (largely evergreen or semi-deciduous) whose combined strata have overlapping crowns (Geldenhuys, undated). The focus here is on indigenous forests, comprising forests as defined above but existing in their natural habitats (Convention on Biological Diversity, 2005). National Forests Act No. 84 of 1998, defines indigenous state forest as an area protected in terms of sections 7(2), 8(1) (a) and (b). Furthermore, indigenous means indigenous to South Africa.

2.3 THE SIGNIFICANCE OF INDIGENOUS FORESTS

The significance of indigenous forests can be better appreciated if they are seen as ecosystems. Indigenous forest ecosystems can be defined at a range of scales; they are defined as a dynamic complex of plant, animal and micro-organism communities and their abiotic environment interacting as a functional unit, where trees are a key component of the system (Convention on Biological Diversity, 2005).

Using the ecosystem approach to situate indigenous forests encourages us to see humans as an integral part of forest ecosystems due to their cultural, economic and environmental needs (Convention on Biological Diversity, 2005). As a result of such needs, humans play a significant role in influencing and maintaining forest ecosystems. In the process of benefiting from indigenous forest resources, humans modify forests to suit their needs. Ntabamhlophe forest is relatively small and it is assumed that it has been modified by the local community due to the perceived unregulated harvesting of forest products.

The natural forest environment forms a crucial element for human habitat; consequently indigenous forests have not been able to escape human influence (Krishna and Woodwell, 1993). Indigenous forests are cleared for human habitation. Global forests are changing due to human activities which impact on the forest structure and its survival. This has led to the realization of threats as being immediate, irreversible and impoverishing (Krishna and Woodwell, 1993). Among other threats, Ntabamhlophe forest could possibly be affected by the harvesting timber material for fencing and building. In most indigenous forests, timber harvesting from the forest is believed to be mainly associated with its use for house and field crops fence construction (Phadima, 2005).

Perceived threats have prompted international concern and urgency to participate in resolving forest management issues. Globally, indigenous forests have valuable environmental and socio-economic values which benefit human and other life forms as a renewable resource (Sharma, 1992). Healthy

indigenous forests have the ability to regenerate if utilised at sustainable levels. As suggested by Sharma (1992), the significance of indigenous forests may be loosely categorised as environmental and socio-economic.

2.3.1 ENVIRONMENTAL SIGNIFICANCE OF INDIGENOUS FORESTS

The environmental significance of indigenous forests can be linked to their provision of environmental services like nutrient recycling and the maintenance of biological diversity in terms of habitat, species and genetic resources (Food and Agriculture Organization, 2000, United Nations Development Programme *et al*., 2000 cited in Global Environment Outlook 3, undated). Forests play a number of ecological functions; providing wildlife habitat, fertilising and nurturing the soil, cleansing the air by absorbing carbon dioxide and releasing oxygen, and soaking up rainfall and releasing it slowly into the air and surface or sub-surface waters (World Commission on Forests and Sustainable Developments, 1999).

At the global level, protected forest areas are regarded as key biodiversity conservation areas (Food and Agriculture Organization, 2000, and United Nations Development Programme *et al*., 2000 cited in Global Environment Outlook 3, undated). Indigenous forests contain the highest species diversity and endemism of any ecosystem type (World Commission on Forests and Sustainable Developments 1999, and Convention on Biological Diversity, 2005). They contain at least two thirds of the earth's terrestrial species (World Commission on Forests and Sustainable Developments, 1999).

In the 1990s, it was estimated that the decline of forests and other natural habitat threatened 12.5% of the world's 270 000 species of plants, about 75% of the mammals, 44% of birds, 57% of amphibians, and 67% of the reptiles (Baillie *et al*., 1996 and Walter and Gillett, 1998). Wildlife hunting is a common tradition for local people. It is assumed that at Ntabamhlophe there has been a high frequency of wildlife hunting. Consequently, there is a strong belief amongst community members that there is less wildlife in the forest and surrounding area (iNkosi Ndaba, 2006 *pers. comm.*). Apparently, wildlife used

to roam in the area. Presently there is very little wildlife observation in the forest.

The loss of the earth's forests affects carbon dioxide, nitrogen and sulphur cycles. Forests store tons of carbon dioxide and release more oxygen than any ecosystem on earth (Krishna and Woodwell, 1993 and Woodwell, 2001). If forests are reduced in size, more carbon dioxide will be released on earth which will affect the atmosphere and contribute to elevated carbon dioxide levels. The release of more greenhouse gasses contributes to climatic disruptions. Drawing on Woodwell (2001), elevated greenhouse gas levels cause rapid decay of organic matter from the soil in the northern hemisphere and cause ice thaw, thereby contributing to climate change.

According to the Department of Environmental Affairs and Tourism (2009), climate change will have detrimental impacts on African country's economy. Agricultural production and food security will be severely compromised. Furthermore, climate change interacting with human drivers such as deforestation and forest fires is likely to be a serious threat to Africa's forest ecosystem.

Deforestation increases the threat of global warming by reducing carbon sinks. It accounts for 20-25% of total carbon emissions into the atmosphere, coming second to combustion of fossil fuels (World Commission on Forests and Sustainable Developments, 1999). Based on personal experience of working with local rural communities, it is likely that some of the community members at Ntabamhlophe are not aware that by cutting down trees they are adding to global warming and reducing their chance of long term survival (*Pers. observation* 2006).

A healthy forest helps to fight other environmental challenges such as soil erosion, river or water sedimentation and storm control by facilitating water percolation. In short, there is an intricate relationship between the state of a forest and the soil on which it exists and surrounding water courses – both surface and underground. Halting further impoverishment of the remaining

forests is an essential component of efforts to slow environmental impacts including climate change (Food and Agriculture Organization, 2000, and UNDP, United Nations Development Programme *et al*., 2000 cited in Global Environment Outlook 3, undated).

2.3.2 SOCIO-ECONOMIC VALUES OF INDIGENOUS FORESTS

Globally, indigenous forests are associated with a variety of socio-economic values. From a strict anthropocentric perspective, one way of expressing these values is the range of uses and benefits forests provide to neighbouring communities and those further afield (Walvekamp, 1999). These values are so broad that they encompass economic, cultural, intrinsic, aesthetic and spiritual values such: as locally consumed non-timber products, biodiversity prospecting, ecotourism, carbon sequestration, soil and water conservation, and option and existence values. Increasing recognition of the socio-economic importance of intact forest ecosystems may play a significant role in providing incentives for the conservation of forests. This has led to studies of the various benefits associated with forests.

The forests supply some traditional medicines, and hundreds of different types of foods such as; fruits, seeds and nuts, leaves, gums and saps, edible roots, tubers and bark, mushrooms and wild spinaches, and insects, including caterpillars and honeybees. Their contribution to peoples' dietary requirements of rural poor communities is invaluable as the gathering of wild foods is an important livelihood strategy for the nearly 60 million indigenous people living in forests (World Commission on Forests and Sustainable Developments, 1999).

Indigenous forests, depending on location and climatic factors among others, are associated with both big and small game - another way by which they contribute to the dietary and livelihood needs of many millions of people around the world. At least 80% of the diet of developed countries originates from tropical rainforests in the form of fruits and vegetables (Walvekamp,

1999). It is important for these resources to be used and managed in a sustainable manner.

In many developing countries fuelwood is the cheapest and most accessible form of forest use (Munslow *et al.,* 1988, Soussan *et al*., 1991, and Shackleton, 1993 cited in Badola, 1998). Fuelwood use in poor rural communities represents a high volume of forest products. Studies have revealed that fuelwood collection forms part of social and cultural life. This is particularly the case with women (Badola, 1978 cited in Badola, 1998). Fuelwood in the world accounts for a large percentage of domestic energy. Highest percentage of this is from rural poor community areas. Fuelwood accounts for 58% of all energy used in Africa, 15% in Latin America and 11% in Asia (World Commission on Forests and Sustainable Developments, 1999). Ntabamhlophe forest is the main and the only source of indigenous timber and fuelwood for the local community.

The forests are also sources of economically valued products and services. For example, they provide industrial wood, fibre, food and medicines. Also, forest existence and products are used by local communities as a source of income either through employment and recreation, ecotourism, or the protection of natural and cultural heritage (Food and Agriculture Organization, 2000, United Nations Development Programme *et al*., 2000 cited in Global Environment Outlook 3, undated). Some forest products such as honey, roots and timber are traded thereby providing an important source of income to the locals.

Locally, forests serve as a source of many livelihood-supporting products. Building materials such as timber are provided by forests. Thatch, forage, and mushrooms are also some of the many products supporting local livelihoods. Forests are also a base for some products used in many home-based industries, *e.g.* materials used in carving, basketry, pottery and other activities. Due to the lack of a commercial market for handcrafts, it is believed that the harvesting carving material is very infrequent. Sticks, knobkerries,

wooden spoons and handles for hoes and axes are produced from forest timber. Indigenous forest products provide economic security in the form of income (Mayers and Bass, 2004). Forests also provide an improved quality of life by means of recreation places and aesthetic values. The Ntabamhlophe area is named after Ntabamhlophe Mountain (White Mountain), due to its aesthetic appeal. Drawing on that, it would be interesting to discover whether the Ntabamhlophe community is proud to be associated with the name "Ntabamhlophe", or even consider it all.

Increasingly, the cultural significance of indigenous forests is being globally recognized (Badola, 1978 cited in Badola, 1998). Forests provide cultural benefits to the local communities in the form of traditional ceremonies and rituals. Historically and traditionally, most of the indigenous forests in the Drakensberg were used as burial sites for *amaKhosi* (Traditional Chiefs). Indigenous forests are still used as burial sites and for undertaking traditional rituals such as initiations. They are also used for religious reasons such as for worship sites (certain tree species, waterfalls and pools for baptism or spiritual cleansing), (Prins, 2006 *pers. comm.*).

Furthermore, traditional medicinal forest plants contribute significantly to the primary health care needs of many rural traditional communities. Most rural poor and traditional communities rely on forest medicinal plants for their primary health care options (Mander, 1998). Drawing from Walvekamp (1999), at least 121 prescription drugs which are currently sold are derived from plant sources. The White Mountain Bambanani Traditional Healers Association (affiliated to the uThukela District Traditional Council) is believed to be the largest forest resource user group (medicinal plant harvesters) at Ntabamhlophe (Luthuli, 2006 *pers. comm.*). It would thus be expected that they form an important component of the focus groups.

The World Commission on Forests and Sustainable Developments (WCFSD) aptly summarizes the obligations of the international community to forest conservation and protection (Table 1). The global significance of forests means that all countries with forests must recognize that they hold in trust

natural resources vital to people beyond their borders (World Commission on Forests and Sustainable Developments, 1999). Land degradation associated with destabilisation of forests and its pervasive impacts demands full commitment at different levels; local, regional, national and international. Otherwise, prospects for successfully tackling the problems of land degradation, which threatens both our environment and food security, become seriously diminished given the growing threats and pressures being experienced in many parts of the world.

Table 1: Summary recommendations of the World Commission of Forests and Sustainable Development (Krishnaswamy and Hanson, 1999)

1. Stop the destruction of the earth's forests: their material products and ecological services are severely threatened.
2. Use the world's rich forest resources to improve the life for poor people and for the benefit of forest dependent communities.
3. Put the public interest first and involve people in decisions about forest use.
4. Get the price of forests right, to reflect their full ecological and social values, and to stop harmful subsidies.
5. Apply sustainable forest management approaches so we may use forests without abusing them.
6. Develop new measures of forest capital so we know whether the situation is improving or worsening.
7. Plan for the use and protection of whole landscapes not the forest in isolation.
8. Make better use of knowledge about forests and greatly expand this information base.
9. Accelerate research and training so sustainable forest management can become a reality quickly.
10. Take bold political decisions and develop new civil society institutions to improve governance and accountability regarding forest use.

WCFSD 1999: 2

2.4 INDIGENOUS FORESTS IN CRISIS – A GLOBAL SYNOPSIS

There is no doubt as to the crisis the world faces in relation to forests (World Commission on Forests and Sustainable Developments, 1999). The latter part of the previous century saw an unprecedented rate of deforestation. Estimates at the turn of the century stood at 15 million hectares lost annually, mainly in the tropics (World Commission on Forests and Sustainable Developments, 1999). The structural integrity of the bulk of the remaining forests has also

been altered significantly. The World Commission on Forests and Sustainable Developments (WCFSD) notes the following facts:

- Virtual disappearance of forests in 25 countries; 18 having lost more than 95% of their forests and another 11 having lost more than 90%.
- The highest current estimate of the remaining forested areas is fast approaching the half way mark of the original forested areas (*i.e*. 3.6 billion hectares compared to the original 6 billion hectares).
- Changes of land use from forest to agriculture accounts for the annual loss of 14 million hectares in the tropics since the 1980s.
- Forest decline poses a serious threat to the world's animal and plant diversity.
- Poor forest management accounts for considerable financial losses every year. The WCFSD estimated an annual loss of US$ 45 billion in the tropics alone.

2.5 GROWING THREATS AND PRESSURES ON INDIGENOUS FORESTS

Given the variety of values discussed above, it is not entirely strange that forests and their linked biodiversity are currently being lost at unprecedented levels (Allen-Rowlandson, 1986 cited in Lawes *et al.,* 2004). At the centre of forest environmental degradation are the various pressures associated with human activities. Threats on the indigenous forests are varied. They include the growing human population and attendant demands on forest resources as well as space for habitation.

2.5.1 AGRICULTURAL PRACTICES

Indigenous forests have progressively come under intense pressure from competing land uses such as agriculture leading to deforestation (Walvekamp, 1999 and Houghton, 1990). Population growth may lead to agricultural expansion through the conversion of forest land into cultivated land.

Drawing on Walvekamp (1999) and Houghton (1990), considerable tracts of land have been cleared to pave the way for major ranching and other agricultural activities. Resultant impacts, such as the increased time it takes to fetch fuelwood, are a costly consequence for the forest-dependent communities. At the subsistence scale, farming practices have had their impacts on forests. A common problem relates to the practice of shifting cultivation. Shifting cultivation is responsible for considerable land fragmentation and degradation (Walvekamp, 1999 and Sharma, 1992).

The practice of shifting cultivation also leads to a decrease in the amount of forest because of encroachment, into land surrounding the forest which is progressively used for farming purposes. The soils in many tropical forests also have high aluminium levels which render them very acidic and toxic to crops after 1 or 2 seasons – this is the main reason for shifting "slash and burn" agriculture as seen in many South American and Central African countries (Freedman, 1995 and Miller and Tangley, 1991).

According to Robertson (2002) the cut timber initially provides considerable amounts of nutrients from the ash and subsequent food crops. People cultivate land and as soon as land becomes less productive, they move to new land. The situation of ever-increasing amounts of agricultural land is exacerbated by the declining fertility of over-cultivated soils. In some instances this has brought about by unsustainable farming techniques (Epulani, 1999 cited in Robertson 2002). Inside and on the edges of Ntabamhlophe forest, trees are cleared and burnt into ash. The cleared areas are then used to grow vegetables.

Preparation for cultivation through slash and burn also creates problems because sometimes the fire gets out of control and destroys fauna and flora (Walvekamp, 1999 and Houghton, 1990). This is exacerbated by the fact that most of these fires are set in the wrong season and are thus accompanied by adverse weather conditions including strong winds or lack of rain which, in some cases lead to uncontrolled fires.

The uncontrolled fires, especially if they are frequent, can be very damaging to a forest. Houghton (1990), reported that frequent fires kill tree seedlings and saplings, deplete soil nutrients, and fire releases gases into the atmosphere and reduces water infiltration. According to Houghton (1990), in the long term, fires can transform a forest into shrubs. Ntabamhlophe forest gets burned annually (*Pers. observation* 2006). Consequently, chances of the forest expanding are significantly minimised. The forest ecotone is destroyed by uncontrolled and inappropriate fires which kill seedlings.

2.5.2 EXTRACTIVE USE OF FORESTS

Growing trade in timber and non-wood forest products is another cause for concern. Trade in basketry, bee keeping, wood work, medicinal plants and other forms of trade which rely on either wood or non-wood products can pose serious threats if unregulated (World Commission on Forests and Sustainable Developments, 1999, Adams and Hulme, 2001 and Holmes, 2002).

Traditionally, for many conservation authorities, regulating extractive use is a challenge. According to Nomtshongwana (1999), forest patches are destroyed due to the inappropriate scale of destructive harvesting methods. Consequently indigenous species decline due to over-utilisation. Diederichs (2006) suggested that harvesting of bark in narrow vertical strips rather than horizontal strips around the stem is more likely to ensure that the tree will survive.

Drawing on Adams and Hulme (2001) and Holmes (2002), under inappropriate policy environments, local institutions and structures necessary to promote sustainable forest management are conspicuous by their absence. Furthermore, within the context of such policies, lack of trust between conservation authorities and local communities, due to previously strained relations in resource conservation, continues to hamper conservation efforts (Dale, 1995).

There is high demand for forest products both globally and locally. Particularly, commercial use of trees for construction, furniture, flooring, rural industries, medicines and crafts is a major challenge. These high demands contribute to increased pressures on indigenous forests (Food and Agriculture Organization, 2000, United Nations Development Programme *et al*., 2000 cited in Global Environment Outlook 3, undated). These pressures arise through the removal of certain tree species, reduction in biodiversity and the resultant effects on the quality of remaining areas (Nomtshongwana, 1999 and Potvin *et al.,* 2003).

Drawing on Shepherd (1992), for commercial purposes, selective cutting of timber and hard woods is often done using heavy duty equipment – arguably the most damaging method of commercial forest use. If not properly done, mechanised logging is often inefficient while the accompanying rolling of timber across fragile forest floors may lead to compaction of the soil in turn leading to poor drainage, increased runoff and erosion. Inside Ntabamhlophe forest, cutting of trees on a slope has resulted in soil erosion (*Pers. observation* 2006). Some trees are killed by fire and as they fall they create soil disturbance which results in further soil loss.

The commercial extraction of medicinal plants from forests is growing and increasingly becoming an important component of deforestation. It is believed that the medicinal plant trade is the single largest cause of indigenous forest degradation in South Africa (Davies, 2005 and McKean, 2005). Some areas, such as Ntabamhlophe, have reported exceedingly high levels of demand for medicinal plants (Mvelase, 2006 *pers. comm.*). Some medicinal plants have disappeared from certain areas of the forest as a result.

Davies (2005) further argues that according to DWAF there are no indigenous forests in South Africa that are not being utilised by gatherers except those inside the protected areas, which are used on a limited scale. Similarly, commercialisation of certain crafts like basket making has resulted in a decline in the numbers of certain types of trees (Lawes *et al.,* 2004).

According to Mander (1998), high levels of unemployment are also believed to be a contributing factor. It makes local people more dependent on natural resources. There is a strong belief from conservation authorities that this kind of situation is a reality for Ntabamhlophe forest (Bainbridge, 1988).

Robertson (2002) reported that fuelwood and charcoal demands in Malawi, Zambia and Zimbabwe are extremely high in both rural and urban areas. Urban fuelwood and charcoal demands have resulted in some areas, especially urban areas, being surrounded by cleared land due to high demand levels for charcoal and fuelwood as sources of energy to those urban areas (Robertson, 2002). As an area gets stripped of species regarded as suitable for charcoal and fuelwood production, remaining trees are felled as alternatives. Rural industries like burning bricks, smoking fish, beer brewing and curing tobacco, also use large amounts of fuelwood (Badola, 1978 cited in Badola, 1998). It is uncertain whether this kind of forest use has been observed at Ntabamhlophe. However, the potential pressure of such use cannot be overlooked.

The significance of indigenous forests both in terms of consumptive and non-consumptive uses poses potentials for conflict. For example, in normal cases, local communities tend to value certain species which they use for construction material, medicinal use, rituals, and celebrations, religious and spiritual ceremonies (Potvin *et al.,* 2003). Forest species which have less use to them are not valued to the same extent as ‘useful’ trees.

Consequently, the protection of such species of the forest ecosystem may be more desirable for local communities because forest degradation has an immediate and direct impact on their daily survival needs. And yet, other values on the forest may exist. For example, a conservation agency may attach more significance to the utilisation of a forest for non-consumptive uses such as promoting recreation opportunities and tourism through visitation to certain cultural or natural sites. Such seemingly divergent values need to be explicitly managed if the risk of conflict between local communities and authorities are to be minimized or, better still, completely averted.

2.5.3 LAND TENURE

The threats and pressures faced by forests are partly exacerbated at local levels where the existence of forests as “commons” exposes them to uncontrolled access and utilisation (Noss, 1997). Under such conditions of uncertainty about resource tenure and access, control is made difficult as there is no sense of ownership among community members of the forests by surrounding local villages. According to Walvekamp (1999), uncertain entitlement to benefits from government managed forests has been shown to be a major hindrance to resource conservation in general, and forests are not an exception. At Ntabamhlophe, it is believed that inadequate local control and participation in resource management and decision-making has led to uncertainty over resource sustainability.

Walvekamp (1999) advises that, internationally, natural resource ownership has always been related to rights. For those who have rights to practice traditional and religious ceremonies, it meant that they have ownership of the resources. By removing rights from people, they tend to view forests as a resource that they have lost. The right comes with responsibilities to conserve. The mistake some conservation authorities have made is that they have tried to devolve responsibility to conserve without any rights to use (McKean, 2005 *pers. comm.*) The lost resource is not looked after, and has no value to people.

Under unfavourable legislative and policy conditions and situations where policy implementation is weak, indigenous forests become exposed to serious competing land uses which may lead to large scale deforestation, fragmentation, uncontrolled forest fires and other negative effects (Bainbridge, 1988, Badola, 1998, Kyle, undated cited in Lawes *et al.,* 2004). Examples of pressures and threats linked to inappropriate policy include governance failure and subsidies which cause forest decline (World Commission on Forests and Sustainable Developments, 1999). Ethical questions such as corruption, timber smuggling and under valuation of timber or forest resources have also been expressed (World Commission on Forests and Sustainable

Developments, 1999). Ntabamhlophe is not an exception to current land tenure disputes. At a local level the lack, of clearly defined resource tenure and access rights could result in a major hindrance to real benefit sharing and effective forest resource management.

2.5.4 HUMAN CONFLICT

In Africa, armed conflicts such as those which occurred in Democratic Republic of Congo in 1996 – 1997 and the nearby great lakes region, have had considerable negative impacts on the environment (Shambaugh *et al.,* 2001). Armed conflict leads to mass human population movements which have been shown in some contexts to be harmful to indigenous forests as they are cleared for survival with little regard for environmental considerations (Babu and Hassan, 1995). In such situations, priorities and time horizons are altered so that short-term survival tends to dominate. In such circumstances, environmental issues which tend to be long-term issues are often neglected.

Warfare situations create pressures and place major demands upon people and their resources so that necessary maintenance tasks, including investment in environmental resources, are neglected, while heavy demands are placed on the environmental resources to which a community has access. Those in power resort to forests and other natural resources, which they turn into economic wealth in order to pay for weaponry.

Shambaugh *et al.* (2001) noted that armed conflicts are unpredictable and they can last for a considerable period. This could result in a lawless society and collapse of traditional rule and control over natural resources. In 1995, Ntabamhlophe forest management initiatives were stopped by the traditional regiments (Dale, 1995). Consequently Ntabamhlophe residents have not been able to resuscitate the project. Therefore, it is imperative to understand the community's historical background, and socio-political issues. In most cases, access to resources and values ascribed to them results in human conflict such as faction fights. Consequently, when tensions increase, more resources are destroyed.

Political “in-fighting” also destroys development opportunities (Thomson, 2006 *pers. comm.*). The Ntabamhlophe area is a case in point. While there was a development opportunity; the community rejected the proposal on the basis that it was initiated by Ezemvelo KZN Wildlife (former Natal Parks Board), and the Traditional Authority (Thomson, 2006 *pers. comm.* and Dale, 1995). The development proposal was incorrectly politicised by some members of the community, claiming that Ezemvelo KZN Wildlife wanted to take away their land.

2.6 IMPLICATIONS FOR POLICY AND MANAGEMENT

The above threats and pressures have considerable implications for policy and management. It is evident in many parts of the world that most, if not all of these pressures are human-related. Success in policy and management initiatives therefore needs to be contextualized in ways that forecast and respond to human pressures (Table 1). At the core, there is the need to understand that these pressures are largely a factor of some form of definition of use of forest resources–directly or indirectly. The socio-economic and environmental significance of forests cannot be over-emphasized (Table 1). However the environmental and economic consequences degradation - are not confined to the countries where it occurs (Krishnaswamy and Hanson, 1999). The effects of deforestation are not only localized, they have linked effects which have international dimensions, e.g. climate change and loss of biodiversity. This suggests that the plight of forests is indeed an international subject.

At Ntabamhlophe there is no accountable authority. Therefore, the assumption is that the forest is threatened by the unsustainable use of its material products by the local community. In 1995, plans for the use and protection of the whole landscape were rejected by the local community (Dale, 1995). Unfortunately, in this area the forest conservation programme was incorrectly politicised by some of the community members. However, in South Africa, the National Forests Act (Act 84 of 1998) provides for the conservation and management of forests. Section 7 refers to the removal of any forest

products, including the removal of branches of a tree. Effectively, a permit is required for any removal of trees or branches in a natural forest.

2.7 SOUTH AFRICA: THREATS TO INDIGENOUS FORESTS

Threats facing indigenous forests in South Africa include uncontrolled fires, invasive alien plants, uncontrolled gathering of plants and animals, disruption of nests and nesting sites, forest gaps and desiccation, forest fragmentation, and illegal cattle grazing in the forest. It is not clear what management strategy should be applied to ensure the continued survival of the forest patches and sustainable forest utilisation through appropriate management. It has been noted in many studies that an area of high biological diversity is a result of complex ecological processes (Sharma, 1992). Loss of indigenous forest results in loss of biodiversity. Many species evolve over long periods of time, thus, if lost, they will never be regained. If Ntabamhlophe forest becomes degraded beyond recovery, some species of plants and animals will disappear.

2.7.1 HUMAN INDUCED ACCELERATED SOIL LOSS

Indigenous forests are known to increase effective water retention and distribution (http//www.eastmauiwatershed.org/watersheds/howwork.htm). A strategy is required to ensure a continued yield of high quality water, because indigenous forest disturbance affects water quantity and quality. Inside Ntabamhlophe forest, there is evidence of accelerated soil loss due to incorrect burning and resource harvesting practices. Soil loss through the removal of trees on steep slopes reduces water production quality and quantity. At Ntabamhlophe forest, the disturbance is evident in the forest margin and on the slopes inside the forest.

2.7.2 FIRE PATTERN AND FREQUENCY

The Drakensberg Montane forests are associated with grasslands. Consequently, there is great need for the maintenance of a fire pattern, fire frequency and intensity. These factors have great influence on forest survival (Maggs, 1977 cited in Lawes *et al.,* 2004). Indigenous forest patches are

being eroded by high fire frequencies. Consequently the forest margin is susceptible to soil erosion due to fires which destroy forest ecotones (Bock and Bock, 1984). The practice of burning the grassland surrounding the forest, without due precaution for the protection of the forest margin, is believed to have detrimental effects on the forest system (Rycroft, 1944; Moll, 1972; Maggs, 1977; Granger, 1984; Everard, 1986; Everard 1992 cited in Eeley *et al*., 1994). When it comes to fire pattern and frequency, Ntabamhlophe forest and the surroundings have suffered severe annual, constant and continuous uncontrolled fires. This happens frequently. This is happening despite the firebreaks which are prepared by some of the community members to prevent the grazing areas from burning (*Pers. observation* 2006).

2.7.3 INVASIVE ALIEN PLANTS

Invasive alien plants are a major threat to indigenous forest. Forman (1995) cited in Lawes *et al.* (2004), indicated that forest disturbance makes patches more prone to alien plant invasion. This causes indigenous species decline and transforms the landscape (Coleman, 1999; Moosa, 2000 and Zimmermann *et al.,* 2004). Consequently, an invasive alien species control management plan would be required in order to prevent and control the spread of invasive alien species. The Ntabamhlophe forest margin is infested by wattle (*Acacia spp*.) and Bugweed (*Solanum mauritianum*), which are alien to KwaZulu-Natal.

However, Shackleton *et al.* (2006), reports that in South Africa invasive alien plant represents a source of livelihoods. Several households traded in invasive alien plant products to generate supplementary income. Furthermore, some tree species such as wattle (*Acacia meansii*) are useful for construction and fuelwood. Therefore wattle is an important resource for village household, virtually all households used it as their primary source of heat as well as for building (Shackleton *et al.,* 2006).

2.7.4 FUELWOOD AND CONSTRUCTION MATERIAL HARVESTING

Management of resource use in Ntabamhlophe forest is a serious threat. It is believed that building materials and fuelwood are fundamental to

impoverished peoples' survival; it becomes extremely difficult for local people to survive without these resources (Todd *et al., 2*004). Drawing on Badola (1998), the inability of local poor people to afford other forms of fuel is part of the problem which poses a serious threat to survival of these forest patches.

The use of forest resources by poor rural communities is inevitable as they cannot afford available alternatives (Mander, 1998). Even if people could afford alternatives, they are still probably likely to harvest local resources, as it is cheaper for them to do so (McKean, 2008 *pers. comm.*) Based on a superficial visual assessment, it has become apparent that Ntabamhlophe community have made a noticeable impact on the forest structure (*Pers. observation* 2006). It appears that the forest is used for harvesting indigenous timber and fuelwood. Generally, live trees are harvested for construction whilst dead wood is preferred for fuelwood. The impacts of harvesting live or dead wood has a different impact on forests.

Williams and Shackleton (2002), reports that harvesting fuelwood presents both opportunities and risks. They further argue that fuelwood is a valuable renewable resource. Therefore, if managed wisely and harvested within sustainable limits it can continue to meet the energy needs of the rural poor people. In terms of nutrient cycling, the removal of dead wood by hand will probably have minimal impact (Williams and Shackleton, 2002). With regards to live wood, the primary mechanism for recycling of above ground nutrients is via leaf and twig litter during annual litterfall, not dead wood. Therefore the impact of harvesting live wood would be more significant than harvesting dead wood. However, it should be noted that dead wood and fallen trees are vital habitat for a diverse range of fauna including the threatened species such as Cape Parrot. Therefore, harvesting of live or dead wood does not have to cause environment**al** damage.

2.8 SOUTH AFRICA: PROTECTED INDIGENOUS FORESTS

In South Africa in the 1950s, several forested areas were set aside as "forest reserves" (Kyle, undated). In the 1980s, a few of them were proclaimed as

protected indigenous state forests. Except for fencing and law enforcement through forest guards, little was done to manage or protect them (Kyle, undated cited in Lawes *et al.,* 2004). The management approach and systems used in the past did not recognize the needs and benefits for local communities.

South Africa, like many countries of the world, has its own experience where different land use systems and land rights were disputed by local communities adjacent to protected forests (Dale, 1995). Ntabamhlophe state-protected indigenous forest is located on communal land, thus is subjected to different land use. Most land uses/practices are incompatible with biodiversity conservation. There has been no positive or effective management system applied to ensure that the forest is protected at Ntabamhlophe since 1995. However, a few conservation strategies are in place to ensure continual survival of certain priority bird species, such as vultures (Rushworth, 2008).

Most traditional African societies were dependent upon direct access to natural resources for survival (Centre for Environment, Agriculture and Development, 1999). It is further believed that their political systems included a set of rules and institutions which protected and regulated the use of natural resources. However, these systems were changed by colonisation, and pressures from the apartheid resettlement programmes.

Drawing on Phadima (2005), it is widely accepted that traditional modes of governance have a role to play in guiding local resource use. In most areas surrounding forest resources, Traditional Authorities are the important governing leaders. In South Africa, traditional institutions played a major role in management of Thathe forest in Limpopo, and Ongoye and Nkandla forest in KwaZulu-Natal (Sikhitha, 1999; Centre for Environment, Agriculture and Development, 1999 and Hendry, 1998 cited in Phadima, 2005). In the past at Ntabamhlophe, the local *iNkosi* was responsible for selecting forest guards to be employed by the government to undertake law enforcement patrols in the

forest (iNkosi Ndaba, 2006 *pers. comm.*). *iNkosi* refers to chief or ruler (Soanes, 2002).

Although this system (Traditional Authority formerly "Tribal Authority") is viewed by the community as a colonial construct, it has served the purpose of conservation (Nomtshongwana, 1999 and Phadima, 2005). In South Africa prior to 1994, some traditional leaders were perceived as puppets of the apartheid state (Grundy *et al.,* 2002 cited in Phadima, 2005). Phadima (2005) indicated that in South Africa, events post-1994 have created tensions between democratically elected and hereditary governance institutions.

Furthermore, Wynberg (2002) reported that biodiversity conservation is still somehow embedded in South Africa's turbulent past of colonialism and apartheid. Historically, this was followed by a protectionist approach, regarding people as separate from nature. Due to that, some Traditional Authorities are inclined to disregard democratic policies. This is particularly the case, if conservation policies conflict with established tradition. This is more evident if Traditional Authorities are not recognised as a legitimate authority in the area (Virtanen, 2000 cited in Phadima, 2005). However, at Ntabamhlophe, when *iNkosi* and some community members proposed an effective management system for the forest and mountain, they were accused and labelled as traitors (Dale, 1995).

Drawing on Phadima (2005), Adams and Hulme (2001), part of conservation efforts' failures have been due to the different natural resource use management systems which were not effective because they were developed without users' input. An example is application of permits. Some of these initiatives were not appropriately enforced due to lack of funding. At Ntabamhlophe, dedicated law enforcement operations came to a halt in 1986 (iNkosi Ndaba, 2006 *pers. comm.)*.

Such a change over of systems as applied in rural community forests without users' input (Phadima, 2005). Consequently, they had limited success to ensure sustainable resource harvesting, monitoring and sustainable

development in rural areas. The current hostile and suspicious relationship is a clear indication of the past interactions between government officials and local communities. Phadima (2005) argued that at Ongoye forest later government systems failed but traditional institutions carried on safeguarding natural resources. The constraints on government departments have always been the lack of resources and capacity to manage natural resources at a local level (Davies, 2005).

Internationally, there have been different forest management systems. Amongst others, Integrated Conservation and Development Projects (ICDPs), Community Conservation Programmes, Collaborative or Joint Management Ventures and Community-Based Natural Resource Management (CBNRM) were used to promote appropriate natural resource management on communal land (Adams and Hulme, 2001).

These systems have been seen as conservation democracy strategies or bottom up approaches to the conservation of natural resources. The current system that is being tried in South Africa is that of Participatory Forest Management (PFM) where local people are being given an opportunity to participate in and guide the process of PFM (Phadima, 2005). PFM can be defined as a form of forest management where all groups with legitimate interests (stakeholders and role-players) form a Joint Forest Management agreement (Hobley, 1996 cited in Lawes *et al.,* 2004 and Robertson, 2002). Currently, community representation in and benefit from this system is skewed, and biased towards government institutions. Communities lack the skills and capacity to participate (Phadima, 2005). Rural local poor communities require capacitation.

2.9 KWAZULU-NATAL: INDIGENOUS FORESTS

In KwaZulu-Natal the forest biome consists mainly of three forest types; Indian Ocean coastal belt, Scarp and Afromontane forests (McKean, 2005). The study area focus is on Drakensberg Montane forest which falls under Northern Afrotemperate forest type. According to Low and Rebelo (1996), KwaZulu-

Natal contains approximately one-sixth (1 185km^2) of the indigenous forest biome in South Africa. Table 2 depicts South Africa's national forest type classification. Ntabamhlophe indigenous forest is classified as Drakensberg Montane forest.

Table 2: National Forest Type Classification: Floristic (adapted from Geldenhuys undated)

I. Southern Afrotemperate - Western Cape Talus (intrazonal) - Western Cape - Southern Cape	**II. Northern Afrotemperate** - Marekele Afromontane - **Drakensberg Montane** - Northern KZN Mistbelt	**III. Northern Mistbelt** - Northern Mistbelt - Mpumalanga Mistbelt
IV. Southern Mistbelt - Eastern Mistbelt - Transkei Mistbelt - Amatole Mistbelt	**V. Scarp** - Eastern Scarp - Pondoland Scarp - Transkei Coastal Platform	**VII. Azonal Forest Types** - Licuti Sand - Northern Highveld Kloof - Lowveld Riverine - Swamp - Mangrove
VI. Northern Coastal - KwaZulu-Natal Coastal - KwaZulu-Natal Dune	**VII. Southern Coastal** - Eastern Cape Dune - Albany Coastal - Western Cape Milkwood (intrazonal)	

The Drakensberg Montane forest patches occur at higher altitudes. Due to their remoteness and inaccessibility, many of the natural forests in the Drakensberg have not been exploited to the same extent as those elsewhere in KwaZulu-Natal (Forest Biodiversity Research Unit, 2005). In 1927, three areas were demarcated as State Forests (Natal Parks Board, 1997). These were Cathedral Peak (including the Cathkin Forest Reserve), Monk's Cowl and Cobham State Forests (Natal Parks Board, 1997).

The Ntabamhlophe forest was proclaimed as part of Monk's Cowl State Forest. This was to ensure that the high rugged terrain along the face of the escarpment (mostly above 1800m) remained as Crown Land (unallocated) but was hired for grazing. Due to the importance of water production, in 1934 a

parliamentary resolution called for the protection of mountain catchments in South Africa for the conservation of water supplies. Consequently the Drakensberg Mountains were conserved and protected from further agricultural land use (Ezemvelo KZN Wildlife, 2006).

2.9.1 MANAGEMENT STATUS OF INDIGENOUS FORESTS IN KWAZULU-NATAL

KwaZulu-Natal is characterised by a high human population and high use of agro-commercial operations which impact heavily on natural resources (Forest Biodiversity Research Unit, 2005). A number of forests within KwaZulu-Natal were considered to be conserved and yet have not been managed as such. According to Jewitt (2008), approximately 76% (3240ha) of the Drakensberg Montane forest is formally protected. The conservation target is 64% (2742ha), thus the conservation target has been achieved. In the past, the need to conserve the indigenous forest was stressed, but there were no proper or clear indications of how this should be achieved (Taylor, 1961). Currently, different management systems have been approved by government but they are not fully operational. This is largely due to a lack of capacity and resources (Davies, 2005). According to Davies (2005) and Taylor (1961), the historical challenges still prevail.

According to Phadima (2005), the current Government and Traditional Authority roles and responsibilities with regard to forest management are not clear, particularly those in communal land. In Ongoye Forest, the issue of ownership is still controversial. Community members believed that the forest belongs to the *iNkosi* whereas Ezemvelo KZN Wildlife is directly managing the forest. This has resulted in a high potential for conflict over forest management and resource use (Phadima, 2005). Like many other forest patches in South Africa, Ntabamhlophe is no exception to current land tenure, exploitation, isolation and fragmentation which influences its continued survival. The conservation authorities believe that neighbouring communities' activities are negatively affecting natural forest due to the extraction of their daily needs from the forest.

According to Geldenhuys (1991), forests on private land are fairly well protected, particularly those in a conservancy and natural heritage system. The application of a permit system in KwaZulu-Natal is thought to have contributed to the conservation of forests (Geldenhuys, 1991). In certain ethnic groups, the efforts and attitudes towards forest conservation have been encouraged through the formation of conservancies.

Conservancies have contributed significantly to the survival of forests in South Africa, particularly those on private land. However, there has been no conservation initiative like conservancies on communally owned land. The only exception is the recent establishment of Community Conservation Areas and the KZN Biodiversity Stewardship Programme. In KwaZulu-Natal, these two programmes are driven by Ezemvelo KZN Wildlife. Due to the fact that they are fairly new, their effectiveness has not yet been fully assessed.

2.10 FOCUS GROUP RESEARCH METHOD

Drawing on Fabricius *et al.* (2004), communities can be identified in several ways. They can be identified through the types of organisations representing them, through ethnic group or clan affiliations, geography, common interest, utilising the same resource; or practicing the same type of land use. Community fluidity applies in physical boundaries, aspirations and interests, thus communities could earn their livelihoods in different ways within the same village (Nabasa*,* 1995 and Welman *et al*., 2005). As seen from the above, dealing with communities is a complex task that requires simple and effective methods.

Individuals from the community may be less willing to reveal sensitive information. However, when using the focus group method, the spirit of discussion assists in revealing more information than might be obtained through formal interviews or other more formal methods (Greenbaum, 1998). Inevitably, like any other research method, focus group research has its limitations such as individual dominance, group size limitation and lack of guarantee on confidential matters (Table 3). Inevitably, people have a tendency to lie about their situation and relationships (Neuman, 2000). As a

result the presence of a moderator is important to ensure that the group remains focussed. To avoid false information, a number of different focus groups from the same community could be useful to verify information.

A fair representation is also important. As a result voluntary participation is encouraged. However, this may distort representation. Nevertheless, compulsion could also undermine the quality of responses. The advantages of using the focus group technique is the fact that the researcher (moderator) assists in keeping the group focussed, recording group conversations and observing non-verbal communication and expressions. The use of focus groups is believed to be a feasible method to use in order to gain insight into resource users' use and perceptions. Focus groups allows for transparency and consensus on issues pertaining to resource use (Table 3). The advantages and disadvantages of the focus group method are reflected in Table 3.

Table 3: Focus Group Research: advantages and disadvantages (adapted from: Greenbaum, 1998)

Advantages	Disadvantages
Consensus • Interactive approach • Collaborative mental framework • Discussants build up to reach consensus	**Individual dominant** • Difficulty in separating individual viewpoints from the collective group viewpoint • Individual may be less willing to reveal sensitive information • People tend to express views which enhance their own image • People may give acceptable or politically correct responses in front of peers
Moderator • Play a facilitator role • Ask prompting questions to elicit expansion • Ensure to keep group focused on the topic • Take notes or record group conversation • Observe non-verbal communications, expression of emotion and energy levels	**Moderator** • Might not be sensitive to issues or leave out crucial points of discussion
Group Size • Manageable size 6-10 members • Consistent group - follow up groups	**Group Size** • Limited number of members not more or less than 6-10 members • Obtaining representative sample within small focus group • Varying interest and concentration (effective group meeting is one to two hours)
Transparency • Discussion are transparent • Information is shared between members	**Confidentiality** • No guaranteed confidentiality

Focus group research results depend on the relevance of the method and researcher interaction with the community (Nabasa, 1995 and Welman *et al*., 2005). If it is applied technically correctly, this method is practically efficient and ethically sound to obtain the required results.

Drawing on Gillham (2000 b) cited in Robertson (2002); if two literature sources and one interview subject all express the same opinion, then the researcher could give credibility to the views expressed. With focus groups, credibility could be enhanced by comparing views or responses from other focus groups. Consequently, the data are considered to convergent if groups give the same or similar answers. However if they do not, it could be concluded that their views diverge.

Nevertheless, responses from the focus groups assist in building up a pool of different stakeholders' views. Furthermore, if dominant views and attitudes of stakeholder groups emerge. These views and attitudes can be merged and prioritised. As observed by Greenbaum (1998), people may give acceptable or politically correct responses in front of peers. However, this could be addressed by using wise counsel, and other focus groups, to validate information.

Focus group research assists researchers to immerse themselves in local life in order to understand the perspectives of the local people (Ottke *et al*., 2000). Through discussions, the focus group provides environmental testimonies of local residents about environmentally damaging activities (Greenbaum, 1998). Furthermore, the recorded information could be presented without alterations.

2.11 SUMMARY

Indigenous forests play an important role in ecosystem processes. They are also associated with a range of products and processes that support the livelihood of millions of people around the world. In many parts of the world, indigenous forests face growing threats and pressures. Implications of the transformation and loss of indigenous forests straddle ecological, economic, political, biodiversity and many other imperatives. Consequently, the future of

the remaining indigenous forests partly depends on the values ascribed to them by local communities. Continuation of these activities unabated could be a serious threat to the forest if continued at what is believed to be the current, un-sustainable, rates. The main challenge is the fact that most traditional and legislated laws and policies demonstrate an inherent respect of sustainable use for forest products is not properly enforced.

CHAPTER 3
THE DESCRIPTION OF THE FOREST

3.1 CHAPTER OVERVIEW: DESCRIPTION OF THE NTABAMHLOPHE INDIGENOUS STATE PROTECTED FOREST

This chapter deals with the description of the forest, the location of the Ntababamhlophe forest and its biophysical characteristics. The forest possesses vegetation links to the flora occurring along the south-eastern African chain of mountains stretching from the Cape in the south to tropical Africa. Historically, the forest was managed by the Department of Water Affairs and Forestry, later its management was delegated to Ezemvelo KZN Wildlife. In 1995, the Mhlungwini Traditional Authority and the Ntabamhlophe community approached Ezemvelo KZN Wildlife, (former Natal Parks Board) to assist them in developing an appropriate management strategy for the whole of Ntabamhlophe Mountain.

3.2 LOCATION

To understand the values, perceptions, forest products and resource use, one has to understand how the community is structured and located in relation to the forest. The Ntabamhlophe indigenous state forest is located in the KwaZulu-Natal, in the Imbabazane Local Municipality of the Republic of South Africa, and it is part of the Drakensberg Mountain range which is an inland mountain range in south-eastern Africa (29˚ 07’ 808” S, 29˚ 39’ 55” E). The forest falls within the Mhlungwini Traditional Authority, which comprises seven traditional wards headed by *Izinduna* (headmen). The Mhlungwini Traditional Council is led by *iNkosi Ndaba*, the only female *iNkosi* in the Estcourt area.

The extent of her area of jurisdiction is 77 9745 km^2. The population within her traditional area is approximately 36 959, of whom 17% (6 108) are classified as employed or working, 37% (13 716) are unemployed, 46% (17 135) are classified as not economically active. The Ntabamhlophe area has a total labour force of 19 824, which is 54% of the population. Thirty one percent (6 108) are employed whereas 69% (13 716) are unemployed. Ntabamhlophe

has about 5 704 households with a population density of 1 126 (number of people per hectare) (Municipal Demarcation Board, 2006).

Some of the traditional wards have sub-wards. KwaNdaba has Mtabhane, Emagebulini and eThwathwa. Ezinyosini has uMvundlwini. KwaBhekabezayo has Inkunzi, 17, De Klerk, Shayamoya, Shiyabazali, Mbangweni and eQhudeni. eDashi has Ngcinusizi, Ezimfeneni and Emaxoxweni. KwaSobabili has Phesheya kwamaThamo, Kwa-nkukh'emnyama. eManjokweni has no sub-ward. Goodhome has one sub-ward eMatshotshombeni. Figure 2 depicts four politically demarcated wards (wards 2, 3, 4 and 5) within the Imbabazane Local Municipality. Traditional wards are within politically demarcated boundaries. Furthermore, it is imperative to note that, when dealing with traditional matters, the *iNkosi* does not necessarily follow political demarcation (political wards), but rather use the traditional wards (Figure 2).

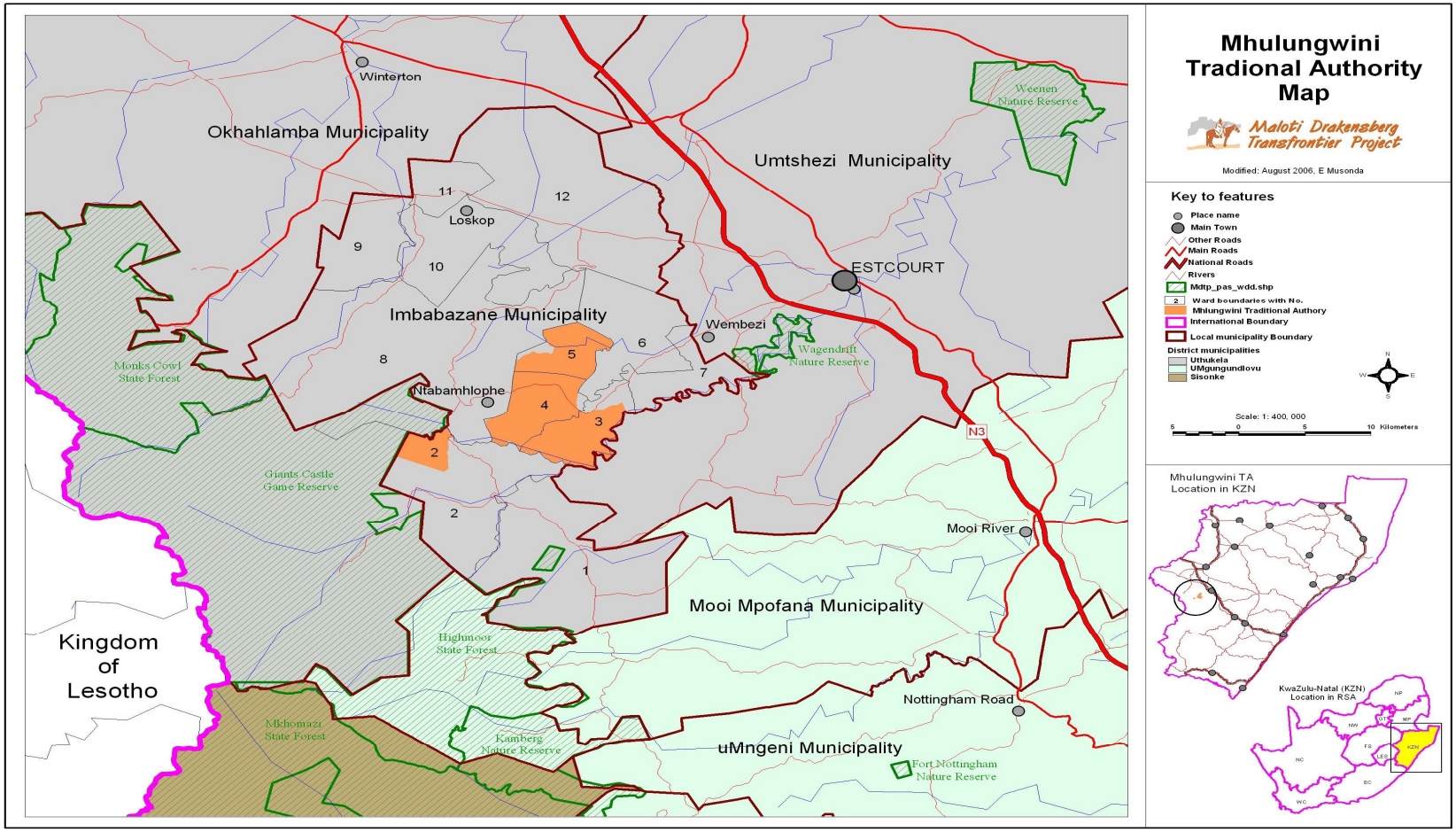

Figure 2: Map of Imbabazane Local Municipality showing Mhlungwini Traditional Authority (Adapted from: Maloti Drakensberg Transfrontier and Development Project, 2006).

3.3 NTABAMLHOPHE FOREST: BIOPHYSICAL CHARACTERISTICS

The Ntabamhlophe forest is an indigenous Drakensberg Montane forest patch of approximately 50ha (Slingsby, 1979 cited in Ezemvelo KZN Wildlife, 2001). Drakensberg Montane forests cover approximately 4,863ha in total and occur along the Drakensberg mountain range at approximately 1500-1800m altitude. These forests are highly fragmented with a high number of them less than 2ha in patch size, whilst the largest patch is 150ha (Forest Biodiversity Research Unit, 2005).

These forests are small, fragmented and isolated. They occur on south and south east-facing slopes. The south facing slopes have more fertile and deep soils and are cooler than north facing slopes. Consequently, they are naturally sheltered and protected from fire (Forest Biodiversity Research Unit, 2005 and Ezemvelo KZN Wildlife, 2006). These forest types are very susceptible to highly intense and frequent fire. They are located in the grassland biome, but also support a range of woody vegetation, from scrub to fynbos.

The Drakensberg region has a summer rainfall climate dominated by the influence of subtropical anticyclones. The mean annual temperature of the Drakensberg area is about 16^0 C. Variations are considerable, both seasonally and between day and night (Ezemvelo KZN Wildlife, 2006). The highest temperatures, which could rise up to about 35^0 C, occur during summer on the north facing slopes at lower altitudes. The lowest temperatures drop to -20^0 C during winter nights on the summit plateau. In winter, the Ntabamhlophe is covered by a white sheet of frost, whereas in summer the mountain is covered by a haze of mist and clouds.

The Drakensberg region is one of the best watered, least drought-prone areas of southern Africa. Annual precipitation totals vary from 1000 mm in the foothills to 1800 mm at the escarpment (Ezemvelo KZN Wildlife, 2006). In the Drakensberg region snow falls with an average frequency of eight days per year. For the community of Ntabamhlophe, Ntabamhlophe Mountain is unique because it is the closest mountain to the community which gets snowfalls. It has unique scenery and aesthetic appeal (iNkosi Ndaba, 2006 *pers. comm.*).

The High Berg consists of the summit plateau adjacent to the escarpment edge, peaks and rock faces. The Little Berg is a grass covered plateau below the slopes of the High Berg, with spurs and ridges which end in prominent sandstone cliffs. Little Berg refers to a series of grassy, rolling hills interspersed with deep, steep-sided valleys and gorges, the summit of the Little Berg averages 2500 m above sea level. They range in height from 1520 to 2009 m in the Ntabamhlophe. The Ntabamhlophe community used to congregate on top of Ntabamhlophe Mountain to pray for rain. For the community, the mountain is "high and mighty" (iNkosi Ndaba, 2006 *pers. comm.*).

Ntabamhlophe indigenous state forest is located in the Great Karoo Basin, a large shallow basin that formed the locus for the deposition of continental shelf sediments formed over 200 million years ago (Grab, 2003 cited in Ezemvelo KZN Wildlife, 2006). The geomorphology of the Drakensberg is varied owing to the considerable geological and climatological differences between the lower altitude sandstone regions and higher altitude basalt outcrops. The steep slopes and deep valleys of the Great Escarpment, combined with a high annual precipitation, produces a diverse landscape.

Forest conservation is important to help maintain high water quality, provide socio-economic benefits and protect the extensive wetland networks of various types within the area. River systems comprise natural drainage networks and are regarded as dynamic ecosystems (Ezemvelo KZN Wildlife, 2006). This is characterized by high altitude tarns, marshes and streams, and emergent vegetation. Most wetlands and drainage systems occur near the forest. Local river tributaries flow from the drainage systems to join the *uMtshezi* (Bushman's River). The isiZulu name for Estcourt town is "*uMtshezi*" and it named after the Bushman's River.

Ntabamhlophe indigenous state forest, as part of the Drakensberg, is a key "hotspot" of plant diversity in southern Africa. The forest possesses vegetation links to the flora occurring along the south-eastern African chain of mountains stretching from the Cape in the south to tropical Africa (White, 1993, Hillard

and Burt 1987, Cowling and Hilton-Taylor, 1994 cited in Ezemvelo KZN Wildlife, 2006). Scrub type vegetation occurs in the same landscape as forest. The *Buddleja salvifolia* (Sagewood) and *Leucosidea sericea* (Old wood) species form part of the scrub. Ntabamhlophe forest has fynbos and heathland communities characterized by *Erica spp*.

The invertebrate fauna of the Ntabamhlophe forest is poorly known, but it has a potential to contribute to the biodiversity of the Drakensberg region. Several taxa, namely the earthworms, millipedes, centipedes, lacewings, crane flies, dragonflies, butterflies, cetonid beetles, hanging flies and robber flies have been found and intensively studied in the uKhahlamba Drakensberg Park World Heritage Site (UDP WHS) (Ezemvelo KZN Wildlife, 2006). For this reason, and because of similar conditions, it is believed that the forest might also be home to a number of these species.

A large number of bird species have also been recorded in the UDP WHS. This includes Palaearctic (Europe and Asia) migrants to the area and intra-African summer migrants, which breed in the UDP WHS and as well as local altitudinal migrants. There are a number of southern and South African endemics and Threatened or Near-threatened species in the Drakensberg region (Barnes, 2000 cited in Ezemvelo KZN Wildlife, 2006). Ntabamhlophe mountain is home to a nesting colony of the threatened Cape Vulture.

Due to the proximity of the Ntabamhlophe indigenous state forest to the UDP WHS there are strong probabilities that species which are found in the park can be found at Ntabamhlophe indigenous state forest, provided there are fewer disturbances than what is perceived. Consequently, it is assumed that there are values ascribed to the forest by Ntabamhlophe community due to the probability of presence of these threatened species. Thus the local communities might be suspicious about the management, if such species are under threat.

3.4 HISTORY OF NTABAMHLOPHE FOREST CONSERVATION MANAGEMENT

Ntabamhlophe indigenous state forest was formerly called Monk's Cowl State Forest, situated in the central section of UDP WHS, KwaZulu-Natal, South Africa (Slingsby, 1979 cited in Ezemvelo KZN Wildlife, 2001). This forest was supposed to be formally managed by Monk's Cowl Nature Reserve (Monk's Cowl State Forest). However, due to its proximity to Giant's Castle Game Reserve, it was decided that Hillside Nature Reserve, which is a management unit of the UDP WHS, would be the more appropriate unit to manage the forest (Figure 1).

In 1980s, Ezemvelo KZN Wildlife was given Ntabamhlophe forest by the Department of Water Affairs and Forestry without any additional resources to support or manage, consequently Ezemvelo KZN Wildlife viewed the management of the forest as unfunded, and an added-on responsibility (Nyambe and McKean, 2005 *pers. comm*.). Later in 1995, due to financial constraints, Hillside Nature Reserve ceased managing the forest. Despite the forest's biodiversity importance, the Ntabamhlophe forest has not been given due conservation consideration like other biomes such as fynbos or areas where big game occurs. It is imperative to understand that for Ntabamhlophe community to ascribe values to the forest, it might not be about the presence of big game.

The main concern of conservation authorities is the fact that in South Africa the management systems of indigenous forests on communal land are not clearly understood (Taylor 1961). The sustained mistrust between conservation authorities and local communities creates unnecessary tensions which make collaboration in terms of conservation difficult (Badola, 1998 and Obua *et al.,* 1998). Due to past inequalities and disregard of the community by government officials, the community at Ntabamhlophe does not trust government officials. Drawing on Dale's report (1995), sometimes the community is even suspicious of well-intended government initiatives. Thus all government initiatives should be transparent and that those involved treat the community with respect.

Ntabamhlophe indigenous state forest is one of the forests which are a national asset but it has not been formally managed according to government forest management systems. Approximately thirteen years ago in 1995, Mhlungwini Traditional Authority and the Ntabamhlophe community approached Ezemvelo KZN Wildlife, (former Natal Parks Board) to assist them in developing an appropriate management strategy for the whole of Ntabamhlophe Mountain, incorporating the Ntabamhlophe indigenous state forest. According to Dale (1995), the committee was presented with the following five options:

i) To leave the use of the mountain as it is at present. This means to allow uncontrolled grazing (which includes other communities from other traditional authorities), hunting, fuelwood and medicinal plant gathering, with the Natal Parks Board continuing to manage its section (Ntabamhlophe forest).

ii) Divide the area into grazing camps and allowing grazing on all accessible grassland. Grazing was to be controlled and rotated.

iii) Declare the mountain a Nature Reserve, where it was going to be fenced and guarded by the community, and people only allowed to enter under controlled circumstances. It was envisaged that the mountain could be used by hikers and horse riding parties from the White Mountain Resort.

iv) Declare the mountain a Community Resource Area, where following research, the resources on the mountain could be managed and used by the community on a sustainable basis.

v) Include the mountain with the Mhlugwini Traditional Authority Area. The proposal was to create a Biosphere Reserve, where the whole area would be zoned into different land use areas. Farming methods and resource utilisation would be encouraged in an environmentally friendly manner.

The committee appeared to agree with the idea of a Biosphere Reserve and requested that the options be written in isiZulu so that they could be correctly conveyed to the greater Ntabamhlophe community.

In 1995, proceedings at the meeting were interrupted by a group of approximately 200 men who demanded to know why their mountain was being sold to Natal Parks Board (Dale, 1995). For a number of years, there had been a dispute between the community and Ezemvelo KZN Wildlife regarding the management of the forest and land ownership (Bainbridge, 1988 and Dale, 1995). A small number of community members were against the Traditional Authority and the community regarding the conservation of the forest and the mountain. They were concerned that the Natal Parks Board would take over the management of the mountain and the forest. The majority of community members' favoured the option of managing the mountain and forest for different land uses such as rotational livestock grazing and tourism. From 1995, there has been no positive progress. To date it is believed that hostile relationships and mistrust prevails.

CHAPTER 4
RESEARCH DESIGN AND METHODS

4.1 INTRODUCTION

The methods used to obtain information regarding both perceptions and use of the Ntabamhlophe forest were varied. A multi-pronged approach to data gathering was thought to be the most appropriate for this study. The Focus Group Research method was used to gather information on different forest users, resource uses, values and perceptions towards the conservation of the forest. Using a focus group is a preferred method to learn directly from the community (Welman *et al*., 2005). Focus group members were identified through relevant community working structures, as discussed in Chapter 4, section 4.2.4. The wise counsel approach was also used to cross-reference information gathered from the focus groups. Wise counsel refers to individuals who were currently and previously use the forest and had knowledge, experience and interest in the subject matter. Five (5) members formed the wise counsel; these members have experience and expertise in biodiversity conservation, tourism development and local economy development.

4.2 METHODS OF OBSERVATION AND DATA COLLECTION

4.2.1 METHODS

A qualitative survey method was used and conducted by using focus group techniques. A focus group is participatory research technique which helps the researcher to tap into local knowledge (Ottke *et al*., 2000). It also brings out different perspectives through the language that is used by the participants. As reported by Greenbaum (1998), the focus group method is favoured because it also ensures individual participations.

The main purpose of using the focus group was to draw knowledge from the community. Unlike the other participatory rural appraisal tools and techniques which are used in teaching. The chosen method is based on consideration which includes the Ntabamhlophe community complex social dynamics, voluntary participation, collaboration and interaction, trust and transparency, resource use complexity and time constraints. All the above-mentioned factors

were considered to address the research objectives, which were, (i) to understand the values and perceptions of the community towards the existence and future management of Ntabamhlophe indigenous state forest, and (ii) to determine the different types of forest products and resources use by the community and their values to the users (cultural, spiritual or economic values).

The study objectives were presented and discussed in a community meeting. A pilot survey was undertaken with the community. Thereafter, the focus groups were identified based on the existing traditional wards and user interests (Figure 3). The study objectives were also presented and discussed in a wise counsel meeting. Wise counsel refers to individuals who were currently and previously use the forest and had knowledge, experience and interest in the subject matter. Both the focus group and wise counsel were given the same questionnaire schedule to fill (Appendix 1). The arrows in Figure 3, illustrates the interaction (sequence of events) from the questionnaire design to research findings and conclusions. Double arrows indicate that there were two way interaction, whereas single arrows indicate the direction in which the interaction was happening.

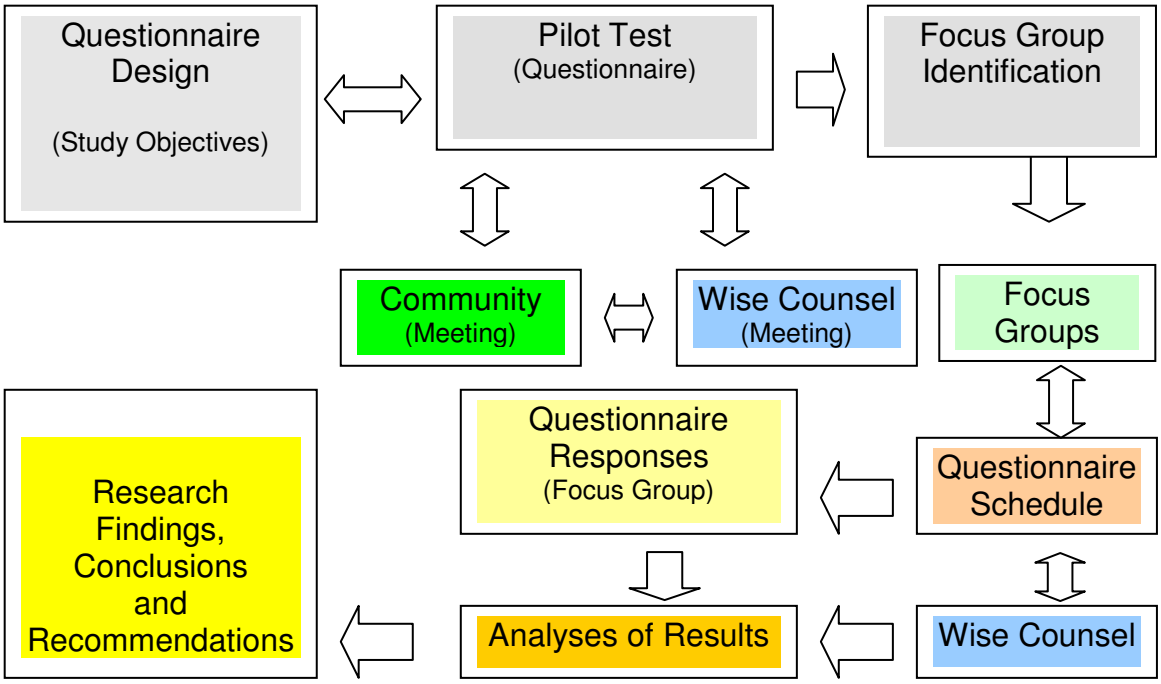

Figure 3: Focus Group and Wise Counsel: Group interaction flow chart

Furthermore, to enhance transparency and researcher integrity, community members were made aware that the researcher is a Ezemvelo KZN Wildlife employee. However, the research project was part of the University of KwaZulu-Natal's academic requirements for the degree of Masters in Environment and Development. It should be noted that being an Ezemvelo KZN Wildlife employee might have an influence on eDashi ward which refused to be part of the research. However, the researcher was not in Ezemvelo KZN Wildlife uniform. Furthermore, the majority of the Ntabamhlophe community members indicated that they would like Ezemvelo KZN Wildlife to be involved in developing appropriate forest management system.

There were no comprehensible reasons given by eDashi's two representatives for not wanting to take part in the research except that the research should wait for migrant workers who normally return home during the December holidays. eDashi representatives felt that migrant workers are the key stakeholders. In my view the issue of migrant workers was a convenient excuse to refuse participation. Furthermore, all community and focus group

meetings were publicly announced in all traditional wards including eDashi. With the exception of eDashi which was represented by two individuals, all traditional wards were fairly represented.

To enhance the quality of information, the focus group was used in conjunction with wise counsel. By using focus group, different age and gender groups, and wise counsel were engaged to gather information on forest use and values. This also ensured a fair focus group representation. By using focus groups, more information was gathered through the use of a researcher who asked prompting questions, to elicit more information on answers; the researcher asked for more clarifying information (Appendix 1).

An added advantage of using the focus group technique is the fact that the researcher (moderator) assists to keep the group focussed and to record conversations. Considering Ntabamhlophe community dynamics and resource use complexity, this technique was useful. Complexities include issues of transparency and trust between community and government officials. In this context 'government officials' had no reference to the researcher. There was also an issue of mistrust among community members. Some of the information given by the focus group was prompted by the researcher during the discussion.

Feedback and clarification during discussions was also useful to understand or eliminate different meanings. The discussions were transparent while responses were reached on consensus. Through discussions, a consensus answer was called for and recorded in a single questionnaire schedule (Appendix 1). There were no further analyses beyond recorded consensus answer. Each focus group was expected to give one consensus answer, if there was a disagreement, then the focus group was allowed to deliberate on a issue until they agree on a consensus answer. It is acknowledged that some useful information might have been lost due to consensus approach. It is also acknowledged that based on focus individual member's personal experience, some individuals might disagree with the focus group members. However, this was not the case at Ntabamhlophe. Furthermore, the information gathered

from the focus groups was also cross-referenced with other focus groups and the wise counsel.

Drawing on Welman *et al*. (2005), the focus group method had an added advantage because questions and information could be explained. It also helped to cross-reference information within the groups (Nabasa, 1995 and Welman *et al*., 2005). For complex socially dynamic situations like Ntabamhlophe, it provided more in-depth information on the subject matter. The interactive setting assisted in drawing out and facilitating the emergence or clarification of new ideas. During the discussions at the meeting, Ntabamhlophe focus group was offered an opportunity to seek clarity on any question related to the research. This helped both the respondents and the researcher to gain a better understanding of the issues.

The respondents provided additional useful information such as land claims, ancestral graves and alien plant control issues. This information would not have been acquired if it was not prompted and recorded during group deliberations. Furthermore, the focus group tended to give historical background before giving or reaching consensus answers. The Traditional Healers Association focus group was the largest group, with 21 members instead of six to 12 as recommended for the focus group method. This was an anomaly. However, it was accepted as a “specific interest group” and a recognised community structure which represented forest user group interests.

Focus group research results depend on the relevance of the method and researcher interaction with the community and the focus group (Nabasa, 1995 and Welman *et al*., 2005). Ntabamhlophe focus group was cooperative with the researcher. At Ntabamhlophe it is believed that the negative attitude of some community members to protect the forest has not changed from prior to 1997. In 1995, the Ntabamhlophe community together with the Mhlungwini Traditional Authority approached Ezemvelo KZN Wildlife, (former Natal Parks Board) to assist in developing an appropriate Ntabamhlophe forest and the mountain management strategy. The proceedings in the meeting were

interrupted by a group of men claiming that the Traditional Authority betrayed them by giving the area to Ezemvelo KZN Wildlife.

It is acknowledged that some individuals were less willing to reveal sensitive information *e.g.* traditional healers provided information on what certain medicinal plants are used for. However, the information was shared between respondents as to why some of the information could not be publicly divulged (Chapter 6, section 6.8.2). Understandably, at Ntabamhlophe some traditional healers were reluctant to divulge information on medicinal plant uses. However, when using focus group, a spirit of discussion assisted in revealing more information than anyone might get through formal interviews or other methods. Through varying experience and knowledge within the focus group members it helped to bring out valuable information such as why there were community woodlots and ancestral graves in the area.

The focus group method has an element of participatory rural appraisal. According to Chambers (1983), Participatory Rural Appraisal (PRA) is a process centred on a principle that seeks multiple perspectives through group enquiry. It helps the researcher to learn directly from the community members (Nabasa, 1995). A combination of the focus group and wise counsel approach was used by administering a structured questionnaire schedule (Appendix 1). However, the information from the wise counsel was only used for cross-referencing. This was helpful in research results analyses (Figure 3). At each focus group meeting, one questionnaire schedule was filled by the group from section B to D (Appendix 1).

Based on the quality of information required by the project, this method was appropriate and preferred to achieve project objectives Table 3 in Chapter 2 reflects method advantages and disadvantages. To avoid compulsion and inferior quality responses, voluntary participation among forest user groups was strongly encouraged. As a result eDashi ward was not forced to partake in the research (Chapter 6, section 6.8.1). Focus group method was found to be easy to use, technically correct, practically efficient and ethically sound to get acquired results.

Due to historical Ntabamhlophe forest management complexities, the information gathered from the focus group was cross-referenced with those of the wise counsel. de Vaus (2002) states that qualitative methods are often regarded as providing rich data about real life people. The social dynamics of the Ntabamhlophe situation and the quality of information required by the project required the use of this method as an appropriate and preferred method to achieve the project objectives. As Ottke, *et al.* (2000) have shown local communities possess profound knowledge of their ecosystems. Interacting with local communities through focus group approach assisted to ensure that such valuable information is recorded. The focus group technique has shown to be effective because it provides collaboration and interactive sessions for members.

4.2.2 RESEARCH QUESTIONNAIRE DESIGN

The demographics section of the questionnaire (section A) was used to gather demographics information from the participating individuals. This included information on the size of households, literacy levels and employment status. From section B to D the questionnaire was used to gather information on forest resource use and products, forest management and conservation (Appendix 1). Section B was specifically developed to gain an understanding of forest resource use and products. Each focus group collectively answered one questionnaire schedule from section B to D. It also dealt with perceived threats and community reliance on the forest. The workshops were conducted in *isiZulu* through translation of the questionnaire schedule. The translation was done by the researcher who is fluent in both *isiZulu* and English.

Sections C and D of the questionnaire dealt with forest conservation, historic and current management. These sections were directed at gaining an understanding of community perceptions of forest management. More importantly, it was aimed at determining levels of involvement of key stakeholders, community understanding of forest ownership, and attributes, and the pressures threatening or affecting the state of the forest (Appendix 1).

The research questionnaire was designed in such a way that it could be used for focus group and the wise counsel. It is suitable for use by both individual respondents and group respondents.

4.2.3 PROCEDURE

The project was discussed with Ezemvelo KZN Wildlife's Community Conservation Unit (CCU) together with prominent community leaders and the local municipality. Before conducting the survey, the Traditional Authority was approached for permission to engage community members. Several meetings to present and discuss the project were convened with the Traditional Authority and relevant concerned community members. Two separate meetings to introduce and discuss the project were convened with Imbabazane Local Municipality and the Traditional Healers' Association.

Nine focus groups were identified and separate preparatory meetings were held with each group. The purpose of the preparatory meetings was to introduce the researcher and to explain research objectives. Out of these nine focus groups that were identified only eight of them participated in focus group workshops. These focus groups discussed and filled in a single questionnaire schedule as a group (Appendix 1 from section B to D). Each question was posed and discussed in turn where one answer was required, this was reached by consensus. Where a range of answers was offered the number of answers in each category was recorded. Specific issues such as crime and tourism developments were addressed in the separate meetings, as this research work had different connotations for different groups of people. For most local rural poor community a "research project" creates expectations such as development and employment.

The focus group raised issues, for example, the White Mountain ecotourism development projects which were not related to this study. Based on the issues raised, the respondents were advised to contact relevant authorities. It should be noted that rural local communities adjacent to protected areas have a tendency to view Ezemvelo KZN Wildlife as a donor or development agent.

Inevitably, they also have a tendency to use any opportunity to voice complaints or issues of resource benefits and development.

The focus group workshops were held between the 1st August and 22nd September 2006 at Ntabamhlophe in community halls. Confidentiality was applied to all information gathered during research proceedings. The results were immediately confirmed by a brief report back to participants. This was done to foster future collaboration and for the following focus group sessions. The researcher had to engage with eight focus groups.

4.2.4 SAMPLING

The study used the data collected from persons who attended the focus group meeting. This was then used to describe the demographics of the population. The sample was socially acceptable, however it should be noted that it was not statistically represented. A socially acceptable representative sample of the Ntabamhlophe community members was chosen by community members, acting through the Traditional Authority.

The focus group members were not specially selected or “hand picked” by the researcher. All focus group meetings were publicly announced in all traditional wards. Voluntary participation was encouraged. It is acknowledged that this may have distorted representation. However, compulsion or forced representation could also undermine the quality of responses. As much as we would like all people to participate, they also have a choice about whether to participate or not. Hence, there was uneven representation of male and female, and eDashi ward did not participate in the research. Furthermore, due to time constraints the researcher would not have been able to deal with the whole community.

The Mhlungwini Traditional Authority has seven traditional wards. These traditional wards are designated by the local indigenous Traditional Council (Traditional Authority). The traditional ward is different from a political designated ward; as the latter is designated by the Demarcation Board. Community representatives were chosen from six traditional wards

(Ezinyosini, Goodhome, KwaNdaba, Bhekabezayo, Sobabili and eManjokweni). The focus groups were formed to represent each traditional ward. All traditional wards were represented with the exception of eDashi. This traditional ward refused to take part in the research. A series of meetings were organised in eDashi but they were not successful. This was due to the communities' reluctance to attend meetings. All meetings in this ward were very poorly attended, which resulted in them being cancelled.

Focus group size varied from six to 21 members (Table 4). Traditional Council and Traditional Healers' Association focus groups were identified and dealt with separately. These two groups were regarded as mixed ward groups because group members were from different traditional wards. A representative sample was drawn from a population living in the area. As reported by Neuman (2000), research and experience has shown that a small community representative group from a larger community is able to produce a accurate generalisation for a larger population.

The gender representation on the focus group was sixty-six percent (66%) male and thirty-four percent (34%) female. Overall, the male gender was over-represented. However, when the responses with the eManjokweni and KwaNdaba focus groups were compared, where male and female representation was even, there was no significant difference in response. Other forest users and role players were livestock owners, land claimants, Imbabazane Local Municipality, White Mountain Resort, local school educators and community development individuals. The above mentioned forest user groups were part of the focus groups, except for White Mountain Resort and Imbabazane Local Municipality. White Mountain Resort and Imbabazane Local Municipality were regarded as wise counsel based on their historical use and interest in the forest.

Table 4: Composition of community focus groups

Focus Group Name	Group Size (No. of individuals per group)	No. of males	No. of females
Traditional Authority (Council)	8	7	1 (iNkosi)
Traditional Healers (Association)	21	12	9
Ezinyosini (traditional ward)	11	10	1
Goodhome (traditional ward)	10	8	2
KwaNdaba (traditional ward)	14	8	6
KwaBhekabezayo (traditional ward)	10	6	4
KwaSobabili (traditional ward)	12	7	5
eManjokweni (traditional ward)	6	3	3
Total	**92**	**61**	**31**

Wise counsel was used to gather information on perceived forest use, perceptions and values. This was based on their current and previous use and involvement in the management of the forest. Wise counsel was given the same questionnaire as focus groups (Appendix 1). Wise counsel members were selected because of their knowledge, experience and interest in the subject matter. Ezemvelo KZN Wildlife, Natal Parks Board, Imbabazane Local Municipality and White Mountain Resort staff were met and given the questionnaire schedule to fill in. Due to the fact that wise counsel consisted of only a few individuals with special interest in the forest, their numbers are not reflected in Table 4. This table purely reflects the number of individuals per focus group who represented the Ntabamhlophe local community.

4.3 SUMMARY

All groups that were involved in the research were cooperative. With the exception of the Traditional Healers Association, all focus groups were a manageable size (six to 14 members). Traditional Healers Association focus group had 21 members. Drawing on Nomtshongwana (1999), a similar

representation was experienced in Gxalingenwa and KwaYili forests in the Southern Drakensberg in KwaZulu-Natal.

The focus group member participation was voluntary. The use of a questionnaire suited both the focus group and the wise counsel. The research project was introduced through appropriate community structures. As a result, it was well received by Ntabamhlophe community, with the exception of eDashi.

The focus groups were represented by different forest resource users. Overall males were more represented than females. However when focus groups were compared there were no significance difference in their forest resource use responses. None of the focus groups were solely male or all female.

Due to varying interests and concentration levels, some focus group meetings took more than two hours. Two hours is recommended effective as an amount of time for a group meeting. However, a further advantage is the fact that the information discussed was transparent and shared amongst group members. The final decisions were reached through consensus which took considerable time. Consequently, all controversial matters were dealt with in a more constructive manner. At no point were the focus group members required to vote in order to determine their position on forest products and resource use.

Results analyses were not gauged as to how the youth or women perceived the management of the forest. Due to the fact that the research was based on consensus approach, age categories were also not analysed to gauge how different age groups responded. As result it is acknowledged that some of the information might have been lost. However, based on the quality of information obtained, it is believed that the research objectives were adequately served by this methodology.

CHAPTER 5
ANALYSIS OF RESULTS

5.1 INTRODUCTION

Based on the findings of this research, this chapter highlights values and perceptions of the Ntabamhlophe community towards the existence and management of the Ntabamhlophe indigenous state forest. This chapter provides an understanding of local community dynamics. The focus is on varieties of forest resource use by local communities. The historic and present varieties of forest resource use and products by the community are investigated. Results are based on focus group responses.

5.2 DATA COLLATION, SYNTHESIS AND ANALYSIS

Various maps (Ezemvelo KZN Wildlife GIS Map, 2008, MDTP, 2006 and Slingsby, 1979) were used to identify the traditional authority boundary and forest boundary, and to show forest size and structure (Figure 1 and 2).

Responses to each questionnaire schedule were also compared with responses from other focus groups. Responses to each questionnaire schedule were compared. To obtain percentages, answers were then divided by the number of focus groups and multiplied by hundred. Each focus group collectively discussed and answered one questionnaire schedule at a time. Wise counsel members were the only individuals who provided individual responses. Both the focus group and wise counsel were provided with the same questionnaires. Each answer was recorded in a questionnaire schedule and cross-referenced with other focus group responses. This was undertaken in order to obtain a better and clearer understanding of resource use, community values and perception.

The reliability of information was enhanced by comparing views or responses from other focus groups. This was also cross-referenced with wise counsel responses. Wise counsel refers to individuals who were currently and previously use the forest and had knowledge, experience and interest in the subject matter .Focus group responses were also compared with those lived

further away from the forest. The only noticeable difference in responses was in terms of fuelwood collection. It is assumed that this was based on fuelwood load as it may be exhausting to carry a heavy load a long distance (5-7 km) from the forest. Data from both wise counsel and respondents was stored on research file for later processing. According to Welman *et al*. (2005), this information should be questioned through the use of secondary data. Questioning of information was done by way of comparing focus groups responses in order to verify information.

The information presented in this dissertation is based on focus group responses. However, it is well acknowledged that respondents may give politically acceptable responses to a researcher to avoid sensitive or confidential information. Generally in group discussions or interactions, people have a tendency to express views which enhance their own image and may give acceptable or politically correct responses in front of their peers (for example, on land tenure and resource use).

However, to address politically correct and acceptable responses, the information verification was undertaken despite information authenticity. Information verification was done through cross-referencing with other focus groups and wise counsel. This was undertaken to ensure that individual and group viewpoints are clearly understood. Hence, these questions were asked and cross-referenced. Cross-referencing helped to clear issues (such as forest clearing for dagga plantations and fires). The focus group indicated that through personal ego, mischief and ignorance, criminals were responsible for destroying the forest, by fire and cutting down trees.

5.3 DEMOGRAPHY AND SOCIO-ECONOMIC STATUS OF FOCUS GROUPS

Each answer was analysed based on the responses of an individual member of each focus group (Appendix 1 section A, question 1.1 to 1.8). Section A of Appendix 1 applied to each member of the focus group (individually). Consensus answers did not apply to this section because questions were specific to individual members. Analysis was undertaken by comparing all

responses from focus group individuals. Ages were analysed separately. The analysis was based on all the focus groups combined. The information gathered from the individual focus group members was not linked to consensus answers from the focus groups. The focus groups collectively answered one questionnaire schedule whereas in this instance (Appendix 1 section A, question 1.1 to 1.8) each member of the focus group was given one questionnaire schedule to fill. As a result they could not be gauged as to how the youth or women perceived the management of the forest.

To obtain percentages, answers per question in a particular age category were divided by the number of all focus group respondents and multiplied by hundred. Where age category did not apply, answers per question were divided by the number of focus group respondents and multiplied by one hundred (Table 5). The Above 55 years of Age category was thirty-one percent (31%) and most people in this category were pensioners (Table 5).

Table 5: Focus group age categories

Age Categories (irrespective of gender)	Percentages
Age 15 – 25	10%
Age 26 – 35	4%
Age 36 – 45	24%
Age 46 – 55	25%
Age above 55	31%

Seventy-two percent (72%) of the focus group was married and having to support their families. Seventeen percent (17%) of the focus group respondents had no schooling, whereas twenty-seven percent (27%) were schooled below Grade 7. Grade 12 and tertiary education was nine percent (9%) and seven percent (7%) respectively. The tertiary education qualification mainly meant that the respondents were qualified school educators or employed as professionals by the local municipality.

Approximately eighty percent (80%) of the individuals per household were unemployed. The above-mentioned percentage excludes children (Appendix

1, section A, question 1.5). Sixty-three percent (63%) of the focus group respondents was unemployed. A total of thirty-seven percent (37%) of the focus group respondents was employed, however most of them were self employed. Only eleven percent (11%) were employed by an employer (formal institution). Based on total employment, seventy-one percent (71%) of employment was self employment (Traditional Health Practitioners). Based on the income accrued from their traditional healing practice, they consider themselves as self employed (Appendix 1 section A, question 1.6).

Twenty-two percent (22%) of the focus group respondents indicated that their range of income per month was less than R400; this was mostly related to traditional health practitioners. Fifteen percent (15%) of the focus group respondents indicated that they earn between R400 and R800 per month, this was related to the old age social grant (pensioners). A monthly earning of more than R2500, which is applicable to ten percent (10%) of the focus group respondents was related to school educators and Imbabazane Local Municipality employees (Appendix 1 section A, question 1.8). Based on population numbers and the potentially active labour force in the area, lack of job opportunities appeared to be the cause of high unemployment.

5.4 FOREST RESOURCE USE AND PRODUCTS

Each answer was analysed based on the response from each focus group (consensus answer). There were no further analyses beyond recorded consensus answer. This is different from section 5.3 (above). Each focus group collectively discussed and answered one question at a time. From section B (Appendix 1 section B, question 2.1 to 2.6), a consensus answer would be received from each focus group. The answers were then added up with same responses from other focus groups and divided by the number of focus groups.

Responses to questions were rated from “very common” to “none” resource use. Others were rated from “very high” to “none”, “true” or “false”, frequency and scale. In some cases respondents were give multiple choice answers. This was dependant on how often forest natural resources were used by the

Ntabamhlophe community. When responses were **yes** or **no**, an opportunity to elaborate on responses was made. This was undertaken in order to obtain a better and clearer understanding of resource use, community values and perception.

Seventy-five percent (75%) of the focus group indicated that gathering medicinal plants and fuelwood was regarded as very common (Appendix 1 section B, question 2.1). Apart from being an indication of forest resource needs, community members revealed that they have a strong dependence on forest resources and products. Sixty-three percent (63%) of the focus group acknowledged the existence of gardening crops in the forest, such as spinach. Other crops that are grown in the forest are cabbage and dagga (*Cannabis sativa*). Seventy-five percent (75%) of the focus group advised that the local community and households rely on the forest products. Unanimously, (100%) of the focus group revealed that community members have always depended on Ntabamhlophe forest as a source of livelihood, such as medicinal plant harvesting, timber and cultural activities.

It was further established that the major benefits of having Ntabamhlophe forest as a resource near the community were:

- Medicinal Plants (two focus groups).
- Legacy for future generations (two focus groups).
- Provision of building material and fuelwood (two focus groups).
- Unique and aesthetic value (one focus group).
- Potential for ecotourism adventures/activities (one focus group).

These benefits (Appendix 1, section B, question 2.3), were not necessarily ranked in order of priority; however they were listed in terms of the number of their occurrence from the respondents. When focus group asked to mention major benefits of having the forest, they all listed the above benefits but they were not asked to prioritise them.

Illegal and uncontrolled resource harvesting (Appendix 1, section B, question 2.4), forest fires, deforestation and conflict on forest management were regarded by most (87%) focus group as the main challenge to the survival of the forest. This is due to lack of clarity on the status (open access) of the forest consequently affecting its use. Drawing on responses from the focus group, it is clear that community members are aware of the extent and the implications of the forest abuse. This is concurrently viewed, by both the community and conservation authorities, as the main challenge to the survival of the forest.

Seventy-five percent (75%) of the focus group reported that Ntabamhlophe forest did contribute directly to household nourishment/food. Regarding ecosystems services, eighty-seven percent (87%) of the focus group acknowledged that the forest provides ecosystem services (such as preventing drought, water catchment). Seventy-five percent (75%) of the focus group regarded the forest to have a very high aesthetic value. (Appendix 1 section B, question 2.5). Fifty percent (50%) of the focus group consider the forest to have very high health (medicinal material) and economic (source of income, savings and investments) value. Fifty percent (50%) of the focus group rated biodiversity assets, existence (legacy) and spiritual upliftment as very high.

Eighty-seven percent (87%) of the focus group said that over time, the use of forest products has intensified. Eighty-seven percent (87%) of the focus group indicated that the future use of forest products is threatened by population growth in surrounding areas (Appendix 1 section B, question 2.6). Focus group (25%) indicated that there are more people using the forest than there had been in previous years. Consequently, the forest is likely to be an area of conflict in the future because of varying and increasing demands. Furthermore, the community understood the need to conserve and protect the forest. Unanimously, focus group (100%) agreed that it was important to conserve the forest.

5.5 INDIGENOUS PLANT HARVEST

Each focus group collectively discussed and answered one questionnaire schedule at a time. From section B (Appendix 1 section B, question 2.7 to 2.28), a consensus answer would be received from each focus group. The most harvested plant parts were; leaves, bark, twigs, roots and bulbs. Fifty percent (50%) of the focus group indicated that medicinal plant harvesting is the most frequent use (harvested on a weekly basis) in the forest and surrounding, followed by fuelwood collection (37%). The traditional healers indicated that medicinal plants are harvested at least once a week. Thirteen percent (13%) of the focus group indicated that forest products were used for decorations or crafts. The most frequently used medicinal plants were; *Callilepis laureola, Dioscorea sylvatica, Anemone caffra, Boweia volubilis, Ocotea bullata, Vemonia neocorymbosa, Alepidea amatymbica, Eucomis autumnalis, Pittosporum viridiflorum, Rapanea melanophloeos and Scilla natalensis* (Appendix 1 section B, question 2.13). Among other uses, medicinal plants were used for colds, influenza, love charms, luck charms, cleansing blood, asthma, chest complaints, warding off evil spirits, infertility and to enhance male potency and libido. Some medicinal plants are used for the treatment of livestock and cleansing ceremonies after death.

The most frequent harvest of medicinal plants was weekly. Twenty-five percent (25%) of the focus group indicated that they harvested more often now than they previously did. This was more related to traditional health practitioners. For the traditional health practitioners, this was due to an increase in the number of patients. Twenty-five percent (25%) of the focus group indicated that they were harvesting less forest products than previous years (Appendix 1 section B, question 2.15).

Another twenty-five percent (25%) of the focus group indicated that they were using the forest to the same extent as previous years. Traditional health practitioners indicated that there had been an increase in number of traditional health practitioners. Other contributing factors discouraging people from harvesting or visiting the forest were crime and safety. Ordinary community individuals indicated they did not feel safe in the forest and were scared to go

there. The forest was also being used by people outside Ntabamhlophe community to harvest resources. The community was evenly split (50%) on the matter with fifty percent (50%) of the focus group indicating that outsiders were not welcome, because they did as they pleased in the forest, and thirteen percent (13) were not sure whether they were welcome or not (Appendix 1 section B, question 2.19).

Sixty-three percent (63%) of the focus group indicated that local people preferred large logs (diameter 3-5 cm, length 3 m) for fencing poles. Fifty percent (50%) of the focus group indicated that local people preferred large logs for building materials. Fifty percent (50%) of the focus group indicated that local people preferred dead wood and dry dead branches for fuelwood (Appendix 1 section B, question 2.22). Seventy-five percent (75%) of the focus group advised that if they were given a choice between using the forest and an alternative such as electricity and woodlots, they would prefer electricity. Thirty-seven percent (37%) of the focus group believed that the forest would be used more in the future, community would still need both timber and non-timber products (Appendix 1 section B, question 2.27). Thirty-seven percent (37%) of the focus group believed that the community and households would benefit more in the future from forest products (Table 6). Data was analysed per activity from very high to none.

Table 6: Ntabamhlophe Indigenous State Forest: Expected future benefits by Ntabamhlophe community

RESPONDENTS % - [8 Focus Groups**]**				
Activity	**Very High**	**High**	**Low**	**None**
Water	37.5%	25 %	12.5%	25 %
Cultural	50 %	12.5 %	25 %	12.5 %
Educational	100 %	-	-	-
Timber Harvesting (building material, fencing)	25 %	-	50 %	25 %
Biodiversity Conservation (Protected Area)	75 %	12.5 %	12.5 %	-
Spiritual Upliftment	37.5 %	12.5 %	37.5 %	12.5 %
Wild vegetables (harvest)	25 %	12.5 %	37.5 %	25 %
Beekeeping	12.5 %	12.5 %	12.5 %	62.5 %
Tourism (hiking, climbing)	87.5 %	-	-	12.5 %
Hunting	25 %	-	25 %	50 %
Fishing	-	-	37.5 %	62.5 %
Craft	50 %	12.5 %	25 %	12.5 %
Firewood	25 %	12.5 %	25 %	37.5 %
Medicinal Plant	37.5 %	37.5 %	12.5 %	12.5 %
Free access for all	37.5 %	12.5 %	12.5 %	37.5 %
Grazing	25 %	-	-	75 %
Allow people to grow crops inside the forest	12.5 %	25 %	12.5 %	50 %

The focus group indicated that they had a very high future benefit expectation of activities such as education, tourism, biodiversity, cultural, water, craft spiritual upliftment and free access (Table 6). Contrary to that they had low future benefit expectations of activities such as timber harvesting, wild vegetable harvesting, beekeeping, hunting, fishing, fuelwood collection, grazing and growing crops inside the forest (Table 6, Appendix 1, question 2.28). Educational benefit was regarded as the most important of all, followed by tourism and biodiversity conservation.

5.6 INDIGENOUS FOREST MANAGEMENT

Each focus group collectively discussed and answered one questionnaire schedule at a time. From section B (Appendix 1 section C, question 3.1 to 3.10), a consensus answer would be received from each focus group. At Ntabamhlophe, seventy-five percent (75%) of the focus group agreed that the current forest management is open access. Open access refers to a situation where there is no control on how the forest is used and anyone can take whatever they want. Surprisingly, twenty-five percent (25%) of the focus group believed that the current system is a state forest management system. This was based on their historical knowledge and involvement in managing the forest. State forest management systems refer to a situation where a government department sets and enforces rules regarding the use and management of the forest. A government department implements legislation to manage forests. The Department of Water Affairs and Forestry is mandated by government to manage the forest.

The forest is protected by the state. The Department of Water Affairs and Forestry is charged with the management of all state protected forests. Late in the 1980s, Ntabamhlophe forest management was assigned to Ezemvelo KZN Wildlife (former Natal Parks Board). There used to be forest guards, and community members mentioned that the forest guards used to be very strict (Appendix 1 section C, question 3.2). The forest guards ceased to undertake law enforcement patrols in 1986. These guards were supported by the Traditional Authority (iNkosi Ndaba, 2006 *pers. comm*). Seventy-five percent (75%) of the focus group described the current state involvement as non-existent. These results concur with second sentence in Chapter 5, section 5.6.

With regards to the involvement of the Traditional Authority in forest management, respondents were evenly spread at fifty percent (50%) between very strongly involved and none. Forest-related crimes are reported to the *iNkosi*. However, the *iNkosi* and government officials do not appear to be taking actions to deal with illegal activities. Fifty percent (50%) of the focus group believed that the forest belonged to the *iNkosi*. Twenty-five percent

(25%) of the focus group thought the forest belonged to the community whereas thirteen percent (13%) of the focus group believed that it belonged to other institutions which are not owned by the government (Appendix 1 section C, question 3.5). None of the focus groups thought or believed that Ntabamhlophe forest belongs to the state (government). This is in contradiction with twenty-five percent (25%) which has been explained in the first paragraph.

Unanimously, focus group (100%) agreed that they would obey rules introduced by a forest authority. These would be adhered to if forest use was managed. Community members made it clear that rules must be introduced to the community through correct community structures. If that is followed they will comply with the rules for protection and conservation of the forest (Appendix 1 section C, question 3.6).

The community had a strong belief that if the forest was appropriately managed with them, benefits are more likely to be realised by the forest and them (Appendix 1 section C, question 3.7). Lack of capacity and resources was identified as a major hindrance for the community to protect the forest. Of critical importance, they wanted to be part of the process of formulating a forest management system. Fifty percent (50%) of the focus group indicated that historically they avoided government officials. Another twenty-five percent (25%) of the focus group indicated that they avoided the Traditional Authority. Currently both structures are not respected and regarded as ineffective.

The focus group (100%) unanimously mentioned that with the current situation they do not avoid any officials or persons in the forest (Appendix 1 section C, question 3.9). No confidence was shown to support of any one structure managing the forest on its own. The community would only support a cooperative management structure. The community members believed that if the forest was managed by both community and government it would be more effectively managed.

5.7 INDIGENOUS FOREST CONSERVATION

Seventy-five percent (75%) of the focus group regarded the present state of Ntabamhlophe forest as modified (Appendix 1 section D, question 4.1). When asked what attributes they perceived to be associated with the present state, focus group mentioned uncontrolled fires, inappropriate forest management, no control over access and resource harvesting. Further, due to lack of control, they indicated that wildlife was disappearing in the forest. Due to present forest disturbances, the individuals from the community felt that the forest needed an appropriate forest management system which would benefit the community economically.

5.8 THREATS TO THE NTABAMHLOPHE INDIGENOUS FOREST

The following were regarded as the major pressures or threats affecting the state of the Ntabamhlophe forest (Appendix 1, section D, question 4.3):

- Uncontrolled fires (three focus groups).
- Uncontrolled harvesting of medicinal plants and fuelwood (three focus groups).
- Deforestation (clearing of forest for the cultivation of vegetable crops and *Cannabis sativa*) (two focus groups).
- Illegal hunting (one focus group).
- Inappropriate or non-existent forest management systems (two focus groups).

The above-mentioned threats were not necessarily ranked in order of priority; however, they were listed in terms of the percentage of occurrences by the focus group. As with the case at Ntabamhlophe, if a forest is protected, that does not necessarily mean that it was being properly managed. Sixty-three percent (63%) of the focus group believed that previous efforts to conserve the forest had led to forest improvement (Appendix 1 section D, question 4.4). If there were no efforts to conserve the forest, it would have been more impacted-on and would have been in a worse state.

Unanimously, focus group (100%) indicated that they were personally aware of the evidence of unsustainable or inappropriate use of forest resources in the forest (Appendix 1 section D, question 4.6). Sixty-three percent (63%) of the focus group indicated that the rate of the problem of unsustainable use of the forest was very high (Appendix 1 section D, question 4.7). Unanimously, focus group (100%), regarded the problem as a very serious one; hence they recommended that it needed urgent attention (Appendix 1 section D, question 4.8). The rating of the problem was subjective; however, the need to attend to the problem was emphasized by both the wise counsel and focus group members.

The focus group was of the opinion that people did as they pleased in the forest. There was no forest management system in place and many forest resources were already difficult to locate. The focus group revealed that further forest abuse should be urgently halted in order to allow the forest to regenerate. For this to happen, the focus group members suggested the establishment of a competent cooperative institution.

In order of priority, the following were regarded by both the wise counsel and focus group as the major threats facing Ntabamhlophe forest resources (Appendix 1, section D, question 4.10):

- Crime (eight focus groups).
- Uncontrolled fires, excessive burning (eight focus groups).
- Uncontrolled harvesting of medicinal plant and fuelwood (seven focus groups).
- Deforestation (clearing forest for plantation, *e.g.* vegetable crops and *Cannabis sativa*) (five focus groups).
- Illegal hunting (five focus groups).
- Soil erosion (five focus groups).
- Inappropriate or non-existence forest management system (five focus groups).

It must be noted on the previous page, crime and soil erosion were not mentioned nor regarded as a threat. However, in this section these were regarded as major and high priority threats. This was based on the community's realisation that the current forest use was regarded as illegal and the forest destruction was causing soil loss.

Crime was seen as a major factor ruining the structure of the forest. The forest was affected by activities such as clearing of the forest for *Cannabis sativa* plantations, use of fire for bee harvesting and incorrect burning to improve grazing on the forest margins. For the community, criminal activities were not easy to deal with, particularly those that were happening in remote areas like the forest. Despite the forest being used by stock thieves, it was also used by car thieves. Consequently benefits and access to forest resources was limited to those who were audacious enough to risk their life for livelihood resources.

Seventy-five percent (75%) of the focus group indicated that people should not be allowed to use the forest resources in an unsustainable manner (Appendix 1 section D, question 4.12). Seventy-five percent (75%) of the focus group indicated that the prospects of the Ntabamhlophe forest being completely exterminated in the absence of proper management are very high. In view of this, sixty-three (63%) of the focus group revealed that they would call for co-operative management between the government and local people (Appendix 1 section D, question 4.13). There were no indications from the respondents as to how this would work.

Unanimously, focus group (100%) strongly agreed that it was important to conserve the forest (Appendix 1 section D, question 4.14. The community felt that the forest should be conserved for the following reasons: so that; they can see wildlife that used to be in the forest: to halt further forest destruction: for community well being and sustainable use. Respondents recommended the following measures to ensure sustainability of Ntabamhlophe forest and its resources (Appendix 1 section D, question 4.16):

- Police crime in the forest (five focus groups).

- Grow medicinal plants (establish an indigenous plant nursery) (two focus groups).
- Manage collectively (cooperative management) (three focus groups).
- Conserve and protect the forest (five focus groups).
- Develop the forest for ecotourism ventures (four focus groups).
- Develop and effective community communication, education and awareness programmes (four focus groups).

Due to the high crime rate, the community felt that authorities should intensify law enforcement operations and undertake regular policing in the forest. They indicated that some illegal activities were due to community ignorance and some due to negligence by community members. Some people indicated that due to criminal activities, they fear to go to the forest.

CHAPTER 6
DISCUSSION AND CONCLUSIONS

6.1 INTRODUCTION

The study objectives were, (i) to understand the values and perceptions of the community towards the existence and future management of Ntabamhlophe indigenous state forest, and (ii) to determine the different types of forest resources use and products by the community and their values to the users (cultural, spiritual or economic values).

This chapter looks at local community perspectives on forest management, and community dynamics with an emphasis on local community perspectives, and traditional authority jurisdiction over Ntabamhlophe indigenous state forest. It contextualizes local community dynamics with reference to local livelihoods. It looks at medicinal plant harvesting needs and desires. Furthermore, it discusses cultural and historical sites, and local living heritage sites. Community perspectives on recreation and educational benefits are highlighted.

Based on the study findings, this chapter examines challenges faced by the community, and present and historic management of natural resources in the forest. It highlights the most challenging factor: that of getting the community to trust one another and agree on working together. Community views on these challenges are explained within the context of the current situation.

6.2 INDIGENOUS MEDICINAL PLANT HARVESTING

Communities depended on the provision of natural resources like building materials, medicinal plants, and livestock grazing. Some of the major perceived benefits from the forest were traditional hunting and medicinal plants. Community members indicated that if they experienced a health problem, they believed in consulting a traditional health practitioner before seeing a western doctor (Mander, 1998 and Dladla, 2006 *pers. comm.*). Some species of medicinal plants were difficult to get from the forest because they have been almost exploited to extinction (Mvelase, 2006 *pers. comm*).

Harvesting of some resources like medicinal plants and edible fruits and vegetables was seasonal. Certain medicinal plants could be harvested only at a certain time of the year because of associated taboos and beliefs, such as that hail storms and droughts would occur if harvesting occurred during the wrong season or before a predetermined harvesting period. Consequently, certain resources might be available in the forest, but if it was not the right season they were not harvested unless the situation was desperate. In such instances, this type of harvest was often mitigated by traditional practices, such as when harvesting *Juncus kraussii* (matting rush) it must be wrapped and dried up far away from homesteads; people are discouraged to harvest before the season. However, drawing from Mander (1998), commercial interests seem to override traditional "taboos" and beliefs.

The community believed that once the forest is formally protected, they would not be allowed to harvest natural resources like medicinal plants. However, they would obey the rules if were set and introduced through correct community structures. Historically, the community was not allowed to harvest forest resources. Forest management and protection was enforced by forest guards. The forest was regularly patrolled by forest guards. The local community members were excluded from the forest management.

Traditional health practitioners and gatherers were the most frequent forest users and visited the forest at least three times a month. Forests represent strong economic value to traditional health practitioners. A traditional health practitioner could easily earn an income of R400 to R800 a month (Mvelase, 2006 *pers. comm.*). This was equivalent to a pension grant. Considering social challenges like HIV and Aids, it was common for a family to survive within this range of monthly income. Medicinal plants have a variety of uses. Some were used to guard against evil spirits. They were also used for cleansing, healing and making "charm concoctions" such as love potions.

Traditional health practitioners indicated that some of them were not properly trained on how to harvest medicinal plants. They felt that some people use

unacceptable harvesting methods such as cutting through the bark into the wood. Drawing on Diederichs (2006), harvesting of bark in narrow vertical strips rather than horizontal strips around the stem is more likely to ensure that the tree will survive. However, when harvesting bulbs, the whole plant is removed. Traditional healers believed that these methods deplete resources and their ability to regenerate. Consequently, this could make resources unavailable in the future (Nomtshongwana, 1999). Traditional health practitioners and natural health resource gatherers normally use maize meal bags (25-50 kg bags) to carry harvested medicinal resources. Considering the small size of the forest and comments provided by the focus group in terms of unsustainable harvesting methods and increased demands of these resources, this was taking too much from the forest to allow it to regenerate. If this kind of harvest was for commercial use, it may indicate unsustainable use of the forest resources. If medicinal plant harvesting is commercially-driven traditional controls are often ignored (McKean, 2008 *pers. comm.).*

6.3 CULTURAL AND HISTORICAL SITES

In South Africa, approximately 3.5 million people were forcibly removed from their areas to make way for protected areas (Fabricius *et al.,* 2004). In 1964, the Ezinyosini community members were moved away from areas near the forest. That area has high cultural and historical values for them. Some community members seemed to be dissatisfied over the 1964 eviction, due to that fact they were very sceptical about the protection of the forest.

Outside the forest, there are community ancestral graves. Community members were convinced that forest protection might result in the incorporation of the surrounding areas. The consequence of this was a community belief which states that when visiting ancestral graves inside the protected area, you have to be escorted. This was perceived as disrespect and created a lack of privacy when conducting traditional rituals. When speaking to or calling ancestors, you are not allowed to be distracted (*Pers. observation* 2006). Consequently, they would like to have privacy with regards to access to their ancestral graves.

Walvekamp (1999), states that communities are driven by certain motives to conserve: one of them being that they are trying to comply with customary practices. Customary practices and taboos assist them to gain the favour of ancestors. Many African traditional communities believe that if they keep to a customary practice, the ancestors will use their power to provide resources for their wellbeing.

Ntabamhlophe forest has living heritage sites. Local living heritage refers to all of those sites (archaeological or natural) still frequented by local communities for spiritual, religious, and/or functional purposes (South African Heritage Resources Agency, 2005 cited in Anderson, 2007). Some of these sites are inside or near the forest and on the mountain. These include waterfalls and springs inside the forest, and specific sites which are used by Rastafarians. Rastafarian refers to a member of a Jamaican religious movement which believes that Haile Selassie (the former Emperor of Ethopia) was the Messiah and that blacks are the chosen people (Soanes, 2002). The annual Rastafarian gathering is held in July at Ntabamhlophe forest (Ndwandwe, 2008 *pers. comm.*).

The Indigenous Knowledge Systems (IKS) play a big role in the mediation of living heritage sites (Prins, 2006 *pers. comm.*). Such sites may include pools, shelters and forests utilised by traditional healers and San descendants, grave sites and other memorial structures still visited by family members, sacred mountains, and other ochre sites and excavations (Anderson, 2007). These sites, like archaeological sites, are also protected by heritage legislation. Referring to the South African Heritage Resources Agency (2005), all cultural heritages are equally protected by law, regardless of the protected area category (Prins, 2006 *pers. comm.*)

Another forest cultural uses included the harvesting of fighting sticks for various traditional uses. Due to cultural changes, it is not expected that the community will significantly benefit from the forest as a cultural resource. For spiritual upliftment, most people visit the mountain not the forest, with the exception of Rastafarians. Most community representatives did not value the

forest for cultural or religious reasons. They valued the forest for the products it provides to support livelihoods (*i.e.* medicinal plants).

6.4 PERCEIVED THREATS

Elder community members advised that, historically, Ntabamhlophe forest used to be denser than it is now. Thus, it is clear that it has been substantially used. This may have been through different needs of local communities resulting in a variety of forest uses. As stated by Fabricius *et al.* (2004), communities are dynamic, hence, so are the needs and uses of natural resources.

The major issues raised by the community were dagga (*Cannabis sativa*) plantations, uncontrolled fires, uncontrolled harvesting of medicinal plants and fuelwood and inappropriate or non-existent forest management system. In terms of physical habitation, the forest was occasionally used by Rastafarians who temporarily visit the forest for the purpose of their religion. Rastafarians come from different communities. They are not necessarily locals, and they are not necessarily associated with dagga plantations in the forest. It is believed that they only visit the forest for spiritual reasons.

Some natural resource harvesting is seasonal such as *Momordica*. However, certain individuals grow and harvest dagga in the forest. The focus group felt that hunting was very high. Stock theft, dagga fields' plantation was also high. According the focus group this meant that only few people benefited from this activity. They also felt that dagga growing was an unacceptable practice, and that dagga growers were selfish. This is understandable because dagga is illegal in South Africa. Illegal drug dealers may not easily share their wealth with others.

The community members did not perceive deforestation as a serious concern in the forest. The community believed that "deforestation" was not a major issue; however they stated that dagga plantation has a potential threat towards accessing resources from the forest. This is due to the criminal activities that are associated with dagga trade. However, they recognised and

admitted that there was a great deal of abuse and senseless destruction of trees. They claim that deforestation was more evident on the forest margin. Consequently the forest margin is susceptible to soil erosion due to fires which destroy forest ecotones.

Trees are being felled and burnt into ashes to make way for dagga plantations. From the community members' perspective, they view this as a serious abuse resulting in personal gain only for a few individuals who benefit from this activity. There is a very strong belief that community members who were closer to the forest have more benefits than those who are far from the forest. This was confirmed by survey results which indicated that community members from KwaNdaba ward did not use the forest.

Accordingly, KwaNdaba ward had a different perspective to eDashi ward. eDashi ward community representatives refused to be engaged with or participate in the research survey. They believed that they had been betrayed by the Traditional Authority and by other community wards. Apparently, this ward had always objected to the conservation of the forest (Dale, 1995). eDashi ward community leaders/representatives who were met indicated that present community members were not ready to engage with the researcher. They advised that this matter needed to wait for the migrant workers (from Johannesburg), who normally return during the December holidays. Evidently, Phadima (2005) had similar findings in a study conducted at Ongoye forest.

Caves inside the forest were used by stock thieves as shelters whilst herding stolen livestock. There are no cattle grazing inside the forest, and it is very rare to see goats grazing in the forest. Livestock do not graze inside the forest unless they are forced to move there.

The community believed that the forest and water production might decrease in the future due to increased commercial afforestation. They believe that in the future they may not benefit from the forest in terms of water production. Elder community members indicated that some of the known perennial streams have dried up due to large alien plantations in the area (Phakathi,

2006 *pers. comm.*). This might not be the case, but it shows that community members are aware of the impacts of alien plant species.

6.5 FUELWOOD AND TIMBER HARVESTING

The community indicated that they would prefer electricity (Section 5.5); however they also believed that using fuelwood is part of their tradition. This implies that they would find it difficult not to use fuelwood in their households. They consider this tradition as the pillar of the i*siNtu* way of life (*indlela yesiNtu*). Desired characteristics are a clean hot flame and long lasting embers. Most members indicated that they would still continue to use the forest for fuelwood. They believe forest fuelwood fire is much warmer and nicer than any other heating system. It gives a sense of i*siNtu*.

Community members believe that if a wattle plantation is removed, they would have to rely on the forest for building materials, fuelwood and timber for use in the graveyard. Alien Invasive plant removal could lead to the increase harvesting of natural resources. When considering the rate of death and funerals due to HIV and AIDS related illnesses, the amount of timber to be used in funeral ceremonies could be more than the production capacity of the forest. Some of the focus groups have a very strong belief that once the forest is formally protected, it is expected that they could not benefit from timber harvesting. This perception is not necessarily correct as there could be terms of “sustainable use” such as controlled resource harvesting (McKean, 2008 *pers. comm.).*

Due to the extent of the Mhlungwini Traditional Authority, some community members live a long distance (6 km) from Ntabamhlophe forest. For them, it is an effort to reach the forest and consequently they are using the wattle plantations for fuelwood. There are small indigenous forest patches (*idotsha*) in the vicinity, which are not being used, because the community prefers wattle and believes that indigenous forest should not be used. This belief coincided with the findings from other groups. In most cases, harvesting and forest resource use was seasonal.

From the discussions with one of the focus groups, community representatives indicated that the community would be concerned if the forest was protected along with the surrounding areas. The major concern was the fact that they would be forced to remove their wattle plantations (woodlots). The establishment of woodlots in the past aimed to prevent the community from using the indigenous forest. They claim that they were encouraged by the government to grow woodlots because they were not allowed to use indigenous forests. All focus groups believe that clearing woodlots will pose a serious threat to the survival of the forest. This was largely because there would be no alternative or substitute for woodlots except the indigenous forest. It was clear from the community that even in the near future they would still desire to use fuelwood. If the forest was to be protected, an appropriate integrated alien plant removal strategy would have to be in place.

6.6 EDUCATIONAL AND RECREATIONAL BENEFITS

Both the Ntabamhlophe forest and the mountain are resources which are highly used by the local community for resource harvesting, and by local schools for educational purposes (Table 6). Some of the focus groups felt that the benefits of the forest and the mountain was realised by other schools situated far from the Ntabamhlophe area. They are of the opinion that there is high (100%) expectation for future educational benefits.

Aesthetically, all the focus groups felt that both the forest and the mountain are unique. They were proud to be associated with them. For them it was difficult to separate the Ntabamhlophe forest from Ntabamhlophe Mountain. They perceive them as one, and an inseparable unit. All the focus groups expressed support for the development of ecotourism initiatives in the area. This initiative is recognised as an approach that would introduce an incentive for improvement of the use and management of both the forest and the mountain. The ecotourism initiative was also seen as a vehicle to create an opportunity for local people to engage in and own businesses, as well as an opportunity for job creation.

6.7 HISTORICAL AND CURRENT FOREST MANAGEMENT

Except for forest ownership, the community is aware of the forest boundary, therefore there should be no dispute over the forest's boundary survey beacons. There are varying views within the focus groups with the majority (63%) of group believing that the forest belongs to *iNkosi* Ndaba (Appendix 1, section 3.5). From the focus group discussions, the respondents indicated that some individuals in the community have heard Kwa-Dlamini community members saying that part of the forest belongs to *iNkosi* Dlamini and some portions of it also belong to local farmers. Some focus groups (13%) believe that Ntabamhlophe forest belongs to the KwaZulu-Natal Ingonyama Trust Board (as per definition of KwaZulu-Natal Ingonyama Trust Act No.3KZ of 1994). Most communal land in KwaZulu-Natal belongs to the KwaZulu-Natal Ingonyama Trust Board; however the local control/management of land rests with the local *iNkosi*. The KwaZulu-Natal Ingonyama Trust Board would be a major role player in the management of the forest. The forest management and ownership needs to be made clear to the Ntabamhlophe community.

Part of Ntabamhlophe Mountain and small forest patches, which are not part of the Ntabamhlophe indigenous state forest have been given back to land claimants (Mchunu, 2006 *pers. comm.*). The new land owners are currently living in the traditional communal area. The 'claimed land' is not occupied, however it was clearly described and marked through the land claims process. The new land owners regard themselves as "local emerging farmers". They currently use the land around the forest for grazing. They indicated that they would like to use the land adjacent to the forest to establish tourism facilities and use the forest to attract tourists. In terms of past and current forest management, the community has a strong belief that the traditional authority has been more involved in the management of the forest than any other formal institutions like government departments. This corroborates findings by Phadima (2005) from Ongoye forest. This transpired from the meeting held on 1st August 2006 at the Mhlungwini Traditional Administration Centre.

Some of the focus group respondents claimed that *iNkosi* Ndaba used to select and appoint forest guards (rangers). This view is supported by the

present situation, as currently, all forest related issues are being reported to *iNkosi* Ndaba by community. Consequently *iNkosi* Ndaba has held a series of meetings in an attempt to deal with issues like the crime which is taking place in the forest. It is the community belief that the forest belongs to *iNkosi* Ndaba, because it is located on the *iNkosi's* land and because the traditional authority is the only institution to which issues related to the forest are reported. In such situations it is well acknowledged that the KwaZulu-Natal Ingonyama Trust Board is represented by the local *iNkosi* as he or she manage the land on behalf of the Trust.

To protect the forest, some (25%) focus group indicated that they would prefer more policing (law enforcement) in the area (Appendix 1, section 4.16). Other individuals in the community believe that if the forest is managed by the government there would be more job opportunities for the community. From direct management of the forest, a limited number of people could be employed. However some, people could be employed on projects related to forest management. These could be Expanded Public Works Programmes (EPWP) such as Working on Fire, Working for Wetlands and Alien Invasive Control Programme. Some individuals from the community revealed that there is a lack of trust among them. They have no confidence that community members have the right skills and capacity to manage the forest.

Some community members alleged that in any institution, in a top management position people are known to be motivated by selfishness. With the exception of the past government, the community has not seen any conservation efforts to protect the forest. Historically, Ntabamhlophe indigenous forest was fenced off, there were forest guards (rangers), and local people were not allowed to harvest any indigenous forest resources. The community understanding that the forest was once protected is believed to have saved the forest from extensive abuse. According to Robertson (2006 *pers. comm.*), despite the fact that there was no physical presence of government officials, the community respected the forest.

Other community members believe that if the forest is managed by the community, it will be better managed because the community understands the needs of both the community and the forest. However, it is challenging to try to understand why they have not exercised this option. In view of all the claims about forest management and resource use, one has to understand the issue of capacity. Some members felt that the forest would be less well managed by a government department, if government-mandated departments do not have the necessary and required resources to manage due to resource constraints. It is therefore impractical to expect rural poor communities to undertake forest management. According to Davies (2005), most government institutions in South Africa are not effectively managing natural resources.

All focus groups respondents stressed that any rules or management introduced in the area would be followed, provided, the community actively participated and benefited from the management of the forest. The focus groups respondents strongly believed that any forest management rules should benefit both the needs of the forest and community. It is believed that participation by the neighbouring communities in wildlife resource management should be and has been, considered as a possible means of achieving both the empowerment and socio-economic aspirations of the neighbouring communities (Centre for Environment, Agriculture and Development, 2006 and Centre for Environment, Agriculture and Development, 2007). However, based on the reports on Ongoye, Hlathikhulu and Nkandla forests, the process to master this approach and to ensure effective integration of wildlife conservation and rural development still remains a challenging task.

Historically the community used to congregate on top of Ntabamhlophe Mountain to pray for rain (during the droughts). They also harvested resources like *Festuca costata.* Among the community members there is a strong belief that if the forest is protected, they would benefit more from it. Hence, the only possible way to use a forest sustainably is to protect it. A very strong belief exists that if the forest is formally protected there would be more benefits to the community. Further to that, such a system should allow community access

and rights to sustainable use of natural resources from the forest. Majola (2006 *pers. comm.*), indicated that new land owners (claimants) would like to take over the management of the forest. Furthermore, they indicated that they would like to develop the 'claimed land' for tourism.

The community revealed that there was a lack of trust and confidence among the community members with regard to forest management. However, in South Africa it is believed that the community can play a highly significant role in a Participatory Forest Management programmes (Phadima, 2005). Furthermore, this can only happen if authority is devolved to the local community (Lawes *et al.,* 2004). Participatory Forest Management is based on sharing products, responsibilities, control and decisions (Hobley 1996 cited in Lawes *et al.,* 2004).

If this approach is applied to Ntabamhlophe indigenous state forest, the community, Ezemvelo KZN Wildlife and the Department of Water Affairs and Forestry will be able to make joint decisions over the management of the forest. Hobley (1996) refers to participatory forest management as a mechanism to develop partnerships, which will resolve conflict between state and local communities (Hobley, 1996 cited in Lawes *et al.,* 2004). According to McKean (2005), the forest is more likely to be protected in the long term if the community had formal tenure. Effectively, stakeholders can develop a working management programme to resolve forest management issues.

6.8 CHALLENGES

6.8.1 COMMUNITY REPRESENTATION

A number of meetings which were scheduled to meet members of the eDashi ward were not successful. In all four meetings which were scheduled, the community did not attend except for few individuals who appeared to be against the idea of forest conservation. It is important to stress the fact that this ward (eDashi) is the closest ward to Ntabamhlophe Mountain but not to the forest. Due to the fact that they see the mountain and forest as one, they are resistant to any proposed change in management issues related to Ntabamhlophe Mountain and the forest. In one meeting in the presence of

iNkosi Ndaba, eDashi community representatives requested that community be given another opportunity for a presentation. They further suggested that the community should select people to represent them in “research focused group” meetings.

Following a long discussion in one of the meetings, it was agreed that the researcher and Ezemvelo KZN Wildlife staff would do a presentation on the 17th and 20th September 2006 at eDashi and Shayamoya wards. It was further agreed that after these two research project presentations, a planning meeting would be held on the 1st October 2006 to plot the way forward for the future of Ntabamhlophe forest. The meeting agreed that KwaNdaba, Ezinyosini, emaNjokweni, Sobabili, Bhekabezayo and Goodhome will not be re-surveyed. Community representatives were satisfied with the process and wanted to move forward to a planning process to conserve Ntabamhlophe forest. Unfortunately all proposed meetings did not materialised because community members did not arrive.

At Ntabamhlophe, the Traditional Authority and the majority of the respondents indicated that they would like the forest to be protected and conserved. Contrary to this, eDashi community representatives indicated that they were not keen to engage in matters regarding Ntabamhlophe forest conservation. Historically, opposition came from Mhlungwini Traditional Regiment. The leader (*Induna yezi-Nsizwa*) of the regiment resides in the eDashi ward. It is the same regiment which forced the Traditional Authority to halt negotiations to conserve Ntabamhlophe Mountain and the forest in 1995.

The community leaders/representatives from eDashi ward that were met with were very influential. In all three meetings that were planned specifically for this ward, there were no community members present except for few individuals who appeared to oppose any forest conservation initiatives. It is not clear whether they were truly representing community interests. It would have been more acceptable if they had allowed the community to speak for themselves.

6.8.2 TRADITIONAL HEALERS' PERSPECTIVE

In a meeting held at Ntabamhlophe on 16 August 2006, traditional health practitioners expressed a very strong view that Ezemvelo KZN Wildlife should allow them to harvest medicinal plants inside protected areas. To achieve this, permission should only be given to members who hold Traditional Healers Association membership cards. They acknowledged that some people were making a living through medicinal plant sales, and thus obtained more direct economic benefits from the forest.

They recommended that medicinal plant harvesting should be limited to traditional healers. This system would ensure that when traditional healers were harvesting they did not bring friends or relatives. This would ensure that resources were not excessively harvested at one time. A liaison structure would have to be established to ensure that all stakeholders are communicating. In most cases, gatherers were excluded from such structures because they were not traditional healers.

For traditional reasons, there are indigenous medicinal plants which are harvested, prepared and used to treat patients inside the forest. These medicinal plants are not used anywhere except inside the forest. Some traditional health practitioners were not happy to give the names and uses of traditional medicinal plants because they felt that some members would learn and use such medicinal plants to compete with specialists (traditional healer specialists). There are traditional health practitioners who are regarded as specialists in certain fields of healing. Consequently, traditional healers maintain a very strong secrecy and confidentiality code for those who are specialists in certain illnesses. As a result, traditional health practitioners are reluctant to part with information on certain medicinal plant uses.

6.8.3 LAND TENURE

There is a strong belief that the forest belongs to iNkosi Ndaba (Mhlungwini Traditional Authority) because it is located within communal land. This is not necessarily true, because there are structures and resources or facilities within the traditional authority which belong to government and other

institutions. However, they are not labelled as traditional authority resources because they happen to be located within traditional authority jurisdiction, *e.g.* municipality structures such as the library, private farms etc. There are farms in and around the forest which are owned by commercial farmers.

The community understands and has accepted that these farms do not belong to the *iNkosi*. However, when it comes to Ntabamhlophe indigenous forest, the understanding is not at the same level. Ntabamhlophe community believed the forest belonged to the *iNkosi*. Historically, the forest was managed by government. There is no recorded evidence which supports that forest management was ever transferred to the community or the Traditional Authority. As reported by Ezemvelo KZN Wildlife (2006), Ntabamhlophe indigenous forest is a proclaimed state forest.

6.9 CONCLUSIONS

The study was based on two specific research objectives (Chapter 1, section 1.5). As a result, conclusions are presented in terms of research objectives.

Objective: (i) to understand the values and perceptions of the community towards the existence and future management of Ntabamhlophe indigenous state forest. It has been realised by natural resource management institutions that there is a growing desired and need for participatory resource management for natural forests (Nomtshongwana, 1999, Phadima, 2005 and Roberston and Lawes, 2005). Local people normally resist changes to traditional practices, especially those people who feel marginalized. Based on the information provided by the respondents in this study, it is clear that the community is aware of forest management challenges and the rate of Ntabamhlophe forest degradation. However, the community was not willing to accept that they were fully responsible for the indigenous forest degradation. The focus group attributes forest degradation to lack of cooperation between management authorities.

Some element of strong opposition to forest conservation by some individuals within the community still prevails. This indicates that Ntabamhlophe

community has complex and conflicting motivations. Like Ongoye and eNkandla community, Ntabamhlophe community members are no exception as their motives and preferences may not be easily understood. There could be an influence from the current prevailing socio-political factors between the traditional authority and some individuals in the community.

In South Africa it is believed that the community can play a highly significant role in a Participatory Forest Management programme. However, this can only happen if authority is devolved to the local community (Lawes *et al.,* 2004). Participatory Forest Management is based on sharing products, responsibilities, control and decisions (Hobley, 1996 cited in Lawes *et al.,* 2004).

If this approach is applied to Ntabamhlophe indigenous state forest, the local community, Ezemvelo KZN Wildlife and the Department of Water Affairs and Forestry would be able to make joint decisions over the management of the forest. Hobley (1996) refers to participatory forest management as a mechanism to develop partnership, which will resolve conflict between state and local communities (Hobley, 1996 cited in Lawes *et al.,* 2004). As McKean (2005) writes, the forest is more likely to be protected in the long term if the community has formal tenure. Stakeholders can develop a working management programme to resolve forest management issues.

Under unfavourable legislative and policy conditions and situations where policy implementation is weak, indigenous forests become exposed to serious competing land uses which may lead to deforestation, fragmentation, uncontrolled forest fires and other negative effects (Potvin *et al.,* 2003). Ntabamhlophe forest is no exception. Local community members are fully aware of the existence of gardening crops in the forest. They regard dagga plantations as a serious threat to the forest because of high levels of crime that are associated with it. At Ntabamhlophe, crime was viewed by respondents as a major hindrance to accessing livelihood resources from the forest.

Natural resource ownership has always been related to rights. In removing rights from people, they then view forests as a resource that they have lost. What is not clearly understood by communities is the fact that with rights come responsibilities to conserve (McKean, 2006 *pers. comm.).* At Ntabamhlophe there is a lack of coordination and coherent leadership to direct and guide the indigenous forest conservation initiative. The community has misinterpreted the fact that the forest is not actively managed by Ezemvelo KZN Wildlife. However, the forest is proclaimed, and as a result, it should be actively managed.

Objective: (ii) to determine the different types of forest products and resource use by the community and their values to the users (cultural, spiritual or economic values). The respondents indicated that their community knows that if the forest is formally protected there would be limited and controlled access to natural resources in the forest (medicinal plant *etc*.). However, they revealed that they are hit hardest when access to the resources is limited. The forest is the source of their livelihoods and for years they have depended on it.

The respondents indicated that there is a clear understanding and acceptance by the community that indigenous forests provide essential ecosystem services. They believe that Ntabamhlophe forest and the mountain possess high aesthetic values. Respondents revealed that for Ntabamhlophe community the most important “community legacy and heritage” is to be proudly associated with Ntabamhlophe Mountain. Thus, the mountain is a unique feature in their area.

The traditional health practitioners depend almost entirely on indigenous forests to provide medicinal plants for healing. Even if the forest is protected, traditional health practitioners indicated that they would always require access to harvest medicinal plants. Traditionally, the harvesting of medicinal plants is not permitted inside protected areas. Consequently, the protected area and the resource system of conservation which saw nature conservation as pure conservation, and state-enforced protection, has had very limited success and

it is not currently considered as a viable option (Fabricius *et al.,* 2004). However, at Ntabamhlophe a permit system could also apply.

The Ntabamhlophe community is dynamic, and so is the need for and use of natural resources. This dynamic emphasizes the need to understand the community and their relationship with the environment and their livelihoods. Consequently, appropriate stakeholder and community representation is important when dealing with an issue which affects community interests. The urgent need for this understanding was highlighted during the survey at Ntabamhlophe through the reflection by the community of eDashi ward. In 1995, the same traditional ward refused to cooperate with Ezemvelo KZN Wildlife, the Traditional Authority and other community members to protect the Ntabamhlophe Mountain and the forest. During the study, the focus group felt that all stakeholders and relevant role players should work together towards the conservation of the forest.

The Imbabazane Local Municipality appeared to be keen to protect the Mountain and the forest with possible potential for tourism ventures. In this case, the community aspirations and needs which are represented by the Local Municipality and Traditional Authority should be considered by these two institutions.

Ntabamhlophe indigenous state forest was proclaimed as part of Monk's Cowl Nature Reserve (Monk's Cowl State Forest). Technically, it is part of the UDP WHS. However, it was excluded during the submission for World Heritage Site listing in 1999. This was due to the fact that it was considered an isolated forest pocket which could be difficult to manage. However, the forest is important for biodiversity conservation as well as socio-economic values.

All respondents agreed that the forest needs to be conserved, and indicated that they were personally aware of the evidence of unsustainable use. Consequently they further advised that the problem was serious and, as a result, it required urgent attention to prevent the further abuse of the forest resources.

6.10 RECOMMENDATIONS

If current activities are allowed to happen without proper management, it is believed that illegal activities might seriously threaten the continued survival of the forest. These activities are considered illegal because there is no management authority to monitor or regulate forest use. It is thus recommended that the under-mentioned options should be considered.

The history of conservation and the occurrence of the threatened Cape Vulture species at Ntabamhlophe indigenous state forest proves the need to set up a strategic management approach which will ensure that Ntabamhlophe Mountain and the forest is protected from degradation through poor management. To ensure that the vulture colony is not disturbed by human activities, it is recommended that a vulture education and awareness campaign be incorporated into the Ezemvelo KZN Wildlife environmental awareness programme. It is necessary to facilitate and provide advice to improve livestock and rangeland management, thus reducing the risk of livestock loss and possible use of undesired drugs on livestock which could affect vultures when feeding on dead animals that may have been treated with undesirable drugs such as flunixin (Finadyne ®, Cronyxin ® and Pyroflam ®).

The biodiversity surveys should be undertaken to ascertain biodiversity assets, and the impacts of illegal activities in the forest. Forest species recruitment and growth rate of frequently used plants or animals species should be established, and the impact of fire on the forest should be assessed.

The Mhlungwini Traditional Authority seems to understand that the forest belongs to the state. However, some community members believe that the forest belongs to the *iNkosi*. The lack of Ezemvelo KZN Wildlife “visible policing” in the area has created an impression that the forest has no conservation importance. In the past, the community used to respect and avoid government officials. The issue of ownership needs to be addressed with community members. The possible solution to the forest ownership

dispute is a cooperative management agreement, involving Ezemvelo KZN Wildlife, the Traditional Authority, the Department of Water Affairs and Forestry, and Imbabazane Local Municipality.

Considering the current enabling policies and legislative framework, a partnership management approach should be recommended for Ntabamhlophe. The community, Traditional Authority and Ezemvelo KZN Wildlife are currently failing to manage the forest, therefore it is recommended that a "cooperative management" approach should be initiated. Currently, cooperative management is increasingly recognised as a mechanism to successful conservation (Centre for Environment, Agriculture and Development, 2006). It is hoped that this approach will assist in ensuring that the rights and responsibilities for natural resource management are devolved and are linked to an appropriate tenure arrangements.

An investigation into legal frameworks that could be used to support any regulations and the penalties for breaching/ignoring regulations need to be made to protect the forest.

The community is not simply a group of people living in one geographic area. The Centre for Environment Agriculture and Development (2007) defines community as a group of people who are bound by a common interest, issue or problem and who are communicating about it. During the study it was apparent that the community has varied views about the conservation of the forest. Ntabamhlophe community is very dynamic. Consequently the cooperative management system needs to take into account the local dynamics and should be adaptive.

The recommended management approach could be extended to Hlathikhulu indigenous forest which is also in the same situation. These two indigenous forests are approximately 13 km apart.

The Ntabamhlophe indigenous forest is part of UDP WHS. However, it is not managed as such. It is recommended that the forest is included in the Park's

management plan. The UDP WHS Integrated Management Plan should be explicit about how this forest (and other forest patches) should be managed and the resources and capacity needed to sustain such management.

The management of the forest should be prioritised in the Intergrated Development Plan for Imbabazane Local Municipality. It should be recognised in municipality's sector plans, such as Strategic Environmental Management Plan, Local Development Plan, Land Use Management Systems and Draft Tourism Development Plan. Therefore, the careful management and protection of these resources must be a priority.

An alternative resource provision should be investigated, to provide fuelwood, timber and medicinal plants (White Mountain Bambanani Indigenous Muthi Nursery). Nomtshongwana (1999) indicated that forest patches are destroyed due to the high and inappropriate scales of destructive harvesting methods. Therefore, sustainable medicinal plant harvesting strategies should be communicated to traditional health practitioners. This can be done through structures such as the Ezemvelo KZN Wildlife Traditional Healers Liaison Forum.

To enhance education and awareness, an appropriate community monitoring project with some kinds of incentives would have to be developed (community monitoring programme). Forest resource users would have to be trained to be monitors.

Drawing on Eeley *et al* (1994), the introduction of commercial plantations of exotic species since 1920s has led to a considerable reduction in the exploitation of indigenous forests. An appropriate integrated invasive alien species strategy would have to be in place to strategically remove invasive alien species and to avoid the spread of alien species. Such a strategy should ensure that the existing and new woodlots are appropriately maintained to provide timber and fuelwood.

The area has potential for ecotourism ventures. It is currently utilised by private business institutions and individual groups for tourism adventures. However, there are no resulting substantial benefits to the local community. An existing potential link between eManjokweni/Hillside Tourism Adventure project and Ngelengele Community Conservation Area would need to be investigated.

CHAPTER 7
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7.1 REFERENCES

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APPENDIX 1

Ntabamhlophe indigenous state forest Neighbouring Community Questionnaire

This study seeks to examine values and perceptions of the local community towards the existence and management of Ntabamhlophe indigenous forest. The aim is on determining varieties of forest use by local communities. I would like to know your perceptions of the conservation of Ntabamhlophe forest and determine if any locally derived forest conservation management is practised. The study and researcher are attached to University of KwaZulu Natal. Under all circumstances interviewees names and details will remain anonymous and participation in this study has to have interviewee consent.

A. DEMOGRAPHICS

I would like to ask you some questions about your self to help me understand your background.

1.1 What is the size of your household?

	1-3	**4-5**	**6-8**	**9+**
Children				
Adults				

1.2 Which of the following age and gender categories do you belong to?

	15-25	**26-35**	**36-45**	**46-55**	**Above 55**	**I do not know**
Male						
Female						

1.3 Marital status

1. Married
2. Single
3. Other

1.4 What is the education level you have attained?

No schooling	**Standard 5**	**Standard 8**	**Standard 10**	**Diploma/degree**	**Other**

1.5 How many adults in the household are employed?

Employed [ ]
Unemployed [ ]

1.6 What is your employment status?

Unemployed	**Self employed**	**Employed part time**	**Employed full-time**

1.7 What job do you have?

_____

1.8 Kindly indicate the range of your income per month.

Less than R400	Between R400 and R800	Between R800 and R1 500	Between R1500 and R2500	Greater than R2 500

B. FOREST RESOURCE USE AND PRODUCTS

2.1 How common are the following **natural resource uses** in this community?

Activities	*Very common*	*Common*	*Rare*	*None*
Hunting (fish, game and birds)				
Gathering (medicinal, fuelwood)				
Bee keeping				
Grazing (livestock)				
Wild vegetable (mushrooms)				
Gardening (crops)				

2.2 Which of the following best describes reliance on Ntabamhlophe forest?

	Very high	High	Average	Low	None
Local community					
Your household					

2.3 What do you see as the major benefit(s) of having Ntabamhlophe forest as a resource near your community?

_____

Management type of the forest is not clear. Lack of clarity on the status of the forest is affecting its condition and management.

2.4 Which of the following challenges apply to Ntabamhlophe forest?

	True	False	Not Sure
Illegal/uncontrolled harvests			
Forest fires			
Grazing of livestock			
Deforestation			
Boundary/border disputes			
Conflict on management			

2.5 Kindly rate the level of contribution of Ntabamhlophe forest to your household's livelihood.

Activities/ considerations	*Very high*	*High*	*Low*	*None*
Nourishment/ food				
Health (medicinal material)				
Spiritual upliftment				
Educational				
Cultural				
Habitat (physical habitation)				
Biodiversity Assets				
Recreation				

Aesthetic value				
Existence (legacy)				
Ecosystems services (prevent drought, water catchment)				
Economic value (source of income, savings/investments)				
Housing – building materials, fencing, etc.				
Fuel/ energy, e.g. charcoal and firewood				
Others (specify)……..				

2.6 Please indicate as appropriate for each of the following statements.

	True	**False**	**Not Sure**
Local people have always depended on Ntabamhlophe forest as a source of livelihood			
Local people see the need to conserve/ protect Ntabamhlophe forest			
Local people participate in the conservation of Ntabamhlophe forest			
Local people use the forest for cropping/ farming			
Local people use the forest for harvesting timber products			
Local people use the forest for harvesting non-timber products			
Usage of the forest and its products has intensified over time			
Future usage of the forest and its products is threatened by population growth in surrounding areas			
The forest is likely to be an area of conflict in the future because of the varying demands on how it should be used			

2.7 What plant parts do you normally harvest from Ntabamhlophe forest?

Flowers	**Twigs**	**Leaves**	**Barks**	**Seeds**	**Roots**	**Bulbs**	**None**	**Other**

2.8 Kindly indicate the frequency of harvest for each of the following plant parts from Ntabamhlophe forest.

	Often	**Rarely**	**Never**
Flowers			
Twigs			
Leaves			
Barks			
Seeds			
Roots			
Bulbs			
Timber/ wood			

2.9 Please rate the frequency of the following common uses of the forest and its products

	Very frequently	**Frequently**	**Rarely**	**Never**
Decoration/craft				
Medicine				
Building				
Fuelwood				
Grazing				
Other (specify)				

2.10 What plant species do you use the most or more often than the others?

Species Name (isiZulu Name)	Parts	Quantity

2.11 How many times do you harvest resource from the forest?

Daily	Weekly	Monthly	Yearly	None

2.12 What plant species do you use less frequently?

Species (isiZulu Name)	Frequency

2.13 What do you use it for?

Species (isiZulu Name)	Use

2.14 How often do you collect and how much at a time?

Frequency	Quantity (kg) bag
Daily	
Weekly	
Monthly	
Yearly	
None	

2.15 Have the number of times that you harvested from the forest changed in the last few years?

1. I now harvest more often
2. I now harvest less often
3. I now harvest same as before
4. Not applicable

2.16 If you have changed your use of the forest why?

_____

2.17 Do you specifically go to the forest to harvest resources or do you do it as you encounter them whilst doing other activities in the forest?

_____

2.18 Do people from outside this community come to use and harvest from the forest?

1. Yes
2. No
3. I do not know

2.19 If your answer is yes, do you think they are welcome by community to harvest?

_____

2.20 What do you look for when collecting fencing poles?

	Dead wood	**Large logs**	**Branches**	**Any thing**
Preference				
Availability				

2.21 What do you look for when collecting building poles?

	Dead wood	**Large logs**	**Branches**	**Any thing**
Preference				
Availability				

2.22 What do you look for when collecting fuelwood?

	Dead wood	**Large logs**	**Small branches**	**Any thing**
Preference				
Availability				

2.23 Would you continue to harvest from the forest even if there is wattle or blue gum available near the forest?

	Always	**Often**	**Sometimes**	**Not at all**
Preference				
Availability				

2.24 If you had the choice between using the forest and an alternative, such as electricity or woodlots what would you choose?

Use forest	**Electricity**	**Woodlots**	**Paraffin**

2.25 How much has the community's/household's benefit changed from the forest over time?

Significantly High	**Not Much**	**Significantly Low**	**None**	**Do not know**

2.26 Do you think that you will use forest more or less in the future?

More	**Less**	**The same**	**Do not know**

2.27 How do you see community's/household's benefits from the forest in the future?

Very high	**High**	**Average**	**Low**	**None**

2.28 What kind of future benefits do you expect from Ntabamhlophe forest?

Benefits	**Very High**	**High**	**Low**	**None**
Water				
Cultural				
Educational				
Timber harvesting (Building material, fencing)				
Biodiversity conservation (Protected area)				
Spiritual				

Wild vegetables (harvest)				
Beekeeping				
Tourism (hiking, climbing)				
Hunting				
Fishing				
Craft				
Firewood				
Medicinal Plant				
Grazing				
Free access for all				
Allow people to grow crops inside the forest				

C. FOREST MANAGEMENT

3.1 In your view, which of the following best depicts the current management of Ntabamhlophe forest?

- ☐ ***State Forest Management*** –government department determine rules regarding the use and management of the forest.
- ☐ ***Community Forest Management*** –occurs when all adult villagers vote to elect Village Forest Management (committee)
- ☐ ***Participatory Forest Management*** –all groups with legitimate interest (stakeholders and role-players) form a Joint Forest Management.
- ☐ ***Open Access*** –no control on how forest is used, anyone can take whatever they want

3.2 Kindly provide a brief description of your understanding/knowledge of how the forest was previously managed?

_____
_____

3.3 How would you describe the level of involvement of traditional authorities in the management of the forest?

Very high	High	Medium	Low	None

3.4 Describe your perception of the role of each of the following in influencing access to resources in Ntabamhlophe forest?

	Very strongly	***Strongly***	***Weakly***	***None***
Local people				
Government (departments)				
Traditional leaders				
Other (specify)……				

3.5 Who does the forest belong to?

iNkosi	Community	Government	Nobody	Other

3.6 Would you obey a rule introduced by forest authority which control forest use?

1. Yes
2. No

3.7 Kindly elaborate on your response above

_____

3.8 Historically, whilst in the forest which institution officials did you avoid?

Traditional authority	Community members	Government	Nobody	

3.9 Currently whilst in the forest which institution officials do you avoid?

Traditional authority	Community members	Government	Nobody	

3.10 What do you think would happen if the following authority was managing the forest?

Authority	Much better managed	Better managed	Worse managed	Do not know
Government (Department)				
Community				
Private Company				
Other				

D. FOREST CONSERVATION (PAST AND PRESENT)

4.1 How would you describe the present state on Ntabamhlophe forest?

Unmodified	Slightly Modified	Highly Modified	Not Sure/Do not Know

4.2 To what would you attribute your perceived present state of Ntabamhlophe forest?

_____

4.3 What would you regard as the major pressures threatening/ affecting the state of Ntabamhlophe forest at present?

_____

4.4 Would you say the efforts to conserve Ntabamhlophe forest have led to:

Great improvement	Improvement	Deterioration	No change	Not sure

4.5 Give reasons to your answer?

_____

4.6 Are you personally aware of evidence of unsustainable (inappropriate) use of forest resources in the forest?

Yes	No	Do not know

4.7 How would you rate the problem of unsustainable (inappropriate) use of forest resources in the forest?

Very high	High	Average	Low	Negligible

4.8 Do you think it need attention to halt the problem?

Urgent needs attention	Not urgent	Not sure

4.9 Please elaborate on the above

_____
_____

4.10 In your opinion, list **five major threats** faced by forest resources in this area in order of priority

_____

_____

_____

_____

_____

4.11 Do you think local people should be allowed to use forest resources in whichever way they want in the forest?

Yes	No	Do not know

4.12 How would you rate the prospects of Ntabamhlophe forest being completely wiped out in the absence of proper management?

Very strong	Strong	Moderate	Low	Do not know

4.13 In view of your response above, would you call for?

- Exclusive government control
- Co-management between government and local people
- Exclusive traditional authority's control
- Other arrangement (specify)

4.14 Do you think it is important to conserve this forest?

Strongly agree	Agree	Disagree	Do not know

4.15 Why?

4.16 What measures would you recommend to ensure the sustainability of Ntabamhlophe forest and its resources?

Your co-operation in responding to these questions is highly appreciated

Thank you.