THE UTILISATION OF NATURAL RESOURCES IN THE MATUTUINE DISTRICT OF SOUTHERN MOZAMBIQUE: IMPLICATIONS FOR TRANSFRONTIER CONSERVATION

by

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Summary

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This dissertation deals with the economic aspect of culture and focuses on the patterns of renewable natural resources utilisation among the people living in the Matutuine District of Southern Mozambique. The study also focuses on the demography, history and socio-political organisation of the area. Against this background the study emphasises the importance of the fact that these aspects will have to be taken into account if the establishment of the planned Lubombo Transfrontier Conservation Area in the same region is to be in any way successful.

This area has no conservation status at present but has been earmarked to become part of the Lubombo Transfrontier Conservation Area. This will mean that the entire area, or a substantial part thereof, will have to be proclaimed as a protected area. In Southern Africa the establishment of conservation areas have often been coupled with the removal of people from such areas. People removed from land declared as nature conservation areas were often denied access to resources they previously utilised to survive.

The research findings indicate that the local people who live in the Matutuine District of Mozambique are extremely dependent on the natural environment for their everyday survival. The vast majority of people are concentrated in small villages where they practise subsistence agriculture. Due to nutrient poor soils and other factors, the local people are not able to produce enough foodstuffs to fulfil their

survival needs. Although most people own small stock, the absolute minority of people own cattle. This is largely, although not solely attributable to the turbulent history of the area, especially the effects of the Mozambican Civil War. The poverty of the people in the area increases their dependence on natural resources. Local people supplement their diets by fish, caught in the lakes and rivers in the area, and wild fruits. Due to the effects of the Civil War, most fauna in the area have been depleted but people still hunt wild animals, especially small game, for food.

The local people are thus extremely dependent on the natural resource base of the area earmarked to become part of the Lubombo Transfrontier Conservation Area. With the information presented in this study it is possible for the planners of the Lubombo Transfrontier Conservation Area to devise a strategy that will not impair the livelihoods of the local people who live in the area, but instead accommodate their socio-economic needs in the planning process and in the eventual establishment of the Lubombo Transfrontier Conservation Area.

Keywords: community-based nature conservation; ethnobotany; ethnozoology; human-wild animal interaction; Maputaland; Peace Parks; renewable natural resource utilisation; Southern Mozambique; Tembe-Thonga; Transfrontier Conservation.

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CHAPTER 1

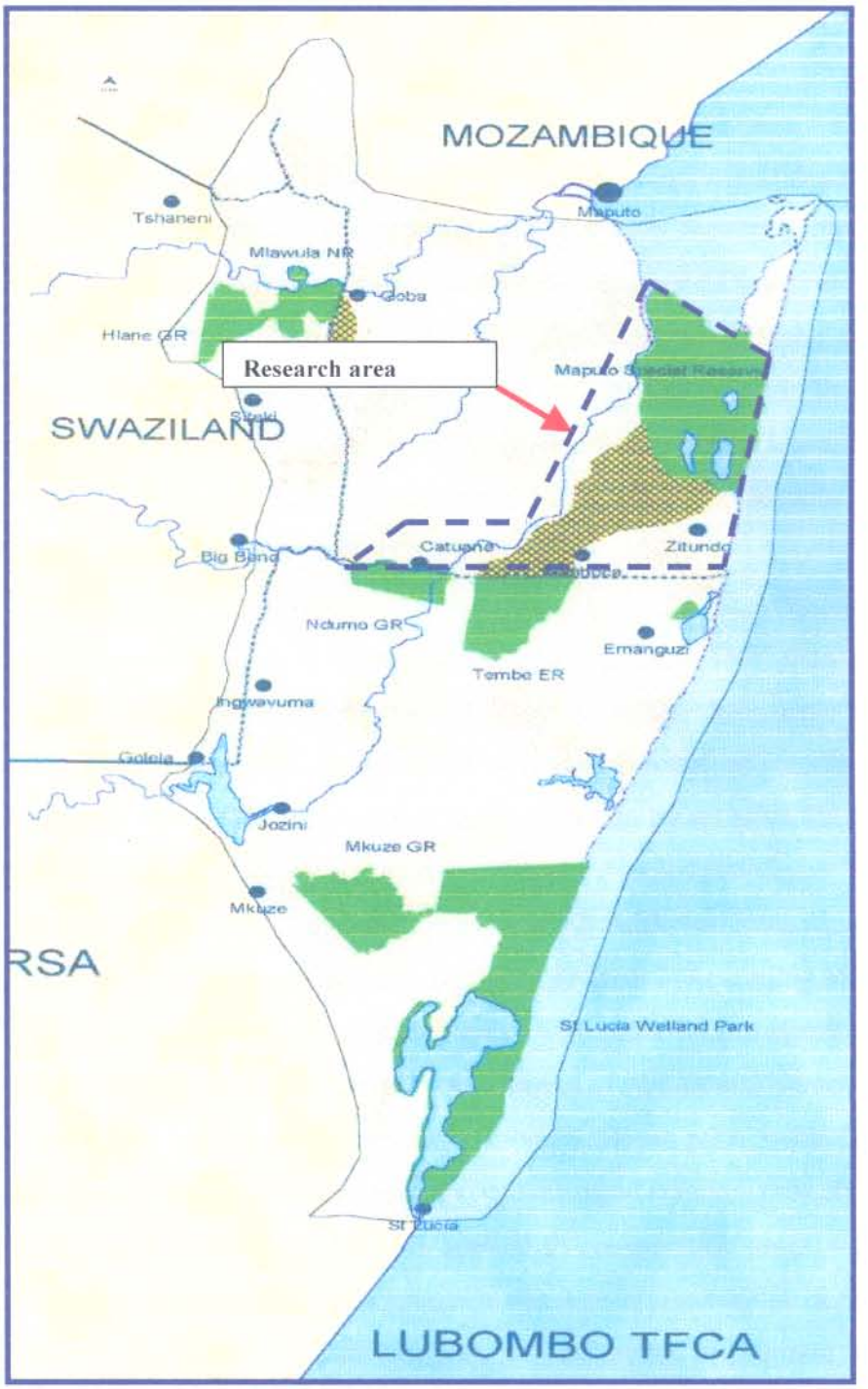
RESEARCH GOAL, THEORETICAL ORIENTATION AND METHODOLOGY

1. 1. INTRODUCTION

This dissertation deals with the economic aspect of culture (see Coertze 1973:1, 56 ff; & 1980:63) and focuses primarily on the patterns of renewable natural resources utilisation among the people living in the Matutuine District of Southern Mozambique. The study emphasises the importance of recognising these aspects to ensure the successful establishment of the planned Lubombo Transfrontier Conservation Area in the Matutuine District (Map 1).

In Southern Africa the establishment of nature conservation areas have often been coupled with the removal of people from such areas. In many instance these people were denied access to the natural resources they were previously dependent on, and forced to make a living under harsher circumstances (Adams & McShane 1992:xvii). This already negative situation is exacerbated in instances where the movement of people in the name of conservation go hand-in-hand with undelivered promises of a better life that will come about once such areas are established and tourists start to visit the areas on a regular basis (Els & Bothma 2000:20-21).

Map 1: The Matutuine District and the boundaries of the proposed Lubombo Transfrontier Conservation Area



Source: Source: Map compiled by James Culverwell: Technical advisor to the Lubombo TFCA of the DNFFB/SPFFB: Mozambique.

This study is, therefore, an effort to represent the, often neglected, human side in the planning and establishment of a conservation area in a region where people have for many generations been virtually forced to make a living from their natural surroundings in order to survive.

Although it is envisaged that the Lubombo Transfrontier Conservation Area will include areas in South Africa, Swaziland and Mozambique, this study focuses on that part of the proposed Conservation Area to be established in the Matutuine District of the Maputo Province in Southern Mozambique (see Map 1). The initial phase of the establishment of the Conservation Area will be realised in this area. The first phase of the programme concentrates on linking the Tembe Elephant Park (South Africa) and the Maputo Elephant Reserve (Mozambique) with a corridor between the Rio Maputo and the Rio Futi, commonly referred to as the Futi-corridor.

Transfrontier Conservation is a nature conservation strategy that aims to conserve biospheres that stretch across the boundaries of different states. Such areas are managed through arranged international co-operation between national governments or their conservation authorities. This ensures that larger areas can be set aside for conservation than is usually possible for one state to undertake single-handedly. Transfrontier Conservation Areas allow wild animals to migrate along traditional routes and contributes to the conservation of biodiversity over much larger areas. According to De Villiers (1999:12-13), the term conservation areas refers to 'any of the six management categories of the IUCN [International Union for the Conservation of Nature and Natural Resources] for protected areas- namely, strict nature reserve, national park, natural monument, habitat management area, protected landscape, and managed resource protected area.' The term Transfrontier Conservation Areas is applied to conservation areas where 'formal and/or informal co-operation between sovereign states or regions within such states, and in the context of international law' applies in 'achieving a common goal in the management of a shared ecological unit on either side of an international boundary' (De Villiers 1999:12).

Transfrontier Conservation is thus primarily a nature conservation strategy, but has also been heralded as a strategy to achieve rural development through tourism. The advocates of Transfrontier Conservation believe that the economic benefits that tourism brings will trickle down to rural communities living adjacent to these tourist attractions. For this reason Transfrontier Conservation in Africa is often promoted as a socio-economic development strategy (Peace Parks Foundation 2000). The history of development in sub-Saharan Africa has proved, however, that this kind of 'top-down' development programme may fail because the cultural systems of the people living where the planned development is to take place, are frequently not recognised in the design and implementation of many of these projects (Verhelst 1990:9-23).

Although Transfrontier Conservation is made out to be a socio-economic development strategy, it is essentially a nature conservation strategy. The socio-economic needs of people are secondary to the nature conservation ideals that Transfrontier Conservation Areas promote. In other words, the main emphasis of Transfrontier Conservation falls almost exclusively on nature conservation with little emphasis on the socio-economic development of people living in these areas.

In an attempt to shift the sole emphasis from nature conservation to the integration of the socio-economic needs of people in the establishment of such areas, this study focuses on a group of people who will be affected by the establishment of a nature conservation area. It explores the renewable natural resource utilisation patterns of the people living in the Matutuine District. These people subsist on whatever they can plant, gather from the veld or catch in lakes and rivers. They are extremely dependent on their natural surroundings for their survival.

The information presented in this dissertation will enable the planners of the Lubombo Transfrontier Conservation Area to make decisions that will ensure that the establishment of the said conservation area does not impair the livelihoods of the local people, as has been the case in so many instances in the past.

In this chapter the philosophy and principles of Transfrontier Conservation is further examined. In Chapters 2, 3 and 4 the history, political administration, demography and natural resource utilisation patterns of the local people who stay in the Matutuine District of Mozambique are discussed. Chapters 2, 3, and 4 are structured according to the questionnaire used in the conduct of quantitative research for this study. This should not be interpreted to mean that qualitative research was not carried out. Instead, the results of qualitative research enabled the researcher to design the questionnaire and also to interpret the answers of respondents to the questionnaire (see 1.3.3). The information presented in this study is thus an integration of qualitative and quantitative research findings, although the questionnaire was used as a logical structure within which to present these results. Chapter 5 presents a summary of the research findings.

1. 2. TRANSFRONTIER CONSERVATION

1. 2. 1. Introduction

Transfrontier Conservation Areas are defined as 'relatively large areas, which straddle frontiers between two or more countries and cover large-scale natural systems encompassing one or more protected areas'. This definition is limiting since Transfrontier Conservation Areas can actually extend far beyond fixed protected areas to encompass large biospheres and a wide range of community-based natural resource management programmes (Peace Parks Foundation 1998). Additionally, an essential component of the definition of Transfrontier Conservation Areas is that a Transfrontier Conservation Area is the unification of fragmented areas for the promotion of regional environmental and political stability (Fakir 2000:161).

According to the Peace Parks Foundation, conservation areas that stretch across international boundaries may provide a viable way to integrate the goals of rural development and nature conservation. The Peace Parks Foundation believes that Transfrontier Conservation Areas will enable indigenous people in Africa to establish

structures at community level that will make it possible for them to increase the value they derive from their natural environment (Peace Parks Newsletter 1997). Hence, Transfrontier Conservation claims not only to be a strategy of nature conservation, but also a strategy of integrated nature conservation and human socio-economic development. As such, it conforms with the current mainstream conservation philosophy.

The philosophy of integrated nature conservation and human socio-economic development is the result of the development of the nature conservation paradigm, from its genesis as a philosophy of preservationism, to the development of the philosophies of conservationism and sustainable utilisation (see 1.2.2.1). Therefore, in order to explain the philosophy of Transfrontier Conservation, the evolution of the concept of nature conservation from preservation to community-based nature conservation is examined in the next section.

1. 2. 2. Community-based nature conservation

1. 2. 2. 1. Evolution of the concept

Conservation may be defined as 'the action of keeping from harm, decay, loss, or waste' or as 'careful preservation' (Hawkins 1984:297). Traditionally, government authorities have supported this view of conservation and it led them to set aside demarcated areas, free from human influence, for the purposes of conservation. In Northern America the Yellowstone National Park was established as early as 1872, when a piece of land was set aside explicitly for the purposes of conservation. There was no permanent human settlement inside the Park (MacEwen & MacEwen 1982:3). The situation was similar to the area now known as Kruger National Park, proclaimed in 1898 (Yates 1935:17). Originally nature conservation thus translated into putting aside large areas of natural land for the sole purpose of preservation. Within these areas people not employed by nature conservation agencies were not allowed to settle (Els 1996:18).

This conservation theory was reinforced in 1969 by the International Union for the Conservation of Nature and Natural Resources. The Union declared a national park to be an area rich in biodiversity, free from human occupation and exploitation. It also stated that the highest authorities of a country must prevent human occupation or exploitation in that area, and that people should only be allowed to enter the park temporarily as visitors, for recreation and cultural activities. People in the employ of nature conservation are, however allowed to settle in the park in order to manage it. Management strategies such as culling of animal species are also excluded from the above legislation (Els 1996:18).

At the root of this philosophy lies two important factors. The first is the destruction of the European natural environment due to years of industrial development. It therefore became a goal of the international community, led by the Western countries, to avoid similar destruction in other parts of the world (Anderson & Grove 1987:5). The second factor, which is closely related to the first, is the so-called 'Myth of Wild Africa', which developed in Europe from the reports and accounts of hunters and explorers who travelled through Africa (Adams & McShane 1992:xii-xv). The narratives of explorers such as Richard Burton and David Livingstone shaped European images of Africa (Adams & McShane 1992:xii-xv). They and others, like Hemingway, Rooseveldt, Selous, Daly and Stigand, created an image of Africa as the last great wilderness (Mackenzie 1987:54-55). Africa was described as a paradise, a wilderness, and a place of refuge from an industrialised and devastated Europe (Anderson & Grove 1987:5).

Advances in cinematography helped strengthen this 'myth'. Films about the African environment were dominated by footage from Tanzania and Kenya. People in Europe and North America came to see Africa as a place consisting entirely of huge open plains with millions of wild animals roaming free, uninhabited by human beings. The image of Africa thus created was of a single sovereign state with the Serengeti stretching from the north to the south (Adams & McShane 1992:xii-xv).

The destruction of the natural environment of Europe and the 'Myth of Wild Africa' gave

birth to the conservation philosophy known as 'preservationism'. The basic elements of this philosophy were incorporated into the 1969 International Union for the Conservation of Nature and Natural Resources declaration referred to above. At the base of this philosophy lies the belief that, in order to save wild animals, they have to be kept as far away from people as possible. The basic model for establishing protected areas was thus to move people out of and away from areas designated for nature conservation. This led to a situation where many people were taken off their land and resettled on the boundaries of conservation areas. These people derive little or no benefits from these areas and in most cases do not even understand why these areas where created. As a result these people normally do not support the existence of these conservation areas (Adams & McShane 1992:xv).

Nature conservation based on the preservation model often deprived indigenous people of a resource base they had utilised for centuries, without providing them with the necessary substitutes to continue their traditional way of live (Bell 1987:80). African hunters were suddenly branded 'poachers', a term denoting a negative value judgment in the struggle between the heroes and villains of nature conservation. The people who determined the future of conservation in Africa did not recognize the age-old interconnectedness between people and their environment. Whatever African conservation ethic existed was thus overlooked (Adams & McSahane 1992:xvii). In this fashion the conservation edifice for Africa was determined by Western or European peoples (Anderson & Grove 1987:2). Even Africans involved in conservation were trained by these people and coached to adhere to a solution for Africa's problems devised in Europe (Adams & McSahane 1992:xvii).

This model of nature conservation (preservation) is especially hard on people who live adjacent to designated conservation areas. As stated above, they lose a resource base on which they have been dependent for many years. They can no longer use the land earmarked for conservation for agriculture; they cannot utilise wild animals and plants inside conservation areas for food and other purposes; and they suffer attacks and crop

damages from wild animals that escape from the conservation areas. In effect these people are disinherited and have no claims on land that no longer belongs to them (Kiss 1990:177).

Many moral arguments could be made against a conservation philosophy that deprives people of their land and livelihood. These arguments have ultimately led to the development of a new conservation paradigm to replace the philosophy of 'preservationism'. The new paradigm can best be described as 'integrated human development and nature conservation' (Els 1996:20-21). At the base of this change in conservation philosophy is the realisation that the needs of indigenous people can no longer be ignored in the name of conservation.

It is not only the moral dimension that has forced conservation authorities to change their views, but also the realisation that 'preservation' is not a workable conservation strategy for Africa. People depend on resources in protected areas for their survival. The African population is growing rapidly (Kegley & Witkopf 1995:298). This growth puts extra pressure on resources inside protected areas. Thus, conservation authorities have come to realise that excluding people from a resource base without compensating them for their loss only forces them to use the resources illegally. Where that happens people do not use the resource on a sustainable basis. Instead, they see the protected area as an 'effectively open-access resource from which an individual can best benefit by taking as much as he can as quickly as possible' (Kiss 1990:177).

Instead of allowing this scenario to unfold, conservation authorities now take into account that people who neighbour conservation areas will only agree to conserve the natural resources in their environs if they derive some benefit from the process. Wildlife conservation, they now believe, must not be viewed by indigenous people as a nuisance, but as a resource (Sibanda & Omwega 1996:180). In many cases, wildlife conservation is a better land use strategy than agriculture and animal husbandry (Enghoff 1990:93). Due to genetic adaptations, wildlife can flourish in areas that are not suited to domestic

animals and plants that are introduced to the environment. Therefore wildlife can use these resources more efficiently and in a sustainable manner (Kiss 1990:17).

The idea is that once indigenous people derive some sort of benefit from nature conservation, they will help to make nature conservation work. The opposite of this philosophy is also true: if indigenous people do not benefit from nature conservation, the political and economic pressures become so large that they have a negative impact on nature conservation.

The International Union for the Conservation of Nature and Natural Resources has come to realise the logic of this argument. In 1980 the International Union for the Conservation of Nature and Natural Resources, in co-operation with the United Nations Environmental Programme and the Worldwide Fund for Nature accepted a new document, entitled the *World Conservation Strategy* (IUCN 1980). The primary objectives of this strategy are (IUCN 1980:iv):

- the maintenance of essential ecological processes and life-support systems;
- the preservation of genetic diversity;
- the sustainable utilisation of species and ecosystems.

The aim of the third point of the *World Conservation Strategy* suggests a new paradigm in conservation thinking. Only eleven years prior to this document the International Union for the Conservation of Nature and Natural Resources advocated a total separation between human activity and protected areas. The new paradigm no longer sees conservation and rural development as mutually exclusive alternatives, but instead as mutually dependent factors (Els 1996:20).

The *World Conservation Strategy* introduced the concept of sustainable development. This was refined in the World Commission on Environment and Development report, *Our Common future*, which was submitted to the United Nations in 1987. According to

that report, sustainable development is 'development which meets the needs of the present, without compromising the ability of future generations to meet their own needs' (Department of Environmental Affairs and Tourism 1998:14).

In 1991 the three above-mentioned international agencies joined forces again to produce a document entitled *Caring for the Earth: A Guide to Sustainable Living*. This document predicts a globally sustainable society, which can be achieved if the following nine principles are applied (Yeld 1997:8-9):

- respecting and caring for the community of life;
- improving the quality of life;
- conserving Earth's vitality and diversity;
- minimising the depletion of non-renewable resources;
- keeping within Earth's carrying capacity;
- changing personal attitudes and practices;
- enabling communities to care for their own environments;
- providing a national framework for integrating development and conservation; and
- creating a global alliance.

Sustainable development is the key concept in this document. However, the document also states that any form of sustainable development is directly linked to the fertility of the planet. To ensure the fertility of the planet three objectives must be met (Yeld 1997:9):

- Essential ecological processes and life-support systems must be maintained.
- Biological diversity (all life forms on earth) must be preserved.
- Natural resources or ecosystems must be used sustainably and, in the case of non-renewable resources, such as most minerals, resources must be used wisely.

The philosophy that conservation and rural socio-economic development must be an integrated process has been well established in international legal documents and in international agreements. Sustainable utilisation, fully defined in the documents named above, has, however, become a mere buzzword. Despite enthusiasm and support for the integrated human development and nature conservation philosophy, there are only a few examples of places where this principle has been successfully implemented (Brandon & Wells 1992; Kiss 1990).

1. 2. 2. 2. The process of integrated nature conservation and human development

The process of integrating the needs of indigenous people and wildlife into the design of a conservation area is usually a struggle to find the correct balance. In one program the economic development of people is the focus, and in another more attention is paid to the conservation of wildlife. On these grounds different methods to ensure community-based nature conservation have been identified (see below). In most cases, the focus is on wildlife conservation rather than on the socio-economic development of people (Brandon & Wells 1992:560). Instead of using wildlife exclusively as a resource for economic development in the same way that other resources like minerals and oil can be used, indigenous people merely share in some of the spin-offs accrued from wildlife conservation.

- Buffer zones

The method of integrated nature conservation and human development with the least amount of involvement of rural people is the creation of buffer zones around protected areas. These buffer zones are areas just inside or outside conservation areas where indigenous people are allowed to harvest natural resources on a sustainable basis. The basic idea is that if people are allowed to harvest resources inside the buffer zone, the rest of the conservation area will be protected. The focus of this

strategy is on the protection of the conservation area rather than on the development of the surrounding communities (Brandon & Wells 1992:560). An example of this method is the community wildlife management programme around the Selous Game Reserve in Tanzania. In this programme, village wildlife management areas have been created along the borders of the Game Reserve. Indigenous people are allowed to hunt a specified quota of wild animals inside the buffer zones every year. Furthermore, indigenous communities have received so-called sustainable utilisation deeds to the village wildlife management areas to ensure their rights to the utilisation of wildlife in the buffer zones in the future (IIED 1994:41).

- Compensation or substitution

The second method in which indigenous people are made part of the conservation process is through compensation or substitution. As was stated above, one of the major problems of the conservation philosophy of 'preservation' was the fact that people were deprived of a resource base on which they depended for their survival. The aim of compensation or substitution is to give money or other forms of compensation to people who suffer crop damages or who are deprived of agricultural land and grazing for their animals (Brandon & Wells 1992:560). At the base of this strategy lies the belief that people will conserve wildlife if they are paid to do so. An example of this strategy is the compensation paid to the Maasai in the Amboseli National Park in Kenya for rights to grazing land they lost with the establishment of the conservation area in the 1960s (IIED 1994:21).

- Rural socio-economic development

The third method accentuates the importance of the socio-economic development of people who stay adjacent to conservation areas. In theory, if development takes place in the surrounding communities, people will no longer be dependent on the resources inside conservation areas for survival. The engine that drives rural development

outside protected areas is the wildlife found inside conservation areas (Brandon & Wells 1992:560). This is best explained by Sibanda and Omwega (1996:180) when they say 'wildlife must be treated as any other resource, such as oil in Texas or in Saudi Arabia'.

A very good example of this method of community-based nature conservation is the CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) programme. Various authors (Child 1991; Els 1996; Murindagomo 1990; Murombedzi 1990; Murphee 1989) have described the functioning and success of this programme in detail and it is not replicated here.

CAMPFIRE is a relative success story for the philosophy of integrated conservation and rural socio-economic development, although there are problems in districts where government officials do not adhere to the initial intent of the agreement (Els 1996:29-34). Few other documented programmes have achieved the same amount of success (Kiss 1990; Brandon & Wells 1992).

According to Els (1996:32-33) the success of the CAMPFIRE programme is based on six principles unique to the programme and the area:

1. The CAMPFIRE programme is only managed in the so-called communal areas and/or safari areas of Zimbabwe. These areas are reserved by the constitution of Zimbabwe for the exclusive purposes of safaris (hunting or photographic), or communal occupation and communal utilisation according to the cultural traditions of the indigenous black people of Zimbabwe.
2. Within the communal areas political leaders are chosen democratically and each district is responsible for more than 60% of its own budget.
3. These communal areas in Zimbabwe are situated in sparsely populated wilderness areas.
4. In Zimbabwe game species with high monetary value occur naturally and in

large numbers in communal areas outside of proclaimed conservation areas. Elephant, lion, leopard, buffalo and even rhinoceros are made available for trophy hunting in these communal areas through systems of ecological monitoring and selection.

5. Research results from the World Wide Fund for Nature's *Multispecies Animal Production Systems Project* support the view that greater economic benefits can be derived from wildlife harvesting than from cattle rearing on the same marginal land in communal areas in Zimbabwe.
6. In 1990 the Zimbabwean Department of National Parks and Wildlife Management transferred the ownership of wild animals to authorities presiding over the communal areas.

Apart from being sparsely populated, none of these conditions exist in Southern Mozambique. This means that a project similar to the CAMPFIRE project can only be initiated once large-scale socio-political changes take place in Southern Mozambique. One such change would, for instance, require the authorities to stock the area with game (at great costs). Such actions would conflict with local interests since people living in the Matutuine District already complain about the negative impact that the few wild animals in the area have on their crops.

1. 2. 3. The establishment of Transfrontier Conservation Areas

1. 2. 3. 1. Transfrontier Conservation Areas worldwide

The idea of establishing conservation areas that stretch across international boundaries is not a new one. The Waterton Lakes National Park in southwestern Alberta (Canada) and the Glacier National Park in Montana (the United States of America) combined to form the first international conservation area, the Waterton-Glacier International Peace Park in 1932 (Parks Canada 1996; De Villiers 1999:64-65).

Other Transfrontier Conservation Areas include co-operation between Germany, Austria and Switzerland to manage the Bodensee (Lake Constance), the Wadden Sea Transfrontier Conservation Area, which consists of the Waddenmeer National Park in Germany, the Waddenzee State Nature Reserve in the Netherlands and the Vadehavet Wildlife Reserve of Denmark, and the joint management of the Maritime Alps Nature Park in Italy and the Mercantour National Park of France (De Villiers 1999:66-76).

The International Union for the Conservation of Nature and Natural Resources has been promoting the establishment of co-operation between trans-border conservation areas for a long time. In 1988 the International Union for the Conservation of Nature and Natural Resources' Commission on National Parks and Protected Areas identified at least 70 protected areas in 65 countries that stretch across international boundaries (Peace Parks Foundation 1998). Since that time, at least 30 more have been added to the list (Douglas 1997:31). During an international conference held in South Africa in 1997, no fewer than 136 potential Transfrontier Conservation Areas were identified worldwide. These areas involve 98 countries and cover over a million square miles (Harvey 2000:67). By 1999 there were 24 established Transfrontier Conservation Areas in Europe, involving 20 countries and approximately 100 Transfrontier Conservation Areas in various stages of development in other parts of the world (De Villiers 1999:63).

Based on the degree of co-operation between states or their respective conservation agencies, De Villiers (1999:43-48, 135-143) identifies four different models of Transfrontier Conservation Areas:

- **Exchange of information** is the most basic form of co-operation between two states or their conservation agencies. It involves the exchange of data and ideas and the discussion of mutual concerns regarding nature conservation areas. When states do not have an explicit agreement to exchange such information, it is possible for the conservation agencies of different states to co-operate, independent of their states.

- **Formal consultation** is a more advanced form of co-operation between conservation agencies or states and occurs when there is a formal interaction on matters of common concern regarding the management and control of respective nature conservation areas.

- **Formal co-operation** involves the signing of joint declarations or treaties between states or conservation agencies on matters pertaining to nature conservation areas. An example of this is the Bilateral Agreement between the governments of the Republic of Botswana and the Republic of South Africa on the Recognition of the Kgalagadi Transfrontier Park.

- Countries may decide to **establish an international agency** with its own jurisdiction over a specific area. Those countries will then cede a part of their territory for the purpose of Transfrontier Conservation.

1. 2. 3. 2. Transfrontier Conservation Areas in Southern Africa

- The establishment of the Peace Parks Foundation

In Southern Africa the establishment of Transfrontier Conservation Areas has been promoted by the Peace Parks Foundation. This foundation came into being after a visit by Dr Anton Rupert, President of the World Wide Fund for Nature, South Africa, to President Joaquim Chissano of Mozambique in May 1990. The aim of the visit was to discuss the permanent linking of protected areas in Southern Mozambique with protected areas in South Africa, and particular attention was paid to the linking of the Kruger National Park with protected areas in Mozambique (Douglas 1997:31). As a result of the meeting, the World Wide Fund for Nature, South Africa, was requested to carry out a feasibility study, which was completed in September 1991. The Mozambique Council of Ministers requested that further studies be carried out to assess fully the political and socio-economic feasibility of Transfrontier Conservation Areas. Assistance was lent by

the Global Environment Facility of the World Bank. In June 1996 the recommendations of the World Bank were released in a document entitled, *Mozambique: Transfrontier Conservation Areas Pilot and Institutional Strengthening Project* (Peace Parks Foundation 1998).

The report promoted the philosophy of a Transfrontier Conservation Area as more than just the linking between designated protected areas. Instead such an area was seen as an area of multiple resource usage, which will also enable local communities to develop (Peace Parks Foundation 1998). The philosophy of using nature conservation as a vehicle for rural socio-economic development was thus incorporated into the planning of Transfrontier Conservation Areas in Southern Africa from the start, linking this philosophy to international thinking on the matter (see 1.2.2). The Peace Parks Foundation also aims to put special emphasis on promoting regional peace and stability and on job creation through the anticipated growth of tourism in Southern Africa (Harvey 2000:67).

At the start of the 1990s South Africa experienced many benefits from nature-based tourism, due to the end of Apartheid and the accompanying influx of international tourists. However, Mozambique and Zimbabwe, the two countries with whom Transfrontier Conservation Areas were planned (see below), did not share in the benefits. This led Dr Rupert to request another meeting with President Chissano, which was held in Maputo on 27 May 1996. Subsequently, a Transfrontier Park Initiative meeting was held in the Kruger National Park on 8 August 1996. At that meeting it was decided that closer co-operation between South Africa, Mozambique, Zimbabwe and Swaziland was necessary in order for the benefits of Transfrontier Conservation Areas to be shared by all participants (Peace Parks Foundation 1998).

After these talks, the Peace Parks Foundation was officially established on 1 February 1997 under the chairmanship of John Hanks. It received an initial grant of R1 200 000 from the Rupert Nature Foundation for the establishment of Transfrontier Conservation

Areas in Southern Africa (Peace Parks Foundation 1998).

- The goals of the Peace Parks Foundation

The overall objective of the Peace Parks Foundation is 'to fund and facilitate the development of Transfrontier Conservation Areas, placing particular emphasis on the promotion of regional peace and stability, the creation of new jobs associated with the anticipated growth of tourism in Southern Africa, and the conservation of biological diversity' (Peace Parks Foundation 1998).

Strong emphasis is placed on the development of the Southern African sub-region, especially by means of the benefits of tourism. The philosophy of integrating the development needs of indigenous people with the need for nature conservation is thus integrated into the ideology of the Peace Parks Foundation. Besides this overall goal, the Peace Parks Foundation (1998) has also identified specific goals. These are (Peace Parks Foundation 1998):

- To **raise and allocate funds** to projects which will further the establishment and management of Transfrontier Conservation Areas

- To **assist with the identification of land** to be acquired for the development of the Transfrontier Conservation Area, taking into account the rights and circumstances of communities living on such land. The Foundation will then:
    - Purchase the land for leasing to the various conservation agencies, or
    - Negotiate with private landowners and residents of communal lands for leasing on a contractual basis.

- To **negotiate loans** to the Transfrontier Conservation Area conservation agencies for approved projects.

- To **negotiate with governments and semi-government bodies** with regards to political and land tenure legal issues associated with Transfrontier Conservation Areas.

- To **promote the development of Transfrontier Conservation Areas on a commercial basis** (including private sector development) as and when appropriate within the parameters imposed by environmental and conservation practices and principles, and whenever possible and practical, involving local communities.

- To **promote the case for Transfrontier Conservation Areas nationally and internationally** in terms of their economic viability, ecologic sustainability, and their contribution to the conservation of global biodiversity. Every effort will be made to promote the recognition of Transfrontier Conservation Areas as World Heritage sites if applicable. Special attention will be given to promoting broad-based education programmes for residents in or adjacent to the Transfrontier Conservation Area.

1. 2. 3. 3. Established and planned Transfrontier Conservation Areas in Southern Africa

At present the only legally established Transfrontier Conservation Area in Southern Africa is the Kgalagadi Transfrontier Park. The Kgalagadi Transfrontier Park was officially opened on 12 May 2000 (Peace Parks Press Release 2000), but it has *de facto* existed for nearly 50 years through various forms of informal co-operation (De Villiers 1999:19). This new park unites the Gemsbok National Park in Botswana with the Kalahari Gemsbok National Park in South Africa (Peace Parks Press Release 2000).

Six other Transfrontier Conservation Areas have been planned for the Southern African sub-region: the Gariep Transfrontier Conservation Area, the Richtersveld-Ai-Ais Transfrontier Conservation Area, the Dongola-Limpopo Valley Transfrontier Conservation Area, the Gaza-Kruger-Gonarezhou Transfrontier Conservation Area, the

Drakensberg-Maloti Transfrontier Conservation Area and the Lubombo Transfrontier Conservation Area (Harvey 2000:68). This study focuses on the Lubombo Transfrontier Conservation Area, as this is the area where research was conducted.

- The Lubombo Transfrontier Conservation Area

The proposed Lubombo Transfrontier Conservation Area will link the Tembe Elephant Park and Ndumo Game Reserve in South Africa with the Maputo Elephant Reserve in Southern Mozambique and with Swaziland's Hlane National Park and Mlawula and Ndzinda Game Reserves (Peace Parks Foundation 2000). The areas included are thus the Matutuine District of Mozambique, northern KwaZulu-Natal and the eastern conservation areas of Swaziland (see Maps 1 and 2).

The proposed park will be 4 200 square kilometres in size, of which 66% will be in Mozambique, 26% in South Africa and 8% in Swaziland (Peace Parks Foundation 2000). The proposed Transfrontier Conservation Area will be of special importance to the conservation of elephants, as it will re-establish the ancient migratory routes of the Tembe-Futi-Maputo coastal plains elephant population (Douglas 1997:33).

The Lubombo Transfrontier Conservation Area will incorporate a large part of the Maputaland Centre of Plant Diversity. The Maputaland Centre of Plant Diversity is one of only eight such centres of biodiversity in Southern Africa and the only one recognised in Mozambique (Cowling, Richardson & Pierce 1997:51). Maputaland encompasses six ecological zones, the Lubombo Mountain zone, the Pongola zone, the sand forest zone, the Muzi Swamp and palm-belt zone, the coastal lake zone and the coastal zone (Mountain 1990:32-78)

Maputaland lies at the southernmost tip of the low-lying coastal plain that flanks Africa's eastern seaboard stretching from Somalia in the north to northern KwaZulu-Natal in the south. The area is bounded in the north by Maputo Bay, in the west by the Lubombo

Mountains and in the east by the Indian Ocean (Bruton & Cooper 1980:xvi- xvii). In South Africa it encompasses the Ingwavuma and Ubombo magisterial districts (Mountain 1990:1-5).

However, besides being an area rich in fauna and a centre of plant species endemism, Maputaland can also be seen as a microcosm of Africa's problems. The human population is rapidly increasing and, in the process, is exerting pressure on the natural environment. There is large-scale rural poverty, with an accompanying destruction of biodiversity (Bruton & Cooper 1980:xvi- xvii).

The Matutuine District of Mozambique has a long history of nature conservation (see Map 2). The Maputo Elephant Reserve, situated 70 kilometres south of Maputo along the southern shore of the Maputo Bay, was established in 1932 and was increased in size in 1969. At present, it is 700 square kilometres in size and includes three lakes, two rivers and about 40 kilometres of beachfront (EWT 1999). The northern boundary of the reserve cuts across the Machangulo peninsula and follows the coastline to the Mozambique Channel. The western boundary runs along the Futi River, at a distance of about 50-100 meters from the river, along the old fence line. The southern boundary of the reserve is not clearly delineated (Osborn 1998:2).

Annual rainfall in the Maputo Elephant Reserve is between 690 and 1000mm. The year is divided into a rainy hot season from March to October, and a colder dry season from September to April (De Boer & Baquete 1998:209). The soils are mostly sandy and generally poor in nutrients (Osborn 1998:2). The vegetation is classified into six vegetation types: mangroves, dune vegetation, grass plains, sublittoral sand forests, savannah and riverine vegetation (De Boer & Baquete 1998:209). Of these, the three main vegetation types are the grasslands, dominated by *Hyperrenia* spp., the woodlands, dominated by Pod Mahoganies (*Afzelia quanzensis*), and the riverine forests, dominated by Acacias (Osborn 1998:2).

There are three saline lakes inside the reserve: Lake Piti (Portuguese: *Lagoa* Piti), Lake Maunde (Portuguese: *Lagoa* Maunde) and Lake Xinguti (Portuguese: *Lagoa* Xinguti) (De Boer & Baquete 1998:209). These lakes support a wide variety of bird and fish life, including flamingos and crocodiles (Osborn 1998:2).

The mammal population of the Maputo Elephant Reserve was severely curtailed during the Civil War in Mozambique in the 1980s. Remnant populations include reedbuck (*Redunca arandinum*), bushbuck (*Tragelaphus scriptus*), common duiker (*Sylvicapra grimmia*), red duiker (*Cephalophus natalensis*), suni (*Neotragus moschatus*), nyala (*Tragelaphus angassi*), bushpig (*Potamchoerus porcus*), scrub hare (*Lephus saxatilis*), vervet monkey (*Cercopithecus aethiops*), samango monkey (*Cercopithecus mitis*), hippo (*Hippopotamus amphibius*), elephant (*Loxodonta africana*) (De Boer & Baquete 1998:209), kudu (*Tragelaphus strepsiceros*), Burchell's zebra (*Equus burchelli*) and baboon (*Papio ursinus*) (Osborn 1998:2). The samango monkey, red duiker and suni are listed as ***Red Data Book*** species (Peace Parks Foundation 2000).

There are also important nesting sites for marine turtles along the east coast of the Maputo Elephant Reserve (Osborn 1998:2). The two species of marine turtles found along the east coast are loggerhead turtle (*Caretta caretta*) and leatherback turtle (*Dermochelys coriacea*) (De Boer & Baquete 1998:209).

The Maputo Elephant Reserve forms the northernmost part of an ancient elephant migration trail (Pickford & Pickford 1998:46). Elephants from the Maputo Elephant Reserve and northern KwaZulu-Natal used to migrate freely across the international borders of Mozambique and South Africa. As political polarisation between the two countries escalated, pressure on the elephant population increased. The Civil War in Mozambique and the ensuing slaughter of elephants by soldiers and rebel forces led to the erection of an electric fence on the South African border that effectively curtailed the migration of the elephant population. On the South African side, efforts to safeguard the last free-ranging elephant population of Natal led, in part, to the establishment of the

Tembe Elephant Park (Pretorius 2001:8-9).

It is estimated that there were more than 350 elephants in the Maputo Elephant Reserve in 1971 (EWT 1999). Current estimates suggest that between100 to 300 elephants are still resident in the Maputo Elephant Reserve (Osborn 1998:2). A main foci of the Lubombo Transfrontier Conservation Area will be to reunite this elephant population by restoring the traditional migration route along the Futi-corridor (see Map 2) (Peace Parks Foundation 2000).

The Maputo Elephant Reserve is administered by the Mozambican National Forestry and Wildlife Department (*Direccao Nacional de Florestas e Fauna Bravia*). The head of the Maputo Elephant Reserve is in charge of management and is assisted by a warden and field staff (De Boer & Baquete 1998:209). Funds provided by the Peace Parks Foundation are used to pay the staff of 32. The staff have wide ranging responsibilities, including providing assistance to local subsistence farmers whose crops have been destroyed by wild animals (Pickford & Pickford 1998:46).

The administration of the Maputo Elephant Reserve has been in transition since the government regained control over the conservation area after the Civil War ended in 1990. In the period between 1972 and 1992, there was no effective administrative control over the Maputo Elephant Reserve (De Boer & Baquete 1998:209).

Other problems with regard to the administration of the Reserve arose when a mammoth concession in Southern Mozambique (including the reserve) was granted to Blanchard Sodeteur, a registered Mozambican company, in November 1996 (Pickford & Pickford 1998:46). Blanchard Mozambique Enterprises, headed by James Ulysses Blanchard III, obtained exclusive rights from the Mozambican government to convert 236 000ha (an area roughly the size of Israel) in Southern Mozambique into a multi-million dollar tourism paradise. Amongst other things, the company planned to develop several hotels, a marina, a golf course and a series of bush and beach lodges. The company also planned

to restock the Maputo Elephant Reserve with game to return it to its former glory (Koch 1997).

It was planned that Blanchard Mozambique Enterprises would co-ordinate its activities with the Lubombo Spatial Development Initiative, set up in 1997 by a Trilateral Ministerial Committee to develop various national and international projects, including Transfrontier Conservation Areas (Peace Parks Foundation 2000). The three countries involved in the Lubombo Spatial Development Initiative are South Africa, Swaziland and Mozambique. The Lubombo Spatial Development Initiative covers the entire coastal strip from Lake St Lucia in the south to Maputo city in the north. The western boundary is the Lubombo Mountains and its eastern boundary the Indian Ocean. The philosophy behind the Lubombo Spatial Development Initiative is that it will be to the advantage of all three countries if the defined area is developed by the three countries working together and if their development activities are co-ordinated. The overall goal of the Lubombo Spatial Development Initiative is to make its area of operations an international tourism destination from which the indigenous people must benefit. In this way, it is believed, that the gap with regard to socio-economic development that exists between this area and richer areas in Southern Africa can be narrowed and eventually eliminated. The Lubombo Spatial Development Initiative was officially launched in May 1998 and its first major project is the construction of a tar road along the coastal strip, which is still under construction. This road will not only provide easy access to nearly 80 existing or planned tourist destinations, but will also enable local people to travel to schools and other destinations in all weather conditions (Jourdan 1998:722-723).

The planned Lubombo Transfrontier Conservation Area and the Lubombo Spatial Development Initiative could have benefited from the efforts of Blanchard Mozambique Enterprises in the development of the area. Unfortunately, James Blanchard passed away in 1999. His untimely death disrupted the planning for the Mozambican side of the target area, leaving it open to new concessionaires. At the time of the current study it was impossible to obtain any concrete information on the size and number of the current

concessions. The World Bank's advisor to the Mozambican government on Transfrontier conservation could not supply the research team with any substantial information on these concessions. This situation will need to be addressed before any further planning for the Lubombo Transfrontier Conservation Area can be done. If the various stakeholders with regard to land rights in the area are not identified and made part of the planning process for the Lubombo Transfrontier Conservation Area, it could lead to future conflicts and even the collapse of the entire process.

Another development planned inside the research area is disconcerting from the point of view of nature conservation. There are plans to develop the harbour at Porta Dobela on the southern boundary of the Maputo Elephant Reserve. Spokespersons in the research area are extremely positive towards this development because, they believe it will bring job opportunities to the area. The effects that the harbour, which potential developers say will replace the present harbour at Maputo, will have on conservation in the area is, however, a cause for concern.

Rural people have always lived inside the boundaries of the Maputo Elephant Reserve. In the 1980s the FRELIMO government forcefully removed these people to the protected village at Zitundo. Although this forced removal had nothing to do with the reserve, the removal worsened the relationship between the people and the Maputo Elephant Reserve authorities. However, people soon moved back again. During the Civil War, many of these people fled to South Africa. At present there are still people living inside the Maputo Elephant Reserve, although most of the local population are concentrated in the villages that surround the reserve (De Boer & Baquete 1998:209). The fact of the matter is that there are many rural people staying on the Mozambican side of the proposed Transfrontier Conservation Area where large parts of the area are used for farming and grazing (De Villiers 1999:24). Although the exploitation of wild animals and plants inside the reserve is technically prohibited by law, the collection of plants for subsistence purposes has always been allowed by the authorities (De Boer & Baquete 1998:209).

In contrast to the situation that exists inside the Maputo Elephant Reserve, there is no permanent settlement of rural people inside the two conservation areas in South Africa designated as potentially part of the Lubombo Transfrontier Conservation Area. These two conservation areas are the Tembe Elephant Park and the Ndumo Game Reserve. The Tembe Elephant Park is situated right against the Mozambican border in northern Kwa-Zulu Natal. The Tembe Elephant Park, proclaimed on 21 October 1983, is 74 000 square kilometres in size and is administrated by Kwa-Zulu Natal Wildlife (Mountain 1990:43 and Russel 1998). Two types of vegetation are found in the Tembe Elephant Park: thornveld and sandforest (Grant & Thomas 1998:386). The Tembe Elephant Park is home to between 120 and 130 elephants (Pers. Com. Wayne Matthews:2001) that form part of the same population of elephants in the Maputo Elephant Reserve discussed above (Peace Parks Foundation 2000).

Besides the elephants, other species of mammal found in the Tembe Elephant Park include hippo, giraffe (*Giraffa camelopardalis*), Burchell's zebra, blue wildebeest (*Connochaetes taurinus*), waterbuck, reedbuck, impala (*Aepyceros melampus*) and both the white rhino (*Ceratotheriu simum*) and the black rhino (*Diceros bicornis*). It is also home to many bird species, including the African broadbill (*Smithornis capensis*), the yellowspotted nicator (*Nicator gularis*), the gorgeous bush shrike (*Telophorus quadricolor*), Neergaard's sunbird (*Nectarinia neergaardi)* and the pinkthroated twinspot (*Hypargos margaritatus*) (Olivier & Olivier 1998:71).

The Ndumo Game Reserve, situated to the west of the Tembe Elephant Park in South Africa, is much older than the Tembe Elephant Park. It was established in 1924 on the southern bank of the Usutu River, which forms the international boundary between South Africa and Mozambique. To the west, the reserve's boundary is the Lubombo foothills, while its southern boundary is a surveyed line (Natal Parks Board 1980:489-490). Four different vegetation types are found in Ndumo: riverine forest, thornveld, woodland and sandforest (Grant & Thomas 1998:386).

The most prominent feature of the reserve is a series of pans fed by the Usutu and Pongola Rivers. These pans provide a habitat for large numbers of fish, crocodiles and birds (Natal Parks Board 1980:489-490). A total of 416 bird species have been recorded inside the reserve (Peace Parks Foundation 2000), and for some of those species Ndumo is the southern limit of distribution (Natal Parks Board 1980:490).

There are no elephants in Ndumo. Large mammals in the Reserve are impala, nyala, reedbuck, buffalo (*Syncerus caffer*), bushbuck, black rhinoceros, white rhinoceros and cheetah (*Acinonyx jubatus*) (Natal Parks Board 1980:490).

Although the immediate plans for the Lubombo Transfrontier Conservation Area only include the amalgamation of the Tembe Elephant Park and the Ndumo Game Reserve in South Africa with conservation areas in Swaziland and Mozambique, it is envisioned that various other conservation areas in South Africa will eventually form part of the Lubombo Transfrontier Conservation Area. Other conservation areas in Maputaland which can later form part of the Lubombo Transfrontier Conservation Area are the Kosi Bay Nature Reserve, the Coastal Forest Reserve, the Mapelane Forest Reserve, the Mkuze Game Reserve, the Pongola Nature Reserve, the whole of the St Lucia Wetlands Park, the Maputaland Marine Reserve, the Sileza Nature Reserve, the Hlatikulu Forest, the Ubombo Mountain Nature Reserve, the Manguzi Forest Reserve, the Inyalazi State Forest and the Makasa Nature Reserve (KZNCS 1999).

In Swaziland, the Lubombo Transfrontier Conservation Area proposes to eventually incorporate the Hlane National Park, the Mlawula Nature Reserve, the Simunye Nature Reserve, the Mbuluzi Nature Reserve and a small section of Sisa Ranch and Malahleni Dispersal Area (Peace Parks Foundation 2000).

1. 2. 3. 4. The neglect of indigenous people in Transfrontier Conservation planning

In the information provided and in the literature consulted (see 1.3.2.1) on all the Transfrontier Conservation Areas planned for Southern Africa, very little was mentioned about the indigenous people who will be affected by the establishment of these areas. Most sources simply refer to 'local communities' without describing who these people are or what their relation to the local natural environment is. This illustrates a lack of insight or comprehension of the importance of the cultural systems of the indigenous peoples who live in areas designated for Transfrontier Conservation and the effect their cultural systems will have on the eventual successful establishment of the Transfrontier Conservation Areas. On the other hand, there is ample information in the literature on the ecological characteristics of the various areas and on the diversity of fauna and flora in every area.

This underlines the fact that Transfrontier Conservation is in essence about nature conservation. Although it is often claimed that Transfrontier Conservation is about people (see 1.2.3.2), it is clear when one looks at the literature and studies done on these areas (see 1.3.2.1) that the main focus is on nature and not on the development of rural communities.

In Chapter 2, the cultural identity of the people in the research area, who will be affected by the establishment of the Lubombo Transfrontier Conservation Area, is addressed. In order to explain the cultural identity of these people comprehensively, there is a brief overview of their history and historical context. The study suggests that the turbulent history of the research area has contributed to the disruption of the cultural system and has created confusion with regards to cultural identity. Historical events have in fact created a breakdown of the traditional cultural system. Furthermore, the history of the area is largely responsible for the extreme poverty and underdevelopment of the area. Due to these poor socio-economic conditions, people are extremely dependent on the

natural environment for survival. What this means in the context of Transfrontier Conservation is that the people who live adjacent to planned Transfrontier Conservation Areas will play a large role in the successful implementation of these areas. In Chapter 2, it will be shown that increases in the human population of the research area, coupled with the poor socio-economic standards, will make the conservation of large areas impossible unless rural socio-economic development does not take precedence, because people will have to use these resources in order to survive.

1. 3. RESEARCH METHODOLOGY

1. 3. 1. Introduction

Fieldwork for this dissertation was conducted under the auspices of the Conservation Ecology Research Unit at the Department of Zoology at the University of Pretoria. The research formed part of a multi-disciplinary research programme entitled the ***Restoration of Tembe-Futi-Maputo Coastal Plains Elephant Population***. The research programme was partly funded by the Peace Parks Foundation.

The aims of the ***Restoration of Tembe-Futi-Maputo Coastal Plains Elephant Population*** programme were the following:

- to quantify demographic variables of the fragments of the original elephant population in an effort to model actions that may be required for demographic viability;
- to quantify landscape use by elephants in each of the fragments so as to assess and model the environmental consequences of restoring the regional population;
- to determine the human demographic and land use patterns of the people of the Tembe-Futi-Maputo coastal plain in order to model actions to facilitate the assessment of the impact of conservation-oriented development on socio-cultural variables to minimize potential conflict between elephants and humans;
- to synchronize cross-border and cross-institutional research efforts to benefit

conservation and scientific education; and

- to synthesize all of the above to the benefit of conservation and sustainable development.

The research conducted for this study focused on the third aim of the larger programme. To accomplish that aim, the following research objectives were put forward. These objectives are also the objectives of this study:

- to determine past, present and future trends in human population demographic variables (population dynamics, settlement and human movement patterns) to facilitate simulation of the effects of conservation development on the people of the research area;
- to determine the structure and function of the socio-economic system and land use patterns of the people in the research area;
- to determine the need for, and extent of, seasonal renewable natural resource utilisation among the people in the research area, and to qualify the annual socio-economic importance thereof;
- to determine the extent and causality of current elephant and human interaction throughout the research area; and

To achieve the set goals (described above), a research approach was used similar to that used by Els (1994:65-68; 1996:42-65) during his research amongst Tsonga people in the Northern Province and in the Mpumalanga Lowveld. This approach entails four recognized and proven anthropological research methodologies, namely the ethnographic method, the quantitative method, an extensive literature study, and observation. Els (1994:65-68; 1996:42-65) proved that combining quantitative and qualitative methodologies creates a valid and reliable tool to establish the realities and value judgments of rural people living in communal areas on their natural environment. Both the importance of the natural environment to their survival and rural people's judgments on issues of the sustainability of current utilisation practices can also be determined when

these research methods are combined.

The basic difference between a qualitative and a quantitative research methodology is that qualitative methods 'are procedures for the analysis of raw data that consist of words or pictures rather than numbers', while quantitative methods are 'procedures applied to numerical data' (Barfield 1997:386-387). Qualitative methods are not as strictly formalised as quantitative methods. The quantitative method is much more limited in range than the qualitative method and is associated more with the natural sciences than the social sciences. The qualitative method, on the other hand, has a much wider range and the methods used are not standardised (Mouton & Marais 1989:157). Instead each qualitative study is unique and tailored for the specific research priority (Barfield 1997:386).

To test both the qualitative and quantitative research results, a list of 10 key questions, developed by Borrini-Feyerabend and Buchan (1997:58-67), were used. These questions were developed to determine what the needs in terms of access to renewable natural resources of people living near or in planned conservation areas are. The questions are as follows (Borrini-Feverabend & Buchan 1997:58-67):

(i). How do the natural resources inside the proposed conservation area contribute to the livelihood of local people?

(ii). How do the natural resources of the conservation initiative help meet people's cultural, religious and identity needs?
(These ten questions were not designed by an anthropologist. In this context, Beals and Hoijer (1971:103) remark that 'the anthropological definition of culture is far more comprehensive than that of the word as it is ordinarily employed.' Ordinarily, a cultivated person is one who has acquired a command of certain specialised fields of knowledge such as art, music and literature. In anthropology, '[c]ulture is not restricted to certain special fields of knowledge; it includes ways

of behaving derived from the whole range of human activity.' (Beals & Hoijer 1971:104). Thus in anthropology religion is normally also included in a definition of culture and is not treated as a separate entity).

(iii). Do local people perceive any need to conserve natural resources, specific species, and habitats?

(iv). Are or were there indigenous customary resource management systems in the area and are they being affected by the conservation initiative?

(v). Does the conservation initiative affect access to land or resources and the control over them for one or more stakeholders?

(vi). Are there major economic activities (e.g. mining, timber extraction) in the area which do or could affect the conservation initiative?

(vii). Are there incentives or disincentives to conservation in the local context?

(viii). What are the actual costs and benefits of the conservation initiative and how are they distributed among the stakeholders?

(ix). What contributions can the stakeholders make to the conservation initiative?

(x). Are there solid social and economic opportunities to link conservation objectives with providing for local needs?

These questions formed the basis of the research and are answered in the conclusion to this study.

1. 3. 2. Qualitative research

1. 3. 2. 1. Literature study

The literature study consists of two parts. The first part is a study of the philosophy and principles of nature conservation in general and Transfrontier Conservation in particular. The second part of the literature study focused exclusively on the research area. The most important issues investigated were the natural and cultural history of the area, agricultural and animal husbandry practices in the area, natural resource utilisation patterns, traditional and contemporary authority structures and the religious beliefs and values systems of people who stay in the research area.

Various books and articles (Anderson & Grove 1987; Borrini- Feyerabend & Buchan 1997; Brandon & Wells 1992a and 1992b; Enghoff 1990; Kiss 1990; Sibanda & Omwega 1996; Yeld 1997) deal with nature conservation and the need to integrate conservation with rural socio-economic development. These books and articles were all consulted. The works of Els (1996), *Die benutting van hernubare natuurlike hulpbronne by die Vanhlanganu-Mnisi van die Mhalasistrik*; and Adams and McShane (1992), *The Myth of Wild Africa: conservation without illusion*, were found to be the most useful.

Els (1996) presents a detailed study of the evolution of conservation philosophies, starting with conservation as an activity separated from human socio-economic development and evolving to the belief that nature conservation and human socio-economic development should be an integrated practice. He also discusses the history of international laws and agreements by means of which the evolving conservation paradigms were implemented. A discussion of 'integrated conservation-development' projects in Africa, their methods, failures and success, is also presented in his study. It brings together the theories and insights of many authors on the subject and was therefore found to be an invaluable starting point.

The origin of Western values on nature conservation and the difference between those values and the African reality is cogently discussed by Adams and McShane (1992). The authors trace the origin of the Western conservation paradigm back to the earliest days of exploration and argue that Westerners came to see Africa as the last paradise on earth. Africa was viewed as an alternative to the environmental destruction that had taken place in the West. Therefore everything possible had to be done to protect this paradise from people. Western arguments failed to take into account the historical connections between man and nature in Africa. This source provides insight into the history of conservation philosophy and makes out a strong argument in favour of the integration of human needs into future conservation practices.

Much of the information in this study on Transfrontier Conservation was obtained from the internet at the website of the Peace Parks Foundation (http://www.peaceparks.org). Two articles on Peace Parks from the popular magazine *Africa, Environment and Wildlife* posted on the website were also used. The Peace Parks Foundation also has a regular review in the magazine, with articles on issues pertaining to Transfrontier Conservation. The only other published information on Transfrontier Conservation that could be found was the Peace Parks Foundation's Annual Reviews and Newsletters and the book by De Villiers (1999), *Peace Parks: The way Ahead.* The work of De Villiers (1999) is, however, primarily a study in international politics and the implications of international law for the establishment of Transfrontier Conservation Areas.

The Peace Parks Foundation website (http://www.peaceparks.org) provides ample information on the history of Transfrontier Conservation in Southern Africa, and also on the aims and objectives of the Foundation. This information was supplemented by an article by Douglas (1997) entitled 'Peace, Parks and Prosperity'. Douglas (1997) traces the history of Transfrontier Conservation in Southern Africa from the first meeting between Dr Anton Rupert and Joaquim Chissano to the inception of the Peace Parks Foundation. In this process, he illustrates the advantages of Transfrontier Conservation for both nature conservation and rural socio-economic development in Southern Africa.

He also discusses the overall aim of the Peace Parks Foundation as stated in the Foundation's charter.

Besides providing information on the establishment of the Peace Parks Foundation, the Foundation's website also gives information on planned Transfrontier Conservation Areas for Southern Africa. It presents detailed information on the various conservation areas that will be affected by the proposed plans. This information includes the sizes of already established conservation areas as well as discussions of the natural environments and fauna and flora found in those areas. This includes a description of the natural environment of the proposed Lubombo Transfrontier Conservation Area, which is the focus of this study.

The main criticism that can be levelled against the information provided on the Peace Parks Foundation website is the fact that very little attention is paid to the rural people, which the Peace Parks Foundation claims will be key beneficiaries of Transfrontier Conservation. In most cases, these people are only referred to as 'local communities'. Information on the ways in which these rural people interact with their natural environments and on the cultural identity of these people is lacking. This demonstrates a deficiency in the initial research done on the preparation of the planning for Transfrontier Conservation Areas in Southern Africa. The fact that most information provided on the website focuses on the natural environment and the benefits of Transfrontier Conservation for the conservation of rare and endangered species also reinforces the argument that Transfrontier Conservation is essentially about the conservation of nature and not, as is claimed, about the socio-economic development of rural people.

Apart from a focus on the theory and principles of nature conservation and in particular Transfrontier Conservation, the study also focused on information about the research area. Only a limited amount of ethnological work was found on the people who stay inside the research area. The two most important sources are the books of Junod (1962a & 1962b), *The life of a South African tribe* and Felgate (1982), *The Tembe Thonga of*

Natal and Mozambique: an ecological approach.

Junod (1962a & 1962b) does not focus exclusively on the Tembe-Thonga, but on the entire Tsonga ethnic group, of which the Tembe-Thonga is a clan. Be that as it may, he covers a wide range of issues important to the present study. On the history of the Tembe-Thonga he gives little information, but his information on traditional agricultural practices, the rearing of domesticated animals and on the utilisation of natural resources is detailed and comprehensive. Furthermore he uses indigenous (Tsonga/ Ronga) terms for plants and wild animals, which was found helpful in the conducting of fieldwork in the current study. Hence, his work serves as a general introduction to the people and the area. Unfortunately, his research was conducted at the turn of the previous century and the area has experienced a rich, although troubled history since then (see 2.2.4 and 2.2.5). Despite the shortcomings of Junod's (1962a & 1962b) books for the present study, the fact that many of the cultural practices described by Junod (1962a & 1962b) were still found to exist a century after he had conducted his research provided some insight into the continuity of cultural practises in the research area.

Felgate (1982) conducted his research in the 1960s. His work was found to be of the utmost importance to the present study, even more so because Felgate's study used an ecological approach that focused on the utilisation of natural resources in the study area. He discusses agricultural practices found in the research area, the domestic animals reared, hunting and fishing and the use of plant materials by the Tembe-Thonga people. His comments are comprehensive. Much of what he found in the 1960s was found to be still true of the present. His work is also a valuable study of the history of the Tembe-Thonga people, not only those residing in the most southern part of Southern Mozambique (the Matutuine District), but also those who stay in northern Kwa-Zulu Natal. The information he presents on the history of the people was supplemented with information presented (most importantly) by Bryant (1964), *A history of the Zulu and neighbouring tribes*; Newitt (1995), *A history of Mozambique*; Omer-Cooper (1975), *The Zulu aftermath. A nineteenth-century revolution in Bantu Africa*; and Van Aswegen and

Verhoef (1982), *Die geskiedenis van Mosambiek.*

Although no comprehensive study had been undertaken in the study area since that of Felgate (1982), recent interest in the area, due to various developments there, has prompted renewed studies on the interaction between local people and the natural environment in the Matutuine District.

Plans by Sappi, the South African paper-manufacturing company, to create large plantations in the area in a project called the ***Mosa Florestal Afforestation*** project has led to an investigation led by the Institute for Natural Resources into the socio-economic and cultural characteristics of the area, which was completed in 1995. The study covered current agricultural practices, the use of natural resources, the social structure of the indigenous people, types of employment available to the local people, the level of education, the health infrastructure, transport infrastructure, energy and telecommunications. The studies done in this regard provide valuable insights, but the information provided is superficial. There is no detailed information on specific plants and wild animals used, or on the extent of people's reliance on these natural resources for their survival. Although the value of these studies should not be completely disregarded, it should be noted that the Institute for Natural Resources's project focused on the area between the Futi River and the Indian Ocean, south of the Maputo Elephant Reserve, to the South African border. Therefore it does include the whole area of interest to the present study (see Map 2).

An article by De Boer and Baquete (1998), 'Natural resource use, crop damage and attitudes of rural people in the vicinity of the Maputo Elephant Reserve, Mozambique' also provides valuable information on the interaction between people and nature in the research area. This article reports on the results of a questionnaire survey (n=50), which analyses the interaction between people and their natural environment in four communities in and adjacent to the Maputo Elephant Reserve. The questionnaires were completed at Salamanga, Bella Vista, Lake Piti and Fábrica de Cal (see Map 2). The

article provides excellent information on wild animal utilisation, but the coverage of plant utilisation is sketchy. Although this article provides valuable information, it leaves unanswered questions about people's values on nature conservation, and on the extent of human and wild animal interaction. Due to the aims of De Boer and Baquete's (1998) study, it covers only areas directly on the borders of the Maputo Elephant Reserve. It does not contain any information on the area to the west of the Maputo River. Nonetheless, this article and the report of the Institute for Natural Resources mentioned in the previous paragraph, served as a starting point from where research could be conducted. In them were found the basic knowledge on the area needed for fieldwork research.

Besides these works that were used as valuable preludes to the actual fieldwork, there were a few other books and articles that were extremely useful during the qualitative fieldwork.

In order to identify various plants found in the area and to correlate their uses with those found among other indigenous peoples of Southern Africa, various books and articles were used. Amongst these, the most important ones proved to be De Koning (1993), *Checklist of vernacular plant names in Mozambique/ Registo de nomes vernáculos de plantas em Moçambique*; Els (1996), *Die benutting van hernubare natuurlike hulpbronne by die Vanhlanganu-Mnisi van die Mhaladitrik*; Hutchings *et al.* (1996), *Zulu medicinal plants*; Liengme (1981), *Plants used by the Tsonga people of Gazankula*; Pooley (1997), *The complete field guide to trees of Natal. Zululand and Transkei*; Van Wyk and Gericke (2000), *People's plants. A guide to useful plants of Southern Africa*; and Van Wyk and Van Wyk (1997), *Field guide to trees of Southern Africa*.

1. 3. 2. 2. Fieldwork

Fieldwork was carried out over a three-month period between 4 April and 18 June 2000. During that time, five visits were paid to the Matutuine District of the Maputo Province in the most southern part of Mozambique (see Map 2).

The first visit was made to the capital city of Maputo. The aim of the visit was to contact a research colleague, Cornelio Ntumi, at the Eduardo Mondlane University. A trip was organised to the Maputo Elephant Reserve where accommodation was granted at the Eduardo Mondlane University's research accommodation facility. To reach the Maputo Elephant Reserve from Maputo, one has to travel on gravel roads to Bela Vista and Salamanga and from there on a sand road that can only be used with a four-wheel drive vehicle. The road crosses the Maputo River (Portuguese: *Rio* Maputo) and the Futi River (Portuguese: *Rio* Futi). The only bridge across the Futi River was completely destroyed by floods. It was thus not possible to reach the Maputo Elephant Reserve from Maputo. It was necessary to enter Mozambique from the south at Kosi Bay to get to the research accommodation facility inside the Maputo Elephant Reserve.

Due to the fact that the bridge over the Futi River had been destroyed during the heavy floods of March 2000, research had to be conducted in two phases. During the first phase, research was conducted south of the Futi River. In the second phase research was conducted north of the Futi River (see Maps 1 and 2). Research north of the Futi River could only commence once the bridge over the river had been restored.

Language is a big problem in the research area if one is not fluent in Portuguese. The people speak a mixture of Ronga, Shangaan, Zulu and Portuguese, which they call *Mandindini*. The only people who can speak some English are those who have learned a few words on the mines in South Africa and people who work, or are trying to find work, at the holiday resorts on the coast. In some instances spokespersons could also speak some Afrikaans.

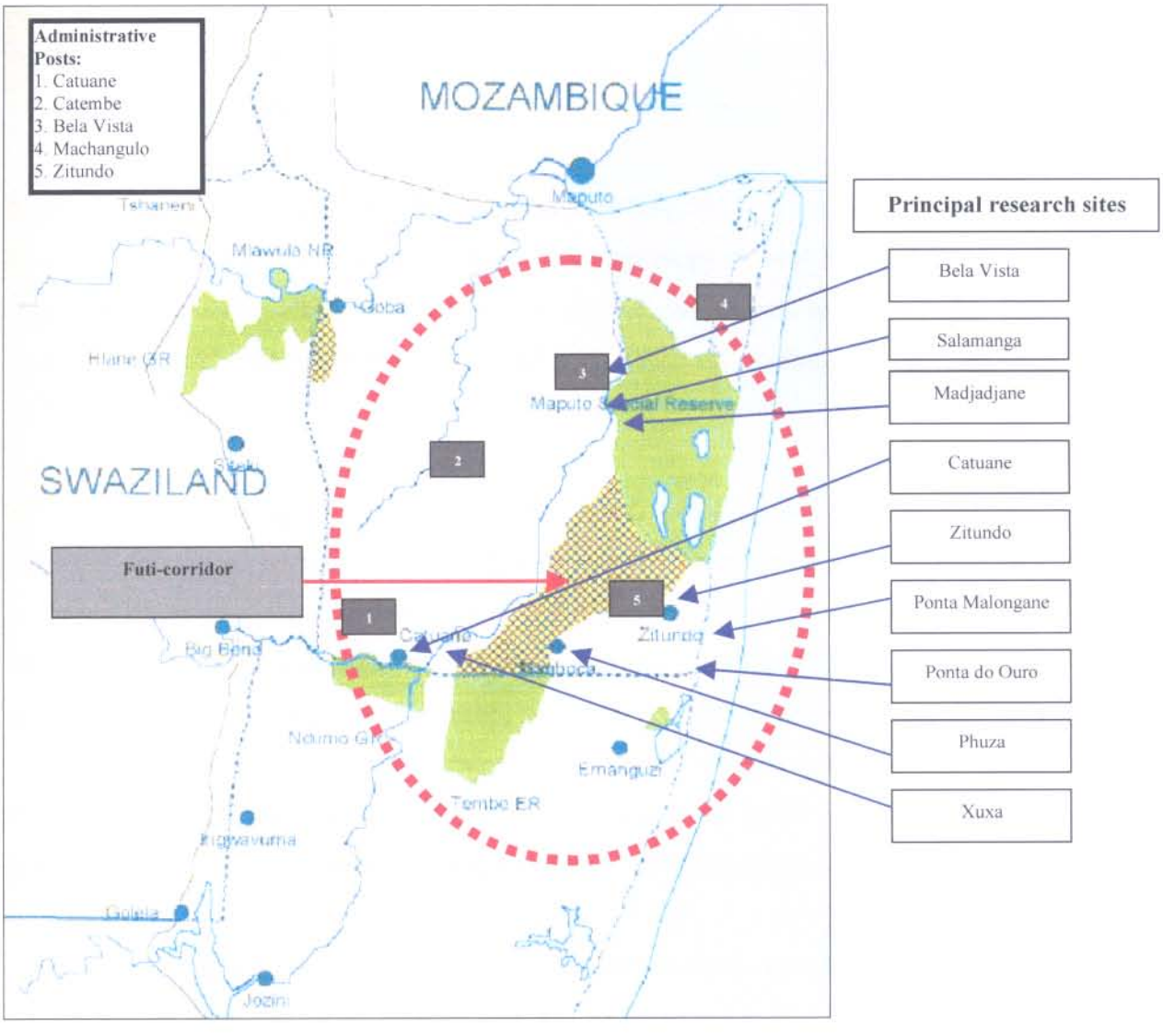
Besides obtaining a field guide, the aim of the first visit was also to gain permission from the traditional leader of the area to conduct research there. Therefore a visit was paid to Mr Sawdust Madjajane, who had been identified as the highest traditional authority in the area (see 2.3.5 where this position is described). It was found that he could not communicate with our guide in Portuguese. It was therefore necessary for the research team to ask a question in English, which was translated by the guide into Portuguese and thereafter translated by another translator into Ronga. The Ronga answers were thereafter translated back into Portuguese and then into English. Needless to say, the interview took an extraordinarily long time. At the end of the discussions Mr Madjajane granted permission to do the research.

On the second visit to the research area, the researchers entered Mozambique through the southern border post at Kosi Bay. At that time, the research team was fortunate enough to have obtained multiple entry visas for Mozambique. It was thus not necessary to apply for new, highly expensive visas every time Mozambique was visited. The road from the south can only be traversed with a four-wheel drive vehicle. The main road goes from the border post directly to a small village called Zitundo, situated some 20 kilometres from the main camp at the Maputo Elephant Reserve. However, border post guards informed the researchers that the floods had devastated that road. The alternative road goes via Ponta do Ouro and Ponta Malongane to Zitundo and from there to the Maputo Elephant Reserve. The road is only a 44 kilometre trip, but due to the bad road conditions, it is nearly a three hours drive.

The original guide/translator whose services had been engaged during the first trip to the research area did not arrive at the Maputo Elephant Reserve on the day arranged nor at any time thereafter. This problem was solved when it was discovered that one of the rangers who works at the Maputo Elephant Reserve could speak English. He was willing to aid the research team. With his aid, the researchers travelled through huge wetland areas to Gala, an area inside the Maputo Elephant Reserve on the southern banks of Lake Piti.

When the researchers arrived at Gala, they paid a visit to the home of the Secretary, who is the government official in charge of the area (see 2.3.4). The Secretary was not at home, but a meeting was organized for two days later. A visit was also paid to the traditional leader of the area. It was arranged that he would also attend the meeting with the Secretary to hear the request to conduct research in the area.

Map 2: The area where research was conducted



Source: Map compiled by James Culverwell: Technical advisor to the Lubombo TFCA of the DNFFB/SPFFB: Mozambique.

Nearly twenty people who stay in the area surrounding Lake Piti attended the meeting. After a short introduction, permission to conduct research in the area was granted by both the government and traditional authorities. Research commenced there and then, with the aid of a semi-structured questionnaire. After a question had been asked, people were allowed to discuss the question with each other. The answer given was thus a consensus answer. The data thus obtained served as an introduction to the area and to the research objective in general, and was used to develop a structured questionnaire (see Annexure 1). This method also introduced the people to the type of research that would be conducted and helped to ensure that the people would henceforth not be suspicious of the researchers in their midst, as they knew why the researchers were there.

Since the road from the Maputo Elephant Reserve to Lake Piti is a long and difficult one to travel, the researchers asked for permission to set up camp somewhere inside the tribal area. This permission was granted wholeheartedly. A cleared area where a teacher had once stayed was chosen. However, it was only on the third visit to the area that camp was set up there.

Although the researchers' new guide was a good translator, he was permanently employed as a ranger and permission for him to assist the research team on the next visit could not be obtained. This created an enormous problem. The problem was eventually solved after contact was established with the World Bank's advisor to the Mozambican government on Transfrontier Conservation. A meeting with him was organised during a week's break in the research between the second and third visits to the research area. At the meeting, which took place on the South-African/Swaziland border, the advisor agreed to find a person who could speak English, Portuguese and Ronga to aid with the research.

Upon their arrival at the Maputo Elephant Reserve on the third visit to the research area, the researchers were met by Mr Geraldo Palelane, an employee of Helvetas Mozambique, a Swiss Non-Governmental Organisation. Helvetas is involved in various community development programmes in the research area. This meant that Mr Palelane knew the

area well and also had previous experience in community research and development work.

Camp was set up at Lake Piti. On the first night, it rained, and the local people said it was a sign that the ancestors of the area were happy that we were there. A meeting was arranged with the traditional leader for the first day. He was asked to take the research team through the research area and to teach them the indigenous names of some of the trees and animals in the area. The traditional leader also happens to be a traditional healer. He took the team to various sacred forests where he harvests his medicines. Not only did he give the names of various trees in the area, but he also indicated the medicinal uses of these plants.

A meeting was also arranged for the second day with the traditional leader and a friend of his who is also a traditional healer. A three hour semi-structured interview with the aid of an open-ended interview schedule was conducted with these two gentlemen. They were asked about the medicinal uses of various plants and wild animals, agricultural practices, crop damage caused by wild animals, their views on developments in the area, their views on nature conservation and the history of the area. The interview was a great success and a lot of information was amassed.

Rain and extremely strong winds forced the research team back to the confines of the research facility at the Maputo Elephant Reserve. It was decided that a trip would be made to Lake Piti every day to conduct further interviews. This meant that more than 4 hours were wasted every day on travelling to and from Lake Piti. Interviews were conducted with the aid of semi-structured interview schedules with fishermen, various farmers and game rangers of the Maputo Elephant Reserve. The aim of these interviews was to understand how people in the area interact with nature, what problems they experience and the nature of the relationship between the officers of the Maputo Elephant Reserve and the local people.

After all this information had been gathered, a structured questionnaire was developed. The structure and contents of the questionnaire are discussed below (1.3.3). After the questionnaire had been drawn up, the qualitative part of the fieldwork was supplemented by quantitative research. Thereafter, open-ended interviews were conducted with more rangers of the Maputo Elephant Reserve, local people, white farmers who had settled in the area and various developers who had been granted concessions in the research area. The aim of all these interviews was to obtain a thorough understanding of the situation inside the research area.

1. 3. 3. Quantitative research

Beals and Hoijer (1971:144) state that a questionnaire survey 'can best be used in the later phases of field work. Considerable time and experience are necessary to frame questions so that they will have the same meaning to the interviewer and the respondent or so they cover the most important problems.' Pratt and Loizos (1992:59) also state that the 'first phase of survey research is normally qualitative interviewing, where one of the team asks a small number of informants to talk at length about the issues the survey will be concerned with. This enables the researchers to understand the issues in the terms in which they are familiar to the informants.' Correspondingly, Weller (1998:365) explains that the 'initial stage of any project should include a descriptive exploration of the topic under study.' According to her, in the first stage the 'goal is to develop a set of items relevant to the area of interest and to the people to be interviewed.' Thereafter, 'the second stage incorporates the results into structured interview materials for systematic examination.' These prescriptions were influential in the decision to do qualitative research prior to conducting quantitative research.

In this regard Els (1994:13) states the following: 'Die betroubaarheid van navorsingsgegewens wat ooreenkomstig die kwalitatiewe metode verkry word, word grootliks bepaal deur die mate van wedersydse vertroue of *rapport* tussen die navorser en sy segspersone (kyk Coertze 1993:70). Dit verseker tegelyk dat gegewens oor waarde-

oordele direk en herhaaldelik gekontroleer kan word. By die kwantitatiewe metode daarenteen is die beginsel van *rapport* selde ter sprake. Met dié metode kan daar gevolglik weinig meer blootgelê word as die insidensie van 'n bepaalde verskynsel, opvatting, gebruik of handelswyse. Dit geld veral by die bestudering van waarde-oordele; die bestaan van 'n waarde-oordeel kan nie deur middel van 'n vraelys ontdek word (van nuuts af waargeneem word) nie. Juis daarom is kwalitatiewe navorsing **voor** die opstel van 'n vraelys wat oor waarde-oordele handel, 'n noodsaaklikheid. In die geval van transkulturele navorsing is 'n kwalitatiewe ondersoek ook die enigste manier waarop sinvolle antwoordmoontlikhede vir die vrae in 'n vraelys blootgelê kan word'.

Although Els (1994) refers to value judgements, the same methodological principles apply to the study of socio-economic organisation. Cultural aspects are interrelated (see Coertze 1980:63) which means that one cannot understand the economic aspect of culture without also trying to understand the cultural values determining economic behaviour. Values as binding element (Boonzaaier 1999: pers. com.), yet separate aspect of culture (Coertze 1980:63), was not the emphasis of the study, but could not be ignored since it was evident that spokespersons interpreted their actions in terms of their own framework of values (an element of the economic aspect of their culture). However, the significance of Els's statements lies in the last sentence, namely that in the case of trans-cultural research, qualitative research is fundamental in designing meaningful questionnaire surveys.

With regard to the present study quantitative research was carried out using 200 structured questionnaires to test the dissemination and validity of information gathered during the qualitative process. The questionnaire was originally drawn up in English, whereafter it was translated into both Portuguese and Ronga by Mr Palelane (see Annexure 1).

With regard to the use of a questionnaire survey as a research methodology Pelto and Pelto (1978: 81) remark that in 'any study involving statistical analysis, questionnaire

responses are open to objection because of the non-random character of the sample.' The objective of the present study was not to do a statistical analysis of typical census information but to quantify qualitative research with the help of questionnaires. As Pelto and Pelto (1978:81) state, '[w]here statistical analysis of materials is secondary to the gathering of general descriptive information, questionnaires can be quite useful, and once the schedules have been prepared, very little time is sacrificed in administration.'

Pelto and Pelto (1978:135) also state that, 'the statistical operations frequently used with quantified social data are based on the assumption that sampling has been random from a designated universe or population.' They further state that the 'realities of field research, however, frequently present us with situations in which deviations must be made from the ideals of randomness. While haphazard selection of informants, test families, or other units of observation is too naïve for most research purposes, the fieldworker must often make compromises in order to produce data without undue expenditures of time, effort and money.' The constraints of time, money and logistical problems were experienced in the conduct of the questionnaire survey for this study. However, it would be false to state that no form of random sampling was employed in the conduct of the questionnaire survey. It can rather be stated that the sampling method used is in accordance with what Pelto and Pelto (1978:134) call 'area-probability sampling.' According to them, area-probability sampling 'is a technique used to simplify problems of enumerating the total population by first breaking up the research unit into equivalent geographical subunits such as counties, neighbourhood, blocks, and so on. This method of sampling is intended to preserve the criteria of randomness without the necessity for enumerating every individual in the population in advance.' The logistical constraints attached to the research as well as the dispersed nature of population settlement in the research area made this a very suitable method of sampling and was therefore utilised as such.

Two factors played a role in the manner in which the research area was divided: the size of the research area and the distribution of the local human population. The area was divided into nine different areas. Although care was taken to try and complete an equal

number of questionnaires per area, it was not always possible. People who joined sessions where questionnaires were completed, were not refused the opportunity to also complete questionnaires when they indicated their willingness or asked to be part of the research.

Questionnaires were completed in the following areas: the village of Ponta do Ouro and the area surrounding it, at Ponta Malongane, where a dramatic rise in the human population recently occurred, at the sparsely populated Ponta Mamoli and the surrounding areas, at the village of Zitundo, where a large percentage of the population of the district is concentrated (mainly due to the fact that people found refuge there during the Civil War), in the tribal ward of Gala, at the village of Salamanga and the area surrounding it, at Catuane, which is situated in the western part of the research area and the areas surrounding Catuane, in the tribal ward of Xuxa, and amongst game rangers of the Maputo Elephant Reserve (Map 2). No questionnaires were completed in the Futi-corridor (the area between the Futi River and the Maputo River), although the area was extensively travelled. The area is sparsely populated, and due to its inaccessibility, it was decided not to conduct research in that area during 2000. Research will be conducted in that area in the latter part of 2001 as part of the larger research programme (see 1.3.1).

To assist in the completion of the questionnaires, four field interpreters were employed and trained at Ponta Malongane. The questionnaires were completed over a four-week period. During their fourth visit, the research team set up camp at Ponta Malongane. From there, it was possible to drive daily to Ponta do Ouro, Ponta Mamoli and Zitundo to conduct the questionnaire survey (see Map 2).

On the fifth visit to Matutuine, camp was set up for one week on an open piece of land at the offices of the Endangered Wildlife Trust in Catuane, a town situated just north of the Ndumo Game Reserve in Kwa-Zulu Natal. Questionnaires were completed in Catuane and surrounding areas, as well as in Xuxa, an area just east of Catuane (see Map 2).

After the questionnaires had been completed at Xuxa and Catuane, the research team moved back to the research facility at the Maputo Elephant Reserve. Since the bridge over the Futi River had by then been reconstructed, it was possible to stay inside the Maputo Elephant Reserve while getting people to complete questionnaires at Salamanga and surveying game rangers who live around the area.

1. 4. 3. 1. The questionnaire

The questionnaire consisted of 181 questions spread over five sections (see Annexure 1). The first section dealt with the demographics of the area. Information was gathered on the age and gender composition of households. Questions were also asked as to where people stayed during the Civil War and what their motives were for moving back to the area. Other important questions in this section dealt with the employment rate and sources of income available to the people in the area. Thus the first goal of the research project, namely to determine past, present and future trends in human population demographic variables, could be reached. Information obtained on human population demographic variables were corroborated by means of comparing the researchers results with information obtained from an Institute of Natural Resources survey on human settlement to the east of the Maputo River, results of the Mozambican census of 1997 and the results of an independent census conducted by Helvetas.

The second section of the questionnaire dealt with agriculture and animal husbandry. The aim was to determine the structure and function of the socio-economic system most prevalent in the area. Concerning agriculture, the goal was to find out not only which crops are planted, but also the extent to which these crops fulfil people's nutritional needs. Thereafter, questions were asked on the types and numbers of domesticated animals reared by people in the research area. There were also questions pertaining to people's value judgments regarding domestic animals.

The interaction between people and wild animals was the subject of the third section of

the questionnaire. This included the hunting of wild animals for food, crop damages caused by wild animals, loss of human life caused by wild animals and value judgments on wild animals and their conservation.

The fourth section of the questionnaire dealt with the utilisation of wild plants for medicinal purposes, construction, firewood, crafts, food, thatching, the brewing of beer and any other utilisation practices identified by the respondents. Thus information gathered not only showed which plants are used by the people in the research area, but also the extent of their reliance on these plants for survival.

The third and fourth sections of the questionnaire were aimed at achieving the third and fourth set aims of the research project. Through an interpretation of the answers obtained, it was possible to determine the extent of and need for seasonal renewable natural resource utilisation as well as the extent and causality of elephant and human interaction.

In the fifth section of the questionnaire, questions addressed people's perceptions on developments in their area, and their willingness to participate in those developments. Respondents were also asked whether they would be willing to lease out their land for future developments. The aim of these questions was to determine possible areas of conflict and co-operation between local inhabitants when future developments in the area take place. This was a specific question that the Mozambican Conservation Authorities wanted to be answered.

1. 5. NOTE ON THE ORTHOGRAPHY

Due to the fact that the people in the research area speak a mixture of Portuguese, Ronga, Shangaan and Zulu, locally referred to as *Mandindini*, it was decided to use the Zulu orthography, as presented by Doke *et al.* (1996), ***English-Zulu dictionary***, in the writing of this dissertation, as it is the predominant language of the area. The local terms as

people presented them are included when a new word or subject is introduced. The following abbreviations will be used to denote the different languages: T for Tsonga, R for Ronga, P for Portuguese and Z for Zulu. Thereafter, to ensure correctness of spelling and consistency throughout the dissertation, the Zulu words for specific indigenous terms are used.

CHAPTER 2

HISTORY, POLITICAL ADMINISTRATION AND DEMOGRAPHY OF THE MATUTUINE DISTRICT

2. 1. INTRODUCTION

This chapter deals with the third aspect of this study, namely the cultural identity of the people who stay in the Matutuine District. The cultural system of these people is examined in a historical context. It is essential to understand the history of the Matutuine District and the people who stay in the area to comprehend the present situation fully. The political administration of the Matutuine District (both the traditional political system and the contemporary government-instituted administrative structures) is also described in this chapter. The political system is also discussed in historical context.

The third part of this chapter deals with the demographics of the Matutuine District. For the purposes of the planned Lubombo Transfrontier Conservation Area, it is vital to know exactly how many people live in the research area and where they are located. It is also necessary to predict growth in the local population so that planning for the Lubombo Transfrontier Conservation Area is sound and adequate. The importance of the demography of Matutuine is stressed again in Chapters 3 and 4, when the natural resource utilisation pattern of the local people is examined. Once the extreme reliance of the people in Matutuine on the natural environment is realised, it becomes clear that the local population of the Matutuine District will play a large role in determining the successful implementation of the Lubombo Transfrontier Conservation Area. The value of the demographic information presented in this chapter will then be evident.

2. 2. THE CULTURAL HISTORY OF MATUTUINE

2. 2. 1. Origin and early history of the Tembe

The Zulu started to refer to the indigenous people who occupy the area south of, and surrounding Maputo (previously Lourenço Marques), as Thonga after their first encounters with them. The Zulu used the word *Thonga* for all the people who lived on the east coast, south of the Zambezi River and who did not belong to the Sotho or Nguni-speaking peoples (Bryant 1965:287).

The Tsonga people consist of six related ethnic groups: the Ronga, the Djona, the Hlanganu, the Bila, the Nwalungu and the Hlengwe (see Map 3) (Thorpe 1992:37). The people who live in the study area are part of the southern Tonga or Ronga group. This group consists of the Konde, Maputa, Tembe-Thonga, Matolo, Mphumo, Mabota, Mazwya, Chiranda and Manyisa tribes (Junod 1962a:16-17).

Although Junod (1962a:15) indicates that the Zulu term Thonga (Tsonga) or Ronga originates from the Zulu word *buronga* (dawn), and was apparently used to denote all peoples living in the east, Bryant (1965:286-287) is very clear on the fact that the term *Thonga* was used by the Zulu to refer to slaves. This master/slave relationship is particularly evident with regard to the role of the Tembe in trade between the Zulu and Europeans at Delagoa Bay, discussed in more detail below.

Due to the negative connotations of the word, the Tembe do not want to be called *Thonga* (Bryant 1964:99). They prefer the term Ronga or Tembe (referring to Mtembu the founder of their kingdom). These people have historically inhabited the area to the south and east of the Tembe River in Southern Mozambique, as far south as Sodwana Bay in northern KwaZulu-Natal (Torres 1980:460).

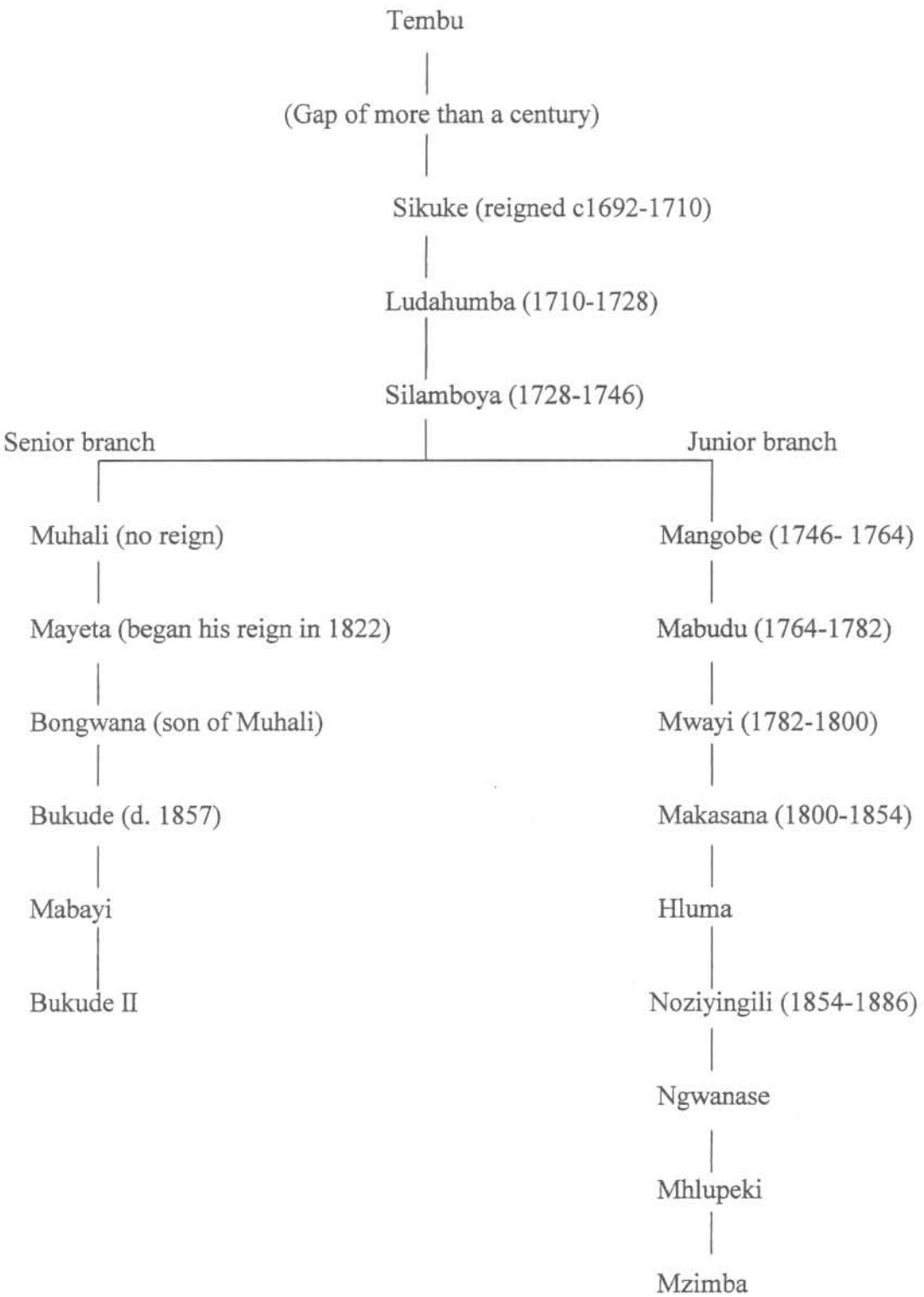
It is important that the Tembe should not be confused with the Thembu people, a Xhosa-speaking people who live in the Eastern Cape Province in South Africa (Bruwer 1963:18). In the current study, the term 'Tembe' is used to designate the people who traditionally lived in the area between Maputo Bay in the north and Lake Sibaya in the south, east of the Lubombo mountains to the Indian Ocean. Later on in

this chapter it is shown that from the 1940s, the Tembe king lost his authority in the part of the area described above that falls inside Mozambique. This and other factors, like the war of independence in Mozambique and the Mozambican Civil War, disrupted the social structure of the people who currently stay in Matutuine to such an extent that they can no longer be classified as being only Tembe. Amongst the inhabitants themselves, there is great confusion regarding their cultural identity. Therefore, in this study, when the Tembe are mentioned after the 1940s, the term refers to the Tembe who stay in northern KwaZulu-Natal in South Africa. The local inhabitants of the Matutuine District are thus included under the term Tembe for the period up to the 1940s, thereafter the local inhabitants of Matutuine are referred to simply as the 'local inhabitants of Matutuine'.

It is said that the Tembe people emigrated from the Kalanga country in what is today Zimbabwe to Maputo Bay via the Nkomati River, which they crossed on a 'floating island of papyrus'. From there they crossed the Tembe River and settled south of the present day Maputo Bay (Junod 1962a:23). This probably meant that they used rafts made from papyrus to cross the rivers. The story can be interpreted to mean either that the Tembe came to the area as a clan, or that Mtembu himself came from Kalanga and established his authority over the people in the area. It is known from historical accounts that Mtembu lived and ruled in the area surrounding the present day Maputo Bay in 1554. Thus the middle of the sixteenth century can be accepted as the time at which the Tembe clan came into being (Bryant 1965:293).

In 1757 the Tembe clan was split into two when their king, Silamboya died (see Figure 1, overleaf). His senior son, Muhali, and his junior son, Mangobe, divided the clan when they parted company, each taking half of the clan under his leadership (Bryant 1965:300). The senior branch or Matutwen branch occupied the area between the Maputo and the Umbeluzi rivers in Mozambique. The junior branch or Maputo branch occupied the area between the Maputo River and the Indian Ocean. Maputo Bay formed the northern boundary of the area of the Maputo-branch and the Ubombo district in Natal, the southern boundary of their area (Felgate 1982:1-2). The area where the research for this project was conducted thus falls within the area of the

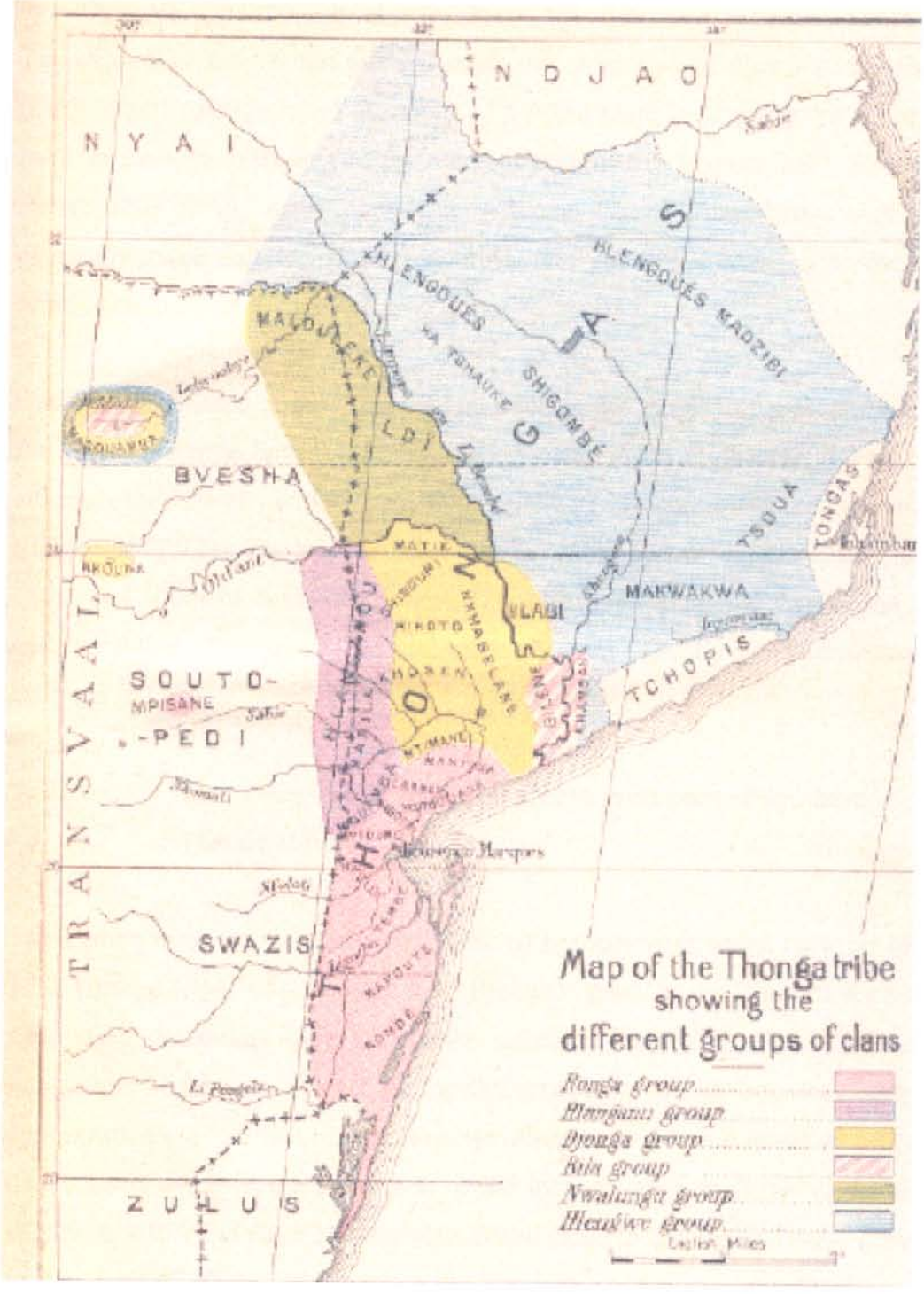
Figure 1: Genealogy of Tembe *amaKhosi*



Source: Felgate (1982:154).

Maputo-Tembe and their descendents. This junior branch or the Maputo-Tembe is referred to as 'Tembe' in the rest of this study.

Map 3: Distribution of the various Tsonga clans through South-eastern Africa



Source: Junod (1962a:16a).

According to Bryant (1965:291), the junior branch was culturally superior, although by birth inferior, to the senior branch. The junior branch is judged as culturally superior because they owned more cattle and were better agriculturists than the senior branch. They were also extensively involved in trade, while the senior branch was dependent on the junior branch for many of their supplies.

The culture of the Tembe differed markedly from that of their Nguni neighbours (Zulu, Swazi and Xhosa) to the south. They had more in common with people who lived in the area extending to the north of present-day Maputo Bay. According to Bryant (1965:290), when compared with the Nguni tribes, they were 'a race physically much inferior, timid and unwarlike, yet withal much more industrious, artistic and keen on commerce'.

Until the nineteenth century, the Tembe lived in the vicinity of present-day Maputo Bay. They claim to have ruled over the entire area as far south as the Mkhuze River, although they do not appear ever to have effectively controlled the southern areas (Felgate 1982:12). The relative peacefulness of Tembe life was disrupted during the 1800s and 1900s by European powers, tribes from the south and then by the conflict that escalated throughout Mozambique after the country's independence from Portugal in 1974.

2. 2. 2. European rivalry for the southern most part of Southern Mozambique

The Tembe came into contact with people of European extraction between 1502 and 1552 (Bryant 1964:105). Traders from Portugal landed at the Island of Mozambique and, when conditions were favourable, sailed to the mainland to trade with the indigenous population. It was during the expedition of one Lourenço Marques in approximately 1544 that the Portuguese discovered what was described as vast quantities of ivory in the possession of the local inhabitants (Torres 1980:461). A ship from either Sofala or Mozambique Island came to trade with Tembe clans on an annual basis. This fuelled growth in the ivory trade in the area between the people of Natal and the Ronga-speaking clans of Southern Mozambique (Parsons 1993:33). The discovery of these valuable trade goods (as well as a strong hint that there was

gold in the interior) led the Portuguese to safeguard very carefully their knowledge on these vast trade possibilities as well as their knowledge of the indigenous people from competing Dutch and British traders (Torres 1980:461).

The efforts of Portugal to keep the trade with Mozambique to herself was, however, in vain. In 1688 Portugal, Britain and the Dutch all established trading stations at what was then called Delagoa Bay (Bryant 1965:178). The most important item traded was ivory, and everyone wanted a part of the gold trade in the hinterland of south-eastern Africa. In 1721 the Dutch East India Company established a fort at Delagoa Bay from whence they hoped to control the gold trade in this particular geographical area (Smith 1972:173). However, before they could even begin to set up trade, the Dutch were struck down with malaria and were forced to retreat to Europe (Bryant 1965:289).

After the Dutch had left, a party of Portuguese traders from Mozambique tried to set up a fort at Delagoa Bay, but also did not succeed (Bryant 1965:298). In 1777 the Austrians were lured by the promise of gold. In that same year the Austrian Asiatic Company of Trieste, under the management of William Bolts, managed to gain control of trade in Delagoa Bay. The Austrians were very successful in their dealings with the local population. The price of ivory traded at Delagoa Bay was double to that of the price of ivory traded from Mozambique Island. However, fever and Portuguese efforts to oust the Austrians from Delagoa Bay to monopolize the trade for themselves eventually led to the departure of the Austrians from Delagoa Bay (Smith 1972:174).

The Portuguese realised that they did not possess the strength to protect their trading interests in Southern Mozambique with the use of force alone. The answer, they thought, was diplomacy. In 1794 as conflict broke out among the Tembe people, the Portuguese promised an alliance to the strongest *induna* in exchange for the deed to his land. After the Portuguese had obtained the deed from the strongest *induna*, they started to construct a fort on the land allocated to them in accordance with the deed. However, they had barely finished building the fort when the French came, in 1796, and forced them to retreat. Despite this setback, the Portuguese returned in 1799 and

tried to obtain further land concessions from the indigenous people (Bryant 1965:299).

Although the Portuguese made early contact with the Tembe, they give very little detail on the Tembe in the records they left. Captain W. Owen, who served in the British navy, documented the first useful account of the people. In 1822 he paid a visit to the area over which the Tembe had authority and produced two volumes, entitled *Narrative of voyages to Africa* (Bryant 1965:290). During this visit, Owen named the area south of what was then Delagoa Bay, bounded in the west by the Maputo River, 'Mapoota' Land (Bruton, Smith & Taylor 1980:438)

The main purpose of Owen's visit to Maputaland was to negotiate land rights in the area for Britain. His first step was to consult the Portuguese at Delagoa Bay and request their protection against the indigenous people while the British expedition visited the area. The Portuguese responded that the indigenous people were not Portuguese subjects, and that Portugal could therefore not promise the British expedition any protection. Upon this Owen paid visits to the two strongest Tembe *izinduna* of the area, Mayeta and Makasana, to tempt them to put their respective lands under British protection. The two *izinduna* obliged, but soon after Owen had left, the Portuguese command obtained written declarations from the same two Tembe *izinduna* that their people had always been subjects of the king of Portugal (Bryant 1965:299).

In reality, these declarations of allegiance of the Tembe to the Portuguese crown did not carry much weight. Conflict between the Portuguese and the Tembe continued for many years. The conflict regarding European ownership of Delagoa Bay was not settled until 1897, when other European countries finally recognised Portugal's territorial rights to this area (Bryant 1965:300).

Before 1875, both Britain (from the Natal side) and Portugal (from the Mozambican side) laid claim to what is today the southern part of Mozambique. These claims were further complicated by a claim by the *Zuid-Afrikaanse Republiek* that the land belonged to them, as it afforded the *Zuid-Afrikaanse Republiek* a passage to the sea. Portugal and Britain put the land claim matter up for international arbitration. French

Premier MacMahon arbitrated the matter in favour of Portugal in 1875, when he established the current boundary between South Africa and Mozambique. This meant that the region under the authority of the Tembe Royal family was divided into two sections, with the larger number of their subjects living in Mozambique (Felgate 1982:9). The Tembe were not consulted or informed about the fact that the largest part of their country had been awarded to Portugal until 1887, when the then Queen Regent Zambili sent a deputation to the Governor of Natal, Sir A. E. Havelock, to complain about Portuguese encroachments. As a result of this visit, Zambili and the British Government agreed upon a treaty in 1895 whereby the portion of land under Tembe control that fell outside the Portuguese sphere under the MacMahon Award was proclaimed to be under British protection (Van Wyk 1983:60-61). From that moment on the section of the Tembe tribal area under British protection was called Thongaland (Makanjee 1989:70).

This meant that the Tembe now found themselves under the authority of two different colonial masters. At first, the Royal Family were able to control their people on both sides of the border. When king Ngwanase, came into conflict with the Portuguese in Mozambique in 1895, he was forced to seek asylum in so-called British Tongaland. The British welcomed him and allowed him to settle near Pelandaba. From there, Ngwanase and his son Mhlupheki after him ruled over the entire Tembe kingdom. During the first few years of the Twentieth century, the Portuguese influence in Southern Mozambique was not very forceful. The Tembe king still appointed *izinduna* in Southern Mozambique, collected taxes from his subjects living there, and also heard court cases from his subjects living in Southern Mozambique. It was only from the 1940s onwards that the king's influence over his subjects in Mozambique dwindled, because the Portuguese colonial administration strengthened their hold in the area and enforced a colonial administration system of direct rule which aimed to destroy the power of indigenous leaders (see 2.3.2) (Felgate 1982:21).

2. 2. 3. Relations between the tribes of Southern Mozambique and Natal.

The relationship between the Tembe and the indigenous African peoples living to their south was dominated by two factors: trade with European countries at Delagoa Bay and the consequences of the *difaqane*. These two factors are not totally independent of each other. It has even been suggested that one of the main reasons for the *difaqane* was the effort of the Zulu to control trade with Delagoa Bay (Ballard 1981:100). This is, however, a revisionist interpretation of the causes of the *difaqane* and is not a view supported by leading historians on the subject (Bryant 1964:48-98, Krige 1988:1-22 and Omer-Cooper 1975:1-8)

The *difaqane* cannot be fully explained as merely the result of Zulu efforts to control trade with Delagoa Bay, since that would be too simplistic. *Difaqane* is a Sotho word (*mfecane* in Zulu) that means 'forced migration' and indicates a period of 30 years in the history of South Africa starting in 1815 in present-day KwaZulu-Natal. Various clans of what was then called Zululand came into conflict with one another. These conflicts caused large-scale political, social and economic destruction and eventually a total restructuring of indigenous socio-economic and political systems. The *difaqane* was, more specifically the result of conflicts between Northern Nguni groups (see below) and it was specifically the conquests of Shaka, king of the Zulu, that provided the momentum for the phenomenon (Van Aswegen 1991:248).

The Tembe were particularly affected by wars of conquest in the northern part of Zululand. Since they were not a warlike people, they would easily have been destroyed had the might of Shaka's army been unleashed upon them. Fortunately for the Tembe, Shaka was assassinated before this could happen. However, the Tembe were hard-hit by the ravages caused by fugitives who fled northwards from KwaZulu-Natal because of the conflicts that originated there (Bryant 1965:292).

The first major conflict that started in the early 1800s in what was then Zululand was that between the Ngwane and the Ndwandwe. The Ngwane clan lived on the northern banks of the Pongola River, under the leadership of Sobhuza. Initially, there was peace between Sobhuza and his neighbours, the Ndwandwe under the leadership of Zwide. When conflicts over land had escalated into a full-scale war, the Ngwane

were forced to flee the area. The Ngwane eventually settled in what is today Swaziland, where they established a strong kingdom (Van Aswegen 1991:248).

Conflict between Shaka and Zwide came to an end in 1818 or 1819, when Shaka defeated the Ndwandwe. Several Ndwandwe leaders fled northwards with their followers and left a path of destruction and misery in their wake (Van Aswegen 1991:248). Two of them, Soshangane and Zwangendaba, went along different routes to Southern Mozambique. Two other clans, the Msene and the Maseko, combined under the leadership of the Maseko *inkosi*, Nxaba, also fled to Southern Mozambique (Omer-Cooper 1975:57).

Soshangane and his followers settled near the present-day Maputo Bay, just north of the Tembe area. The Tembe escaped the worst part of Soshangane's tyranny by moving southwards along the coast (Felgate 1982:10). After being nearly defeated by Shaka's army, Soshangane fled northwards and settled in the vicinity of the Save River, the same area were Zwangendaba and Nxaba had settled. The three groups were loosely associated for a short period, but conflict soon flared up between the leaders. Soshangane defeated Zwangendaba in 1831. Thereafter, Zwangendaba and his followers fled westward through present-day Zimbabwe. A war between Soshangane and Nxaba broke out soon afterwards. After Nxaba had been defeated, the Maseko-Msene army broke up. The Msene followed Nxaba westward on the same path that Zwangendaba had taken, while the Maseko fled northwards and finally settled in present-day Tanzania. With the opposition out of the way, Soshangane established the mighty Gaza Empire in the area surrounding the central Sabi River. From here, he sent plundering expeditions in all directions (Omer-Cooper 1975:58).

Although the Tembe suffered at the hands of Soshangane, his actions did not result in the destruction of the Tembe either as a political or as a social unit. They did, however, result in various migrations to the south. Makhasana, then the king or *inkosi* of the Tembe, and his son sent armies to the south of present-day Tongaland and to the western areas of Southern Mozambique to conquer independent clans living there (Felgate 1982:11).

Various other people passed through Tembe country during the reigns of Shaka and Zwide, either individually or in groups. Many of them settled among the Tembe. Over time, this caused the Tembe to lose their distinctive culture to a certain degree and to incorporate many aspects of Nguni (especially Zulu) culture (Bryant 1965:292).

As this process continued more and more prestige was attached to being Zulu and to the Zulu language. Tembe men had learned to speak Zulu even before the reign of Shaka from people with whom they traded. This trend increased now that there were Zulu people in their midst. The women, however, especially in the southern regions of the Tembe kingdom, did not feel the need to learn to speak Zulu (Felgate 1982:11).

The people who fled the onslaught of Shaka only stayed in Tembe country for a short period before they moved on. The most predominant reason for this was the ecology of the region in which the Tembe lived (Felgate 1982:11). Due to prevailing ecological conditions in the region, people who decide to settle there are compelled to follow a certain economic pattern with respect to hunting, fishing and practising horticulture in the nutrient-poor sandy soils. This pattern is still used nowadays in everyday life in Matutuine and northern KwaZulu Natal. The high incidence of malaria and tsetse fly in the low-lying parts of the region also made the area unfavourable to Zulu and Swazi invaders who relied heavily on cattle. The result was that the Tembe were left in relative peace to pursue their own way of life, even if they were never absolutely secluded from happenings in Zululand and Natal (Torres 1980:460-461).

The ecological conditions in Southern Mozambique were not the only reason why the Zulu never openly waged war against the Tembe. The principal reason for this was, quite simply, that it was never necessary for the Zulu to wage war against the Tembe, because the Zulu had an overlord-vassal relationship with the Tembe (Ballard 1981:102).

During his campaigns, Shaka had established his authority over the Tembe. The Zulu king forced the Tembe leaders to pay tribute to him. This was a well-organised annual political and economic activity, with special collectors appointed by Shaka and

the Zulu kings who followed him (Ballard 1981:102). Mpande even intervened in the politics of the Tembe to help settle a dispute in his own favour. The dispute came about as follows: when the paramount *inkosi* of the Tembe, Makhasana, died in 1854, he left his throne to his second eldest son Noziyingili, after his eldest son Hluma had died. However, Makhasana's brother, Nonkatsha, had as regent acquired a considerable amount of autonomy and a huge following, and had usurped the throne. Noziyingili fled to Zululand to ask Mpande to intervene. Mpande sent seven regiments to reclaim the Tembe throne for Noziyingili, and after a long campaign, succeeded in doing so. Noziyingili returned to Tongaland where he reigned as king from 1854 to 1886. This incident increased the Zulu hold on the Tembe, but also secured Noziyingili's position as Tembe king. As long as Noziyingili paid his dues to the Zulu king, he was assured of his position. In this way, his ties to the Zulu royal family strengthened his power against would-be opponents (Ballard 1981:105).

It was the responsibility of the Tembe *inkosi* to organise hunting parties to obtain ivory, hides and feathers or to organise groups of people to harvest their crops as tribute for the Zulu king. This tributary system started in 1820 and continued up to 1860. The Tembe *inkosi,* at that time Makhasana, and later his son Noziyingili, had no choice but to pay the tribute. In exchange, the Zulu recognised them as leaders of a vast territory, and this, to an extent, secured their positions (Ballard 1981:103).

This relationship with the Tembe was instituted because Shaka wanted to control trade with Delagoa Bay. Due to their usefulness as traders, Shaka only demanded tribute from the Tembe and never waged a full-scale war on them. Tembe porters went to the kraals of the Zulu king where they collected large amounts of ivory to be carried to Delagoa Bay for trade with the Portuguese. Shaka also chose not to interfere with the political organisation of the Tembe, and allowed traditional Tembe leaders to retain their authority as long as they paid tribute to the Zulu king. In this manner, Shaka laid the foundations of a foreign policy that was continued by Dingane, Mpande and Cetswayo (Ballard 1981:104).

Cetswayo, who succeeded Mpande as king of the Zulu, was even more successful in managing his hold over the Tembe and thereby his control of the trade with Delagoa Bay. Like his predecessors, he collected ivory, vervet monkey tails, skins and

calabashes from the Tembe. It was in his time that trade with Delagoa Bay took on a renewed importance. In the 1860s and 1870s, coastal trade was dominated by the sale of firearms. Control of the trade route from Zululand to Delagoa Bay took on a new importance, since it was the only way in which the Zulu could obtain firearms. Various plans by the British and the *Zuid-Afrikaanse Republiek* made it nearly impossible for the Zulu to obtain firearms through any other channel (Ballard 1981:106).

Zulu control of the coastal trade route waned by the end of the 1860s. The reason for this was twofold: a succession dispute between the two sons of Soshangane, Mzila and Mawewe, in the Gaza Empire from 1858 to 1862, and an ecological disaster. When the succession dispute over leadership of the Gaza Empire broke out, Mzila turned to the Portuguese for military assistance and Mawewe turned to the Swazi kingdom. After Mzila had defeated Mawewe, Mawewe fled to Swaziland. Noziyingili, the then king of the Tembe, aligned his forces with Mawewe and succeeded in defeating Mzila in the early 1870s (Ballard 1981:108). These political upheavals coincided with an ecological disaster. The *Mbethe* or *Ngongoni* famine struck much of south-eastern Africa and it was especially the area around Delagoa Bay that was hit extremely hard. A lack of ground water, combined with lung disease, destroyed nearly all the cattle, while the human population was struck down by a smallpox epidemic (Ballard 1981:108).

These factors made it difficult for the Tembe to provide the necessary tribute to the Zulu king. The years of tribute paid to the Zulu king had depleted most of the fauna in the area and the draught further disabled the Tembe, making it hard for them to pay their dues. The tribute relationship was totally transformed in the last few years of the nineteenth century as the demand for labour in Natal opened up a new way for tribute to be paid to the Zulu king. Cetswayo assisted the government of Natal in recruiting Tembe and other Ronga-speaking people as labourers in exchange for a share in their wages, which he perceived as commission for their recruitment (Ballard 1981:108).

2. 2. 4. Colonialism and the struggle for the independence of Mozambique

The colonial rule of Portugal over Mozambique had a profound influence on the history of the Tembe who came under Portuguese influence. This is largely due to the Portuguese system of colonial administration, which is discussed below (2.3.2). The Portuguese followed a system of administration that can best be described as centralisation and assimilation. The Portuguese looked down on the cultures of the indigenous people in their colonies and wanted to replace the indigenous culture with Portuguese culture. In order to accomplish this goal, the Portuguese aimed to eradicate indigenous cultures. This also meant the eradication of traditional authority structures. This caused resentment in a large portion of the indigenous population and, in the case of Mozambique, led to a brutal war of independence. In the process, thousands of people were displaced, while the infrastructure of large parts of the country was destroyed. This implies that the colonial era and the effects of the war of independence contributed to the underdevelopment of large areas of Mozambique, including the Matutuine District. Furthermore, the traditional cultural system was disrupted to such an extent that, as will be discussed in the following sections, there is no longer any cultural homogeneity in the Matutuine District, and in large areas of the Matutuine District people have lost their cultural identity.

The struggle for the independence of Mozambique from Portuguese colonial rule took a long time to become overt. This was largely due to the way in which Portugal administered her colonies and the way in which Portugal refused to accept that the colonial era was ending. Pressure came to bear on Portugal to grant Mozambique her independence from two sides, internal and external. From the end of the Second World War (1939-1945), there was a marked change in world opinion with regard to imperialism. In the United Nations newly independent countries like India and Ghana voiced their opinion against colonies and the repression of so-called third world peoples. Throughout the years during which many African states gained their independence, Portugal was seen as the most stubborn imperialist state, and voices were raised from various quarters for the independence of Portugal's colonial holdings (Bennet 1995:379-380).

To divert the pressure put on him and to win the favour of Western states, the leader of Portugal at the time, António de Oliveira Salazar, redesigned the colonial system. In 1951 the Portuguese constitution was changed so that colonies were no longer called colonies, but Overseas Provinces of Portugal. This was followed in 1953 by the Organic Law of Overseas Portugal, the Statute for the Province of Mozambique in 1955 and an updated Native Statute in 1954. Growing international opposition against Portuguese colonial rule also resulted in the granting of full citizenship to all inhabitants of the colonies (Newitt 1995:473).

Internal pressure for the independence of Mozambique built up relatively slowly. Mozambique was isolated from revolutionary happenings elsewhere in Africa. It was left to Mozambicans living abroad to initiate resistance from inside the colony. A forum for Mozambican nationalism was created abroad when three nationalist movements, UDENAMO (the *União Nacional Democrática de Moçambique*), Unami (the *União Africana de Moçambique Independente*) and MANU (the Mozambique African National Union) merged to form FRELIMO (the *Frente de Libertaçãao de Moçambique* or National Front for Mozambique Liberation) in June 1962. FRELIMO was headed by Eduardo Mondlane. He had been educated in Lisbon and by 1962 had lived abroad for nearly ten years (Van Aswegen & Verhoef 1982:50).

From its inception, there was internal conflict as to what actions FRELIMO should take to achieve its goal of independence. The FRELIMO campaign was finally launched on 25 September 1964 with an attack on a Portuguese base at Chai in Northern Mozambique, and the issuing of a proclamation of independence and a call to arms of all indigenous people in Mozambique (Newitt 1995:523).

The bulk of FRELIMO's activities were concentrated in the northern part of Mozambique because guerrillas could find safety in Zambia and Tanzania. FRELIMO gradually increased its power and forced the Portuguese to take notice of the plea for independence. When the Portuguese government under Marcello Caetano collapsed after a military coup in 1974 and Antonio de Spinola came to power, negotiations with FRELIMO began (Newitt 1995:538-539).

Portugal wanted a complete ceasefire, which FRELIMO refused. Chaos broke out throughout Mozambique. In August 1974 FRELIMO finally ended its military campaign. This led to the signing of the Lusaka Accord in September 1974, whereby control of the government of Mozambique was transferred to a transitional government under Joaquim Chissano. On 25 July 1975 Samora Machel officially became president of an independent Mozambique (Newitt 1995:539).

2. 2. 5. The Civil War in Mozambique

After coming to power, FRELIMO had two goals: establishing a rigid socialist economy and supporting the struggle for independence in the former Southern Rhodesia by allowing Rhodesian rebels to operate from Mozambique (Newitt:1995:542).

Many people who were opposed to FRELIMO fled abroad. Much of the opposition to the FRELIMO government came from the Mozambican rural population. This resistance was directly related to FRELIMO's socialist policies. One of the socialist policies that were implemented was the establishment of communal villages. Families living in rural areas were moved into large communal villages under the control of party officials or newly appointed traditional leaders on whose land the communal villages were built. This meant that some traditional leaders lost all their authority while others grew stronger. The authority of traditional leaders was broken down even further by the institution of party officials and People's Tribunals (Newitt 1995:571).

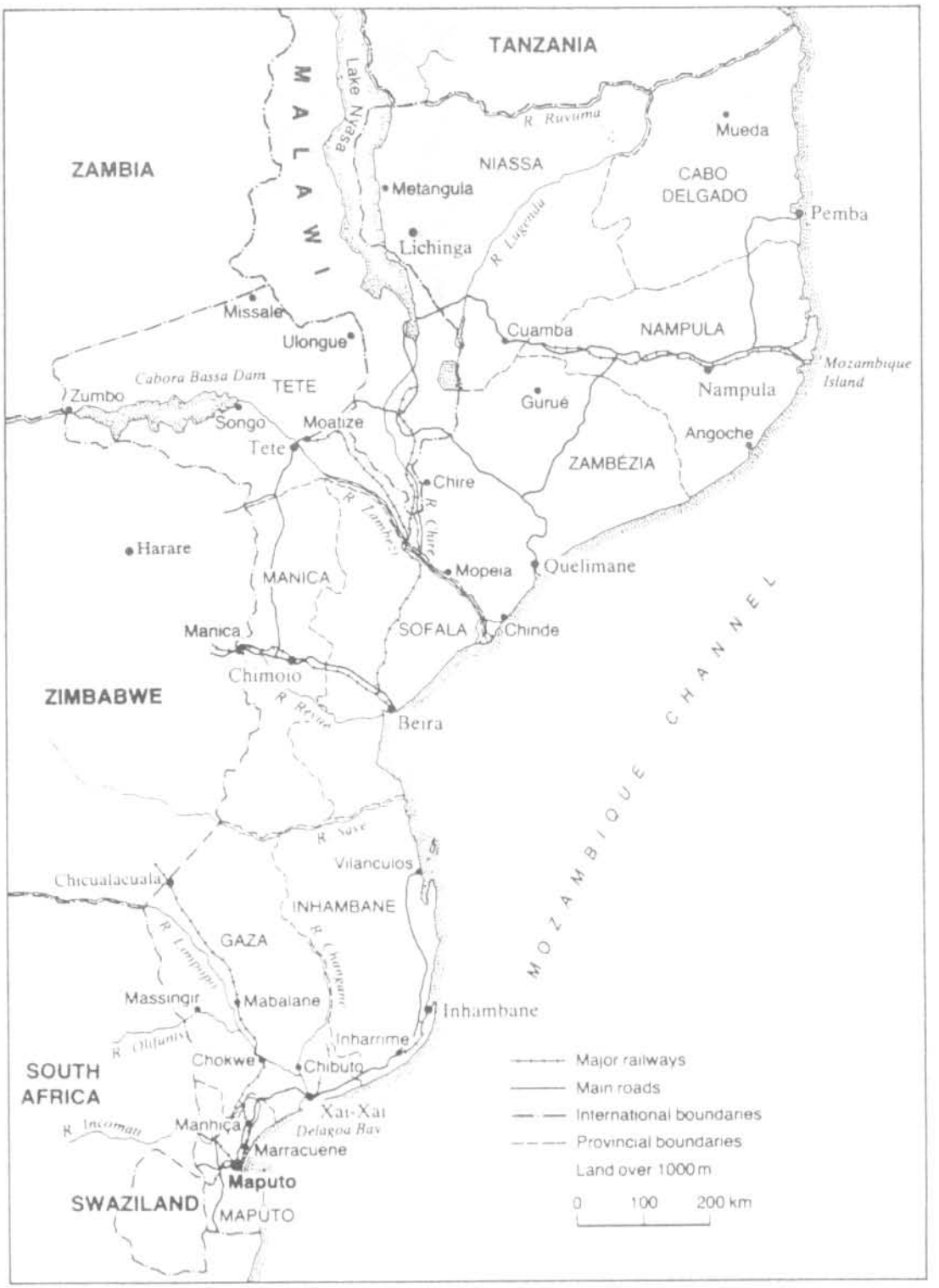
Many people who fled from Mozambique found refuge in the former Rhodesia. There they were helped by the Rhodesians to establish RENAMO, the *Resistência Nacional de Moçambique*. The Rhodesian security organisation trained and funded RENAMO soldiers to run insurgency operations throughout Mozambique and to oppose the FRELIMO government. The main targets were the country's economy and infrastructure. In 1980, however, the then white president of Rhodesia, Ian Smith, fell from power, and Rhodesia became the state of Zimbabwe. At that stage, the South African Defence Force stepped in and took over the role of supporting RENAMO. Training facilities were set up in the former Northern Transvaal and

equipment was supplied by the South African government. RENAMO, now under the leadership of Alfonso Dhlakama, targeted any person or building associated with the FRELIMO government in Mozambique. The rural economy and communal farms also became targets. The purpose was to strike fear into the hearts of the population and to instil the belief that the FRELIMO government was incapable of ensuring the safety of its subjects. Commanding widespread support from the disaffected, RENAMO was especially active in the central provinces of Mozambique, such as Sofala, Manica and Zambezia, and later on in the south (south of Maputo up to the South African border) (see Map 4). Through sabotage, RENAMO managed to destroy much of the country's economic and social infrastructure: roads and railways, schools and health centres, houses, shops and factories (McGregor 1998: 38; Newitt 1995:570).

In 1984 South Africa and Mozambique signed the Nkomati Accord, whereby the two countries pledged not to support insurrection in each other's territories and to lend mutual co-operation in development (Liebenberg 1993:447). This effectively meant that RENAMO could no longer operate from inside South Africa. This led to the darkest hours of the Civil War. By 1990, as many as 100 000 people had been killed and 4 million (a third of the population) had been displaced due to the fighting. Tens of thousands of refugees fled to neighbouring countries and the FRELIMO-led government lost effective control over large parts of the country (Newitt 1995:571).

By 1989, however, FRELIMO had become disenchanted with its Marxist ideology and started to build a Western-style democracy. On 1 December 1990, a cease-fire was signed between RENAMO and FRELIMO (Newitt:1995:573).

Map 4: Map of Mozambique showing the various provinces



Source: Darch and Pacheleke (1987:361).

2. 2. 6. Labour migration from Southern Mozambique to South Africa

As was discussed above (2.2.3), there has always been interaction between the local inhabitants of Southern Mozambique and people who stay in what is now South Africa because of cultural and kinship ties. There is evidence to show that migration along traditional trading routes increased with the growth of the ivory trade since the early parts of the nineteenth century. Migration escalated with the rapid development of the sugar industry in Natal, which increased the demand for labour (Newitt 1995:482). The demand for labour was not met by the Zulu who stayed in Natal in South Africa. The reason for this is that among the Zulu agricultural work was women's work and the cash incentive for male labourers was too low to entice them to work in the sugar plantations (Davenport 1987:117).

To combat labour shortages, Britain took steps to use freed slaves and also started to import labour from India in 1860. Between November 1860 and June 1861, 1 593 Indians entered Natal. By the end of 1866, the number of Indians in Natal had risen to 6 445 (Ballard 1981:109). However, plantation owners found that Southern Mozambique was the most abundant source of labour (Newitt 1995:482-483).

Indigenous people from Mozambique have always seen migratory labour in South Africa as an alternative in times of economic hardships. The nutrient-poor soils in the environment they live in provides low crop yields even at the best of times. The establishment of the Gaza Empire put extra pressure on tribal people in the southern region. People had to pay tribute in the form of cattle, consumer goods, women and children. This deprived people of most of their surplus production. The situation worsened in the 1870s after the demand for ivory had driven most elephants from the region and people had lost this valuable economic resource. Also, the wars that followed the death of Soshangane in 1858 led to widespread destruction, which was felt especially in the extreme southern part of Mozambique, devastated time and again by Swazi raids.

A large number of people died due to famine and epidemics. Many destitute people gathered in large fortified settlements or sought protection in Portuguese *presídios*

(garrisoned enclaves). These events created ideal conditions for labour recruiters to sign up workers for the sugar plantations in Natal (Newitt 1995:483).

In 1859 the Natal Legislative Council passed Law 13 of 1859, which provided for the legal entry of Mozambican labourers on a three-year contract to Natal. This law caused problems for the Zulu king at the time, Cetswayo. Due to various problems affecting the Tembe (as discussed above) Cetswayo had already lost a lot of the annual tribute from Tongaland. Cetswayo was therefore reluctant to allow the Tembe to cross Zululand freely because he feared losing this important resource base. The Tembe were also disinclined to sign a contract on a three-year basis. However, the continuing impoverishment of Tongaland forced many labourers to enter Natal to seek work. Eventually, Cetswayo expressed his willingness to allow the Tembe workers to cross through Zululand. By the end of 1873, five migrant rest stations had been established along the coastal route and a promise had been obtained from Cetswayo not to molest Tembe men travelling through his country in exchange for a commission paid to the Zulu king (Ballard 1981:114).

The number of Mozambicans entering Natal on the government-recruiting scheme increased annually. Recruitment peaked in 1878, with 5 000 Mozambicans entering Natal through Zululand. White agriculturists preferred Mozambican labour to Indian labour, because, they said, Mozambicans have greater strength and stamina to perform manual tasks than Indians. Mozambican labour was also a lot cheaper. Compared with the £30 it cost to obtain an Indian worker, it cost only £1 to employ a Mozambican labourer (Ballard 1981:115).

The number of Tembe labourers working in Natal changed the tributary system that existed between the Tembe and the Zulu. Although Cetswayo was unwilling to co-operate with the Natal authorities at first, he later recruited Tembe men to work in Natal himself. The reason for this was that Cetswayo began to see the value of the hard currency in which tribute was now paid. The Government of Natal paid Cetswayo a third of the wages earned by labourers that Cetswayo forced the Tembe *inkosi* at the time, Noziyingili, to send to Natal. With this money, Cetswayo could buy cattle and other goods perceived as superior to the traditional tribute he had

received from an already depleted natural resource base in Southern Mozambique (Ballard 1981:116).

Labour migration from Mozambique to South Africa was encouraged even further after the discovery of diamonds in the Orange River in 1867. Once diamonds had been discovered in other parts of South Africa, larger and larger numbers of labourers left Southern Mozambique in search of work (Newitt 1995:483).

Workers were attracted to Kimberley by wages and weapons. Firearms were easily available in Kimberley and many traditional leaders sent parties of young men to the mines so that they could purchase firearms. Even after the sale of firearms had been stopped, many young Mozambican men still went to the area for the high wages which enabled them to buy consumer goods, increased their status and provided them with the necessary money for *lobola* (Newitt 1995:484). *Lobola* refers to goods handed over by a bridegroom's family to the father or guardian of the bride to supplement a marriage (Doke *et al.* 1996:460).

Money earned for *lobola* increased in importance, due to raids from the Gaza Empire on the people of Southern Mozambique which made it nearly impossible for young Tembe men to transfer *lobola* in the form of cattle, because their cattle was stolen during the raids. People in Southern Mozambique were stripped of most of the cattle necessary for *lobola*, and they could not enter into customary marriage without transferring *lobola*. Initially, hoes were used as *lobola* instead of cattle, but with the increase in migrant labour, *lobola* came to be transferred in consumer goods. This had a detrimental effect on the authority that lineage heads had traditionally exerted over their sons, since the lineage heads had traditionally provided the cattle their sons used to get married. Hence, wages earned in the mines in Kimberley and in the sugar plantations in Natal initiated a social revolution in Southern Mozambique (Newitt 1995:484).

In 1886, the demand for labour from Southern Mozambique increased dramatically with the discovery of gold on the Witwatersrand. To ensure a steady influx of workers, the Witwatersrand Native Labour Association, established in 1896, set up labour recruiting stations in Southern Mozambique (Newitt 1995:492).

Large numbers of labourers to the South African mines came from Mozambique. In 1920, as much as 55.6 % of labourers employed by the Witwatersrand Native Labour Association came from Mozambique. Over the years, this percentage had decreased gradually, but it was always substantial. On the eve of the Second World War, no fewer than 84 335 Mozambicans were employed through the Witwatersrand Native Labour Association. This ads up to 26.11 % of the total number of labourers employed in the South African mines through the Witwatersrand Native Labour Association (Van der Horst 1942:216-217).

In the 1970s the situation on the gold mines changed considerably with the removal of the controls on the gold price. Profits made by the gold mining industry could now be used to mechanise and to increase wages, which made employment in the mines an option for South African citizens, who had, till that time, looked down on mine work. Between 1970 and 1979, the percentage of South African workers on the mines increased from 28% to 63%. The embargo placed by Malawi in 1974 on all labour recruitment for work in South Africa further convinced the mine industry to focus its attention on the local population. However, it was at that time heavily dependent on Mozambican labour. In 1975 a record number of 113 000 Mozambicans were recruited. However, the rhetoric of FRELIMO worried the South African government and in 1976 the mines instituted a policy of not re-employing Mozambicans once their contracts had expired. In 1977, only two years after the 1975 record employment of Mozambicans, a mere 36 447 Mozambicans were employed by South African mines (Newitt 1995:498).

The situation for Mozambican labourers in South Africa improved slightly after the signing of the Nkomati Accord in 1984. The government of Mozambique asked that the quota of Mozambican labourers be raised to 120 000. The South African government backed the idea and in 1985, there were again 52 410 Mozambicans employed in South African mines. However, in the following year, the South African government changed its course and threatened to expel all foreign workers. As a compromise, all new recruitments were halted and only those Mozambicans who were re-contracting were allowed to work in South African mines (Newitt 1995:499).

2. 2. 7. Socio-cultural impact of historical events on the present situation in Matutuine

Historical events have had an enormous influence on the present socio-cultural situation in the Matutuine District of the Maputo Province of Mozambique. There is a strong Portuguese influence in the area that is evident from building styles and the fact that most people converse in Portuguese, even when the people they talk to speak the same African language they themselves do. People say that they prefer it this way because Portuguese is a binding factor in a nation with strong ethnic diversity. There is also still a strong Tembe influence in the area, especially among the older people. It would, however, be incorrect to state that there is ethnic homogeneity in the area. This is largely due to the displacement of people brought about by the war of independence from Portugal and the Mozambican Civil War.

The Civil War has had an immense influence on the area's present inhabitants. Quantitative research results indicate that 72% of the current inhabitants of the area lived outside Matutuine during the war. The majority of these people (35%) lived in South Africa and Swaziland. The children of many of these people were born outside Mozambique and grew up in other countries and attended school there.

This situation means that especially the younger people living in the research area have been exposed to foreign cultures. It can therefore not be said that the people of Matutuine have a single cultural identity. Recently people from Maputo and other areas in the north of Mozambique have moved into the research area due to the tourism developments at Ponta Malongane and in Ponta do Ouro and the job opportunities these places afford.

The forced migration of labourers to Natal and years of migration to the mines in South Africa have also had considerable effects on the present situation in Matutuine. According to Newitt (1995:502), the mines ' … worked major social changes not least in the structure of the family, the monetarisation of the economy and the growth of a relatively prosperous "middle peasantry" '. The institutionalisation of migrant labour disrupted the pattern of agricultural production as well as the social cohesion of the family. Since men were absent for periods of up to 18 months, they became removed

from their normal production tasks. Tasks like building houses, constructing roofs, catching fish and small game and clearing fields were gradually taken over by artisans paid for in wage earnings (Head 1995:135).

Mine earnings especially affected the transfer of *lobola*. It caused the inflation of *lobola* and the replacement of cattle as *lobola* goods by monetary payment. Miners also joined independent churches and developed a taste for consumer goods. However, in general, the influence of mining is regarded as a conservative force. Miners tended to seek money to improve their status within traditional authority structures and were even more concerned with the continuance of traditional hierarchies and structures than people who did not partake in the migration (Newitt 1995:502).

Nonetheless, there may be some truth in the assumption that Mozambicans who went to South Africa came into contact with the ideals of African nationalism and the struggle for the independence of Mozambique. The Portuguese were relatively successful in isolating the indigenous population of Mozambique from revolutionary happenings during the 1950s and 1960s elsewhere in Africa. Those who went to the mines were exposed to these political changes. They became involved in the politics of South Africa. They agitated with mineworkers on the Witwatersrand, joined political movements and came into contact with ideals their countrymen had been isolated from (Newitt 1995:521).

2. 2. 8. Economic impact of historical events on Matutuine

The introduction of the mercantile capitalist system at Delagoa Bay and the resultant competition between the Zulu and other peoples in northern Natal to secure the trade routes from Natal had a detrimental affect on Southern Mozambique. These events have been identified as two of the main causes of the underdevelopment of the area. In this regard it was especially the tributary system instituted by the Zulu that caused great hardship. It led to the exploitation of the natural and the human resources in the area and greatly contributed to underdevelopment (Ballard 1981:118).

The large-scale exodus of Portuguese from Mozambique in the mid-1970s also had detrimental effects on the economy. The Portuguese had done little to train the indigenous population to perform highly skilled tasks. Thus, when they left, the Portuguese took with them most of the available formal skills 'down to the level of (say) taxi-driver or mechanic assistant' (Raikes 1985:231).

Due to these factors, Mozambique still has, largely, an economy based on subsistence-agriculture. This is especially evident in the southern parts of the country. There has been extremely little infrastructure development in the research area. The majority of the roads to the east and south of the Maputo River are sand roads traversable only by four-wheel drive vehicles. There are only two tar roads in the area and the one, leading to Zitundo is in a poor state of maintenance. The other two roads in the area are gravel roads which become extremely treacherous in rainy conditions. Although there are four hospitals or clinics in the area many people prefer to travel to Manguzi in South Africa to seek medical attention there. There is also no electricity supply in the area, except at Bela Vista, Ponta Malongane and Ponta do Ouro. At Ponta do Ouro and Ponta Malongane the electricity is, however, mainly reserved for the benefit of tourists who frequent the area. There are only eight public radio-telephone links which have to serve the entire study area. There is also no water-infrastructure, except for the facilities at Ponta do Ouro and Ponta Malongane, which are again reserved for use by tourists. A past characterised by exploitation from various quarters and war is largely responsible for this situation.

The migration of Mozambican labour, especially from the southern parts of Mozambique, has had several important economic effects. As has been discussed, the wages earned on the mines play an important role in the production-patterns of peasant households. The country's balance of payments has also been greatly influenced by foreign exchange receipts from remitted wages (Head 1995:129). Prior to 1975, nearly 50 % of the country's foreign exchange earnings came from a gold premium paid by the South African government for Mozambican mine workers in South African mines (Leatt, Kneifel & Nürnberger 1986:165). Even in 1995, Mozambicans still made up 13.6% of the total workforce at South African gold mines. This translates to 28.4% of the foreign labour force in South Africa at the time. A similar pattern can be seen at the coalmines (Head 1995:129).

This in-depth discussion on the history of the Matutuine District and its inhabitants is important in the context of the study on the establishment of the Lubombo Transfrontier Conservation Area, because it illustrates the causes of the economic underdevelopment of the area. This study illustrates below that people migrate to the area from various parts of Mozambique because of the slight promise of employment offered by the small-scale tourism developments along the coastline. This is indicative of the desperation of these people, who find themselves in an extremely poor economic situation. Any developments planned for the Matutuine area will thus have to take cognisance of the fact that both the people in the area, people from other areas in Mozambique, and even people who stay in northern KwaZulu-Natal will probably flock to the area in the hope of being employed. The developmental needs of the local people must therefore be a key priority in the establishment of the Lubombo Transfrontier Conservation Area, otherwise, these people, who are extremely reliant on nature for their survival (see Chapter 4), will increase the pressure on the natural resources to such an extent that nature conservation will not be viable.

Furthermore, there is a lack of political capacity and law enforcement throughout the area that will also be detrimental to the successful establishment of the Lubombo Transfrontier Conservation Area. The focus of the rest of this chapter is therefore the political system in the area and the demography of the area. These two aspects are discussed to show that the socio-economic needs of the local people of the Matutuine District must play a primary role in the establishment of the Lubombo Transfrontier Conservation Area.

2. 3. POLITICAL ADMINISTRATION OF THE RESEARCH AREA IN HISTORICAL PERSPECTIVE

2. 3. 1. Traditional political organisation of the Tembe

The traditional political-administrative system of the Tembe functions in much the same way as that of other Southern Bantu-speaking peoples with whom they are grouped. At the head of the political unit there is a king, called *inkosi* in Zulu. Councillors and advisors, usually composed of his family members or *umdeni*, assist him. The *inkosi* has supreme authority over the entire tribal area. The tribal area, called *umhlaba* in Zulu, is divided into various wards or *izigodi*. At the head of each *isigodi* there is an *induna* or district (ward) headman. This person is usually appointed by the *inkosi* in council and is responsible for ensuring that the policy implemented by the *inkosi* in council is adhered to at local level (Hammond-Tooke 1993:79). Boonzaaier (1980:72) and Hartman (1972:103) describe a similar situation amongst the Tsonga.

The royal linage of the Tembe clan is traced back to the founding *inkosi*, Mtembu, from whom the Tembe took their name. The chieftainship is hereditary and passes from father to son, but it is not necessarily the oldest son of the *inkosi* who succeeds him. In the case of Ngwanase, for instance, it was the child of one of his younger wives, who cared for him during his illness, who became *inkosi* after his death (Felgate 1982:153).

When the Tembe moved into the area they now occupy, they were faced by many indigenous peoples claiming to be the original owners of the land. In order to subdue them, the *inkosi* appointed his relatives as *izinduna* over the indigenous tribes. These *izinduna* were granted far-reaching powers and most of the administration of the Tembe as a tribe revolved around them (Felgate 1982:147).

The *izinduna* formed a council who advised the *inkosi* on policy and actions when they convened (Felgate 1982:157). The traditional political-administrative system of the Tembe was thus relatively uncomplicated. The *inkosi* and his councillors

determined national (tribal) policy and governed accordingly, and the *izinduna* and their advisors were responsible for government at a local or *isigodi* level.

2. 3. 2. Political administration during the colonial era

The colonisation of the Tembe tribal area by Britain and Portugal respectively meant that the Tembe found themselves under the authority of two different imperial masters. These two imperial powers implemented two radically different systems of colonial administration (Van Aswegen & Verhoef 1982:14). Britain followed a policy in Africa that can best be described as indirect rule. The British used the indigenous authority structure to exert their own control. Indigenous people were allowed to follow their own traditions and ways of life, provided they paid homage to the British crown. This meant that the Tembe living in what was called British Tongaland were left free to follow their traditions and customary way of life (Smith & Nöthling 1993:280).

The situation in the Portuguese colonies was markedly different. The Portuguese system of colonial administration can best be described as one of centralisation and assimilation (Smith & Nothling 1993:287). Although the Portuguese colonies were not called provinces until 1951, the Portuguese administrators had always seen them as being an integral part of Portugal (Seegers 1977:59-60).

This philosophy of centralisation can clearly be seen in the political administration of Portuguese colonies such as Mozambique. The Prime Minister of Portugal was at the head of colonial administration. He was only responsible to the President of Portugal and not to the National Assembly. Below the Prime Minister was the Minister of Overseas Areas, who was empowered to dictate colonial administration and policies via the promulgation of decrees. A Ministry of Overseas Areas, who served in an advisory capacity, assisted him (Seegers 1977:62). The National Assembly, to which seven Mozambicans were elected, had very little influence on the formulation of colonial policy (Van Aswegen 1980:360).

A Governor-general was appointed by the Portuguese cabinet as head of the legislative and executive authority in each colony. He governed with absolute

authority, although a Legislative Assembly, with the power to stipulate laws, assisted him. The Legislative Assembly, however, only had legislative powers while it was in sitting. This meant that the Governor-general could nullify all the laws the assembly made after they retired. Judicial power was divided into two categories. One system, *regimo do indigenato* (see below), catered for unassimilated blacks while whites were tried according to Portuguese law (Seegers 1977:64).

The Portuguese divided Mozambique into nine districts: Cabo Delgado, Gaza, Inhambane, Lourenço Marques, Manica e Sofala, Moçambique, Niassa, Tete and Zambezia. A governor appointed by the Ministry of Overseas Areas was at the head of every district. He was assisted by a District Council comprised of elected and appointed members (Seegers 1977:64).

The districts were subdivided into *concelhos* and *circumerições*. A *concelho* was a relatively developed area with a measure of local governance. A *circumerição* was a rural area not yet developed enough to qualify as a *concelho*. At the head of the *circumerição* was an *administrador*, responsible for the development (assimilation) of the indigenous people. Those areas that were the least developed were further divided into *postos administrativos*, with a *chef do poste* in charge of every *poste* (Van Aswegen & Verhoef 1982:18-19). These areas were mostly black-dominated areas where few Portuguese had settled. To facilitate administration, the *postos administrativos* were further divided into *regedorias* under the leadership of a *regulo* or under a traditional leader (Seegers 1977:65).

During the colonial era, the Southern Maputo district was thus subdivided into various *concelhos* and *circumerições*. One of these was called Matutuine, covering approximately 5, 403 square kilometres. The administrator for Matutuine was based at Bela Vista. Four *chefs du postos*, stationed at Zitundo, Catuane, Catembe and Machangulo, assisted him. This situation continued after independence and was given statutory recognition by Decree Six of 1975 (Pollett *et al*. 1995:63).

Besides their policy of centralisation, the Portuguese also followed a policy of assimilation. In contrast to the British policy, which allowed African people to keep their own cultures alive, the Portuguese believed it was their God-given task to bring

'civilisation' to the peoples of Africa. In other words they wanted to turn Africans into Portuguese (Smith & Nöthling 1993:288). The Portuguese believed that they would ensure their authority in the colonies in this way (Van Aswegen & Verhoef 1982:35).

The racial policy followed in the Portuguese colonies was enunciated in the Statute of 1926, as amended in 1929. By means of decree, this Statue became two laws in 1933. These laws explicitly state that the aim of the Portuguese racial policy was based on the integration of the indigenous population and Portuguese settlers (Van Aswegen & Verhoef 1982:35).

On the basis of this policy, the inhabitants of Mozambique were divided into two groups, namely the *indigenas* and the *não-indigenas*. The *indigenas* were that part of the indigenous population who had not yet, according to the Portuguese, reached a high enough standard of civilisation. Nearly 98% of the Mozambican population resorted in this group. They were governed under the *regime do indigenato*. There is some similarity between this *regime* and the British system of indirect rule, except that the Portuguese banned any traditional laws that could not be reconciled with the principles of morality as defined by the Portuguese. The *não-indigenas*, consisting of all white Portuguese, assimilated black people and *mestiços* (people of mixed origin), were governed by Portuguese laws (Van Aswegen 1980:362). The difference between an *indigena* and a *não-indigena* could be changed by law if a black person had proved himself/herself worthy of the Portuguese culture. In this way, a person could achieve the status of *assimilado*, which excused him/her from various taxes and allowed him/her extra privileges (Van Aswegen & Verhoef 1982:36).

The main difference between the racial policy of the British and that of the Portuguese was that the Portuguese system encouraged cultural assimilation or acculturation. There were no laws in the Portuguese colonies that prohibited racial integration, and the law was not constituted along racial lines, but along cultural lines. Any person, white or black, could become a Portuguese citizen. A lot of status and privileges were attached to being an *assimilado*. Therefore, many people strove to become *assimilados*. This further strengthened cultural assimilation (Van Aswegen & Verhoef 1982:37).

In contrast to this, for a while, the British followed a strict colour-line policy in South Africa. It is true that indigenous people in Natal and the Cape could obtain political rights if they achieved a high enough level of civilisation, as defined by Britain, but very few black people qualified for the vote under these regulations. This policy underwent extreme changes after the end of the Anglo-Boer War of 1899-1902. Article 8 of the Peace Treaty of Vereeninging made black suffrage dependent on the consent of a white majority (Davenport 1987:228). In 1910, with the formation of the Union of South Africa, the only place where people who were not of European descent could attain the right to vote was in the Cape (Spies 1993:49).

The impact of these two different colonial systems meant that the Tembe in Mozambique were forced to take over a foreign language and, to a large extent, also a foreign culture, whilst the Tembe in South Africa were left to pursue their traditional ways. However the Tembe in South Africa did not stay free from foreign cultural influences and were particularly influenced by their Zulu neighbours. As has already been said, because the Zulu were the nation with status in their area, many Tembe, especially the men, started to speak Zulu and also started to refer to themselves as Zulu (Felgate 1982:9). This Zulu influence was strengthened when the Tembe tribal area was placed under the authority of the KwaZulu National Assembly after 1951 (Els 1993:101; Mountain 1990:30-31).

2. 3. 3. Political administration after independence

After Mozambique attained its independence in the 1970s, the Tembe were influenced by a radically different system of political administration. However, although the political administrative system adopted by the new government differed markedly from the system of colonial administration, many of the older structures were kept in place. The system employed can be viewed as a mixture between the historical administrative systems and the philosophy of Marxist-Leninism officially adopted by FRELIMO in 1977.

The most striking factor of the post-colonial system was its extreme focus on centralisation. As has been discussed above, the Portuguese followed a policy of centralisation. However, as will be shown below, the Portuguese system actually devolved more power to district and local government than the new system implemented by FRELIMO.

According to the communist-inspired constitution of Mozambique, the President and the Ruling Party (FRELIMO) were the highest authority in the country (Van Aswegen & Verhoef 1982:83). The country was divided into provinces, districts and localities. Provision was only made for assemblies at national and provincial level. At present, however, the new Mozambican constitution makes provision for assemblies at all three levels of government. In other words, during the communist era, decision-making was a lot more centralised (*Africa south of the Sahara* 1976:575-587).

It is not clear whether the communist political-administrative system has had a large influence on the lives of the Tembe-Thonga people. However, the conflict that developed, largely due to FRELIMO's acceptance of the communist ideology, did influence the lives of most Mozambicans in some way.

2. 3. 4. Political administration after the end of the Civil War

Mozambique underwent radical political changes after the end of the Civil War. On 30 November 1990, a new constitution that replaced the constitutions of 1975 and 1978 came into force. The shift from communism or state centralism to democracy is clearly visible in the wording of the constitution. The president and the party are no longer the *de facto* leaders of Mozambique, but are now responsible to the Assembly of the Republic, which is constituted solely of elected persons and not of people appointed by the president and FRELIMO, as was the case under communist rule (*Africa south of the Sahara* 2000:764-773).

To facilitate administration, the country is divided into 10 provinces (see Map 4). A governor heads the Provincial Government. The current governor for the Maputo Province is Soares Bunhaza Nhaca. He is assisted in his duties by a Provincial Assembly (*Africa south of the Sahara* 2000).

The Provinces are subdivided into municipalities or districts. An administrator heads each district and is assisted in his tasks by a Municipal or District Assembly (*Africa south of the Sahara* 2000). The research area falls into the Matutuine District of the Maputo Province. According to a government official, the Matutuine District administrator's seat is Bela Vista, which is the district capital. Matutuine is divided into five administrative posts, Bela Vista, Catuane, Zitundo, Catembe and Machangulo (see Map 4).

At the head of each administrative post there is a *chef du poste*, appointed by government. An interview was conducted with the *chef du poste* of Zitundo. He explained that he is responsible for all socio-economic developments in his post. He is also responsible for law and order, but in a limited sense. He does not have a court and no cases are brought before him. He is only responsible for ensuring that suspected criminals are taken to Bela Vista by the police. The office of the *chef du poste* at Zitundo is severely understaffed. There are only two people working with him; one is his secretary and the other a tea-maker.

Due to financial limitations, the *chef du poste* indicated, very few developments take place in Zitundo. For nearly the entire time while research was conducted in the area, the only bridge over the Futi River was down due to the floods. The *chef du poste* said this meant that he could not pay visits to the various parts of the administrative area. He also said that even under the best of conditions he is not capable of visiting the administrative area, due to financial constraints.

The administrative areas are subdivided into localities and villages. Zitundo is divided into two localities (*localidade*), Zitundo and Manioca. These two localities are further subdivided into *povoados*. The term *povoado* can be loosely translated as a 'village' or a 'place' (Ferreira 1964:650). Thus Zitundo is divided into Zitundo sede, Ponta do Ouro, Puza um, Puza dois, Ndlovu, Mapungati, Gala, Ponta Malongane and Ponta Mamoli. Manioca is divided into Vumindawa, Geveza, Vuku, Musonge and Masale.

Before the Civil War broke out, a secretary was appointed as government representative in every *povoado*. According to the *chef du poste*, there are at present

only secretaries at Ponta do Ouro and Geveza. In the other *povoados* there are also people who claim to be secretaries. However, the *chef du poste* explained, these people are appointees of the FRELIMO Party and not government appointees. According to law these appointees do not have any power, but people in the respective *povoados* accept their authority. The *chef du poste* explained that at present research is being done to rectify the situation pertaining to government at local level.

2. 3. 5. Traditional political administration in contemporary Matutuine

The situation with regard to traditional authority has been severely disrupted by historical events. It was a surprise to hear from spokespersons that it is not necessary for a person who moves into the research area first to obtain the permission of a traditional leader to settle there or to pay one's respects to him. The only requirement is that a person must have a friend in the area where he wishes to settle. According to the traditional system, all land belonged to the *inkosi*. No one could buy land. The *inkosi* assigned land to anyone who made a submission (*khonza*) to him (Junod 1962b:6). The custom of paying a submission to the *inkosi*, practised widely amongst the indigenous people of Southern Africa, also entitled a person to utilise the communal natural resources held in trust by the *inkosi* and his council. The *inkosi* did not own the communal natural resources, but controlled access to them. In many instances, this control ensured sustainable harvests from natural resources by means of the *inkosi*'s regulating of harvesting periods and the volumes that could be harvested (Sansom 1974:137).

This disruption of the cultural value system becomes even more obvious when one realises that the majority of households, for instance in Ponta do Ouro or Ponta Malongane, are constituted of a man and a woman who are not married but may have as many as six children. The traditional leader in the Zitundo area explained that because people do not have any currency for *lobola* they can not get married. Hence they are allowed to live together and have children as if they were married, as long as the man promises to transfer the *lobola* at a later date. However, because the marriage is not 'sealed' (official), it is easy for a man to abandon his wife and children (Els & Kloppers 2000:35).

When one looks at the situation in Zitundo, one finds that the area over which the traditional leader claims influence corresponds with the boundaries of the administrative post. The *umhlaba* or tribal area is still divided into various *izigodi* with an *induna* at the head of each one. In the case of Zitundo these *izigodi* and *izinduna* are Ponta do Ouro (Mbawazani Timula), Ponta Malongane (Million Gumede), Ponta Mamoli (Simiao Tembe), Gala (Jonas Tembe), Ndlovu (Benizi Manzini), Puza (Ingariani Tembe), Masali (Thulani Tembe), Musongi (Carlos Musongi Tembe), Hucu (Amos Tembe) and Geveza (without *induna*).

The boundaries of the different *izigodi* are similar to those of the different *povoados*, discussed above. Thus ideally there should be a representative of government and a traditional leader in every section of the land. This system has its origin in the Portuguese colonial administrative system. As was discussed, the Portuguese divided areas where African people stayed in the colonies into *postos*, with a *chef du poste* at the head of every *poste*. The *postos* were subdivided into *regedors* with a *regulo* in charge in every one. The *chef du poste* and *regulo* had to control an area in cooperation with the traditional authority (Smith & Nöthling 1993:287). Today the function of *regulo* is fulfilled by the government-or FRELIMO-appointed secretary.

After the Civil War, as the *inkosi* at Zitundo with whom an interview was conducted related, the traditional authority structure was in tatters. He said that he had had to go to the various *izigodi* to make sure that there is an *induna* for each one. In cases where there was no *induna*, one had to be appointed. This was done simply by determining whoever in that specific *isigodi* was related to the Tembe clan. This implies that people still see the Tembe as the ruling clan. However, the *inkosi* at Zitundo did not acknowledge the authority of the *inkosi* of the Tembe in South Africa. He said that he knew that that person was a direct descendant of Ngwanase and Mtembu, but that the *inkosi* had no authority over the Tembe in Zitundo as long as he stays in South Africa.

Qualitative research in this study indicates, however, that the majority of the people in the Matutuine District still accept the authority of the Tembe *inkosi* in South Africa in customary matters. These customs are, however, purely ceremonial, as the local traditional leaders in Matutuine with whom interviews were conducted indicated

clearly that they do not take court cases to the South African Tembe *inkosi* anymore. They merely know of his existence and know that he is the traditional leader of all the Tembe people.

The *inkosi* at Zitundo has only limited powers. His main duties are ceremonial and focus on the first-fruit festival and sacrifices to the royal ancestors. He also has a restricted number of juridical responsibilities. When a minor crime has been committed inside the tribal area, the case is brought before him and his council, but if the crime is too serious, or if he cannot solve it, the police are called in to take the alleged perpetrators to Bela Vista. Compared with the traditional authority structure in the past, the *inkosi* at Zitundo no longer has powers as far-reaching as he historically had (Els & Kloppers 2000:37). It cannot be stated with any certainty how much power individual traditional leaders in the area have. In Xuxa, near Catuane, for instance, the traditional leader is also the secretary of the area. In the whole of Xuxa, he is thus the only traditional and political authority, which implies that his powers are greater, relatively speaking, than that of the other traditional leaders in the study area.

The position of traditional leaders in the authority system of Mozambique is, however, not clear, and all indications are that, although their positions are acknowledged, their positions have not been incorporated into the every-day local level administration. The negative impact of the Portuguese and later communist systems on the continuance and perpetuation of the traditional authority system is clear, as spokespersons were frequently not certain who had the most authority at local level; the traditional leader or the party secretary. To make matters worse, the Mozambican government has not yet decided where traditional leadership fits into local government. This creates considerable uncertainty among local people as to who is responsible for their well-being. In the research area, government at local level (official and traditional) is confused and unclear (Els & Kloppers 2000:38).

2. 4. DEMOGRAPHY OF THE RESEARCH AREA

According to an independent census conducted by Helvetas Mozambique (1997), 36 927 people were living in the Matutuine District in 1997. The figures from this census were adopted in the current study.

2. 4. 1. Population distribution in the various administrative areas

The number of families and the gender composition of the different *povoados* in the five administrative areas in the region are presented in Tables 1-5 below respectively.

Table 1: Catembe: Number of households and gender composition

Povoado	Number of families	Male	Female	Total
Nsime	579	1314	1811	3125
Cufa	211	497	683	1180
Mungazine	352	887	1226	2 113
Cualhe	107	231	320	551
Djabissa	129	319	441	760
Muchocholote	87	211	285	496
Total	**1465**	**3 459**	**4 766**	**8 225**

Source: Helvetas Mozambique (1997).

Table 2: Catuane: Number of households and gender composition

Povoado	Number of families	Male	Female	Total
Mahau	152	383	487	870
Incassane	69	166	221	387
Manhangane	194	509	654	1163
Nalala	113	273	388	661
Total	**528**	**1331**	**1750**	**3081**

Source: Helvetas Mozambique (1997).

Table 3: Bela Vista: Number of households and gender composition

Povoado	Number of families	Male	Female	Total
Bela Vista-sede	673	1 898	2 131	4 039
Muama	145	381	486	867
Maccassane	126	308	420	729
Pedreira	97	244	337	581
Mabilibili	128	315	435	750
Salamanga	290	731	1009	1740
Capezulo	115	289	400	689
Massidla	119	479	661	1140
Pochane	227	571	789	1360
Hindane	146	367	506	873
Manihihane	107	269	371	640
Djabula	113	292	388	680
Madjuba	137	276	381	657
Lihundo	61	133	183	316
Thanga	67	160	221	381
Cholombane	117	280	378	658
Mavucuza	53	82	114	196
Madjajane	71	178	239	412
Massoane	117	261	348	609
Total	**2 909**	**7 514**	**9 797**	**17 322**

Source: Helvetas Mozambique (1997).

Table 4: Machangulo: Number of households and gender composition

Povoado	Number of families	Male	Female	Total
Nhonguane	132	218	289	507
Mhala	173	259	343	602
Maphanga	267	382	507	889
Ngomene	281	427	568	995
Ndelane	271	323	428	751
Mabuluco	148	292	315	577
Total	**1 272**	**1 851**	**2 450**	**4 321**

Source: Helvetas Mozambique (1997).

Table 5: Zitundo: Number of households and gender composition

Povoado	Number of families	Male	Female	Total
Zitundo-sede	341	864	1 169	2 033
Ponta do Ouro	267	639	720	1 359
Puza	103	264	322	586
Total	**711**	**1 767**	**2 211**	**3 978**

Source: Helvetas Mozambique (1997).

These statistics show that the majority of the people in Matutuine live around the administrative post of Bela Vista. The vast majority of the people in Bela Vista live in the district capital, Bela Vista-*sede*. This can be attributed to the fact that, as is discussed below, Bela Vista-*sede* is the only village in Matutuine where local people have access to electricity. It is also the only place in Matutuine where children can attend secondary school. The trend of people occupying the larger villages in the area is also evident in the other administrative posts. This is most probably due to the fact that people have a greater access to infrastructure (small shops, telephone) in these villages. The explanation for this trend is also due to the history of the area. As was discussed above (1.3.3.3), people were forcefully moved, by the armies of either FRELIMO or RENAMO to small villages during the Civil War. The current distribution of the population of Matutuine is thus a reflection of the history of the area.

The census statistics presented here also show that 57% of people in Matutuine are female and 43% male. The fact that the majority of the people are female may be attributed to men leaving the area to find work in other parts of Mozambique or in neighboring countries, as discussed above (2.2.6). Therefore, planning for any developments in the area should be focused on the specific needs of women and women should be a key target group in all development efforts.

2. 4. 2. Family and age structure

Of the 200 respondents to the questionnaire survey, 53% were male and 47% were female. The questionnaire survey is thus not really representative of the actual situation pertaining to gender composition, but since the main foci of the questionnaire survey was to test the validity and spread of qualitative research results

(see 1.4.3) it was deemed sufficient for this study. The oldest respondent was 89 years and the youngest 17, with a mean age of 39 for all respondents.

A total of 53.5% of the 200 respondents to the questionnaire indicated that they were married, while 30.5% of respondents indicated that they were single (see next paragraph), 7% were divorced and 8% were widowed. Only 13 men indicated that they had more than one wife (the highest number was 4 wives), while 14 women respondents (14.9% of all women respondents) indicated that their husbands had more than one wife. Thus polygamy is still practised in the area, although very few people are involved in polygamous marriages. This phenomenon is in all probability due to the prevalent economic situation.

Despite the fact that only 53.5% of the respondents indicated that they are married, 97% of the respondents indicated that they had children. Informants indicated that this is due to the extreme poverty in the area (see 2.3.5 and Els & Kloppers 2000:41).

On average families who participated in the research questionnaire have four children. This is twice the 'replacement fertility rate', which is calculated at two children per couple. If a 'replacement fertility rate' is achieved, births will merely replace deaths; in other words, there will be no population growth (Kegley & Witkopf 1995:298). However, the population in the research area by implication, doubles with every generation. If a generation is calculated at a modest 30 years, it means that by the year 2030 there will be close on 80, 000 people in Matutuine as a result of natural births alone as opposed to the current population of 36 927. The possible influence of the AIDS pandemic is obviously not calculated here, nor is any influx of people seeking jobs taken into account.

The average of four children is lower than the figure indicated for couples in the whole of Mozambique, which is calculated as six children per couple (http://www.africaonline.com/AfricaOnline/countries/ mozambique.html). Of the children in the research area, 61% are younger than 17 years. By comparison, a survey done by the Institute for Natural Resources in 1995 (University of Natal-Pietermaritzburg) found that between 48% and 49% of the population who partook in the survey and who lived in the area between the Futi River and the coast were

younger than 20 years (Pollet *et al.* 1995:67). Although the findings of this study differ slightly with the findings of the study of the Institute for Natural Resources, they both indicate that a large percentage of the people in the research area are younger than 20 years. This means that a substantial part of the population of Matutuine is dependent on their families, or guardians for their subsistence needs. It also means that a subsistent part of the population will soon become part of the potential working force. It will therefore be necessary to create employment opportunities for these people.

There are slightly more boys than girls in the research area. Of the respondents, 94% indicated that they had sons and 97% of the respondents indicated that they had daughters. The mean number for sons as well as daughters per respondent is 2. The mean age for children, daughters as well as sons, is 13.

2. 4. 3. Migrancy

It was found that a high percentage of the male population younger than 39 years are at present absent from the study area. Many of these men are studying in South Africa or looking for work elsewhere (Pollet *et al.* 1995:67). Of the people present in the research area, many have recently settled or re-settled there. Of the 200 respondents to the questionnaire, 28% had lived in South Africa during the Civil War, 7% had lived in Swaziland and 1% had lived in Zimbabwe, while 22.5% had lived in Maputo, and 9.5 % had lived in other provinces in Mozambique. Only 2.5% of respondents indicated that they had been soldiers during the war. A total of only 27.5% of the respondents had remained in the Matutuine District during the war. This seems to indicate that possibly more than 60% of people who are at present living in the Matutuine District have moved there since 1991/1992 (since the end of the Civil War). Moreover, only 26% of all respondents indicated that their parents stay in the Matutuine District. This seems to corroborate the statement that more than 60% of present inhabitants of the area have moved into the area from other places in Mozambique and other countries.

A questionnaire survey conducted by De Boer and Baquete (1998) using a sample of 50 questionnaires in four villages (Bela Vista, Salamanga, Fabrica de Cal and near

Lagoa Piti) found that most people in these areas had been born in the Matutuine District. This does not, however, mean that they had stayed at the places they occupy at present during the Civil War. It is true that the populations of Salamanga and Bela Vista are more permanent in nature than those of areas closer to South Africa and Swaziland, like Catuane and Xuxa. It was easier for the people in Catuane and Xuxa to move across the border when trouble loomed. Similarly, the populations at Ponta Malongane and Ponta do Ouro are less permanent in nature and most people in the area have recently moved there or moved back since.

What is interesting to note, however, is that 81.5% of all respondents indicated that they regard the places where they currently live as their permanent homes. People therefore do not see their recent moves to the area as temporary. This implies that Matutuine is being re-populated now that the Civil War is over.

When asked why they moved to the areas where they live at present, 33.5% of the respondents indicated that they were seeking employment. This phenomenon is most noteworthy at Ponta Malongane, where 77% of the 200 respondents said that they had moved to the area to look for work. Qualitative research at Ponta Malongane confirms this trend, as the absolute majority of spokespersons indicated that they had come to Ponta Malongane because they had heard that tourists frequent the area, and they hoped to find employment (even if it would only be temporary). There are never less than ten young men or women who station themselves at the gate of the resort at Ponta Malongane in the hope of finding temporary employment as dishwashers and/or day labourers helping divers at the resort to carry and wash their equipment.

Job opportunities at Ponta Malongane are extremely limited. At the main resort there are permanent job opportunities for only 35 local people. These people are employed as cleaning staff, security guards, gardeners and labourers. There is also a second resort in Malongane, Thabundu, where eight locals are employed. Construction on the resort is still continuing, with labour recruited mainly from South Africa.

As can be seen from the figures in Table 4 above, Ponta Malongane was not included in the 1997 census. Spokespersons indicated that in 1997 there were fewer than eight households in the area surrounding Ponta Malongane. During the research period, 68

households were counted in the Ponta Malongane area, and there was ample evidence of new homesteads being constructed on a daily basis. At an average of 6 people per household, this means that more than 400 people have moved into the Ponta Malongane area since 1997. This is a state of affairs that is extremely worrying when one takes into account that the two resorts together provide permanent job opportunities for fewer than 60 people.

At Ponta do Ouro, as many as 38% of the respondents indicated that they had moved there in the hope of finding employment. This figure is not as high as in the case of Ponta Malongane, but it is still significant if one takes into consideration that the employment opportunities at Ponta do Ouro are just as limited as at Ponta Malongane. On the other hand, data relating to the population in Bela Vista, Salamanga and Madjadjane indicate that the people living there have all returned to live there despite having been displaced by the Civil War because their family live there or because they grew up there. The same situation also prevails among the population in Catuane and in Xuxa, although their movement into and from Swaziland and other areas during and after the Civil War seems to be much more erratic, with no set patterns, and their main objective was trying to make sure that they were not caught up in the war.

2. 4. 4. Education

A total of 62.5 % of respondents in this study indicated that they had attended school. By comparison, research by the Institute for Natural Resources in the area between the Rio Futi and the Indian Ocean indicates that only 40% of their respondents had attended school (Pollett *et al.* 1995:76). Of the 125 respondents in the sample of 200 in the current study who attended school, 5% attended school in South Africa, 1% attended school in Swaziland and 1% attended school in Zimbabwe, while the remaining 55% of respondents who had attended school had done so in Mozambique. Secondary schools, situated in Maputo, had been attended by 35 of the 125 respondents who had attended school. This equals 18% of the total number of 200 respondents or 28% of the total number of respondents who attended school. On average, respondents had completed four years of schooling.

Schooling in Mozambique is divided into primary and secondary education. Primary education consists of two phases, Standard 1 to Standard 4, and Standard 5 to Standard 7. This is equal to Grade 1 to 4 and Grade 5 to 7 respectively in South Africa. None of the schools in Matutuine, except for the one at Bela Vista, can offer schooling for more than the first phase of primary education. If a person wishes to study further than Standard 4, he/she has to attend boarding school in Bela Vista.

No school in the Matutuine District offers secondary education. To study further than Standard 7 it is necessary for a person to go to Maputo to stay there, at either boarding schools or with friends and family. According to spokespersons, government provides very little financial support for this purpose, although some church groups help out with food and clothes.

Spokespersons indicated that school fees alone per child per year in Maputo amounted to between R50 and R100. Besides this, the uniforms required for attending school in Maputo cost a further R100, and every child needs at least 2 uniforms. Another R60 is needed for stationery, and between R100 and R150 is spent on transport costs per child per annum. Parents do not have to pay for school books. A school bag costs a further R25. This means that even before the boarding school fees are taken into account (between R500 and R650 per annum), it will cost a parent R485 to send his/her child to school in Maputo. Some parents send their children to schools in South Africa. The cost to keep a child in school in Manguzi in South Africa is roughly the same as in Maputo.

The quantitative data regarding household income suggests that households in the research area have a mean annual income of between R2 500 and R3 500. This means that keeping one child in secondary school in Maputo can cost parents (or a single parent) R985 per annum, which translates into roughly 25% or 35% respectively of his/her annual income. Taking into account that 64.5% of respondents indicated that they were unemployed, and that the mean annual income is not derived from salary income, but is calculated on the basis of the value of agricultural produce used per annum plus that which is sold, it is obvious that it becomes virtually impossible for the average household in the Matutuine District to send children to

secondary school in Maputo. The same applies to sending children to Bela Vista for the last three years of primary school training.

The fact that 59,9% of the adult population in Mozambique are illiterate clearly indicates the negative results of the current system of education in the country (*Africa south of the Sahara* 2000:772). This situation is exacerbated by the fact that 77% of the respondents indicated that they had received no further training after school. Only 6.5% of respondents indicated that they had completed a short course after school, while another 6% of respondents indicated that they had obtained a post-school certificate or diploma, while only 1% of respondents indicated that they had a university degree.

The above findings imply that most people are not qualified for skilled and semi-skilled work. It is thus necessary to import skilled people from outside the area when future development in the region takes place. Moreover, people in the area will also not be able to take advantage of skilled and semi-skilled employment opportunities brought to the area by such development. The implication is a further influx of skilled/semi-skilled people into the area, with a subsequent lowering of living standards for the local inhabitants due to people pressure on available natural resources.

2. 4. 5. Employment and care of dependents

Only 34.5% of respondents are employed in one way or the other. There is thus an unemployment rate of 64.5%. On average, it has been eight years since unemployed people have had jobs. Employed respondents have had their jobs for an average of seven years.

A total of 7.5% of respondents are or were employed as farm labourers, of which 3.5% indicated that they had lost their jobs after independence, when the Portuguese left the country, while another 3.5% were soldiers who lost their jobs when the Civil War came to an end, and 2.5% had been employed by development programmes initiated by Blanchard Mozambique Enterprises, but lost their jobs when Mr Blanchard died and his programmes came to an end.

Respondents on average have to care for five people. One respondent indicated that he is responsible for 22 people. Only 32% of respondents indicated that there were people beside themselves who made some contribution to support their families financially (6% indicated that their brothers helped out, and 3.5% indicated that their sisters help out). Of the people who help support the family financially, 7.5% work in South Africa and 2.5 % work in Swaziland, while 4.5% of family members outside the direct household who support families financially work in Maputo. Some money thus enters the country from abroad where there are some employment opportunities. This indicates a reliance of at least 32% of respondents on people outside the area for financial support. On average, people from outside the immediate household who give financial support have had their jobs for much longer periods than people in the area. Compared with people in the area who are employed and who have had their jobs for an average of seven years, those few people who lend financial support from outside the immediate household, have held their jobs for an average of 27 years.

Only 6.5% of respondents indicated that someone in the household received an old age pension. In South Africa this figure is much higher: it is estimated that old age pensions make up close to 30% of the annual income of households living in the communal rural areas of South Africa (Els & Bothma 2000:20).

It would be safe to deduce that the people in Matutuine are extremely poor. Most people (64.5% of respondents) do not receive salaries. Apart from money coming in from outside the family and limited pensions, people have no access to capital. It was found that in order to get some money, people sell their crops or the fish they catch. Spokespersons at Lake Piti related that people walk all the way from there to Manguzi in South Africa with a bag of fish, which they sell for approximately R30. They can then use that money to buy supplies in Manguzi, where they believe, it is a lot less expensive than at the stores closer by at Zitundo and Ponta do Ouro. Investigation showed that prices for everyday products at Zitundo and Ponta do Ouro are indeed very steep, and are on average 30% higher than in Manguzi. One of the main concerns echoed by the people who stay near Lake Piti was access to quality goods that they can buy at a reasonable price. The desperation of the people at Lake Piti typifies the extreme poverty and the absolute absence of employment opportunities in Matutuine.

2. 5. CONCLUSION

The local inhabitants of Matutuine thus find themselves in a desperate situation. Their past is characterised by oppression from neighbouring tribes, colonial masters and a FRELIMO government-instituted system of political administration that aimed to eradicate the traditional cultural system that existed in the area. The turbulent history of the area is largely responsible for the desperate situation that exists there now. The war of independence from Portugal and the Mozambican Civil War led to the exodus of many people from the area. The actions of soldiers during these wars contributed further to the depletion of natural resources, especially wild animals, in the area. It will be shown in the next chapter that the local inhabitants also lost much of their livestock during these wars.

The desperate situation is aggravated by the fact that there is nearly no economic development in the area, which means that there are nearly no employment opportunities for local people. This increases the dependence of local people on natural resources for survival. If it is therefore the aim of the Lubombo Transfrontier Conservation Area to conserve the natural resources in the Matutuine District, attention should be paid to the fact that the local people have few other alternatives than to utilise these natural resources for survival. Coupled with this, there is the alarming trend of people from various areas in Mozambique flocking to areas such as Matutuine where there is a promise of development and employment. This will further increase the pressure on the natural environment.

Consequently, it is essential to understand the natural resource utilisation needs of local people before any planning for conservation can be done. The following two chapters are devoted to this subject. In Chapter 3, the agricultural and livestock rearing practices of local people will be examined. In Chapter 4, the utilisation of wild animals and wild plants by local people is discussed. The extreme reliance of local people on natural resources, in the light of the limited alternatives available to them, as explained in this chapter, are discussed more fully.

CHAPTER 3

AGRICULTURE AND ANIMAL HUSBANDRY

3. 1. AGRICULTURE

3. 1. 1. Methods of cultivation

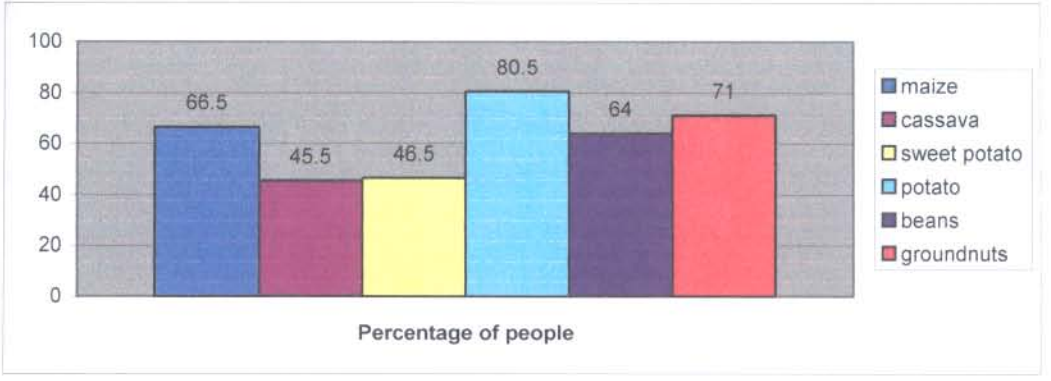
The biggest part of the diets of people in Matutuine is made up of crops that they grow themselves. They do not, however, live solely on these crops; they also have to buy additional foodstuffs, catch fish, hunt wild animals and collect wild fruit to supplement their diets.

Nevertheless, cultivated crops are the most important source of food in the area. A total of 93.5% of respondents said that they have their own cultivated lands (P- *macamba*/ T- *masimo*/ Z- *insimu*). Even people who are permanently employed, and thus have an alternative source of income, grow crops for personal consumption.

Crops are not grown for consumption alone, but also for commercial purposes. A total of 19% of people in the research area sell the crops that they plant. Thus only a small percentage of people grow crops for commercial purposes. Most people hardly grow enough foodstuffs to meet their own needs. This is evident from the fact that most people purchase additional foodstuffs to eat (see Figure 2). As can be seen from Figure 2, most people buy maize, potatoes, beans and groundnuts. A large percentage of people also purchase cassava and sweet potatoes. It is especially significant that such a large percentage of people need to buy maize and cassava, which are without a doubt the staple foods of the people in the area.

Thus, although 93.5% of people grow their own crops, they are also heavily dependent on food that they purchase to survive. This can be attributed to the fact that people do not or can not grow enough crops, due to labour shortages, harsh weather conditions, low soil fertility and crop damage caused by wild animals.

Figure 2: Percentage of people who purchase crops.



In addition, the soil throughout the area is not ideally suited to agriculture. Since a large part of the research area features nutrient-poor, drought-susceptible sand (Cunningham & Davies 1996:479), it is easy to see why people are not able to grow enough crops for their own consumption. In areas like Ponta Malongane and Ponta do Ouro, where people live close to each other and close to holiday resorts, they are unable to open up large areas of land for cultivation. These sandy areas, close to the beach, are definitely also not very fertile soils.

It is not only near the coastline where people cannot open large areas for agriculture. The agricultural fields throughout the area are relatively small. Agricultural labour is primarily the occupation of women. The fields can therefore only be as big as the area which a single woman can cultivate. The average *insimu* is 20 yards long and 5 yards wide. The average number of cultivated fields per household is two. In other words, most families have an area approximately 40 yards long and 10 yards wide in which they can plant their crops.

Moreover, the farming implements used in the research area are very rudimentary. A flat iron plate is attached to a piece of wood with a diameter of approximately 10 centimetres and about a metre long to construct a hoe. Women use the hoe to till the land after it has been cleared by men. Two different methods for clearing land were observed in the area. The one method is to clear all the trees and large plants from a specific area using a tractor, or simply a bush-knife. After this had been done, the women use their hoes to dig a trench all around the specific area. The ground dug up

is thrown on top of whatever grass or small plants there still are in the area that had been cleared. This means that the *insimu* is elevated above ground level.

All this work is done with a hoe. When they are asked why they do not use shovels with which they will be able to complete the work much more quickly, the women answered that only men can use shovels. A shovel can, of course, carry a much larger amount of ground at a time, but more strength is necessary to use it. By contrast, a hoe takes a lot longer since the loads it can handle are much smaller, but it is work that requires stamina and not work that requires a lot of strength; therefore it is more suited to women, who have to do the work.

According to spokespersons, small grasses and plants that have been covered with the ground from the trenches will increase the fertility of the soil. Although spokespersons did not actually say so, there can be no doubt that the trenches, approximately a metre wide and a metre deep, also serve to drain the water from cultivated fields. They will also help to keep out wild animals that may be afraid to cross such trenches.

The second horticulture technique which is employed is known as swidden, slash-and-burn or shifting cultivation. This method has been practised for a long time in Southern Mozambique. In 1575 a Portuguese explorer, Manuel de Mesquita, named the area *Terra dos Fumos* (Land of Smoke) because of the many fires lit by the Tsonga people practising their traditional slash-and-burn shifting agricultural system (Mountain 1990:12). In this system, a piece of land is cleared by cutting down any large trees and slashing away the undergrowth. After the remaining tangle of grass and weeds have dried, it is set on fire. The ash from the vegetation provides a natural fertilizer for the soil. Farmers harvest their crops at different times so that there are always crops growing in the fields. Between the planting and harvesting of crops, relatively little effort is needed from the farmer, except for weeding and protecting crops from wild animals. After several years the nutrients in the soil become depleted and weeds start to dominate again. The plot is then abandoned and a new plot is cleared for cultivation (Hicks & Gwyne 1996:133).

3. 1. 2. Crops cultivated

The most important crops planted in the research area are (in order of the extent to which they are cultivated) cassava, maize, beans, sweet potatoes, sugarcane, groundnuts, peanuts, bananas, cabbage, lettuce and onions.

Cassava (*Manihot esculenta*) is a staple food in many tropical countries where potatoes and cereals do not grow easily. Common names by which it is known throughout the world include *mandioca*, manioc, *yucca*, tapioca plant and *sagu* (Langenheim & Thimann 1982:354). People in the research area call cassava *mandioc* or *ntjumbulu*. In Zulu it is called *umdumbula* (Doke *et al.* 1996:64).

Cassava was introduced to West Africa from South America during the seventeenth and eighteenth centuries (Langenheim & Thimann 1982:354). Cassava spread eastwards and westwards from West Africa and only reached Southern Africa a few hundred years ago (Van Wyk & Gericke 2000:90). According to spokespersons, cassava was introduced to Southern Mozambique from Nyassa Province (see Map 4).

Cassava is a staple food in many developing countries for a number of reasons. Firstly, it grows well in depleted soils, areas where rainforests have been stripped or in savannah areas that have persistently been burned (Langenheim & Thimann 1982:354). The crops thus provide food security in times of drought and are considered to be a famine food (Van Wyk & Gericke 2000:90).

Secondly, the roots are easy to plant, harvest and store (Langenheim & Thimann 1982:354). At the beginning of the rainy season, cassava seed cuttings are planted. The roots can be harvested within a year (Van Wyk & Gericke 2000:90). According to spokespersons, cassava is planted in the Matutuine District during the month of June. The following year, at the same time, all the cassava which has not been harvested throughout the year, as the need arose, is harvested and a new crop will be planted. This operation takes the entire month of June to complete (also see Els 1996:179).

Cassava is usually planted and harvested by hand. Small stem cuttings are inserted into holes in the ground. After a period of eight months, the roots can already be harvested, but an optimal yield of good quality roots takes approximately twice as long. If all the roots are not dug up, new stems will grow from the roots left in the ground (Langenheim & Thimann 1982:355).

The third reason why cassava is an ideal crop is that cassava can be planted at various periods during the year, ensuring a year-round crop yield (Langenheim & Thimann 1982:354). This, as was indicated above, was not found to be the case in Matutuine. In tropical areas, where there is a constant rainfall throughout the year, it is probably easier to plant cassava throughout the year, but no systems of irrigation were observed in the research area. If elementary irrigation systems can be developed, then people in Matutuine can make use of cassava's potential to grow throughout the year.

Fourthly, the calorie per acre yield of cassava is unmatched (starch yield per acre is up to 20 tons on fresh roots more than any other crop with minimum labour). Fifthly, cassava is an ideal crop because is not subject to many diseases (Langenheim & Thimann 1982:354).

The main drawback of cassava is that it consists mainly of starch, with only 1% protein and 1% fat. The leaves contain 30% protein, but are not favoured as human food. The tuber does, however, contain calcium and Vitamins B and C (Langenheim & Thimann 1982:354). Although the leaves are not a preferred food, they are sometimes mixed with nuts and eaten in a dish called *mutapa* (Van Wyk & Gericke 2000:90).

Cassava is prepared in various ways. The most common way observed was simply to boil the peeled roots in water until they are soft, in the same way that potatoes are cooked. The roots are then eaten as a side dish or on their own. Cassava is also taken with tea during the day as a bread substitute and is sometimes eaten raw. A favourite cassava dish prepared in the research area is called *xigvinha*. The roots are cut into small pieces and boiled with beans. When the mixture becomes soft, it is mashed and stirred to make porridge.

In some parts of Africa, the boiled root is pounded into a thick paste called 'fufu'. The Amazonian Indians ferment juices extracted from cassava to create alcoholic beverages. This alcoholic beverage is also used as a meat sauce in 'West Indian pepper pot' (Langenheim & Thimann 1982:355). None of these uses were observed in the research area.

Maize (*Zea Mays*), called *mavele* in Tsonga (Ceunod 1991:264) and *ummbila* in Zulu (Doke *et al.* 1996:496), was the only cereal cultivated of the New World (Americas) (Forde 1966:430). It is believed that it was introduced to Southern Africa by early explorers and that it has been under cultivation there since 1500 AD (Van Wyk & Gericke 2000:90). Maize is an important staple food world-wide, second only to wheat in importance as a staple crop (Harlan 1992:52, 72). Maize is similar to other cereals in energy value, but due to lower levels of essential amino acids, it is less nutritious (Van Wyk & Gericke 2000:16).

In Maputaland maize is planted mainly during October, November and December, although the temperature in the area is generally warm enough for plant growth throughout the year. Maize can thus be planted at any time during the year, although a yield reduction occurs when growing conditions are sub-optimal. In other words, a smaller cob is harvested when maize is planted outside of the warmer spring and summer months (Taylor 1988: 470).

People in the research area plant various types of **beans**, which they call *tinyawa*. The types planted include *Phaseolus lunatus* and *Phaseolus vulgaris* (Els 1996:181). In the research area beans are planted in December and January. The common bean (*Phaseolus vulgaris*) is widely cultivated throughout Southern Africa and is an important food source in rural areas (Van Wyk & Gericke 2000:22). Beans are important sources of folic acid, which is essential for the normal maturation of red blood cells. Fruit and root vegetables, which form a major part of the diet of people in the area, are pour sources of this essential vitamin. Beans are also a rich source of protein (Mahan & Arlin 1992:78, 95). The leaves and pods are eaten as green vegetables, or the dry seeds (beans) are harvested for consumption (Van Wyk & Gericke 2000:22; Els 1996:181).

The **sweet potato** (*Ipomea batatas*) is undoubtedly a plant of American origin, since no wild species are known anywhere else (Forde 1966:413). It is called *ubhatata* or *batata doce* by the people in the research area. It is known in Zulu as *ubhatata* or *umhlaza* (Doke *et al.* 1996:486). It is widely cultivated throughout the area and can be harvested throughout the year. It is a perennial crop (living for several years), which is treated as an annual (Taylor 1988:470). Sweet potatoes contain high levels of Vitamins B and C, and are also rich in Vitamin A. In some parts of Southern and Eastern Africa it is used as a cure for diabetes (Rood 1994:39). Although it is mostly the tuber that is cooked and eaten, the leaves (*matsimbo*) can also be used as a vegetable (Junod 1962b:13).

Sugarcane (*Saccharum officinale*) is called *umoba* in Zulu (Doke *et al.* 1996:506) and is known throughout the research area as *moba*. It originates from New Guinea and was introduced to Africa and Madagascar between 400 and 600 AD (Van Wyk & Gericke 2000:112). Spokespersons indicated that both young and old people eat sugarcane. Local people in Maputaland plant sugarcane throughout the year in the swamp areas. Sugarcane is therefore available all year round and forms an important nutritional supplement. Cane sugar is an extremely rich source of carbohydrates. Pure cane sugar is made up of 99.5% carbohydrates. Most of the energy that the body needs is consumed in the form of carbohydrates (Mahan & Arlin 1992:42; see also Els 1996:177 and Junod 1962b:14).

Groundnuts (*Vigna subterranean*), also known as *jugo* beans, are indigenous to Africa and are widely cultivated throughout the tropical parts of the continent (Van Wyk & Gericke 2000:28). People in the research area call it *tindluwu*, and it is known in Zulu as *intongomane* or *indlubu* (Doke *et al.* 1996:205). In Maputaland groundnuts are planted in January and February and again from July to September (Taylor 1988: 477). The actual importance of the groundnut as a food source is its ability to grow in conditions of extreme drought and in poor soils (Van Wyk & Gericke 2000:28). Groundnuts are however susceptible to many pests and diseases (Taylor 1988: 469). In the past, *tindluwu* were subject to various taboos amongst the Ronga-speaking people. The beans could not be planted in the same garden patch with other crops and the patch in which they were planted had to be separated from other patches by a fence of thorns. Although men could plant the beans, they were not allowed to enter

the fields once the beans had started to grow (Junod 1962b:12). According to spokespersons, these taboos are no longer practised in the research area.

Although **bananas** (*Musa sapientum*) are seen as a fruit rather than a food crop, it is important to note that this was the only fruit mentioned by respondents when asked which crops they grow. Therefore it must be viewed as an important food supplement for the people who live in the research area. It has traditionally been taboo amongst Ronga-speaking people to plant foreign trees like bananas and oranges (Junod 1962b:29), but there can be no doubt of the importance of these foods in the research area nowadays (see 4.2.2).

Bananas are a rich source of Vitamin B6. Other valuable sources of Vitamin B6, which are essential for normal growth, include yeast, pork, glandular meats, milk and oatmeal. Research proved that none of these foodstuffs are consumed in large quantities by people in the study area. Fortunately, the banana is such a rich source of this vitamin that only three medium bananas provide the recommended daily intake for an adult male. Bananas are also rich in biotin, which helps with the removal of carbon dioxide from the body (Mahan &Arlin 1992:92, 99).

Bananas are tolerant of a wide range of soil pH, including acid soils and are mainly grown in the swamp areas of Maputaland. The extreme popularity of the banana in Maputaland can be attributed to the fact that they grow easily and maintenance is low. The fruit is harvested during most of the year and the yields are high (Taylor 1988:470).

Tomatoes (*Lycopersicum esculentum*) have traditionally been widely grown throughout the area, especially as a commercial crop (Junod 1962b:14). Nowadays tomatoes are still widely grown, particularly for sale on the markets.

3. 1. 2. 1. Discussion

Cassava and maize are the two crops most commonly planted throughout the research area. Of the 200 respondents, 74% said that they plant cassava and 72% said that they plant maize. However, cassava can be seen in virtually every single *insimu*

throughout the area, while maize was not observed as often. It is therefore interesting to note that more people (67.5%) said that maize was the most important crop, than people (62.5%) who said that cassava was the most important crop. It was learned from interviews with Tembe people who live in Northern KwaZulu-Natal that there is a tendency amongst them to look down on cassava as a foodstuff. According to spokespersons, only poor people eat cassava. Although it would be a speculative conclusion, the fact that cassava is seen as a foodstuff of poor people may explain why people in Matutuine said that they planted more maize (with its higher status) than cassava, although observation indicated that cassava was by far the major food crop.

Respondents to the questionnaire survey were also almost evenly divided between maize and cassava when asked which crop gives the most reliable harvest. Of the 200 respondents, 55% said cassava gives the most reliable harvest, while 54.5% said that maize gives the most reliable harvest. Respondents were allowed to indicate more than one crop to be the most important. Observation and qualitative research clearly illustrated that cassava was by far the most important crop in the area. It is therefore interesting to note that Felgate wrote in 1962, '[C]assava was by all accounts grown in fair quantities in the past; but today only a few people grow the crop' (Felgate 1982:53). It is, however, important to note that although Felgate (1982) did research amongst the Ronga-speaking people who live in Southern Mozambique, the main part of his research was conducted amongst the Tembe who live in Northern KwaZulu-Natal. His comment can therefore not be accepted as totally true for the people who stay in Matutuine, in fact, most spokespersons indicated that cassava has always been the major foodstuff in the area.

There can be no doubt that cassava is the most important crop in Mozambique. It is estimated that 5, 337, 000 metric tons of cassava were produced in Mozambique in 1997. The second most important crop, maize, yielded a comparative harvest of only 1, 042, 000 metric tons (*Africa south of the Sahara* 2000:762).

Besides maize and cassava, the only other crops indicated by respondents to be important sources of food or to provide reliable harvests were sweet potatoes

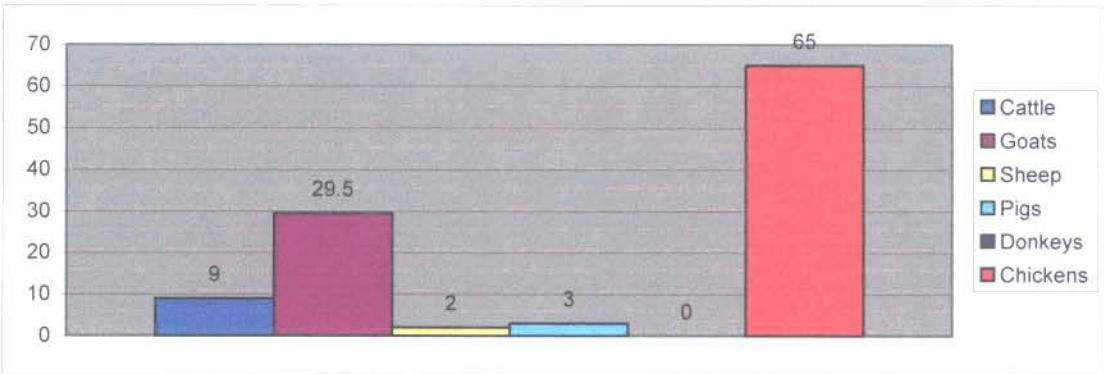
(indicated by 20% of respondents), beans (indicated by 19.5% of respondents) and sugarcane (indicated by 14% of respondents).

There can thus be no doubt that cassava and maize are the most important crops due to their value as staple foods. In terms of their market value, De Boer and Baquete (1998:211) found that sugar cane, tomatoes, onions, bananas and melons are the most important crops in the research area.

3. 2. ANIMAL HUSBANDRY

Few people in the research area keep livestock or other domestic animals (see Figure 3). Although most people own chickens and a large percentage of people own goats, very few other animals are owned. The main reason for this is that people just do not have the money to purchase said animals

Figure 3: Percentage of people who own domestic animals.



3. 2. 1. Cattle

The Nguni invasions into Southern Mozambique and the tribute paid in cattle to the Zulu kings (see 2.2.3) largely depleted the research area of cattle. There have never been large numbers of cattle in the area since then, and disasters like the Texas Fever of 1910 destroyed nearly all the herds in the Maputo region (Junod 1962b:46).

Cattle (P- *bovinos*/T- *tihomu*/Z- *izinkomo*) are still not common at all in the research area. Only 9% of the 200 respondents to the questionnaire owned cattle. In the area

between the Futi River and the sea and between the Maputo Elephant Reserve and the South African border, there are fewer than 200 head of cattle. In Catuane, more people own cattle than anywhere else in the study area. In fact, 78% of the respondents who indicated that they own cattle lived in the Catuane-Xuxa-area. This area lies west of the Maputo River, just north of the Ndumo Game Reserve (3 km) in South Africa (see Map 2). The extremely low figure of people who own cattle east of the Maputo River corresponds with the figure of 3% of cattle owners in the area surrounding the Maputo Elephant Reserve recorded by De Boer and Baquete (1998:211).

When respondents were asked why they do not keep cattle, most (68.5%) said it was because they do not have money to buy cattle. Some (13%) indicated that their cattle had been killed during the Civil War. Only one person said that he does not want to own cattle. These statistics show that people want cattle, they just do not have the means to buy these animals. These particular facts and reasons for not owning cattle were also repeatedly stated during the qualitative phases of the research.

Research was also done as to the reasons people keep cattle. Most (55%) said they keep cattle for meat and to plough with, while 45% said they keep cattle for milk. Respondents also value cattle because they see it as an investment for the future. In this regard, 39% of respondents said they keep cattle for their family's well-being, and 22% said they keep cattle as a source of money (see Sansom 1974:149-152). Besides these reasons, one respondent also said that he keeps cattle as a symbol of his status.

Despite the fact that so few people own cattle, 96% of respondents said that they eat beef. However, they do not do so frequently. In Table 6, the frequency with which the local people of Matutuine consume beef, as indicated by respondents to the questionnaire survey, is depicted. The fact that the majority of people eat beef only once a year confirms that the people in the research area are very poor and do not have money to buy beef. The fact that so few people in the research area own cattle will naturally also means that people seldom eat beef because there is a very limited supply.

Table 6: Frequency with which beef is eaten in the research area

Every day	2.5% of respondents
Once a week	12.5% of respondents
Once a month	19.5% of respondents
Once every six months	16.5% of respondents
Once a year	54.5% of respondents

Since so few people own cattle, only 3% of the respondents said that they slaughter their own stock for food, while the clear majority (91.5%) indicated that they buy beef when they want to eat it. Some people (8%) get the meat free from their friends and/or family.

Thus, at least for the past 100 years, cattle have not been prominent in the research area. Despite this low figure, 186 (93%) of respondents said that cattle are beautiful.

Motivations given for this value judgment is that cattle help people by providing food, milk and helping to cultivate fields. Cattle are furthermore valued as a source of money (similar to a savings account). Some people (13%) also said that cattle are beautiful because cattle can be used for *lobolo*. Cattle are also seen as status symbols.

Cattle are thus still highly valued and this value is directly related to the utilisation advantages of these animals. This corresponds with the findings of Els (1996:419) amongst Tsonga people in South Africa. Els (1996:419) found that Tsonga people view cattle as being the closest animals to humans because of the value of these animals. Humans are dependent on cattle for wealth and status, and even though cattle may be in short supply in the research area, these values are still attached to cattle.

Among the Tsonga, cattle are thus valued because they have utilisation values for humans. This differs markedly from the values attached to cattle by the Zulu. To the Zulu cattle 'are more than beasts of burden which provide life-giving milk and meat: surrounded by cattle, a Zulu man is proud and wealthy, his spiritual and mental well-

being secured' (De la Harpe *et al.* 1998:58; also see Berglund 1975:110). Cattle play a larger role in Zulu culture, where higher values than mere utilisation values are attached to them.

A very small percentage of people (6%) said that cattle are not beautiful. Most of the respondents who were of this opinion said that they do not have cattle, so they do not have any opinion about whether cattle are beautiful, dangerous or bad. This confirms the argument presented above, that, since these animals are absent in the lives of these people, they do not attach value to them, because they are irrelevant in the lives of these people.

3. 2. 2. Goats

Goats (P- *cabritos*/T- *mbuti*/Z- *izimbuzi*) have traditionally been very common throughout the research area and although very few people own cattle, most own goats (Junod 1962b:49). Goats are a lot more prominent in the area than cattle, but nowadays it is by no means common for people to own goats. Only 29.5% of respondents indicated that they own goats. The respondent with the biggest herd owns 133 goats, while a large number of respondents only own one goat.

As is the case with cattle, most people (52.5%) who do not own any goats indicated that it was due to a lack of money. Besides this reason, 12% of respondents said that their goats had died. Not a single respondent said that he/she did not keep goats because he/she did not want them. Qualitative research indicated that goats are very highly valued, and the only reason why more people do not own goats is because these people are too poor to buy goats.

The most prominent reason given for keeping goats was that goats are a source of food; 61% of respondents who own goats indicated that they keep goats for their meat. Like cattle, goats are also seen as an investment; 42% of goat owners said they kept goats for wealth and money. Related to this reason, 30% of respondents said they keep goats for a better future. One person also said that he keeps goats to *phahla* (venerate the spirits of the ancestors).

Most people (95%) still eat goats' meat and do so more frequently than is the case with beef. In Table 7, the frequency with which the local people in Matutuine consume goats' meat, as indicated by respondents to the questionnaire survey, is depicted. Although the largest percentage of people only eat goats' meat once a year, a substantial number of the respondents to the questionnaire indicated that they eat this type of meat on a monthly basis. Since more people in the research area own goats than cattle the supply of goats' meat is much higher than the supply of beef. Spokespersons indicated that goats' meat is also a lot cheaper than beef and hence more affordable for the people in Matutuine.

Table 7: Frequency with which goats' meat is eaten in the research area

Every day	0.5% of respondents
Once a week	8% of respondents
Once a month	25.5% of respondents
Once every six months	27.5% of respondents
Once a year	31% of respondents

Most respondents (78.5%) said they buy the meat, 12.5% said that they slaughter their own animals, while 19.5% of people said that they get the meat from friends and family for free. From this information it can be deduced that if many people did not get goats' meat for free, they would not be able to eat it at all. Thus, although 95% of people eat goats' meat, a lot of them are reliant on other people in order to obtain this meat.

The majority of people (93.5%) feel that goats are beautiful animals. Again, as with cattle, there is a correlation between the findings presented here and those of Els (1996:229) amongst Tsonga people in South Africa. People value goats because they have some utilisation value. In traditional religion too, people still value goats as sacrificial animals. Thus, even though not everyone owns goats, the values traditionally attached to these animals are still honoured.

Goats have traditionally played a much larger role in the religious lives of the Tsonga-speaking people than cattle. If one compares the values attached to cattle, to those attached to goats, it is clear that the higher (spiritual) values that the Tsonga-speaking peoples do not attach to cattle because cattle is seldom present on their land are instead attached to goats. Goats are often reserved for religious usage. According to Junod (1962b:50), this usage is partly due to the fact that Tsonga-speaking people have reared goats for a much longer time than they have reared any other domestic animals.

The small percentage of people (5%) who felt that goats were not beautiful complained that goats eat their crops and are difficult to control. As with cattle, some people also said that they have no opinion whether goats are beautiful or bad, because they do not own any goats. This response is yet another indication of the poverty in the area.

3. 2. 3. Sheep

Sheep (P- *ovelhas*/ T- *tinyimpfu*/ Z- *izimvu*) have historically not been common in the research area (Junod 1962b:50). The situation has not changed much. Only two respondents (1%) indicated that they own sheep. No sheep were seen anywhere inside the research area during the course of the study. The respondent with the most sheep indicated that he owns five sheep. The two people who own sheep said that they keep them as a source of income.

As with cattle and goats, most (79%) of the respondents said they do not own sheep because they do not have the money to buy them, while 2.5% said they have the money but they cannot find sheep to purchase. In addition to these reasons, 7% of the respondents said they had never attempted to keep sheep and one respondent said that there are no sheep in the area.

Despite there being so few sheep in the area, most people (78.5%) said that they eat mutton. Most of them, however, said that they eat it only about once every year. In Table 8 the frequency with which mutton is consumed in the research area is set out.

Most people buy the mutton. Some (12.5%) indicated that they get it free from friends and family.

Table 8: Frequency with which mutton is eaten in the research area

Every day	5% of respondents
Once a week	6% of respondents
Once a month	11% of respondents
Once every six months	14% of respondents
Once a year	59% of respondents

3. 2. 4. Pigs

When Junod (1962b:51) conducted his research at the beginning of the twentieth century he found that the pig was a relative newcomer to the area and that the name given to this animal, *inguluve*, actually means 'wild pig' or 'bushpig'. He discovered that only a small percentage of people owned pigs and that there were only one or two pigs in every village.

If anything, the number of pigs in the area has dwindled since. Only three (1.5%) respondents indicated that they own pigs. They all said that they owned the pigs as a potential source of food. Of the remaining respondents, 62.5% indicated that they do not have pigs because they do not have money to buy any, while 5% of respondents said that there were no pigs in the area and two respondents said that the pigs they had, died during the Civil War.

Of the 200 respondents, 87% indicated that they eat pork. As is the case with beef, goats' meat and mutton, the people in Matutuine eat pork only very infrequently. The frequency with which the local people of Matutuine consume pork, as indicated by respondents to the questionnaire survey, is set out in Table 9. As can be clearly seen from Table 9, the majority of people eat pork only once a year. This is indicative of two things: firstly, the fact that there are very few pigs in the research area, and, secondly, the fact that people do not have money to buy pork on a regular basis.

Table 9: The frequency with which pork is eaten in the research area

Every day	5% of respondents
Every week	11% of respondents
Once a month	17% of respondents
Once every six months	23% of respondents
Once a year	45% of respondents

The majority of respondents (78.5%) indicated that they bought pork, whereas 12.5% of respondents rely on friends or family to give them the meat free. Interestingly, none of the respondents who owned pigs indicated that they slaughtered them for meat.

The large percentage of people who say that they eat pork despite the absence of pigs in the area is probably best explained by the fact, discussed above, that people use the same term for both wild and domestic pigs. Bushpigs are regularly hunted for their meat throughout the area (see 4.1.3). It could thus be argued that most people do not distinguish between bushpigs and domestic pigs, because the domestic pig is not well known in the area.

People's value judgments on pigs should therefore be examined in this light. Most people (77.5%) think that pigs are beautiful animals. They supported this motion by saying that pigs can help people by providing food and money. In other words, pigs are beautiful because they can benefit people.

People who said that pigs were not beautiful said that pigs are too difficult to farm with and that pigs destroy their crops. As will be discussed in more detail in Chapter 4, bushpigs are responsible for much of the crop damage in the study area.

3. 2. 5. Donkeys

None of the respondents said that they kept donkeys (P- *burros*/ T- *timbhongolo*/ Z- *izimbongolo*). The vast majority of people (62%) said that they would like to own

donkeys, but that they just do not have money to buy them. People also indicated that there are no donkeys for sale in the area. So, as is the case with sheep, although people would like to own these animals, there are none in the area and, even if there were, people would not be able to afford them. Very few people said that they do not want to own donkeys – those few who did argued that, if you cannot eat donkey meat there is no sense in keeping donkeys.

The fact that no one in the research area owns donkeys is hardly surprising when one looks at the statistics and realises that there are only 20 000 donkeys in the entire Mozambique, compared to 1 290 000 head of cattle (*Africa South of the Sahara* 2000:762).

It is evident that people want to own donkeys (and cattle, goats and sheep), but simply do not have the necessary means to buy them. The worth of donkeys as traction animals and as beasts of burden is well understood by the majority of the people in the research area with whom qualitative interviews were conducted.

The majority of the respondents (68.5%) felt that donkeys are beautiful animals. Only a very small minority of people felt that donkeys were bad or dangerous animals. Those who felt that donkeys are beautiful animals mainly stressed the fact that donkeys can be used as a means of transport and to carry loads. As with cattle and goats, the utilisation value of the animals is stressed: if the animals are useful to people, they are beautiful.

3. 2. 6. Chickens

Chickens (P- *galinhas*/ T- *tihuku*/ Z- *izinkuku*) have traditionally been the most common of all livestock in the area (Junod 1962b:51). Today, chickens are still the single most owned domestic animal in the research area - 65% of respondents indicated that they own chickens. This percentage is more than twice the figure of 32% found by De Boer and Baquete (1998:211) amongst people who stay close to the Maputo Elephant Reserve. The respondent with the most chickens indicated that he owns 306 chickens. Most respondents (69%) keep chickens as a supply of meat. They also keep chickens 'for money' (32%), and 'for the future' (25%). Only 2% of

respondents indicated that they kept chickens for their eggs. Tsonga-speaking people do not value chickens for their eggs. They would much rather allow the eggs to hatch so that the true delicacy, the meat, can be utilised (Junod 1962b:51). Some people (6% of respondents) said that they use chickens to *phahla* (to revere their ancestors). It is interesting that Junod (1962b:51-52) does not mention religious usage of this animal. One can only speculate that the absence of goats, the animals traditionally used for ritual purposes, has forced people to use chickens to *phahla*.

Of the respondents who do not keep chickens, most (29%) said that they do not have money to buy chickens, while some (5.5%) indicated that their chickens had died. The importance of chickens as a source of nourishment is illustrated by the fact that 99% of respondents said that they ate chickens. Unlike beef, pork, goats' meat and mutton, chicken is eaten very frequently. Table 10 sets out the frequency with which the local people of Matutuine consume chicken (as was indicated by respondents to the questionnaire survey). The fact that chicken is eaten more frequently than beef, pork or goats' meat indicates that there are many chickens in the area, and that most people own chickens. Chicken is also a lot cheaper than beef, pork, goats' meat and mutton. It is thus only logical that people would eat more chicken than other types of meat and do so more frequently, with most people eating chicken at least once every week.

Table 10: The frequency with which chicken is eaten in the research area.

Every day	10% of respondents
Once a week	37% of respondents
Once a month	36% of respondents
Once every six months	10% of respondents
Once a year	6% of respondents

Despite the fact that 65% of people own their own chickens, most respondents (69.5%) said that they have to buy the chicken they eat. Only 40.5% said that they slaughter their own stock. This may be due to the small number of chickens people own. On average, those respondents who indicated that they have chickens (with the

exception of the respondent who owned 309) own 19 chickens. The people might therefore sometimes slaughter their own animals, but, most of the time, they would rather buy chicken. Only 4.5% of respondents said that they rely on friends and family to give them chicken free.

3. 2. 7. Dogs

Of the respondents to the questionnaire, 31% own dogs (P- *caês*/ T-*timbyana*/ Z-*izinja*). The respondent with the most dogs owns 10, although it is more common for respondents to own between 2 and 4 dogs. Dogs are mainly kept to protect homesteads and to protect fields against wild animals. In this regard, 75% of the respondents said they kept dogs to guard the house, while 50% also indicated that they kept dogs to guard their fields (11% kept dogs to chase away monkeys). A further two respondents said that they own dogs to hunt for them.

Most of the people who do not own dogs (37.5%) said that they do not have money to buy a dog, 4% of respondents said that their dogs had died, and a further 4.5% said that they did not have a place to keep a dog.

Some respondents had negative feelings towards dogs. During qualitative research, some spokespersons indicated that dogs are bad animals. The reason for this value judgment, they said, was that during the Civil War in Mozambique some dogs ate the bodies of people who had been shot. Some dogs came to see human beings as prey. Those dogs, they say, will not hesitate to bite people and even kill young children. In this regard, 5.5% of respondents said that dogs are bad and 9% said that they do not want dogs.

It was clear that, in contrast to the high incidence of hunting with dogs, in addition to the protection they afford their owners, as found by Els (1996:316-318) among the Tsonga in the Mpumalanga Lowveld, few people in the research area keep dogs for hunting. No doubt dogs do occasionally catch a wild animal which their owners can eat, but it was clear that hunting was not the main reason for keeping dogs – despite the relatively high number of dogs per owner.

Most people (76%) felt that dogs are beautiful. A fairly large percentage of people (21%), however, felt that dogs were not beautiful. No fewer than 11% of respondents said that dogs were bad and 12% said that dogs were dangerous.

Those who felt that dogs are beautiful said that dogs guard their homes and fields by keeping away strange people and wild animals. People who did not agree that dogs are beautiful said that dogs steal their chickens and eggs and that dogs chase and bite people.

3. 2. 8. Cats

Of the people interviewed, 32.5% kept cats (P- *gatos*/Z- *amakati*). The person with the most cats owns 21. The predominant reason for keeping cats is that cats kill rats. Of the respondents who own cats, 90% said they kept cats to kill rats. Of the respondents, 4% also said that cats protect their homes and 6% said that they keep cats to kill snakes.

Of the respondents, 39% said they do not keep cats because they do not have money to buy cats. Another 6% said that they cannot find a cat to purchase. Only 17.5% of respondents said that they do not want, need or like cats.

It can therefore again be stated with reasonable certainty that if it was not for the absolute poverty that exists in the area, more people would have kept cats, and that if people were to get access to more money, more of them would purchase cats.

3. 2. 9. Care of domestic animals

The vast majority of respondents (95.5%) said that it is peoples' responsibility to take care of domestic animals. This corresponds with the findings of Els (1996:419-427) amongst Tsonga people in the Mpumalanga Lowveld. These people believe that domestic animals, especially goats and cattle, were created by the same supreme being that created people and that these animals have the same attributes found in people, namely *miri, moya* and *xindzhuti*. It is therefore peoples' God-given task to look after these animals.

Of the respondents in Matutuine, 45% said that people have to look after domestic animals because people benefit from these animals. The study also found that people believe it is peoples' responsibility to care for domestic animals simply because, they said, it is the way things work, and domestic animals cannot care for themselves. Qualitative research has confirmed that people in Matutuine have the same value judgment with regard to the origin of domestic animals as the value judgments held by people in the Northern Province and the Mpumalanga Lowveld (see Els 1996:419-427). Spokespersons explained that the creator gave people this responsibility because people benefit from these animals. There is thus a close relationship between people and domestic animals that does not exist between human beings and wild animals (see Chapter 4). These believes have an impact on people's views on nature conservation: whereas it is human beings' god-given task to care for domestic animals, it is not their responsibility to care for wild animals. Doing so is the responsibility of the creator. This view differs radically from the modern Western or European value judgment that people have a responsibility to care for all animals, including wild animals (see Milton 1996:27). This issue is examined in more detail in the next chapter.

3. 3. CONCLUSION

The fact that there are so few cattle, sheep, goats and pigs in the research area and the fact that people do not eat the meat of these animals very frequently demonstrate both the poverty of the people and their dependence on other sources of food. As was discussed in the beginning of this chapter, people cannot and do not produce enough crops to fulfil their dietary needs. It has also been shown above (2.4.5), that there are no real job opportunities inside the area whereby people can earn money to purchase food. People therefore have to rely strongly on wild plants and animals. It is important to note why people in the research area hold the value judgment that humans are responsible for caring for domestic animals and not wild animals. The reason for this, as has been explained in this chapter, is that domestic animals have a close link to people and that it is their god-given task to look after these animals, whereas it is the responsibility of the creator, and not that of people, to care for wild animals. The utilisation of wild plants and animals as sources of food is discussed in Chapter 4. It is important to examine the utilisation of wild plants and wild animals in

the light of the facts presented above with regard to domestic plants and animals as sources of food. It is vital to understand that these people have very limited alternatives to hunting wild animals, catching fish and collecting wild fruits in their immediate environment.

CHAPTER 4

UTILISATION OF WILD ANIMALS AND PLANTS: VALUES REGARDING NATURE CONSERVATION AND DEVELOPMENT

4. 1. INTERACTION BETWEEN WILD ANIMALS AND PEOPLE

4. 1. 1. Introduction

One of the primary aims of this study was to investigate the interaction between human beings and wild animals in the research area. Key questions in this regard were:

a. How many people eat venison?
b. To what extent do local people rely on this source of meat for their survival?
c. How do people obtain venison?
d. How many people hunt wild animals?
e. Do local people hunt wild animals for reasons other than to obtain meat (i.e. hides, ivory, feathers etc.)?
f. Do local people experience conflict with wild animals regarding resource utilisation?
g. What is the extent of conflict experienced with wild animals?

Spokespersons identified the following animals as important with regard to the key questions above: the bushpig (*Potamochoerus porcus*), the hippopotamus (*Hippopotamus amphibius*), the elephant (*Loxodonta africana*), the buffalo (*Syncerus caffer),* the grey duiker (*Sylvicapra grimmia*), the red duiker (*Cephalophus natalensis*), the reedbuck (*Redunca arundinum*), the vervet monkey (*Ceropithecus aethiops*), the impala (*Aepyceros melampus*), the nyala (*Tragelaphus angasi*) and the cane rat (*Thryonomys swinderianus*).

These people largely see grey duiker, red duiker, reedbuck, nyala and impala as beneficial animals, because people hunt them for their meat and experience very few problems with these animals except for isolated cases of crop damage. These anthelopes are also not dangerous to humans. The bushpig, monkey and cane rat are also hunted and regarded as important sources of food, but these animals are responsible for a large amount of crop damage, and they are therefore not strictly seen as beneficial animals.

The hippopotamus, elephant and buffalo are only very rarely hunted. Most people do not object to eating these animals, but they are not able to hunt them with their rudimentary hunting tools. These animals, especially the hippopotamus, are also responsible for a lot of the crop damage experienced by subsistence farmers and are therefore not seen as beneficial animals.

Wild animals that can be regarded as problem animals in the research area are the bushpig, the cane rat, the monkey, the hippopotamus, the elephant and the buffalo. Before other animals are discussed, some special attention must be given to the problem animals.

4. 1. 2. Problem animals

- **Ceropithecus aethiops** - Vervet monkey (Pienaar *et al.* 1987:64)
  Ronga name: *hawu*
  Zulu name: *inkawu* (Doke *et al.* 1996:298)

  Monkeys are responsible for a lot of crop damage throughout the area and are viewed in the same light as cane rats (see below). However, not nearly as many people said that they hunt and eat monkeys as the number of people who said that they ate cane rats. It was also interesting that when respondents were asked which of the wild animals that eat their crops are beautiful, many identified the monkey, because, they said, it behaves like a human being and it is amusing to watch.

- **Hippopotamus amphibius** – Hippopotamus (Pienaar *et al.* 1987:111)
  Ronga name: *mfuvu*
  Zulu name: *imvubu* (Doke *et al.* 1990:220)

Hippos are still relatively secure in the eastern parts of Southern Africa, although they face several threats due to the destruction of their habitat. The primary reason for this destruction is an increase in the human population with a resultant increase in areas used for grazing and agriculture (Stuart & Stuart 1996:131), leaving less grazing for hippos.

The hippo is the most problematic wild animal in the research area. It is the animal most mentioned in connection with crop damage throughout the area. A far greater percentage of people mentioned the hippo as a problem animal than the percentage who mentioned bushpigs or elephants. It is also the animal most frequently mentioned to have been responsible for the death of a person, or to have caused harm to a person. It is therefore no surprise that most people see hippos as dangerous animals. According to spokespersons, hippos, like elephants, are especially dangerous when they have their young with them, and, spokespersons say, a hippo attacks without appparent provocation if a person happens to walk too close to it.

Although spokespersons say that they eat hippo meat, this does not occur very often. When they were asked when last they ate this animal, most people answered that it was before the Civil War, or when the Portuguese were still in control of Mozambique. However, in an interview with rangers from the Maputo Elephant Reserve, the rangers said that they sporadically find hippo snares inside the reserve, indicating that these animals are definitely still hunted for their meat and ivory.

Traditional healers in the area use hippo fat in a veterinary medicine to calm calves and make them obedient. Similar uses for hippo fat have been recorded amongst other indigenous people in Southern Africa. Tsonga people in South Africa smear hippo fat on the poles of cattle kraals to ensure that calves become strong animals (Els 1996:340). The Zulu burn a mixture of hippo fat,

the bones of a swallow and various herbs in the kraal to teach cattle to return to the kraal at the same time every day. The inclusion of swallow bones stems from the belief that a swallow always comes back to the same place (De la Harpe *et al.* 1998:150).

- **Loxodonta africana** – Elephant (Pienaar *et al.* 1987:97)
  Ronga name: *ndlophu*
  Zulu name: *indlovu* (Doke *et al.* 1990:147)

Elephants have played an important role in the lives of humans for millennia. Indian elephants were tamed for the first time around 3 500 BC in the Indus River valley where the first highly advanced Oriental civilisation emerged. By then, elephants had already come to play a major role in natural religions and fertility cults, and were honoured as sacred beings. Although elephants have been tamed and trained, they have never been domesticated and remained wild animals, even in captivity (Saller 1998:108).

In India, the elephant was seen as a mystical symbol of greatness, power, nobility and the pride of the dominant caste, and also as a symbol of the Brahmanic priesthood, as far back as the 5th and 6th centuries BC (Nath & Wacziarg 1987:29). Indians consider elephants to be the most intelligent of all animals and this is reflected in Hindu and Buddist religions (Saller 1998:127). The god Ganesh, who is the protector of wisdom, erudition and well-being is portrayed with the head of the clever elephant (Watson 1974:34).

Indian culture had a profound influence on the countries of Southeast Asia bordering India. Together with Buddhism, the veneration of the elephant was exported from India to Thailand, Burma and Cambodia. Elephants dignified kings and were used by common people for labour (Saller 1998:162). They were also used in combat in the bloody power struggles in the Indo-Chinese Peninsula (Nath & Wacziarg 1987:211). In Siam (Thailand) a cult developed around the white elephant. The king of Siam bore the title, 'Phra Chao Chang Phuk', the 'King of the White Elephant', and Siam, which never came under

colonial domination (Sardesai 1997:133), was called the 'Land of the White Elephant' (Saller 1998:162).

In warfare the elephant played a role as the 'tank of antiquity'. The first test of strength between a Western warlord and an Oriental elephant fighting force took place in the 4th century BC during the battle of Hydaspes, which was fought and won in India by Alexander the Great (336-323 BC) (Wolpert1993:55-56). After Alexander's death his generals, who divided his empire between them, included war elephants in their newly formed state armies. Even Great Britain used elephants in warfare: during the 19th century the British included several elephant units in their colonial army in India (Saller 1998:196, 232).

In Africa elephants have also long played a role in the religious beliefs and practices of the indigenous peoples. Western and Central African peoples incorporated forest-dwelling elephants in their myths and legends. The art of the Yoruba and Ashanti refflect a definite intrest in the majesty of elephants. The elephant is also the focus of the secret Bamileke elephant society in Cameroon who clad themselves in glass bead jewellery to look like elephants during rituals and religious ceremonies. Elephants are furthermore portrayed in Saharan rock paintings dating back to the 7th and 6th millennium BC. In Southern Africa San cave paintings depict large hunting expeditions aimed at obtaining the meat of these large beasts (Saller 1998:338-310).

A vital element in the relationship between humans and elephants throughout Africa is the conflict surrounding land-use. Elephants are the largest land mammals in the world and are also a species that needs lots of space. Traditionally, they have migrated over large areas of the continent in search of food and water. Most of these migratory patterns have been limited by human activity, but elephants still need large areas of land to survive (Kangwana 1993:2-3). In the past century or so, Africa has experienced a boom in human population numbers. In order for humans to survive, large areas previously available to wildlife have been converted to agricultural land. This meant that

the areas used by elephants and humans increasingly began to overlap, which in turn led to increased conflict (Kangwana 1996:138).

In areas where people are primarily agriculturalists, as is the case in the research area, conflict between elephants and humans has revolved around the destruction of cultivated crops by elephants (see Kangwana [1996:138] for the situation in Kenya). This is not only an African problem, but also one experienced in Asia, where an increase in the human population and an accompanying increase in land under cultivation are causing intense conflicts between people and elephants. The problem is perhaps best illustrated by Jerry Tupacz of the Wildlife Fund Thailand, who says, '…people are basically squeezing the elephants out of their home and at the same time putting tasty treats right in front of them' (Cramer 1997:2). Shooting and shocking problem elephants, paying compensation and constructing electric fences are solutions put forward. However, although compensation payments seem to be the most humane of all the solutions, it does not solve the root of the problem, and conflict between elephants and people will continue (De Boer & Ntumi 2001).

The conflict between humans and elephants is not one-sided. On the one hand, humans need to be protected from a loss of life and livelihood caused by elephants and, on the other, elephants need to be protected from hunters who make huge profits on the black market from the sale of ivory (Duke 1997).

The number of elephants in Africa has been reduced at an alarming rate in the past century. It has been estimated that in 1930 there were between 5 million and 10 million elephants in Africa. The estimated number of elephants in Africa for 1991 is between 549 000 and 652 000, of which 130 000 are in Southern Africa (Stuart & Stuart 1996:6-12). The two main reasons for the dramatic drop in elephant numbers are the ivory trade and the increase in human numbers.

Ivory has played an important role in the lives of people for thousands of years. Since prehistoric times there has been a profitable trade in ivory, which

was often prized higher than gold (Saller 1998:364). As has been discussed above (2.2.3), the trade in ivory between Nguni groups in Natal and Europeans at Maputo Bay played an important role in the history of the people of Southern Mozambique. Indeed, the value of the Tembe as ivory traders was one of the key reasons why the Zulu did not wage war against the Tembe.

The ivory trade did not have a large impact on elephant numbers in Central and Southern Africa until the nineteenth century, when the age of the 'white hunter' began. Big-game hunters penetrated the hinterland of south-eastern Africa in search of lion, buffalo, rhinoceros, leopard and, of course, elephant (Saller 1998:332-333). By the early 1900s, almost all the elephants in Southern Africa had been killed and only remnant and isolated populations were left (Stuart & Stuart 1996:14-15).

In the 1970s and 1980s there was a renewed upsurge in the hunting of elephants for ivory. Due to internal conflicts and civil strife, law and order broke down in Africa and armaments from Western and Eastern countries poured into Africa. The demand for ivory in Asia, Europe and the United States was high and African officials and revolutionary leaders were in need of money. The government and rebel soldiers in Mozambique and other countries used ivory as a means to pay for weapons (Stuart & Stuart 1996:10-15).

For peasants in Africa, killing elephants to sell the ivory became a viable alternative to risking a life alongside elephants. These peasants received only a very small fraction of the actual profits from the sale of the ivory. In 1990 poachers in Kenya, for instance, received between $2 and $3 per kilogram of ivory. Nevertheless, for them it was a small fortune. The large tuskers and bulls were quickly wiped out in many parts of Africa, with the result that poachers turned their weapons, including rocket launchers, against elephant cows, sub-adults and even juveniles. It is estimated that by 1988 poachers had to shoot twice as many elephants to collect the same amount of ivory they did in 1979 (Stuart & Stuart 1996:15).

Up to 1 000 tons of ivory per year entered the international trade markets in the mid-1980s. Due to these high figures, CITES (the Convention on International Trade in Endangered Species) introduced an ivory control system in 1985. The amount of legally traded ivory dropped; but, at the same time, the amount of illegally traded ivory soared (Stuart & Stuart 1996:16). The African elephant population continued to be decimated. On 18 January 1990 the African elephant was removed from CITES Appendix 2 (trade with controls) and placed on Appendix 1, which bans all forms of international commercial trade in products from the animal (Harland 1994:101). This ban has only been lifted for the sale of stockpiled legal ivory from Botswana, Namibia and Zimbabwe, which was sold to Japan in a specially approved transaction (Apps 2000:81).

It is interesting to note De Boer and Baquete's (1998:212) finding that people who live around the Maputo Elephant Reserve still value the elephant highly for its ivory, and less for consumption, the commercial sale of meat, or for skin.

In general elephants are not as big a 'problem' as the hippos are in the study area, except in the area surrounding Salamanga. Salamanga is the only place where elephants cause more havoc than hippos do. It was also mostly at Salamanga where incidents of attacks on people by elephants were recorded (see Map 2). It is thus only at Salamanga where there is regular interaction between people and elephants. This corresponds with the findings of De Boer and Ntumi (2001), who state that elephants 'do not cross the Maputo River, where the majority of the agricultural fields can be found, and crop damage is therefore only reported from the area between Salamanga and Massuane, on the eastern side of the Maputo River and the western side of the Futi River'.

In the research area elephants are not seen as a food source and most people have never eaten elephant meat. The hunting methods that hunters (poachers) in the area employ (see below) would moreover, for the most part, not be sufficient to trap or kill elephants. Therefore people do not see elephants as beneficial animals.

In order to find out which wild animals are perceived as being really dangerous to people, respondents were asked to list the five animals they fear the most. To ensure that the results reflected the real situation, the questions were open-ended: respondents were not asked whether they fear elephants, or rhinos, etc. It is interesting to note that the animal mentioned by most people is the hippopotamus, and not the elephant. Only 20% of all respondents listed the elephant as the animal that they fear the most. This figure was much higher at Salamanga than anywhere else, where 60% of respondents live who listed the elephant as the animal they fear the most. This means that in the rest of the study area, only 8% of all respondents feel that the elephant is the most dangerous of all the wild animals.

Elephants play an important role in the religious and magical world of indigenous people in Southern Africa. Amongst the Zulu, Swazi, Xhosa and Tsonga, for example, the Queen Mother is known as the Great She-Elephant (Mills & Hes 1997:223). Spokespersons relate that in the past elephant fat was used medicinally in the research area. Nowadays, they say, the fat is too difficult to obtain. However, the *izinyanga* (traditional healers) still use cud taken from an elephant's mouth to cure tooth problems. Tsonga people in South Africa use the skin, heart fat and other fat of the elephant in magical 'strengthening' medicines (Els 1996:342). The Zulu mix the heart, eyes, flesh and fat of an elephant with plant ingredients and parts of other powerful animals as a cure for nervousness (Krige 1988:334). Ronga people who stay in the research area also use elephant dung for medicinal purposes and burn it to keep away mosquitoes (De Boer & Baquete 1998:212).

- **Potamochoerus porcus** – Bushpig (Mills & Hes 1997:245)
  Ronga name: *inguluve ya nova*
  Zulu name: *ingulube* (Doke *et al.* 1996:348)

Despite the fact that people regularly hunt the bushpig and eat its meat, it is not considered to be a beautiful animal, in the same way that duikers are seen as beautiful animals. Bushpigs are not necessarily seen as dangerous animals, but they are seen as bad animals because of the crop damage they cause.

Bushpigs enjoy agricultural food crops, especially potatoes, maize, sugarcane and tomatoes (Mills & Hes 1997:24). Spokespersons in Matutuine also indicated that bushpigs especially prefer cassava.

Cultivated fields targeted by bushpigs were observed at Lagoa Piti. One in particular was very striking, the cultivated field or *insimu* of an old man who lives on his own. His *insimu* is not very big, approximately 10 metres long and 5 metres wide. The only crop planted on that piece of land was cassava, which was supposed to be that man's food for an entire year. It took bushpigs only one night to destroy all the crops. It was therefore no surprise when people answered in a chorus '*inguluve*' (bushpig), when asked at a general meeting at Lagoa Piti which animal destroys their crops.

Bushpigs are regarded as clever and deceitful animals. In order to protect their crops from bushpigs, people sometimes place pieces of old clothing on large upright sticks in the middle of their fields to act in the same way as scarecrows do. They say that on the first day the bushpig will see this stick and think it is man and he will stay away. On the second day, he will come closer to the stick, but still think it is a man and stay way. On the third day the bushpig will know it is a stick and he will enter the field and eat the crops. Respondents see bushpigs as *salamurdo*, sly, crafty and cunning animals. For this reason traditional healers say, they are very careful when using any parts of the bushpig in their medicines because medicines using such parts will be very dangerous to use. The sinister aspect of the character of bushpigs are probably reinforced by the fact that bushpigs are nocturnal animals. However, the teeth of bushpigs are highly valued for commercial sale (De Boer & Baquete 1998:213).

- **Syncerus caffer** –Cape Buffalo (Pienaar *et al.* 1987:132)
  Ronga name: *nyarhi*
  Zulu name: *inyathi* (Doke *et al.* 1996:54)

In the same way that elephants are mostly a problem at Salamanga, buffalo are mostly a problem in the south-western parts of the research area, near Catuane

and at Xuxa. This area borders the Ndumo Game Reserve in South Africa, and buffalo from there eat people's crops. Incidences have been recorded of attacks on humans by buffalo. It is thus not surprising that people in this area view the buffalo as a dangerous animal. Except in this area, however, the buffalo was not mentioned in any regard in other parts of the study area, where buffalo do not occur.

- **Thryonomys swinderianus** - Cane rat (Mills & Hes 1997:126)
  Ronga name: *vondo*
  Zulu name: *ivondwe* (Doke *et al.* 1996:60)

  There is no mystery surrounding cane rats (as there is surrounding bushpigs). Cane rats are largely seen as pests that cause great destruction to people's crops, especially in sugarcane fields, but also in maize fields. They are also regarded as a delicacy and snares are set up in the cane fields to catch these animals.

4. 1. 3. Wild animals as a food source

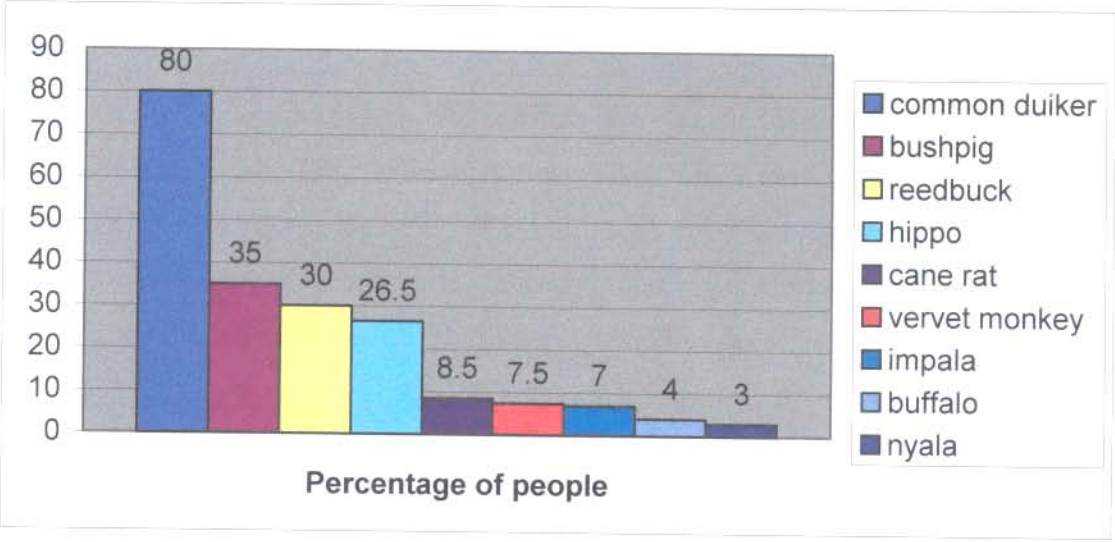
Considering the low number of people who rear domestic animals (see 3.2.1), it is clear that people in the research are extremely reliant on wild animals for meat. Besides the 87% of respondents who eat venison, 98.5% of the respondents eat fish, and a further 46.5% of the respondents eat wild birds. The frequency with which people eat venison is furthermore quite high, compared to the frequency with which people eat beef, pork and goats' meat (see 3.2). In Table 11, the frequency is illustrated with which local people in Matutuine consume venison, as indicated by respondents to the questionnaire survey.

Table 11: The frequency with which venison is eaten in the research area

Every day	3% of respondents
Once a week	12% of respondents
Once a month	33% of respondents
Once every six months	11.5% of respondents
Once a year	9.5% of respondents

The wild animals eaten most in the area are common duikers, bushpigs, reedbucks, red duikers, hippos, cane rats, vervet monkeys, impalas, buffalos and nyalas (see Figure 4).

Figure 4: Percentage of people who eat various wild animals in Matutuine



According to De Boer and Baquete (1998:212), people eat (in order of preference) bushpigs, reedbuck, common duiker, red duiker, sunni (*Neotragus moschatus*) and scrub hare (*Lepus saxatilis*).

Although most respondents said that they ate venison, one should be careful, especially when it comes to hippopotamus and buffalo, not to assume that people regularly eat the meat of these animals. People at Gala were asked, for instance, whether they eat elephant meat. They answered that they do. When asked when last

they had eaten elephant, they replied that they had done so before the Civil War started.

It is, however, quite certain that the local people regularly eat the meat of smaller animals like the duiker, bushpig and reedbuck, as is shown in Figure 4. People were also observed doing so in the area. Meat of these small animals is sold along the road between the Maputo Elephant Reserve and Zitundo. One kilogram of 'bush meat' costs approximately 25 000 MT (R13). Hunters were also observed at Zitundo selling a bushpig they had caught in the Maputo Elephant Reserve. Besides these informal sales, cooked venison is always readily available, according to spokespersons, at the '*quiosque*' (a small restaurant) at Bela Vista.

4. 1. 4. Hunting

The responses to the questionnaire indicate that 16.5% of respondents hunt wild animals. De Boer and Baquete (1998:212) also found that 21% of people in the area hunt. A survey conducted by the Institute for Natural Resources in 1995 put the figure of people who hunt at 30%, but stated the figure may underestimate the real numbers because people are afraid of being caught for poaching. Moreover, De Boer and Baquete (1998:212) found that although only 21% of people admitted to hunting, half of the people in the area wanted to exploit wild animals.

Most respondents who hunt catch wild animals solely to eat their meat (23.5%). Other reasons why people catch wild animals are to use the skin, to use the feathers, to use the fat, to use the horns, and to use as medicine.

The hunting of wild animals is a very sensitive subject, and many people in the area are afraid to talk about it. Only 39 of the 200 respondents answered the question about how wild animals are caught. Of these 39 (15%) said that they use traps, two (5%) use nets, 10 (25%) use snares (*switzimba*), six (15%) use wire, four (10%) use guns and one (3%) uses bushfires.

Although so few people were willing to speak about the methods used, 181 (90.5%) of the respondents said that if they were to find a snare in the bush they would not take it down. The explanation given for this by 35.5% of respondents was that the snare may protect someone's *insimu*. Therefore, if a person were to take it down he would be putting another person's crops at risk of being destroyed by wild animals. It is therefore quite understandable that people will not take down snares.

A large percentage of people (30%) also simply stated that they do not take down snares because the snares do not belong to them. Many people (11.5%) said that they believe that medicine has been put on the snares, and if a person were to fiddle with a snare that was not his/her, that medicine will negatively influence him/her and cause him/her misfortune.

The small percentage of the respondents (8.5%) who said that they would take down a snare was either people with livestock or people who work for the Maputo Elephant Reserve. People who own cattle and/or goats said that they would take down snares because there is a potential danger that their own animals might walk into the traps. Since so few people own cattle and goats, it is obvious that this is unlikely to be a prominent reason for taking down a snare inside the research area. The Maputo Elephant Reserve rangers said that they will take down a snare because it is their job to do so.

Despite the fact that these rangers say that they will take down snares, it was interesting to find that a game ranger at Lagoa Piti was willing to explain ways in which snares and traps are supposed to be set. He did not, however, relate this information as a ranger who has seen many different snares, but as a person who sets snares himself.

According to the people interviewed at Lagoa Piti, the most common method of catching wild animals is not with snares, but with steel traps called *tinkotsa* in Ronga and *ingoda* in Zulu. People buy these traps at Manguzi in South Africa. The animals caught most in the snares and traps are, according to the respondents, grey duiker, bushpigs, cane rats, vervet monkeys, red duiker and scrub hares.

4. 1. 5. Protection of crops from wild animals

Although most respondents (28.5%) said that they caught wild animals in the bush, 1.5% said they catch these animals near their homes, and 7% said that they catch the animals in their fields. It is therefore necessary to distinctiguish between people who use snares and traps to hunt, and people who use these methods to keep wild animals away to protect their crops. Moreover, as has been discussed above, a prominent reason given by respondents for not taking down snares was that snares protect someone's cultivated fields.

Various methods, besides snares, are employed by people to keep wild animals away. Clothing and pieces of plastic are put on sticks inside the *insimu* to act in the same way as scarecrows. According to spokespersons, this method is not extremely effective (as with the bushpigs discussed above).

Another method used to keep away wild animals is to tie two or more tin plates together on a tree next to the *insimu* or homestead. When the wind blows during the night, the plates bump against each other and act as wind chimes that keep away wild animals.

Bushfires are also used as a method of hunting. Despite the fact that only one respondent acknowledged that he uses fire when dealing with wild animals, 15 respondents (7.5%) said that they use fire to chase away wild animals. Respondents related that bushfires are mainly lit to keep away snakes and to make it easy for people to walk through the thick grass. However, spokespersons also said that they burn the grass to provide grazing for wild animals so that the wild animals will not need to eat the crops in cultivated fields.

Indigenous people throughout the world use bush fires as a method to maintain a balance in the natural environment. There is ample evidence that indigenous people deliberately manage local ecosystems to increase productivity for their own benefit. This is perhaps best illustrated by hunting and gathering groups who burn large areas of grasslands to create and maintain 'game parks', which can benefit them in more than one way (Bodley 1996:50-51).

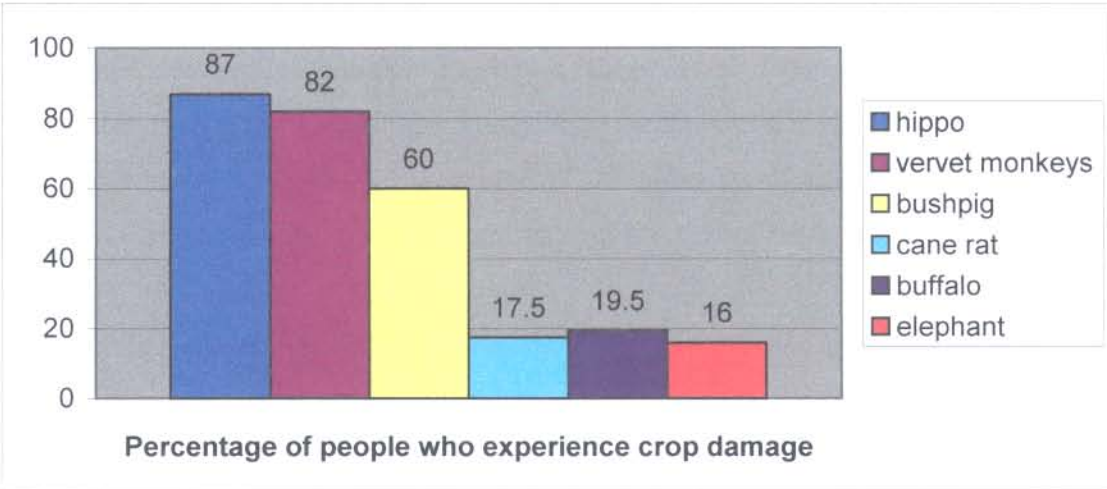
Native Americans in the northern parts of Canada not only burn the forests to increase bison, elk and deer populations, but also to increase the availability of wild berries, to reduce the numbers of harmful insects and to increase the availability of firewood (Bodley 1996:51). Indigenous peoples also burn grasslands and savannahs for other reasons than to create 'game parks'. The Aborigines who live in Australia and on the islands surrounding the continent start bush fires for the same reason as people in the research area, in other words to enable them to walk through the thick bushes. Some Australian mainland tribes also use bush fires as hunting methods. Burning in Australia usually takes place after the wet season when tall spear grass makes it uncomfortable to walk through the bush. In the past the burning was also employed for protection so that enemies could not hide in the grass (Levitt 1981:15; Gould 1971; Hallam 1975).

Today it is recognised by foresters and scientists that controlled and frequent burning can dramatically increase the productivity of an ecosystem. According to Bodley (1996:50-51), 'burning forests can improve soil fertility, favour the growth of herbaceous plants, promote vigorous growth of trees and shrubs by 'pruning', and induce germination of fire dependent species. Such burning increases both the quantity and nutritional quality of the forage available to game animals'.

This means that there are more animals who are healthier and who reproduce faster and are available to be hunted. This has an effect on the sustainability of utilisation. If the grass is burned, it is also easier for hunters to move through it. Frequent burning has the added advantage of stripping an area of combustible material, thereby making unplanned fires less destructive (Bodley 1996:51)

As had been stated earlier, the wild animal with which people in the study area experience the most problems concerning their crops is the hippopotamus. Most respondents said that hippos eat the crops in their *amasimu*. The other two animals that cause a lot of problems are monkeys and bushpigs (see Figure 5).

Figure 5: Animals which cause crop damage in the research area



When people were asked which of the animals that eat the crops in their fields are dangerous to man, most (83.5%) answered that the hippopotamus is a dangerous animal because it can kill or attack people. A large percentage (67%) said that the bushpig is a dangerous animal, while 19.5% of people said that a buffalo is a dangerous animal. The localisation of problems with particular wild animals discussed above should also be taken into account here. All the respondents who said that buffalo eat the crops in their cultivated fields said that buffalo are dangerous animals. The same holds true for elephants. All the people who experienced problems with elephants eating their crops also said that elephants are dangerous to humans because they attack and kill people.

When asked which of the animals that eat the crops in their fields are beautiful, most respondents (58,5%) said that none of these animals are beautiful, because they are dangerous and destroy their crops. Some respondents (11.5%) said that monkeys are beautiful, because they look like people and are amusing. 5% of people said that buffalo are beautiful, because they look like bulls. Respondents also said that cane rats, bushpigs and duiker are beautiful, because they provide meat. Thus, as was the case illustrated with domestic animals (see 3.2), wild animals with an utilisation value are considered to be beautiful.

4. 1. 6. Other aspects of interaction between humans and wild animals

A third of the respondents in the research area have been chased by wild animals. Hippopotamuses are responsible for 45% of these cases. Given this statistic, and the fact that most damage to their crops are caused by hippos, it is easy to see why people fear these animals the most. Moreover, of the cases mentioned where people were killed by wild animals, hippos were responsible for 52% of the incidents.

Among the respondents, 80% said that they have been chased by bushpigs near their homes. 1% said that lions had chased them, 1.5% have been chased by buffalo and only 6% have been chased by elephants. Again, these occurrences were localised. Of the people who have been chased by elephants, 91% live in the vicinity of Salamanga and all the people who have been chased by buffalo live in Catuane.

Of the respondents, 33% said that they knew of a person who had been killed by a wild animal. As has been stated above 52% of these respondents indicated that the animal responsible was a hippopotamus. In 22% of the cases, the animal was an elephant.

Most of these incidents (54%) occurred more than five years ago. Respondents knew of nine people who were killed by wild animals from 1998-1999. In eight of these nine instances, people had been killed by hippos. These attacks were spread throughout the study area, occurring in Zitundo (3), at Xuxa (2), at Salamanga (2) and at Ponta do Ouro (1).

Interestingly only one instance of a person killed by an elephant during the past year was mentioned. As could be expected from the information already set out above, all but two of the cases where elephants attacked people occurred near Salamanga. Besides the one occurrence of an elephant that killed a person during the past year, the most recent attack by an elephant on a person in the research area and which led to that person's death occurred more than four years ago.

4. 1. 7. Utilisation of wild animals for medicinal purposes

Wild animals are not only hunted for meat. Indigenous healers also use certain body parts taken from wild animals for magical and medicinal purposes, even though these animals might not be present in the research area. The following wild animals are used in this manner:

- **Ceropthecus mitis**– Samango (Mills & Hes 1997:111)
  Ronga name: *tihavu*
  Zulu name: *insamango* (Mills & Hes 1997:111)

  The samango took its name from the Zulu *insamango*. Due to the destruction of its forest habitat it is listed as a ***Red Data Book*** species (Mills & Hes 1997:111). People in the research area use the skin and fat for medicinal purposes. Heated fat is administered as ear drops for acute pain and traditional *izinyanga* dresses are made from the skin.

- **Crocodylus niloticus** – Nile crocodile (De Graaf 1992:117)
  Ronga name: *ngwenya*
  Zulu name: *ingwenya* (Doke *et al.* 1996:105)

  Crocodile fat is administered in liquid form to clear phlegm. Among the Zulu, crocodile fat is used together with the wood of the White Stinkwood Tree in a lightning charm. Crocodile fat is also mixed with the ground bark of the Wild Quince Tree (*Cryptocarya latifolia*) to treat chest ailments (Hutchings *et al.* 1996:74 & 107). Tsonga in the Northern Province and the Mpumalanga Lowveld believe that the power inherent in the body parts of the crocodile can be applied for both good and evil ends. 'Crocodile stones', which come from the stomach of the crocodile, are used by pregnant woman to ensure an easy delivery (Els 1996:349). These 'crocodile stones' are also used in the divination set of the *inyanga* (Hammond-Tooke 1993:194). The gallbladder of the crocodile is used to neutralize witchcraft. Crocodile skin may also be worn by the *inyanga* around his/her waist to counteract witchcraft, as well as

to strengthen his/her own power over witches (Els 1996:349).

The Tsonga believe that the brain of the crocodile is extremely poisonous and that witches use it for malevolent purposes. They believe that this poison is so potent that only a small amount is necessary to inflict harm. The amount that fits into a matchbox is all that is needed. Fingernail clippings or hair from a person towards whom the evil is directed are put in a matchbox with crocodile brain. The matchbox may then be thrown into the water. This will cause the victim to drown. In the same way, a matchbox thrown into a fire will ensure that the victim will burn to death. If the matchbox is thrown under the wheels of a taxi, the victim will be run over by a taxi (Els 1996:349).

- **Crocuta crocuta** - Hyena (Pienaar *et al.* 1987:78)
  Ronga name: *mphisi*
  Zulu name: *impisi* (Doke *et al.* 1996:227)

People in the research area believe that the hyena, like the bushpig, is *salamurdo* or deceitful. Traditional healers therefore refrain from using any parts of this animal in medicines, because the medicines will be too dangerous to use. Witches and sorcerers, however, use hyena tails and eyelids in their potions.

The Zulu and Tsonga people who stay in South Africa ascribe similar attributes to the hyena. The Zulu believe that witches (*abathakathi*) use the skin of the hyena to make a sleep-inducing potion. The skin is also used to weaken a person's spirit (Krige 1988:323). It has been recorded that Tsonga people in South Africa believe that witches use the sexual organs of the hyena in occult practices. (Els 1996:348).

Tsonga healers also use the bones of hyenas in their divination sets. These bones represent the witch (Hammond-Tooke 1993:194). According to Junod (1962b:546), hyena bones can also represent the counsellors of the *inkosi*. This is, however, very rare, because of the supposedly evil character of the hyena (Els 1996:348).

The skin and other body parts of hyenas are also used by *izinyanga* to represent their authority over the power of *abathakathi*. Amulets made from the tail-hair of hyenas are worn by *izinyanga* around their necks as protection from sorcery (Els 1996:348).

- **Hippopotamus amphibious** – Hippopotamus (Pienaar *et al.* 1987:111)
  Ronga name: *mfuvu*
  Zulu name: *imvubu* (Doke *et al.* 1996:220)

  The fat is used in veterinary medicine as was discussed above (see 4.1.2).

- **Loxodonta africana** – Elephant (Pienaar *et al.* 1987:97)
  Ronga name: *tindlophu*
  Zulu name: *indlovu* (Doke *et al.* 1996:147)

  The fat is used medicinally as was discussed above (see 4.1.2).

- **Panthera Leo** – Lion (Pienaar *et al.* 1987:92)
  Ronga name: *nghala*
  Zulu name: *ibhubesi* (Doke *et al.* 1996:269)

  Lion fat is drunk to make a person powerful and respected by the community. It is thus believed that a person will receive the characteristics of a lion if he drinks its fat. Berglund (1975:352-355) refers to this as a sympathetic association between an animal's nature and the effect medicine made from the body of that animal will have on a patient. If an animal is seen as powerful, a medicine made from the parts of that animal's body will make the user powerful. Similarly, if an animal is seen as aggressive, it is believed that medicine derived from the body of that animal will make the user aggressive.

  Medicinal and magical uses for lion parts have also been recorded amongst Tsonga people in South Africa and amongst the Zulu. Tsonga diviners use lion bones in their divining sets. It is usually the phalax that is used. This

bone represents the *inkosi* (king) because he is the king of the people, as the lion is the king of the wild animals. Lion bones may also represent white people because they are as rich as kings (Els 1996:346).

The Zulu mix the heart, eyes, fat and flesh of the lion with other medicines as a cure for nervousness (Krige 1988:334). Lion claws are sometimes used by diviners (*izangoma*) as a divining bone (Binns 1974:261). Lion fat and lion bones are also mixed with python fat and ground roots of the Ironwood Tree (*Millettia grandis*) to produce a tranquilliser which is burned inside a hut to dispel worries (Hutchings *et al.* 1996:140).

The Zulu also use parts of a lion's body in the practice of witchcraft. The *abathakathi* use the hair of a lion, or of other 'wild beasts' to infect the respiratory tract of a person, resulting in a dry cough. This charm is called *udosi*. Lion fat is also used in a spell called *ihabiya*, which causes hysteria (Bryant 1966:46 & 70).

- **Papio cynocephalus ursinus** –Chacma baboon (Mills & Hes 1997)
  Ronga name: *mfene*
  Zulu name: *imfene* (Doke *et al.* 1996:28)

Parts of a baboon's body are used medicinally by traditional healers in Catuane. Tsonga healers in the Mpumalanga Lowveld make a powerful love charm (*xitshungulo*) with the phalax bone of the baboon (Els 1996:357). The australagus bones of baboons are also used by *izinyanga* in their divination sets. Because baboons are extremely territorial, these bones represent the village (Hammond-Tooke 1993:194).

Among the Zulu, the tail and eyebrows of the baboon are used in witchcraft. The menstrual emission of a baboon is given to a person to cause excessive menstrual flow. The menses of the baboon are also believed to have medicinal powers and are thus utilised by the *izinyanga* (Krige 1988:321, 323, 327).

- **Potamochoerus porcus** – Bushpig (Mills & Hes 1997:245)
  Ronga name: *nguluve ya nhova*
  Zulu name: *ingulube* (Doke *et al.* 1996:348)

  The fat is used medicinally, as was discussed above (see 4.1.2).

4. 1. 8. The importance of fish as a food stock

Fish forms a substantial part of the diet of people living in the research area. Most people (98.5%) eat fish. Fish is eaten very frequently: most people (43.5%) eat it on a daily basis, compared with the frequency with which beef, pork, mutton, goats' meat, chicken and venison are eaten. Thus, fish is indeed a very important food source in the research area (see Figure 6). Fish is not only a valuable source of protein, but it is also rich in Vitamin D, Vitamin B1, Niacin and Vitamin B12, which are all essential for the optimal function of the human body. Fruit and vegetables, which constitute the bulk of the diet of these people, are poor sources of Vitamin D, Niacin and Vitamin B12. Fish is thus the only source from which people get these essential vitamins other than meat (Mahan & Arlin 1992:78, 85, 89, 97).

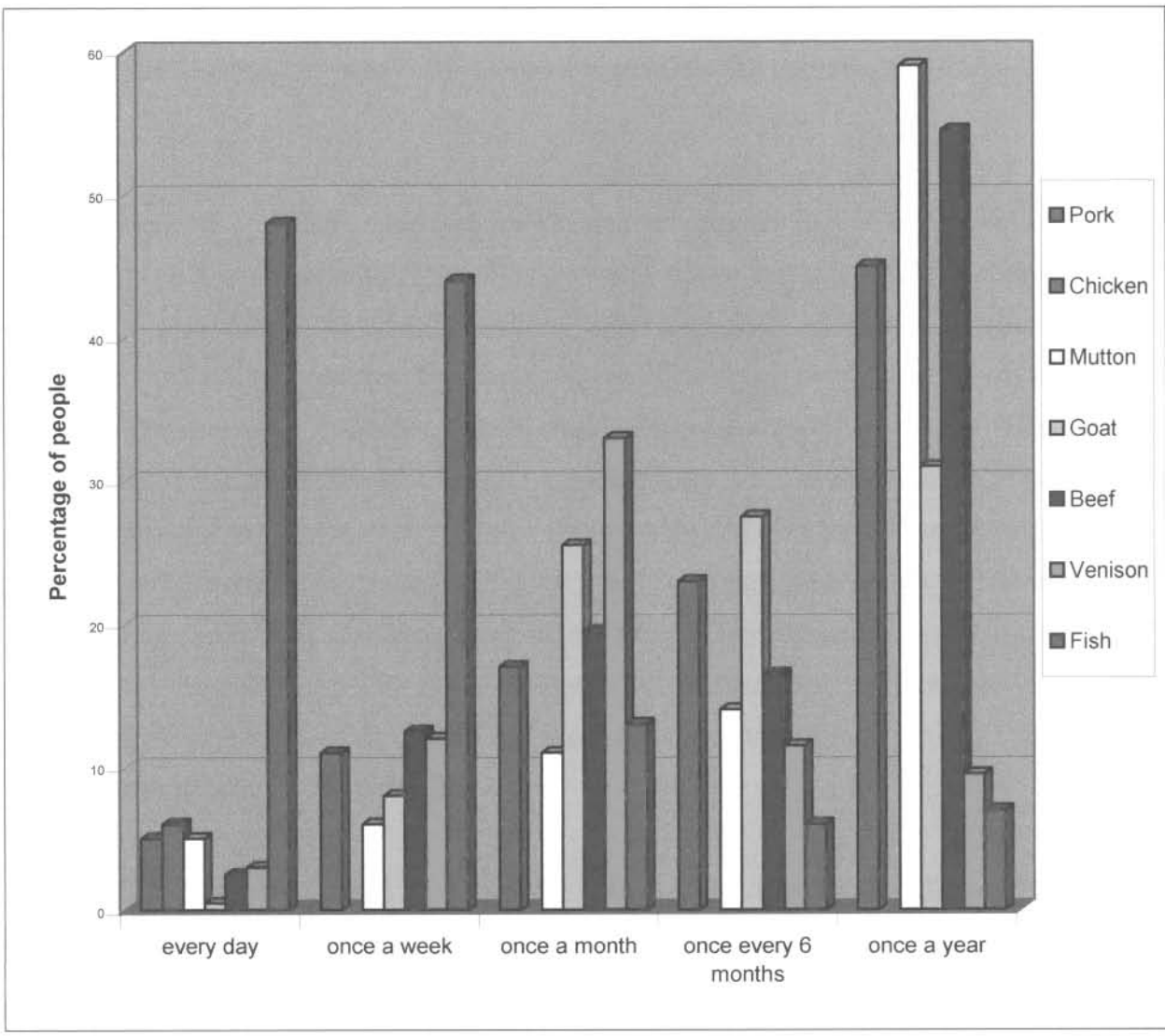
Most respondents (86%) said that they not only catch but also buy fish. The price of fish is extremely low. Fish at Catuane, for example, was sold at R1 per fish. People who live around Lake Piti said that in order for them to make money, they walk to Manguzi in South Africa with a large bag of fish (approximately 20kg), which they sell for R30. They then use that money to buy supplies at the stores at Manguzi. Fish is also sold at the border market at Puza, which is held on Wednesdays and Saturdays. At this market, people from South Africa and Mozambique exchange products across the border fence. Tilapia is sold for between R5 and R7 per bundle, and catfish for between R4 and R5 per bundle (a bundle contains between five and seven fish).

Besides buying fish, a substantial number of people (47,5%) also catch fish to eat. Fish are caught for both commercial and subsistence purposes. Of the respondents, 13% said they catch fish in the sea, 22.5% catch fish in the various lakes in the area

and 12.5% catch fish in the river. The place where a person catches fish is obviously determined by that person's place of residence.

Most people (23%) go fishing at least once every week. Of the respondents, 11% fish every day and 6% fish at least once every month.

Figure 6: The frequency with which fish is consumed, compared with the consumption of the flesh of other animals in the research area.



Various methods are employed to catch fish. Of the respondents, 28% said that they use fishing rods while 20.5% said that they use nets to fish. Both seine and gill nets are used

It was observed that people who live in the area surrounding Lake Piti also use hand-lines to catch fish. At Lake Sugi at Ponta Malongane, and at Lake Soutibe ou Satine in Zitundo, people also use handheld lines for fishing. These people explained that they do not use nets because they do not have money to buy nets. Nets and hand-lines are used by people in Xuxa, near Catuane, to catch fish in Lake Mpandlene. It was also observed that people who stay in the Maputo Elephant Reserve near the main camp use fish-traps to catch fish. These traps are constructed in the same way as the fish-kraals at Kosi Bay in South Africa (see Van der Walt 1996:35-37 and Felgate 1982:66-68). A cone-shaped trap (*shibaba*) is woven with reeds (Junod 1962b:85). It is placed in the river, and once the fish have swum inside the trap, they are unable to escape.

Another method of fishing, common throughout the coastal region of the entire Maputaland, but not observed in Matutuine (probably due to the time of year at which research was conducted), is called *ku tjeba* or *fonyo* fishing. It is a means by which people in groups kill fish in pans that are drying up. This action usually takes place at the end of winter when the various small pans in Maputaland start to dry up. This forces the fish, mostly barbel and carp, to congregate in much smaller spaces. The *inkosi* orders the men to make *shiranga* or *fonyo* baskets. These baskets are conical and open at both ends. The opening at the top is only big enough to allow a person to put a hand through. The people assemble at the pans. They then walk in a straight line to herd the fish into a very small enclosure. The baskets are put down on the bottom of the pan and the fish trapped inside are removed through the opening at the top of the basket (Junod 1962b:86-87).

Only 15% of the respondents in Matutuine sell the fish they catch. There are, however, some commercial fisheries in the area. It was found that in the areas around Lagoa Piti, for instance, there are five commercial fisheries. Together they employ between 10 and 15 people. It is estimated that they catch between 150 and 250kg of fish per day (Pollett *et al.* 1995:103). The fish caught in Lagoa Piti is exported for sale at Salamanga and also in Manguzi in South Africa. A spokesperson indicated, that when conditions are good, as much as three 80litre containers are exported per week. The recent floods, especially the fact that the bridge over the Rio Futi was

down, had brought this business to a standstill. However, the bridge was rebuilt in June 2000, and it is certain that the industry is flourishing once again.

According to spokespersons, the fishermen at Lagoa Piti catch fish exclusively with nets, because they feel that rods are too difficult to handle. The gill nets they use are approximately 100m long and 1.5 meters wide. The nets have weights at the bottom and floaters at the top to keep them in position in the water.

Fish is caught on a daily basis. The nets are taken out onto the lake in a boat, which people buy or even construct themselves, and cast into the water. The fishermen usually do this at around mid-afternoon, and they leave the nets in the water overnight. Early the following day, the nets are drawn in. If the nets are taken out too early in the day, spokespersons indicate that the fish caught inside them will rot. Therefore, they are left overnight and brought back early in the morning when it is cool.

The nets are numbered according to their size. Number one nets have the smallest holes and number three nets the biggest ones. Since Lagoa Piti is inside the Maputo Elephant Reserve, fishermen are only allowed to use number three nets (3cm by 3cm). This ensures that small fish are not caught. Maputo Elephant Reserve rangers inspect the various fishing camps to ensure that people adhere to the rules. These inspections are, however, not conducted on a regular basis. The employer of the commercial fishermen at Lake Piti is responsible for ensuring that the fishermen around Lagoa Piti do not use smaller nets than the ones stipulated by law. If people are caught with nets that are too small, their nets and boats are confiscated and they have to pay fines to get their equipment back.

Sometimes fishermen experience problems with crocodiles and birds that eat the fish caught in the nets. However, fishermen indicated that the birds are only a problem during summer. They indicated that they always used to have a problem with seagulls eating the fish in their nets, but that for the past few years there have been very few seagulls in the area. They do not know the reason for the low number of seagulls. When a crocodile is caught in a net, it may be killed, if it has not already died from suffocation, and the skin is used for shoes or other utilities.

According to spokespersons, Black tilapia (*Oreochromis placidus*), Mozambique tilapia (*Oreochromis mossambicus*) and Sharp-tooth catfish (*Clarius gariepinus*) are the predominant species caught. At Xuxa, Tiger fish (*Hydrocynus vittatus*) is also caught, but a fisherman there indicated that there are not many Tiger fish in Lake Mpandlene, or in that part of the extension of the Pongola River system.

The following species were identified by fishermen throughout the area as fish they catch as food on a regular basis:

- **Anguilla marmorata** – *Mokane* (R) - Madagascar mottled eel
- **Anguilla mossambica** - *Mokane* (R)- Longfin eel
- **Clarias gariepinus** - *Babule* (R) - Sharptooth catfish
- **Clarias ngamensis** - *Babule* (R) - Bluntooth catfish
- **Hydrocynus vittatus** – *Inhlangi* (R) – Tiger fish
- **Megalops cyprinoids** - *Anhulu* (R)- Oxeye tarpon
- **Oreochromis mossambicus** – *Sikwambi* (R)– Mozambique tilapia
- **Oreochromis placidus** – *Imefu/ Xidlawana* (R) - Black Tilapia
- **Serranochromis meridianus** – *Itsheya* (R) - Lowveld largemouth
- **Tilapia rendalli** – *Xidlawana* (R) - Redbreast Tilapia
- **Tilapia sparrmanii** – *Imefu / Xidlawana* (R) - Banded Tilapia

Carcharinus leucas and the brown squeaker (*Synodantis zambesis*) are also caught (De Boer & Baquete 1998:213). Besides for these species, Hamilton's barbel (*Barbus afrohamiltoni)*, redeye labeo (*Labeo cylindricus*) and silver labeo (*Labeo ruddi*) are also caught occasionally.

4. 2. UTILISATION OF WILD PLANTS

The importance and value of natural resources such as wild animals, fish and wild plants increase in communities in poor socio-economic circumstances (De Boer & Baquete 1998:208). The inhabitants of Matutuine rely heavily on natural resources for their survival. Wild animals are an important source of food in the area, but due to continuous hunting and the consequences of the Civil War, most wild animals have disappeared from the area (De Boer & Ntumi 2001:1-2). Furthermore, as has been discussed already, the wild animals remaining in the area cause large amounts of crop damage, thereby depriving people of a large part of the food on which they depend. Also, most people in the area are unemployed. The result is that people are extremely reliant on fish and wild plants for their survival. Plants provide food, medicine, construction materials, utensils, traps for fish and wild animals and also fruit to eat and to make beverages with.

4. 2. 1. Medicinal plants

4. 2. 1. 1. Importance of medicinal plants

Medicinal plants are still widely used throughout the research area. Although De Boer and Baquete (1998:211) found that only 1% of people in the four sites they investigated collected plant material for medicinal usage, a survey conducted by the Institute for Natural Resources found that 39% of people collect plant material for medicinal usage and no less than 79% of people use medicinal plants (Pollett *et al.* 1995:98). The questionnaire survey conducted for this dissertation showed that at least 48% of people in Matutuine use medicinal plants, although this figure is probably much higher, since many people were not willing to disclose any information on the use of medicinal plants. These figures are much lower than estimates by the World Health Organisation that as many as 88% of people in developing countries use traditional medicines. The percentage of people who rely on plant-derived medicines is the highest in Africa, where it is estimated that 95% of people are dependent on traditional plant-derived medicines (Anyinam 1995:322; Farnsworth & Soejarto 1991:25-39; Feris 2000:10; Lusunzi & Qhotsokoane-Lusunzi 1999; McKean 2000:86-87).

There are two reasons why such a large percentage of people in Matutuine use medicinal plants. The first reason is that many people still adhere to the traditional belief system. In the traditional system herbalists or traditional healers, who utilises medicinal plants, are important figures (Junod 1962b:451-458). The second reason why medicinal plants are still widely used in the research area is the lack of alternatives. There are very few hospitals in the area and even people who have easy access to the hospitals seldom have the necessary financial means to visit them. In many cases people who visit professional doctors go to the traditional healer at the same time.

The reason for this is that the medicinal system of many traditional people is inseparable from their belief system. This is evident in most traditional societies, where the means to deal with injury and diseases are limited. This limitation does not imply that people are not cured: the actual remedies employed often have no true medicinal value, yet people are cured. The answer to this anomaly is that the medicinal practices of these people are rooted in their religion. It is their faith in the healer and the medicines he/she uses that gives power to the medicine (Child & Child 1993:120; Bryant 1966:16; Hammond-Tooke 1993:193). This process is defined as psychosomatic: if people believe in the effectiveness of a medicine, or, in the case of witchcraft, in the effectiveness of a curse, it is possible that the believers will either be cured or become ill (Sebald 1978:20).

Western medicine is furthermore only administered when a person is physically ill, while traditional medicine covers a much larger set of phenomena. Traditional medicines are used by men and women when they are sick, but also to provide protection and to bring good fortune. At the root of traditional medicine is the conviction that most plants and animals contain *amandla* (Z), or power. This power is neutral and can be used morally or immorally, to do good or to cause harm. This *amandla* is found in specific plants and animals and it is therefore essential to use these materials if the person wishes to be protected from all forms of misery (Berglund 1975:345; Bryant 1966:16-17; Els 1996:389-394; Hammond-Tooke 1993:193).

Illness or misfortune can be caused by sorcery or by the loss of ancestral protection. Thus, even in cases where a person is healed by Western medicine, the question still remains as to who caused the illness (Kriel 1996:178). Western medicine can cure only the symptoms. It cannot address the source of the illness. Therefore traditional healers are still visited, even though people may have access to Western medicine (Green 1992:247).

Medicine should therefore not only be seen as a substance which cures disease, but as an instrument whereby relations with the ancestral spirits can be brought into harmony and as a weapon that can combat witchcraft and sorcery (McKean 2000:86). Hence, it is very difficult to make a clear-cut distinction between religion, magic and medicine in the lives of traditional people, as they collectively constitute a domain of disease and cure, which is not part of Western thought on this matter.

The interconnectedness between religion, magic and medicine is clearly illustrated in the profession of the traditional healer. He/ she is not only a person with knowledge about manufacturing and applying medicines to cure a physically sick person, but also a practitioner of magic who uses various charms to cure people (Junod 1962b:451-458).

Since traditional healers are able to communicate with and appease the ancestral spirits and are also empowered to combat witchcraft and sorcery they are visited regularly. However, not all traditional medicines used in Mozambique are obtained from traditional healers. Many cures for everyday ailments are known to the local people, and most of the people grow or collect their own medicinal plants.

As has already been stated, traditional cures in Matutuine is important due to the fact that people have only limited access to modern medical facilities. There are hospitals/clinics at Ponta do Ouro, Zitundo, Bela Vista and Catuane, but, some people prefer to travel to Manguzi in South Africa to get medical aid. However, the cost of travelling to the few hospitals in Matutuine or to Manguzi, together with the doctor's fee, is too high for many people to pay. This increases their reliance on traditional remedies, especially with regard to minor ailments.

4. 2. 1. 2. Plants utilised for medicinal purposes

The information presented here was obtained from in-depth interviews with revered traditional healers (*izinyanga*) at Lagoa Piti. Two healers were escorted into the sacred Makhali forest, where they pointed out trees and plants they use as medicine as well as the diseases these plants can cure. After a plant was identified, the healers explained how they prepare specific medicines from its components. Additional information on plants used for medicinal purposes was gathered with the aid of the structured questionnaire, and the literature consulted.

Concerning the plant species discussed in the next section, it is important to note that only rarely is the whole plant utilised for medicine. In some instances, the bark is used, while in other instances the roots, leaves or tubers of a plant may be used. It is also important to note that different plants are usually mixed together to make medicines and that a plant is very rarely used on its own to cure a disease (Van Wyk, Van Oudtshoorn & Gericke 1997:10-16 and Hutchings *et al.* 1996:5-335).

- **Acacia karoo** –Sweet thorn (Pooley 1997:130; Van Wyk & Van Wyk 1997:494)
  Ronga names: *goane, nkaya* (De Koning 1993:146)
  Zulu names: *isikhombe, umunga* (Hutchings *et al.* 1996:121)

  The roots are used medicinally in Matutuine to treat stomach pains and are administered to pregnant woman to prevent abortion. Medicine from this tree is usually administered in the form of decoctions or infusions of the bark, leaves and gum (Van Wyk *et al.* 1997:24). Neither Liengme (1981:503) nor Els (1996:267) indicates any medicinal usage of this tree amongst Tsonga people who live in South Africa.

  In the Cape, the bark and leaves are used as a remedy for dysentry and diarrhoea (Van Wyk *et al* 1997:24). The gum, once exported as 'Gomme du Cap' (Cape Gum) for use in the confectionary trade, is used medicinally for oral thrush (Venter & Venter 2000).

Tests have shown that this tree has real medicinal value. Both the bark and fruit contain tannin. It has also been found that parts of the tree contain acacatechin, catechutannic acid and quercetin, which makes it useful in the treatment of diarrhoea (Van Wyk *et al.* 1997:24; also see Hutchings *et al.* 1996 and Rood (1994:50).

- **Acridocarpus natalitius** – Moth fruit (Pooley 1997:206)
  Ronga name: *mabophe* (De Koning 1993:148)
  Zulu names: *umabophe, umabophe-omkhulu* (Hutchings *et al.* 1996:159)

  The roots are used medicinally in Matutuine as a cure for haemorrhoids. Tsonga people also use the roots as purgatives (a substance that causes evacuation of the bowels) and ointments. Amongst the Zulu and amongst other peoples in Africa, parts of the plant are used in war, protective and love charms to protect or to magically enhance the qualities of the user (Hutchings *et al.* 1996:159).

- **Adenia gummifera** (Pooley 1997:338)
  Ronga name: *kwavikwavi* (De Koning 19993:149)
  Zulu names: *imfulwa, impinda, impindamshaya, isifulwane* (Hutchings *et al.* 1996:208)

  In the research area, the roots are ground and mixed with water into a thick paste. This paste is then put into hot water and used in a bath to protect a person from witchcraft. The Zulu and the Ronga in Southern Mozambique also use root decoctions for malaria and leprosy and they make a steam bath with the leaves to treat malaria (Hutchings *et al.* 1996:208).

- **Albizia versicolor** –Broad leaved false thorn (Pooley 1997:122; Van Wyk & Van Wyk 1997:506)
  Ronga names: *ampiso, mbhesu, muvambangoma* (De Koning 1993:153)
  Zulu name: *umvangazi* (Grant & Thomas 1998:300)

  A decoction made from the boiled roots is administered to women in the research area during pregnancy to prevent abortion. Tsonga who live in the Northern Province and Mpumalanga Lowveld use the root and bark to make a medicine with which to perform exorcisms (Liengme 1981:504).

  The root-bark is used by African people in Southern Africa as an enema and purgative. The plant is also used as a headache cure, while a bark infusion is used to wash sore eyes and to treat skin diseases (Venter & Venter 2000).

- **Anacardium occidentale** – Cashew (Van Wyk & Gericke 2000:120)
  Ronga name: *kanyu* (De Koning 1993:156)
  Zulu name: *uhlobo lwamantongomane oluvela eMelika* (Doke *et al.* 1996:64)
  Portuguese names: *caju, cajueiro, castanha* (De Koning 1993:156)

  Bark infusions are used medicinally in Matutuine to treat stomach complaints. Van Wyk & Gericke (2000:120) indicate that bark tinctures are used medicinally in Mozambique to treat diabetes. The bark is also used to treat dysentery and apthous ulcers. Leaf infusions are used to treat coughs and are applied topically for burns and other skin complaints.

- **Annona senegalensis** – Wild custard-apple (Van Wyk & Van Wyk 1997:156)
  Ronga name: *antshova, marompha, umthova, murhompfa, muyembe* (De Koning 1993:157)
  Zulu names: *isiphofu, umthofa, umhlalajuba* (Pooley 1997:94)

  A root emetic (a substance that causes vomiting) is used medicinally in Matutuine to treat stomach-aches. Neither Els (1996:268) nor Liengme (1981:504) specify any medicinal uses of this plant by Tsonga living in South

Africa. Hutchings *et al.* (1996:74) have recorded medicinal uses of the roots of this plant by the Zulu.

- **Balanites maughamii** – Green thorn (Pooley 1997:182; Van Wyk & Van Wyk 1997:376)
  Ronga name: *nulu, nulo* (De Koning 1993:160; Liengme 1981:505)
  Zulu names: *ipamu, iphamba, umnulu* (Hutchings *et al.* 1996:151)

  A paste made from the ground roots is used in Matutuine to chase away evil spirits. The same use of the roots has been recorded amongst the Tsonga in South Africa (Liengme 1981:505), and also amongst Zulu who use both the roots and bark in protective charms to keep away evil spirits (Hutchings *et al.* 1996:151).

  In Mozambique a paste from the bark is cooked and administered orally as a general tonic. The bark is also cooked with beans for haemuturia. Bark and root decoctions are also used as emetics (a substance that causes vomiting) and a bark infusion is used as a refreshing bath (Van Wyk & Gericke 2000:142; also see Els 1996:268; Van Wyk *et al.* 1997:52).

- **Brachylaena discolor** – Coast silver oak (Van Wyk & Van Wyk 1997:110)
  Ronga names: *mphahlakhuhla, phahla, pasha, umphasa* (De Koning 1993:165)
  Zulu names: *iphahla, umduli* (Grant & Thomas 1998:150; Pooley 1997:488)

  Of the respondents, 10% said that they use this plant as a cure for general ailments. The Zulu use the leaves of this tree in purgatives and anthelmintics (a medicine that destroys or expels parasitic intestinal worms) (Hutchings *et al.*1996:151, 153, 157, 265; also see Venter & Venter 2000).

- **Bridelia cathartica** – Blue sweetberry (Pooley 1997:216)
  Ronga name: *munangati* (De Koning 1993:167)
  Zulu names: *umnangasi, umngwangazi, umthundangazi* (Hutchings *et al.* 1996:165)

  This plant is used in traditional medicine in Matutuine. It has many magical applications amongst the Zulu and is used against witchcraft in Natal and Zimbabwe (Hutchings *et al.* 1996:165). Besides the various medicinal uses of the plant, the wood is used for the construction of fish-kraals on the Kosi Bay lakes (Pooley 1997:216; also see Van Wyk & Gericke 2000:36).

- **Bridelia michrantha** – Mitzeeri (Pooley 1997:218; Van Wyk & Van Wyk 1997:188)
  Ronga names: *ushonge*, *mindzere* (Liengme 1981:505)
  Zulu names: *umshonge, umhlahle, incinci* (Hutchings *et al* 1996:165)

  Boiled roots are administered to women to relieve pre-menstrual pains. It is also used in traditional medicine as an abortifacient (a substance that induces delivery) (Van Wyk & Gericke 2000:182). Tsonga healers in South Africa use the bark to make a remedy for stomach complaints (Liengme 1981:505). Indigenous people in Southern Africa also use the leaves as a treatment for sore eyes. Powdered roots, mixed with oil and butter, are applied to the scalp as a headache cure (Rood 1994:45-46). The fruit is also edible when ripe and has a currant-like taste (Venter & Venter 2000; also see Hutchings *et al.* (1996:165).

- **Carica papaya** - Pawpaw (Van Wyk & Gericke 2000:122).
  Portuguese name: *papaieira* (De Koning 1993:169).

  Root decoctions and infusions are used in Matutuine to treat stomach ailments, malaria and venereal disease. Van Wyk & Gericke (2000:122) explain that root infusions are taken for gonorrhoea in Mozambique. To treat dehydration in infants, the root is mixed with their porridge. The seeds are also used

medicinally, taken in small doses as a vermifuge (a substance that destroys or causes the expulsion of parasitic intestinal worms), and in larger doses as an abortifacient.

- **Dicrostahys cinerea** – Sickle bush (Pooley 1997:142; Van Wyk & Van Wyk 1997:500)
  Ronga names: *andzenga, ndzenga, munga, ntenge, tengendi, tsenga, tyenga* (De Koning 1993:191)
  Zulu names: *ugagane, ugegane, umthezane* (Hutchings *et al.* 1996:125)

  In Matutuine this tree is used in various traditional medicines. The Tsonga who live in South Africa use the bark as a remedy for, amongst other things, a sore throat, headaches, intestinal worms, toothache, diarrhoea, venereal disease and snakebite (Els 1996:272-273; also see Hutchings *et al.* 1996:125 and Venter & Venter 2000).

- **Garcinia livingstonei**– African mangosteen (Pooley 1997:322; Van Wyk & Van Wyk 1997:360)
  Ronga name: *maphimbe* (De Koning 1993:203)
  Zulu names: *umphimbi, isihlumanye, ugobandlovu* (Hutchings *et al.* 1996:204)

  The tree is used in traditional medicine in Matutuine. The Zulu also use this plant medicinally. The roots are used in aphrodisiacs and branches are placed on graves (Hutchings *et al.* 1996:204). Liengme (1981:508) does not specify any medicinal applications for this tree by Tsonga people in South Africa.

- **Landolphia kirkii** – Landolphia (Moll 1981:284)
  Ronga names: *mbungwa, maungo, mawungu, umbengwane* (De Koning 1993:126)
  Zulu name: *umbungwa* (Pooley 1997:430)

  According to spokespersons, meal made by mixing the roots of this plant with those of the Green thorn (*Balanites maughamii*) and other plants is eaten by

izinyanga to improve their magical and healing powers. Liengme (1981:509) does not indicate any medicinal application of this plant by Tsonga people in South Africa.

- **Melia azedarach** – Umbrella tree (Pooley 1997:200)
  Ronga name: *siringa* (De Koning 1993:224)
  Zulu name: *umsilinga* (Hutchings *et al.* 1996:156)

  The plant is used in traditional medicine in Matutuine. The Zulu use the leaves to cure abdominal pains and as anthelmintics. Leaves are also used to treat epileptic fits. All parts of this plant are reported to be toxic. The fruit is more toxic than the leaves, bark or flowers (Hutchings *et al.* 1996:156).

- **Momordica balsamina** – Bursting beauty (Hutchings *et al.* 1996:304)
  Ronga names: *nkaka, inkakana, cacana* (De Koning 1993:227)
  Zulu names: *inkaka, intshungu* (Hutchings *et al.* 1996:304)

  This vegetable is cultivated as a foodstuff and is also used medicinally in Matutuine. Both the leaves and the oval, pointed fruits are eaten (Junod 1962b:14). Medicinally, the roots are used in Matutuine as a cure for malaria. A total of 12.5% of respondents said that they use this plant medicinally. The Zulu also use this plant medicinally as a cure for stomach complaints, for burns and to treat diabetes. It is also used medicinally in West Africa and America (Hutchings *et al.* 1996:304; also see Els 1996:187).

- **Ozoroa obovata** –Broad-leaved resin tree (Pooley 1997:248; Van Wyk & Van Wyk 1997:356)
  Ronga name: *xifuka* (De Koning 1993:231)
  Zulu names: *isifica, isifice, isifico* (Hutchings *et al.* 1996:180)

  In the research area this tree is used in various remedies. The roots are eaten, together with the roots of the Sickle bush (*Dicrostahys cinerea*) by *izinyanga* to strengthen their magical and healing powers. The Zulu also use the roots

medicinally for dysentery and inflammation of the chest (Hutchings *et al.* 1996:180).

- **Rhus natalensis** – Natal karee (Van Wyk & Van Wyk 1997:404)
  Ronga name: *ximunyamunyane* (De Koning 1993:242)
  Zulu name: *inhlokosinyane* (Pooley 1997:256)

  The roots are used medicinally in Matutuine to treat various ailments. The roots are also used medicinally by indigenous people in Southern Africa for stomach complaints, boils, inflammation of the skin, influenza and wounds (Rood 1994:6).

- **Sarcostemma viminale** – Caustic vine (Pooley 1998:552)
  Ronga names: *nentha, leta, linenta, lineta* (De Koning 1993:245)
  Zulu names: *igotsha, umbelebele* (Hutchings *et al.* 1996:254)

  Water is fortified by steeping the roots and leaves of the plant in it. Women who have given birth bathe in the water to regain their strength. Tsonga people in South Africa put the milky sap of the plant in food given to cows in the belief that it will make them produce more milk (Liengme 1981:511; also see Hutchings *et al.* 1996:254).

- **Sclerocarya birrea** – Marula (Pooley 1997:240; Van Wyk & Van Wyk 1997:446)
  Ronga names: *nkanye, kanhu, kanho* (De Koning 1993:246)
  Zulu name: *umganu* (Hutchings *et al.* 1996:177)

  Quantitative results indicate that the marula is used in traditional medicine in Matutuine by 9% of the people. Tsonga people in South Africa use a bark extract as a purgative (Els 1996:279). Throughout Southern Africa, the bark is used for dysentery and diarrhoea (Hutchings *et al.* 1996:177).

The Tsonga people of South Africa and Mozambique use oil obtained from the seeds for cooking, as a moisturiser for women and as a baby oil (Van Wyk & Gericke 2000:24).

A bark extract mixed with brandy has furthermore been used in southern Africa as a prophylactic against malaria (Rood 1994:7). Chemical analysis has shown the bark to contain 20.5% tannin and some alkaloids. Furthermore, the inner bark has proved to have an antihistaminic action against the burns of hairy caterpillars and insects (Venter & Venter 2000). It is also said to take away the irritation caused by scorpion stings (Rood 1994:7).

- **Spirostachys africana** –Tamboti (Pooley 1997:230; Van Wyk & Van Wyk 1997:108)
  Ronga names: *xihlati, xihlangamahlo* (De Koning 1993:252)
  Zulu names: *umthombothi, injuqu, ubanda* (Hutchings *et al.* 1996:173)

  The tree is used medicinally throughout the Matutuine District. It has been recorded that the Ronga of southern Mozambique use it for kidney ailments and as a purgative (Hutchings *et al.* 1996:173). It is also used for similar medicinal purposes by Tsonga people in South Africa. They use it as a purgative and as a cure for stomach pains (Els 1996:279).

  The Zulu name for this tree, *umthomboti* literally means 'poisonous tree' (Rood 1994:49). Most parts of the tree are poisonous. The bark and latex have been suspected of causing human deaths (Hutchings *et al.* 1996:173). Therefore only very small quantities of the bark are used as a purgative and cure for diarrhoea, dysentery and abdominal pains (Venter & Venter 2000).

  In Zimbabwe the bark is used as a fish poison. The wood is not used in cooking fires as it is believed to poison food (Hutchings *et al* 1996:173; also see Van Wyk & Gericke 2000:212, 244).

- **Strychnos madagascariencis** – Black monkey orange (Van Wyk & Van Wyk 1997:250)
  Ronga names: *makwakwa, nkwakwa* (De Koning 1993:255)
  Zulu name: *umkwakwa* (Pooley 1997:418)

  The roots are administered as a cure for haemorrhoids. In Matutuine 5.5% of the people use parts of this tree for medicinal purposes. In South Africa Tsonga people use the bark as an emetic, and the roots as a charm given to a man after the death of his wife to protect him from further misfortune (Els 1996:280).

- **Strychnos spinosa** – Green monkey orange (Pooley 1997:420; Van Wyk & Van Wyk 1997:254)
  Ronga names: *masala, ansala* (De Koning 1993:255)
  Zulu names: *ihlala, umhla, umhlahla* (Hutchings *et al.* 1996:238)

  The roots are used in Matutuine as a medicine to treat stomach ailments. Of the respondents to the questionnaire survey, 15% said that they use the roots of this tree medicinally. Tsonga people in South Africa mix ground leaves from the tree with water as a cure for sore eyes (Els 1996:279). The tree is used medicinally in KwaZulu-Natal and in other areas of Africa (Hutchings *et al.* 1996:238-239). The roots are used medicinally by indigenous people in Southern Africa as a snakebite cure and as an emetic administered for fever. A boiled extract from the roots and leaves is believed to relieve pain (Rood 1994:69).

- **Tabernaemontana elegans** –Toad tree (Pooley 1997:432; Van Wyk & Van Wyk 1997:312)
  Ronga names: *makahlwani, kahlu, kahlo, kahluane* (De Koning 1993:257)
  Zulu names: *umkhalwana, umkhadlu* (Hutchings *et al.* 1996:245)

  Cooked roots of the tree are mixed with other plants to produce a remedy for haemorrhoids. The latex from the stem is mixed with milk to fortify the milk.

The Tsonga also use the latex as a styptic (an agent that arrests bleeding), and the roots for pulmonary complaints (problems associated with the lungs) (Hutchings *et al.* 1996:245).

- **Terminalia sericia** – Silver cluster-leaf (Pooley 1997:364; Van Wyk & Van Wyk 1997:174)
  Ronga names: *nkonola, canola, konono, mukununu* (De Koning 1993:260)
  Zulu names: *amangwe, umkhonono* (Hutchings *et al.* 1996:216)

  The tree is used in traditional medicine in Matutuine. The Tsonga in South Africa use the bark as a cure for diarrhoea (Els 1996:280), and the root as an emetic (Liengme 1981:512).

  Tests have shown triterpenoids, sericic acid and sericoside to be the main chemical constituents of the roots of plants from Mozambique (Hutchings *et al.* 1996:217). Triterpenoids are known for their antimicrobial (a substance with the ability to destroy or inhibit the growth of micro-organisms) and anti-inflammatory (a substance that curbs swelling and inflammation) activity. Tannin found in parts of the tree is believed to be responsible for the antidiarrhoeal effects of medicine made from this tree (Van Wyk *et al.* 1997:254; see also Rood 1994:23 and Van Wyk & Gericke 2000:308).

- **Tricalysia capensis** - Cape coffee (Van Wyk & Van Wyk 1997:288)
  Ronga name: *xihlobongo* (De Koning 1993:263)
  Zulu names: *ibicongo, indulwane* (Pooley 1997:466)

  In the research area a paste made from the ground roots and leaves is put in incisions made on the head of a person with a razorblade (*hlavela*) to relieve headache.

- **Trichilia emetica** - Natal mahogany (Pooley 1997:204; Van Wyk & Van Wyk 1997:468)
  Ronga names: *ankhuhlu, Makhuhlelo, nkhuhlu* (De Koning 1993:264)
  Zulu names: *ixolo, umathunzini, umkhuhla* (Hutchings *et al.* 1996:158)
  Portuguese name: *mafurreira* (De Koning 1993:264)

  In Matutuine a leaf and bark extract is administered as an enema for diarrhoea. The plant is said to be very poisonous. Enemas made from the plant are believed to cause sweating and vomiting and have been suspected of causing death. The bark and leaves contain tannin and the purgative effect of the bark is attributed to its resin content. The resin and tannin found in the root bark is furthermore presumed to have anti-malarial properties (Hutchings *et al.* 1996:158).

  The liquid extracted from the seeds is also used for medicinal purposes in the research area. According to Hutchings *et al.* (1996:158) the Ronga use the seed oil for dysentery and rheumatism. A relatively large percentage (13%) of respondents said that they use the seeds of this tree for medicinal purposes. The Tsonga people who live in the Mpumalanga province also use the seed-oil for medicinal purposes (Liengme 1981:512).

  People throughout Matutuine and northern KwaZulu-Natal use the seeds to make soap. The seeds are soaked and cooked to produce a liquid which they use as soap. After the seeds have been cooked, they also scoop the fat, which rises to the surface of the pot, and store it for later use (Pooley 1980:471).

  Chemical tests have shown the seed-oil to have real medicinal value. A large number of limonoids have been extracted from the seed-oil. Limonoids of the *Meliaceae* family, to which this plant belongs, are known to have antimicrobial and anti-inflammatory activity (Van Wyk *et al.* 1997:260; also see Venter & Venter 2000).

- **Vangueria infausta** – Wild medlar (Pooley 1997:470; Van Wyk & Van Wyk 1997:274)
  Ronga names: *amfilo, mapilo, mapfilo, pilo* (De Koning 1993:267-268)
  Zulu names: *umthulwa, umvili, umviyo* (Hutchings *et al.* 1996:298)

  According to the questionnaire survey, 5.5% of the people in Matutuine use parts of this tree medicinally. A root decoction is used as a cure for malaria and fever. Tsonga in the Mhala district in Mpumalanga use root and leaf decoctions for the same purpose. They furthermore administer root and leaf decoctions for toothache, breast complaints and as a purgative (Els 1996:281). It has been found that the plant is used similarly in Mozambique as a cure for dental pain (Hutchings *et al.* 1996:298). It has also been recorded that the roots are used in the treatment of pneumonia, coughs and chest complaints (Venter & Venter 2000), and as a treatment for intestinal worms (Rood 1994:89) by the indigenous people of Southern Africa.

- **Ximenia caffra** – Natal sourplum (Van Wyk & Van Wyk 1997:130)
  Ronga name: *antshunduluka* (Pooley 1997:90)
  Zulu names: *amathunduluka, umgwenya, umthunduluka* (Hutchings *et al.* 1996:83)

  An extract from the boiled roots is used as a general medicine in Matutuine. The Tsonga in South Africa use the bark and leaves medicinally to treat diarrhoea, eye inflammations, venereal disease and intestinal worms (Els 1997:281). The Zulu also use the leaves for eye inflammations and the roots as a cure for general ailments (Hutchings *et al.* 1996:83; also see Rood 1994:76).

- **Zanthoxylum davyi** – Knobwood (Pooley 1997:184; Van Wyk & van Wyk 1997:442)

  Ronga name: *xhinongwane*

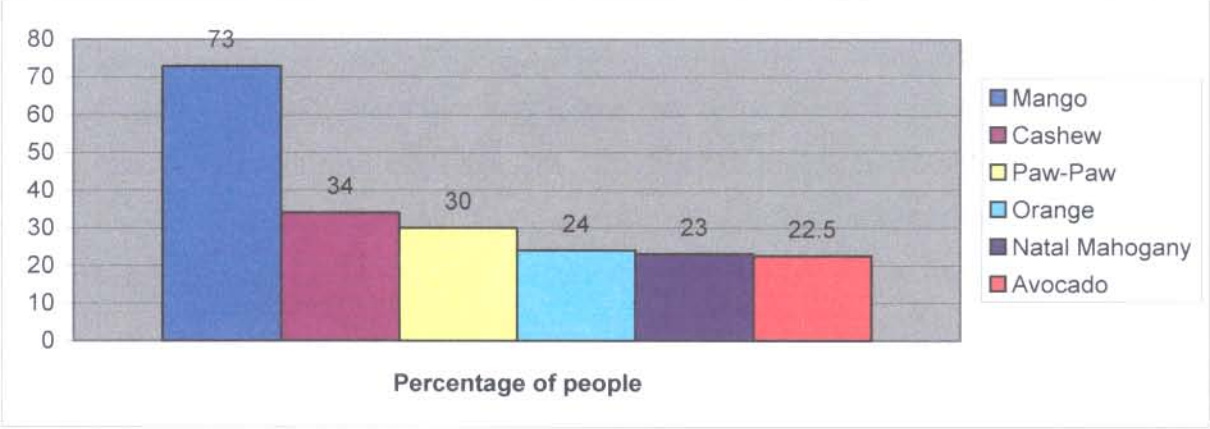
  Zulu names: *isimungumabele, isinungwane, umlungumabele* (Hutchings *et al.* 1996:152)

  In the research area the smoke from burned leaves and roots are inhaled by *izinyanga* to strengthen their magical and healing powers. The Zulu also use root decoctions as tonics for both humans and animals. The bark is also cooked, powdered and chewed for coughs and colds amongst the Zulu. The Mpondo and the Venda use the bark as a treatment for snakebite. The Venda use the thorns for infected wounds and the roots as a cure for sore throats, mouth ulcers, venereal diseases and as an aphrodisiac (Hutchings *et al.* 1996:152).

4. 2. 2. Fruit and shade utilisation

Fruit is an important nutritional supplement for people who live in the research area. Fruit are gathered from trees that grow wild, but people also plant their own fruit trees. Of the respondents to the questionnaire survey, 88% said that they plant trees, and of those that do 86% said that they do this to get fruit. The trees that are planted the most are set out in Figure 7.

Figure 7: Trees planted in the Matutuine District.



The fruit of all these trees are eaten. The Natal Mahogany is the only one of these that is not an exotic tree.

- **Anacardium occidentale** – Cashew (Van Wyk & Gericke 2000:120)
  Ronga name: *kanyu* (De Koning 1993:156)
  Zulu name: *uhlobo lwamantongomane oluvela eMelika* (Doke *et al.* 1996:64)
  Portuguese names: *caju, cajueiro, castanha* (De Koning 1993:156)

  The cashew nut originated in South America and was brought to Africa by early Portuguese explorers. A large fleshy structure is formed when the flower stalk and base develop and swell up. The fruit, with the nut inside it, is attached to this fleshy part or cashew apple. The cashew apple (the fruit) is eaten when it has ripened or is fermented to produce an alcoholic drink (Van Wyk & Gericke 2000:19).

  The nut has formed an important part of the diet of the people of Mozambique for a long period of time. It is very nutritious and contains high levels of protein (Van Wyk & Gericke 2000:19).

- **Annona senegalensis** – Wild custard-apple (Van Wyk & Van Wyk 1997:156)
  Ronga names: *antshova, marompha, umthova, murhompfa, muyembe* (De Koning 1993:157)
  Zulu names: *isiphofu, umthofa, umhlalajuba* (Pooley 1997:94)

  The fruit is up to 40 millimetres in diameter. It is best picked while it is still green and then left in a dark warm place to turn yellow or orange (Van Wyk & Gericke 2000:34). Very few people who stay in the research area (1.5%) said that they eat the fruit from this tree. The Tsonga people in South Africa eat the fruit pulp, but the fruit is not common enough in South Africa to be an important part of the local diet. Children in South Africa also use the empty fruit as toys (Els 1996:268; Liengme 1981:504). In northern KwaZulu-Natal the fruit is also eaten (Pooley 1980:474).

- **Carica papaya** - Pawpaw (Van Wyk & Gericke 2000:122)
  Portuguese name: *papaieira* (De Koning 1993:169)

  Pawpaws originate from South American. They are relatively rich in Vitamin C, calcium and potassium (Mahan & Arlin 1992:732-733). Only 6.5% of respondents said that they eat pawpaws, but pawpaws are commonly seen throughout the study area where they grow well in the tropical climate.

- **Dialium schlechteri** – Zulu podberry (Pooley 1997:152; Van Wyk & Van Wyk 1997:450)
  Ronga names: *tinsiva, enziva, tithiba, ziba* (De Koning 1993:190-191)
  Zulu name: *umthiba* (Hutchings *et al.* 1996:129)

  The fruit pulp is edible and a refreshing drink is made by mixing it with milk or water (Van Wyk & Van Wyk 1997:450). Of the respondents, 12% said that they eat this fruit.

- **Diospyros mespiliformis** – Jackal-berry (Van Wyk & Van Wyk 197:180)
  Ronga names: *mfuma, mfoma, mtoma* (De Koning 1993:193)

  The tree bears yellow to purplish berry-like fruit of up to 25 millimetres in diameter (Van Wyk & Van Wyk 1997:180). Only one respondent said that he eats this fruit. However, the fruit is very nutritious and contains protein (1.1g/100g), carbohydrate (22g/100g), sodium (13.7mg/100g), potassium (417mg/100g), phosphorus (27.8mg/100g) and Vitamin C (25mg/100g) (Venter& Venter 2000). The fruit can be eaten raw or stored as a preserve for later use (Van Wyk & Gericke 2000:42).

  The fruit is especially valued in the Northern Province and Mpumalanga Lowveld in South Africa because it ripens in late winter when other natural foodstuffs are scarce. It is therefore a very important food resource (Liengme 1981:507).

- **Garcinia livingstonei**– African mangosteen (Pooley 1997:322; Van Wyk & Van Wyk 1997:360)
  Ronga name: *maphimbe* (De Koning 1993:203)
  Zulu names: *umphimbi, isihlumanye, ugobandlovu* (Hutchings *et al.* 1996:204)

  The African mangosteen bears bright orange-red berries, approximately 30 millimetres in diameter. It is widely used for eating and for brewing beer (Van Wyk & Gericke 2000:42). Only 4.5% of respondents said that they collect the fruit from this tree to eat. Not a single respondent said that it is the fruit he eats the most or likes to eat the most.

  The Tsonga people who stay in the Northern Province and Mpumalanga Lowveld also eat the fruit and use it to make alcoholic beverages, but the plant is not common there (Liengme 1981:508).

- **Landolphia kirkii** – Landolphia (Moll 1981:284)
  Ronga names: *mbungwa, maungo, mawungu, umbengwane* (De Koning 1993:126)
  Zulu name: *umbungwa* (Pooley 1997:430)

  Landolphia kirkii is a creeper found throughout Maputaland. It produces a large spotted yellow-green fruit. Of the respondents, 19% indicated that they collect fruit from this tree. The fruit is also popular in northern KwaZulu-Natal where it is collected for subsistence and commercial purposes (Pooley 1980:472).

- **Manilkara discolor** – Forest milkberry (Pooley 1997:394; Van Wyk & Van Wyk 1997:94)
  Ronga names: *tinweva, nheve, nhuebe* (De Koning 1993:221)
  Zulu names: *umnqambo, umweba-wentaba* (Hutchings *et al.* 1996; 231)

  Milkberry is the common name given to *Manilkara discolor* and *Manilkara mochisia*, due to its milky latex (Van Wyk & Gericke 2000:48). It bears

yellow berries that are edible and tasty (Van Wyk & Van Wyk 1997:94). Of the respondents, 29% said that they eat these berries. In fact, 90% said that it is the fruit they eat the most and like to eat the most.

- **Manilkara mochisia** – Lowveld milkberry (Pooley 1997:394; Van Wyk & Van Wyk 1997:96)
  Ronga names: *nambo, nuambu, nuwamba* (De Koning 1993:222)
  Zulu names: *nwambu, umncambu* (Hutchings *et al.* 1996:231)

  This tree produces a large amount of oval yellow berries. It is considered to have commercial potential as a fruit tree in South Africa (Van Wyk & Gericke 2000:48). Of the people interviewed, 11% said that they eat the fruit from this tree, and also value it for the shade it provides.

- **Mimusops caffra** – Coastal red milkwood (Pooley 1997:390; Van Wyk & Van Wyk 1997:96)
  Ronga names: *tsole, ndzole, mtole, munore, tinsole* (De Koning 1993:225)
  Zulu names: *umkhakhayi, umthunzi* (Grant & Thomas 1998:154)

  The tree bears oval orange-red berry-like fruit with a hair-like tip (Grant & Thomas 1998:157). Although only two respondents said that they eat the fruit from this tree, the fruit is reported to be very tasty. The fruit is also an important food source for monkeys, and bushpigs eat the fruit that has fallen to the ground (Grant & Thomas 1998:156; also see Pooley 1980:476 and Van Wyk & Gericke 2000:48).

- **Saccharum officinarum** – Sugarcane (Van Wyk & Gericke 2000:112)
  Ronga name: *moba* (De Koning 1993:244)
  Zulu name: *umoba* (Doke *et al.* 1996:480)
  Portuguese names: *cana de acucar, cana doce* (De Koning 1993:244)

  Sugarcane is commonly chewed throughout the research area, especially by young children. Since it contains high levels of carbohydrates, there is no

doubt that it is an important supplement to the diets of people in rural areas (Van Wyk & Gericke 2000:112).

- **Sclerocarya birrea** – Marula (Pooley 1997:240; Van Wyk & Van Wyk 1997:446)
  Ronga names: *nkanye, kanhu, kanho* (De Koning 1993:246)
  Zulu name: *umganu* (Hutchings *et al.* 1996:177)

  Van Wyk and Gericke (2000:56) regard the marula as probably the most important of all Southern African fruit trees. The fruit is oval and approximately the size of a plum. It drops to the ground while still green, where it ripens to a pale yellow colour that gives off a strong fruity smell (Grant & Thomas 1998:307). The fruit is delicious when eaten fresh and is very nutritious. It contains exceptionally high levels of Vitamin C (67.9mg/100g). It is also a valuable source of calcium, magnesium, phosphorus, potassium, fructose, glucose and sucrose (Venter & Venter 2000).

  The fruit is very popular inside the research area. Of the respondents, 25% said that they eat the fruit. In fact, 4% said that it is the fruit that they eat the most and 6.5% said that it is the fruit that they like to eat the most. Not only is the fruit valued in its raw state, but an alcoholic beverage is also made from it, and the tree is highly valued for the shade it provides.

  In northern KwaZulu-Natal the fruit from this tree is also collected in piles when it has ripened and is eaten raw. It is, however, mainly used to brew alcoholic beverages. When the alcoholic beverages are made, the nuts inside the pips are taken out and stored. After the nuts have been dried, they are eaten or sold. Since the fruit is so highly valued, the trees, especially the female trees, are left standing when land is cleared for agriculture (Pooley 1980:475; also see Els 1996:278 and Liengme 1981:511).

- **Strychnos madagascariensis** – Black monkey orange (Van Wyk & Van Wyk 1997:250)
  Ronga names: *makwakwa, nkwakwa* (De Koning 1993:255)
  Zulu name: *umkwakwa* (Pooley 1997:418)

  The fruit from this tree is similar in size to that of *Strychnos spinosa*, but it is bitter if eaten raw (Pooley 1980:477). The fruit is very popular. Indeed, 34.5% of respondents collect fruit from this tree; 12% of respondents said that they use this fruit the most and 3% said that they like this fruit the most.

  In northern KwaZulu-Natal people remove the orange flesh from the seeds to allow the seeds to dry. The dry seeds are then pounded into a type of flour which is eaten with sugar or honey (Pooley 1980:477). The Tsonga people in South Africa eat it in the same way (Liengme 1981:512; also see Els 1996:280 and Junod 1962b:17).

- **Strychnos spinosa** – Green monkey orange (Pooley 1997:420; Van Wyk & Van Wyk 1997:254)
  Ronga names: *masala, ansala* (De Koning 1993:255)
  Zulu names: *ihlala, umhla, umhlahla* (Hutchings *et al.* 1996:238)

  The tree bears large green fruit, up to 120 millimetres in diameter. When the fruit ripens, it turns a dull yellowish colour (Van Wyk & Van Wyk 1997:254). As many as 65% of respondents said that they collect fruit from this tree; 32% of respondents said that it is the fruit that they eat the most, but only 12% said that it is the fruit that they like the most. The fruit is thus commonly used, and the tree is also valued for the shade it provides. The fruit is usually eaten raw from the tree, but can be collected and stored for later use. The fruit contains large stone-like seeds that give off a sour, yet sweet taste when sucked. The tree especially used in times of drought when it produces fruit in large quantities (Pooley 1980:477; also see Els 1996:279-280 and Liengme 1981:512).

- **Syzygium cordatum** - Water berry (Pooley 1997:372; Van Wyk & Van Wyk 1997:320)
  Ronga names: *amuhlu, mudoni, muhlu, muhlo, mushu* (De Koning 1993:257)
  Zulu name: *umdoni* (Grant & Thomas 1998:172)

  The tree bears small, red berry-like fruit that turn deep purple when they ripen (Grant & Thomas 1998:175). The fruit is edible, but bland (Van Wyk & Gericke 2000:58). The flesh of the ripe fruit tastes faintly like eucalyptus sweets (Venter & Venter 2000). A large percentage of people in the research area (30.5%) claim to eat the fruit. In fact, 16% of respondents said that they use this fruit the most of all fruits and 6.5% said that they favour this fruit the most. Wild animals also favour the edible berries from this tree. Monkeys, baboons, bushpigs, bushbabies and various wild birds eat the fruit (Grant & Thomas 1998:174). Besides its fruit, the shade of the tree is also valued; 29% of the people interviewed use it as a shade tree.

- **Tabernaemontana elegans** – Toad tree (Pooley 1997:432; Van Wyk & Van Wyk 1997:312)
  Ronga names: *makahlwani, kahlu, kahlo, kahluane* (De Koning 1993:257)
  Zulu names: *umkhalwana, umkhadlu* (Hutchings *et al.* 1996:245)

  The tree bears grey-green dotted paired fruit, which are joined at the base. When the fruit ripens, it opens to reveal black seeds in a bright orange pulp. When the fruit is ripe, the pulp is edible (Van Wyk & Van Wyk 1997:312). Only one respondent said that he eats the fruit from this tree. In northern KwaZulu-Natal the fruit is also eaten (Pooley 1980:477).

- **Trichilia emetica** - Natal mahogany (Pooley 1997:204; Van Wyk & Van Wyk 1997:468)
  Ronga names: *ankhuhlu, mukhuhlu, nkhuhlu* (De Koning 1993:264)
  Zulu names: *ixolo, umathunzini, umkhuhla* (Hutchings *et al.* 1996:158)
  Portuguese name: *mafurreira* (De Koning 1993:264)

  The seeds of this tree used to be exported from Mozambique under the name *Mafura* or *Mafurreira* nuts (Venter & Venter 2000). The seeds are red and black and covered in a bright red pulp (Grant & Thomas 1998:281). Most (51%) people said that they eat these seeds; 30% of respondents said that they use these seeds the most of all wild fruits and 24% said that they like these seeds the most. The seeds are also eaten in northern KwaZulu-Natal (Pooley 1980:475).

  In both northern KwaZulu-Natala and the research area this tree is conserved as a shade tree (Pooley 1980:475). Most people (50%) said that they utilise this tree for its shade.

- **Vangueria infausta** – Wild medlar (Pooley 1997:470; Van Wyk & Van Wyk 1997:274)
  Ronga names: *amfilo, mapilo, mapfilo, pilo* (De Koning 1993:267-268)
  Zulu names: *umthulwa, umvili, umviyo* (Hutchings *et al.* 1996:298)

  The tree bears a fleshy, plum like fruit that turns yellow-brown when it ripens (Grant & Thomas 1998:179). Only 2% of respondents said that they collect the fruit from this tree. In northern KwaZulu-Natal the fruit is also collected (Pooley 1980:478). People eat the fruit raw or dry the soaked pulp to eat later. The seeds are also roasted (Venter & Venter 2000), and the fruit can be distilled into brandy (Grant & Thomas 1998:178).

  The fruit is extremely nutritious. It contains Vitamin C (3.7mg/100g), protein (1.4g/100g), carbohydrate (28g/100g), sodium (28mg/100g) and nicotinic acid

(0.61mg/100g), and is also a rich source of calcium and magnesium (Venter & Venter 2000).

- **Ximenia caffra** – Natal sourplum (Van Wyk & Van Wyk 1997:130)
  Ronga name: *antshunduluka* (Pooley 1997:90)
  Zulu names: amathu*nduluka, umgwenya, umthunduluka* (Hutchings *et al.* 1996:83).

  The bright red fruit, which is tasty, but very sour near the seed (Van Wyk & Van Wyk 1997:130), is eaten in Matutuine. People in northern KwaZulu-Natal also eat the fruit (Pooley 1980:473).

4. 2. 3. Beverages made from fruit and plants

Two methods are used to make alcoholic beverages from wild fruit and plants in the study area, fermentation and distillation. Beer or cider is made from maize, marula, cashew apples, sugarcane, *ilala* palms and wild date palms. A strong spirit, called *tontonto* (similar to South African *mampoer*), is also distilled from various fruit. The green monkey orange is especially favoured for this purpose, but *tontonto* is also made from bananas, pawpaws, pineapples, black monkey orange and various other fruit. The most important fruit with which alcoholic beverages are made, are (in order of the number of people who said they use those plants to make alcoholic beverages): marula, sugarcane, green monkey orange, lala palm and cashew.

- **Anacardium occidentale** – Cashew (Van Wyk & Gericke 2000:120)
  Ronga name: *kanyu* (De Koning 1993:156)
  Zulu name: *uhlobo lwamantongomane oluvela eMelika* (Doke *et al.* 1996:64)
  Portuguese names: *caju, cajueiro, castanha* (De Koning 1993:156)

  An alcoholic beverage called *bukanyu* is made through a process of fermentation from the cashew apple in the research area. A large number of respondents (19.5%) indicated that they make alcoholic beverages from this plant. Very few people (5.5%) said that the beverage is the best tasting

alcoholic drink and even fewer (2.5%) felt that the drink made from this fruit was very strong (i.e. had a high alcohol content).

- **Carica papaya** - Pawpaw (Van Wyk & Gericke 2000:122)
  Portuguese name: *papaieira* (De Koning 1993:169)

  In the research area an alcoholic beverage is made from pawpaw through a process of distillation. Pieces of cut fruit are boiled in a pot with water. The condensed liquid is caught on a lid placed on top of the pot, from where it is transported in a pipe-line to another container and left to cool down. The beverage is reported to be highly potent, with a high alcohol content.

- **Garcinia livingstonei**– African mangosteen (Pooley 1997:322; Van Wyk & Van Wyk 1997:360)
  Ronga name: *maphimbe* (De Koning 1993:203)
  Zulu names: *umphimbi, isihlumanye, ugobandlovu* (Hutchings *et al.* 1996:204)

  A beer called *xihimbe* is brewed from the fruit when it is available. The beer is also favoured in northern KwaZulu-Natal (Pooley 1980:472). The fruit, which ripen in December, are pressed between the hands and the liquid extracted in this manner is mixed with water and boiled. The foam rising to the surface is removed and the liquid is left to ferment for a few days. Due to its high alcohol content, the beer can be kept in a good condition for up to a year (Junod 1962b:41).

- **Hyphaene coriacea** – Lala palm (Van Wyk & van Wyk 1997:50).
  Ronga names: *milala, malala, anala* (Pooley 1997:52).
  Zulu name: *ilala* (Pooley 1997:52).

  'Ubusulu, the fermented sap of the *ilala* palm, is by far the most important of the beers or fermented drinks consumed in Tongaland' (northern KwaZulu Natal and South Southern Mozambique) (Felgate 1982:59). This observation

made by Felgate in 1962 is still valid today. Although only 33.5% of people interviewed tap palm wine, most drink it.

In the afternoons the people at Zitundo gather at the meeting place in the centre of the village to drink *ubusulu* or *sura*, as it is called due to the Portuguese influence. At Zitundo, palm wine is sold at R1-30 per litre. When this is compared with the price of bottled commercial beer sold at the shop in Zitundo for nearly R7 for half a litre, it is understandable why even the shopkeeper joins the group under the trees to drink *ubusulu*.

Ubusulu is not only an alcoholic drink, but also a valuable food source. It is a rich source of nicotinic acid, Vitamin C, potassium and magnesium. One litre of *ubusulu* provides 14% of the Recommended Daily Allowance (RDA) of magnesium, between 14 and 28% of the RDA of nicotinic acid and between 105 and 113% of the RDA of Vitamin C (Cunningham & Wehmeyer 1988:302-303). It is also a valuable source of protein (Felgate 1982:59). The starch-based diet of people in the study area, which is poor in these nutrients, is greatly supplemented by the nutrients found in palm wine.

The value of palm wine as a food source is enhanced by the fact that it is not seasonal, but available throughout the year. However, there is a seasonal variation in the amount of palm wine tapped, depending on marula beer production (Cunningham & Davies 1996:493). The largest concentration of *ilala* palms is in the area surrounding the Muzi or Futi swamp system. From there the wine is gathered and transported to every corner of Maputaland and the surrounding area (Felgate 1982:59-60). One such trading place is the market at Puza. There *ubusulu* is bought and sold by people from South Africa and Mozambique across the border fence.

In northern KwaZulu-Natal the fruit of the *ilala* palm is eaten and the nut is cracked to obtain the kernel (Pooley 1980:473). None of the respondents in Matutuine said that they eat the fruit of this palm tree.

- **Landolphia kirkii** – Landolphia (Moll 1981:284)

  Ronga names: *mbungwa, maungo, mawungu, umbengwane* (De Koning 1993:126)

  Zulu name: *umbungwa* (Pooley 1997:430)

  An alcoholic beverage is made from the fruit, but it is not a major industry. Only 3% of respondents said that they use the fruit to make beer.

- **Manilkara discolor** – Forest milkberry (Pooley 1997:394; Van Wyk & Van Wyk 1997:94)

  Ronga names: *tinweva, nheve, nhuebe* (De Koning 1993:221)

  Zulu names: *umnqambo, umweba-wentaba* (Hutchings *et al.* 1996: 231)

  Only 6.5% of respondents said that they use the fruit from this tree to make beer.

- **Phoenix reclinata** – Wild date palm (Pooley 1997:50)

  Ronga names: *mikinzu, musundu, mkindu* (De Koning 1993:236)

  Zulu name: *isundu* (Pooley 1997:50)

  Portuguese name: *palmeira de coconote* (De Koning 1993:236)

  The wild date palm grows in patches along the Pongola River (*Rio* Maputo in Mozambique) and the coastal lakes in South Africa and Southern Mozambique. The wild date palm is tapped in the same way as the *ilala* palm, but the yield per tree is much lower (Felgate 1982:61). The wine produced from this tree is also known as *ubusulu* or *sura* in Mozambique. According to Pooley (1980:473), it is known as *mgemani* in northern KwaZulu-Natal. It is not as popular as wine tapped from *ilala* palms, with only 11.5% of people interviewed in Matutuine saying that they use this plant to make beer.

- **Saccharum officinarum** – Sugarcane (Van Wyk & Gericke 2000:112)

  Ronga name: *moba* (De Koning 1993:244)

  Zulu name: *umoba* (Doke *et al.* 1996:480)

  Portuguese names: *cana de acucar, cana doce* (De Koning 1993:244)

Beer made from sugarcane is called *smobane* or *xiwayawaya*. It is also known as *isishimeyana*. It is a very popular alcoholic beverage throughout the area. A total number of 52.5% of respondents indicated that they brew *smobane*.

After the leaves have been stripped off the stalks, the sugarcane is cut into small pieces and crushed with a pounding block. The juice and crushed sugarcane is thereafter put into a large pot of boiling water. After it has boiled for between five and six hours the water is put through a conical basket that acts as a strainer (Felgate 1982:180).

After all the juice had been caught in a pot placed below the strainer, yeast is added. Residue from a previous brew is usually used as yeast. The liquid is then allowed to stand for a number of days. The amount of time that the liquid cooks and the amount of days that the liquid is left to stand has an influence on the taste and alcohol content of the beverage. Additional sugar may also be added and the liquid boiled again to increase its alcohol content (Felgate 1982:180).

Sugar is also added to palm wine and other alcoholic beverages to increase the alcohol content thereof. In northern KwaZulu-Natal and Southern Mozambique, sugar is added to palm wine to produce a drink called *shikokiyane*. *Xiwayawaya* or *smobane* is said to be the main ingredient for the original *shikokiyane* or *skokiaan*, which is a strong alcoholic drink known in Zimbabwe and Southern Mozambique (Van Wyk & Gericke 2000:122).

- **Sclerocarya birrea** – Marula (Pooley 1997:240; Van Wyk & Van Wyk 1997:446)
  Ronga names: *nkanye, kanhu, kanho* (De Koning 1993:246)
  Zulu name: *umganu* (Hutchings *et al.* 1996:177)

Most respondents (58.5%) said that they use this fruit to brew a beer called *bukanyi* with. In Zulu the beer made from the fruit is called *ubuganu*, after the Zulu name for the tree, which is *umganu* (Felgate 1982:62). Not only is a beer made from the fruit, but it is also used to make *tontonto*. The alcoholic beverage made from the marula is favoured throughout the area, with 26% of respondents saying it tastes the best of all alcoholic beverages.

The beer is only mildly intoxicating (Felgate 1982:62). Indeed, only 2.5% of respondents said that it is the strongest type of alcoholic beverage. The beer has a very high Vitamin C content (between two and four times that of orange juice) and thus makes an important contribution to the health of the people (Felgate 1982:62; Van Wyk & Gericke 2000:114).

The fruit of the marula is only available for three months of the year during late January and early February. Great importance is placed on the brewing of beer from the fruit (Junod 1962a:399). In the past, first-fruit festivals or *ukuluma* were connected to the brewing of *bukanye* throughout the historical Tembe tribal area. This meant that no one was allowed to brew *bukanye* before the headman of the district had told his people to do so in preparation for *ukuluma*. In the 1960s when Felgate did research in the area, he observed that the first-fruit feast was no longer honoured, although people still waited for the instructions of the *induna* before they started to brew the beer (Felgate 1982:61).

It was therefore surprising to learn from a traditional leader in the study area that the first-fruit feast or *chikanye*, as it is called by the people in the research area, is still honoured in some parts of Matutuine. When the fruit of the marula trees in the Zitundo area start to ripen, the *inkosi* tells his *izinduna* to

order the women of the area to collect the fruit and to start to prepare *bukanye*. At this stage, no one is allowed to drink the beverage.

When enough beer has been brewed, the people gather in a sacred forest called *Mato de Makhaza e Madingi in* Portuguese. According to spokespersons, the forest is the burial place of all the great *amakhosi* of the area. In this forest, the grave of Makhaza, who spokespersons say, died in 1952 is especially important. Containers filled with marula beer are brought to the grave of Makhaza. The *inkosi* pours some of the beer over the grave. Thereafter, he and all the people gathered there, start to drink the *bukanye*. Chickens and goats are also slaughtered at this festival in honour of Makhaza. After all the ceremonial duties are over, the meat of the goats and chickens is eaten and more beer is drunk. The festival lasts for a period of two days. Thereafter people leave the sacred forest, which they are not allowed to enter until the following year. After all these ceremonies have been completed, people throughout the area are allowed to brew *bukanye* for their own use.

First-fruit festivals in northern KwaZulu Natal have also been revived in the past few years. The festival called *Mtayi*, which literally means 'great amounts' (Doke *et al.* 1996:788), was observed by the author in February 2001 in the tribal ward of Manqakulani, situated south of the Tembe Elephant Park. During the festival people brought marula beer to the home of the *induna* of Manqakulani. A big party was held, with singing and dancing. Everybody was allowed to partake of the beer and, after the ceremony spokespersons said, everybody was allowed to brew marula beer for their own consumption.

The fruit of the marula tree is picked before it has ripened and is taken home in large quantities. There it is put under the shade of a tree and left to ripen. When it has ripened, the skins of the fruit are pierced, whereafter the fruit is thrown in large containers filled with water and left overnight. In the morning, the skins and pips of the fruit are removed and the fruit is left to stand in the water for another night. On the third day, the scum caused by the fermentation process is removed. The beer is ready to be drunk on the fourth

day (Felgate 1982:62; also see Els 1996:278, Pooley 1980:475 and Liengme 1981:511).

- **Strychnos madagascariencis** –Black monkey orange (Van Wyk & Van Wyk 1997:250)
  Ronga names: *makwakwa, nkwakwa* (De Koning 1993:225)
  Zulu name: *umkwakwa* (Pooley 1997:418)

  Tontonto is made from the black monkey orange, but, according to spokespersons, few people drink it. Most prefer to make *tontonto* from the green monkey orange, since they say it tastes better.

- **Strychnos spinosa** – Green monkey orange (Pooley 1997:420; Van Wyk & Van Wyk 1997:254)
  Ronga names: *masala, ansala* (De Koning 1993:255)
  Zulu names: *ihlala, umhla, umhlahla* (Hutchings *et al.* 1996:238)

  Most respondents (47.5%) indicated that the most potent of all alcoholic beverages is *tontonto de masala*, which is distilled from the fruit of the green monkey orange or *masala* tree. It is especially popular amongst older men. Half the respondents said that they make their own *tontonto de masala*. The drink is definitely more popular for its high alcohol content than for its taste. Despite such a large percentage of people drinking this beverage, only 4% said that it is the best tasting alcoholic drink.

- **Syzygium cordatum** - Water berry (Pooley 1997:372; Van Wyk & Van Wyk 1997:320)
  Ronga names: *amuhlu, mudoni,, muhlu, muhlo, mushu* (De Koning 1993:257)
  Zulu name: *umdoni* (Grant & Thomas 1998:172)

  The small purple berries of this tree are used to make an alcoholic beverage, but, according to spokespersons, it is not very popular.

- **Syzygium cumini** – Jambolan-plum (Pooley 1997:372)
  Portuguese names: *jambalao, jambalaneiro* (De Koning 1993:257)

  Only two respondents said that they use the fruit from this tree to make an alcoholic beverage.

- **Zea mays** – Maize (De Koning 1993:273)
  Ronga name: *mavele* (De Koning 1993:273)
  Zulu name: *ummbila* (Doke *et al.* 1996:279)
  Portuguese name: *milho* (Ferreira 1964:441)

  People in the research area call beer made from maize *udanguana*. In Zulu it is called *uthswala* (Doke *et al.* 1996: 824). The methods by which *utshwala* is made has been described by various authors (De la Harpe *et al.* 1998: 53-54; Krige 1988:58). It is basically done by grounding maize cobs into a thin powder that is boiled in water to produce a very thin porridge. Yeast obtained from other kinds of corn is added to the mixture. Thereafter it is left for a period of seven days to ferment in a dry warm place. After this paste has been poured through a strainer, the liquid is ready to drink (Felgate 1982:181)

  Very few respondents (3.5%) said that they use maize to make beer. In 1962 Felgate (1982:59) observed that beer made from maize was found chiefly along the Pongola River and that it was not well known in the coastal areas.

  Utshwala is not nearly as important in the study area as *ubusulu* is as a food supplement. The finding amongst Zulu people that *utshwala* is a food and not a drink, together with the cultural importance of *utshwala* amongst the Zulu (De la Harpe *et al.* 1998: 53) does not hold in the study area.

  It has already been discussed that, although people say maize is an important crop, not a lot of maize was seen in fields in the area. Furthermore, two thirds of the people interviewed said that they have to buy maize to eat. The absence of maize and the total dominance of cassava as a staple food is thus also

reflected in the fact that very few people brew *utshwala*, which was once a very important drink in certain parts of the study area, especially along the Pongola River (Felgate 1982:59).

4. 2. 4. Use of trees for firewood

The utilisation of trees for firewood is a very important subject in rural areas when one considers the volume of trees used for this purpose. It is estimated that 17 324 000 cubic metres of woodland were cleared in Mozambique for firewood in 1997 (*Africa South of the Sahara* 2000:762). In South Africa more than half of all energy needs are met by firewood (Van Wyk & Gericke 2000:283). In Matutuine, this figure is estimated to be even higher due to the complete absence of alternative sources of energy. The only place in the district where people have daily access to electricity is at Bela Vista. There is no electricity at Catuane, Zitundo or Salamanga. At Ponta do Ouro and Ponta Malongane, electricity is generated, but this is mainly for the benefit of tourists. Wood is therefore the only source of energy available to the local people in the research area.

Studies done on the utilisation of firewood in areas where people do not have access to electricity reveal that a family uses between 13 and 15 kilograms of firewood per day (Els 1996:288; Liengme 1983:249; Van Wyk & Gericke 2000:283). If such high levels of utilisation continue without regulation, it can lead to deforestation and environmental degradation. It is thus vital to provide people with alternative sources of energy to reduce their reliance on firewood.

The results from the questionnaires distributed in Matutuine indicate that people use wood predominately for cooking and for roasting food. In fact, 96% of respondents said that they use wood for cooking and 26% said they use wood for 'braaing (barbequeing)', while 37.5% of respondents said that they use wood to generate heat. Needless to say, this means that more firewood will be collected during winter than during summer. Fire is also used to brew beer with: 22% of respondents said that they use wood to make fire for brewing beer.

People in the research area also use wood fires for light and to keep away wild animals from their homesteads. Only 2.5% of respondents said that they use fire for light; 2% use fire to keep away mosquitoes; 3% use fire to keep away wild animals, and 4.5% use fire to deter snakes. Fires are lit during the evenings to keep away wild animals. Besides this, wild animals are deterred by means of bushfires, which are mainly lit during May and June.

Besides all these uses of fire, one (0.5%) respondent said that he uses the smoke of wood fires for healing and three (1.5%) respondents said that they use wood fire to burn rubbish with.

On average people collect firewood three times per week. As many as 46% of respondents to the questionnaire collect the firewood themselves. In most of the other cases (40%), it is the wives and children who collect the firewood.

Trees preferred for firewood differ from trees preferred for construction and trees used to make utensils, because of their high energy values and slow burnout time of trees utilised for firewood. Wood that contains poisonous substances or give off unpleasant smells are usually not used for firewood. The unpleasant smelling smoke of some Eucalyptus tree species together with the taste the smoke gives to food is an example of a tree that is not preferred (Van Wyk & Gericke 2000:283).

Many respondents were very vague in the answers they gave on which specific trees are used for firewood, saying that they use all dead and all dry trees for firewood. In one interview at Lagoa Piti, an interviewee answered that the only trees not used for firewood are the ones that grow in *Tilo* (heaven).

Despite this, the most important firewood trees (in order of the number of people who utilise them) are: the waterberry (*Syzygium cordatum*), the black monkey orange (*Strychnos madagacariensis*) and the Natal Mahogany (*Trichillia emetica*). When asked why they use these specific trees as firewood the most, most respondents (51%) indicated that it was because the wood from these trees provides the best coals. Another answer also frequently given was that these specific trees are used because

they are available in large numbers in the research area. The use of trees for firewood is set out alphabetically in table 12.

Table 12: Wood species used for firewood in Matutuine according to respondents to the questionnaire survey (n=200).

Acacia grandicornuta – Horned thorn (Van Wyk & Van Wyk 1997:492) Ronga name: *mdongola* Zulu names: *umdongolo, umngampondo (*Pooley 1997:130)	
Acacia karoo – Sweet thorn (Pooley 1997:130; Van Wyk & Van Wyk 1997:494) Ronga names: *goane, nkaya* (De Koning 1993:146) Zulu names: *isikhombe, umunga* (Hutchings *et al.* 1996:121)	This wood is popular as firewood in most dry parts in Southern Africa (Van Wyk & Gericke 2000:28). It is also used by the Tsonga in the Northern Province and Mpumalanga Lowveld in South Africa, where it is specifically favoured for warmth during winter (Els 1996:289). Of the respondents who stay in Matutuine, 8% said that they use this tree for firewood.
Acacia tortilis – Umbrella thorn (Pooley 1997:140; Van Wyk & Van Wyk 1997:488) Ronga name: *shitsoba* (De Koning 1993:147) Zulu names: *isishoba, isithwethwe, umsasane* (Hutchings *et al.* 1996:124)	
Afzelia quanzensis – Pod mahogany (Pooley 1997:150; Van Wyk & Van Wyk 1997:420) Ronga name: *hlamfuta* (De Koning 1993:150) Zulu names: *umdlavusa, umhlakuva, umhlavusi, umshamfuthi* (Hutchings *et al.* 1996:129)	
Albizia anthelmintica – Worm-bark false-thorn (Pooley 1997:120; Van Wyk & Van Wyk 1997:506) Ronga name: *mnala* Zulu name: *umnalahanga* (Hutchings *et al.* 1996:120)	

Anacardium occidentale – Cashew (Van Wyk & Gericke 2000:120) Ronga name: *kanyu* (De Koning 1993:156) Zulu name: *uhlobo lwamantongomane oluvela eMelika* (Doke *et al.* 1996:64) Portuguese names: *caju, cajueiro, castanha* (De Koning 1993:156)	
Dialium schlechteri – Zulu podberry (Pooley 1997:152; Van Wyk & Van Wyk 1997:450) Ronga names: *tinsiva, enziva, tithiba, ziba* (De Koning 1993:190-191) Zulu name: *umthiba* (Hutchings *et al.* 1996:129)	
Dicrostahys cinerea – Sickle bush (Pooley 1997:142; Van Wyk & Van Wyk 1997:500) Ronga names: *andzenga, ndzenga, munga, ntenge, tengendi, tsenga, tyenga* (De Koning 1993:191) Zulu names: *ugagane, ugegane, umthezane* (Hutchings *et al.* 1996:125)	An *inyanga* interviewed at Lagoa Piti said that people do not use this tree as firewood. He explained that it was only *izinyanga* who are allowed to use it as firewood. Nevertheless, the questionnaire survey indicates that 5% of people in Matutuine use this wood as firewood. In South Africa the sickle bush is a valuable source of good quality fuelwood and is sold commercially (Van Wyk & Gericke 2000:292). Amongst the Tsonga people who live in the former Gazankulu, sickle bush is also favoured as firewood. For practical reasons people there prefer the *Dicrostahys cinerea* ssp. *africana* over the *Dicrostachys cinerea* ssp. *nyassa* (Large-leaved sickle bush) because its thorns are smaller and is thus not as dangerous (Els 1996:289; see also Liengme 1981:507).
Eucalyptus sp. (De Koning 1993:199) Portuguese name: *Eucalipto* (De Koning 1993:199)	Of the respondents, 3% indicated that they use this tree for firewood. People have easy access to these trees that grow in deserted plantations in the area. According to a spokesperson, the EWT (Endangered Wildlife Trust) is busy with a project to turn the wood in plantations near the Futi River into charcoal.

Mimusops caffra – Coastal red milkwood (Pooley 1997:390; Van Wyk & Van Wyk 1997:96) Ronga names: *tsole, ndzole, mtole, munore, tinsole* (De Koning 1993:225) Zulu names: *umkhakhayi, umthunzi* (Grant & Thomas 1998:154)	
Sclerocarya birrea – Marula (Pooley 1997:240; Van Wyk & Van Wyk 1997:446) Ronga names: *nkanye, kanhu, kanho* (De Koning 1993:246) Zulu name: *umganu* (Hutchings *et al.* 1996:177)	Of the people who stay in Matutuine, 7% use the marula tree as firewood. The marula is not sought after as firewood in the Mpumalanga Lowveld, but is collected when it is dry (Els 1996:290; see also Liengme 1983:250).
Strychnos madagascariencis – Black monkey orange (Van Wyk & Van Wyk 1997:250) Ronga names: *makwakwa, nkwakwa* (De Koning 1993:255) Zulu name: *umkwakwa* (Pooley 1997:418)	Apart from *Syzygium cordatum* this tree is used most extensively as a source of firewood: 28% of respondents revealed that they use this wood as firewood (also see Liengme 1983:257).
Strychnos spinosa – Green monkey orange (Pooley 1997:420; Van Wyk & Van Wyk 1997:254) Ronga names: *masala, ansala* (De Koning 1993:255) Zulu names: *ihlala, umhla, umhlahla* (Hutchings *et al.* 1996:238)	Respondents (4%) said that they use the wood from this tree as firewood. Both the green monkey orange and the black monkey orange are used by Tsonga in the Mpumalanga province in South Africa as firewood. It is especially favoured for cooking food in a short amount of time (Els 1996:290).
Syzygium cordatum - Water berry (Pooley 1997:372; Van Wyk & Van Wyk 1997:320) Ronga names: *amuhlu, mudoni, muhlu, muhlo, mushu* (De Koning 1993:257) Zulu name: *umdoni* (Grant & Thomas 1998:172)	The water berry is popular as a source of fuel in the whole area along the Kwa-Zulu Natal coast (Venter & Venter 2000). There is no exception to this concerning the research area: 45% of people in Matutuine use this tree for fuel. Most people (33%) also said that they use the wood from this tree more than that of any other tree to make fire with.
Syzygium cumini - Jambolan-plum (Pooley 1997:372) Portuguese names: *jambalao, jambalaneiro* (De Koning 1993:257) (De Koning 1993:257; Pooley 1997:372)	

Tabernaemontana elegans – Toad tree (Pooley 1997:432; Van Wyk & Van Wyk 1997:312) Ronga names: *makahlwani, kahlu, kahlo, kahluane* (De Koning 1993:257) Zulu names: *umkhalwana, umkhadlu* (Hutchings *et al.* 1996:245)	
Terminalia sericia –Silver cluster-leaf (Pooley 1997:364; Van Wyk & Van Wyk 1997:174) Ronga names: *nkonola, nconola, konono, mukununu* (De Koning 1993:260) Zulu names: *amangwe, umkhonono* (Hutchings *et al.* 1996:216)	Only 3% of respondents said that they use this tree for firewood. The silver cluster leaf is also favoured in the Mhala district in Mpumalanga because it burns quickly and does not make a fire that is too hot (Els 1996:289; see also Liengme 1983:257).
Trichilia emetica - Natal mahogany (Pooley 1997:204; Van Wyk & Van Wyk 1997:468) Ronga names: *ankhuhlu, mukhuhlu, nkhuhlu* (De Koning 1993:264) Zulu names: *ixolo, umathunzini, umkhuhla* (Hutchings *et al.* 1996:158) Portuguese name: *mafurreira* (De Koning 1993:264).	As many as 18% of respondents said that they use the wood from the Natal mahogany as firewood. The Tsonga people in the former Gazankulu also use this tree as firewood, and although they indicate that it does not burn well, they collect it when it is dry (Els 1996:290; see also Liengme 1983:257).

4. 2. 5. Use of plants as construction materials

The building of a Ronga hut is relatively simple. Junod (1962a:323-328) presents information on the traditional manner in which these homes were constructed. Most homes in the area are still constructed in this manner, using reeds and grass. Sometimes a framework is first made from wood. Most people prefer to use Eucalyptus for this because, they say, is straight and durable. It is also easily obtainable in deserted plantations near the Maputo Elephant Reserve.

Reeds are then put on the framework as walls, while the roofs are thatched with grass. In most cases, however, the walls are simply constructed by tying reeds together and placing them in a square formation. Sometimes openings are cut in the walls to serve as windows. These holes are covered with mats, usually made from sedges. The plant most used for the walls of houses is *Phragmites australis*, while most roofs are thatched with *Imperata cylindrica*. These, together with the other plants used for construction, are set out in Table 13.

Table 13: Plant species used for construction in the research area, according to respondents to the questionnaire survey (n=200).

Acacia grandicornuta – Horned thorn (Van Wyk & Van Wyk 1997:492) Ronga name: *mdongola* Zulu names: *umdongolo, umngampondo (*Pooley 1997:130)	The wood is used for constructing the walls of houses.
Acacia karoo – Sweet thorn (Pooley 1997:130; Van Wyk & Van Wyk 1997:494) Ronga names: *goane, nkaya* (De Koning 1993:146) Zulu names: *isikhombe, umunga* (Hutchings *et al.* 1996:121)	The wood is used for constructing the walls of houses.
Acacia tortilis – Umbrella thorn (Pooley 1997:140; Van Wyk & Van Wyk 1997:488) Ronga name: *shitsoba* (De Koning 1993:147) Zulu names: *isishoba, isithwethwe, umsasane* (Hutchings *et al.* 1996:124)	The wood is used for constructing the walls and roofs of houses.
Agave sisalana – Sisal (Van Wyk & Gericke 2000:298) Ronga names: *chikwenga/ paka paka* (De Koning 1993:150) Zulu name: *uhlobo lomhlaba okwenziwa ngwano izindophi* (Doke *et al.* 1996:443)	The fibres in the leaves are used to build houses and roofs. It is also used as ropes for binding and tying. The fibres in the leaves are extracted by smashing the leaves with a hammer. Thereafter the fibres are pulled out and put in the sun to dry. They are used as a rope and as binding material by 77.5% of the respondents.
Albizia anthelmintica – Worm-bark false-thorn (Pooley 1997:120; Van Wyk & Van Wyk 1997:506) Ronga name: *mnala* Zulu name: *umnalahanga* (Hutchings *et al.* 1996:120)	The wood is used to construct the roofs of houses.

Anacardium occidentale – Cashew (Van Wyk & Gericke 2000:120) Ronga name: *kanyu* (De Koning 1993:156) Zulu name: *uhlobo lwamantongomane oluvela eMelika* (Doke *et al.* 1996:64) Portuguese names: *caju, cajueiro, castanha* (De Koning 1993:156)	The wood is used for building the walls of houses.
Brachylaena discolor – Coast silver oak (Van Wyk & Van Wyk 1997:110) Ronga name: *mphahlakhuhla, phahla, pasha, umphasa* (De Koning 1993:165) Zulu name: *iphahla, umduli* (Grant & Thomas 1998:150; Pooley 1997:488)	The wood is used for building houses for constructing roofs. People in northern KwaZulu-Natal use this tree for the same purposes (Pooley 1980:478).
Cyperus papyrus (Gordon-Gray 1995:66) Ronga names: *mabungu, mabungu* (De Koning 1993:187)	*Cyprus papyrus* is the largest Natal sedge and is widely distributed throughout Maputaland. The sedge reaches heights of 1.5 to 2 metres upwards (Gordon-Gray 1995:66). It is used as thatching for roofs and as ropes.
Dialium schlechteri – Zulu podberry (Pooley 1997:152; Van Wyk & Van Wyk 1997:450) Ronga names: *tinsiva, enziva, tithiba, ziba* (De Koning 1993:190-191) Zulu name: *umthiba* (Hutchings *et al.* 1996:129)	The wood is used for building the walls and roofs of houses.
Dicrostahys cinerea – Sickle bush (Pooley 1997:142; Van Wyk & Van Wyk 1997:500) Ronga names: *andzenga, ndzenga, munga, ntenge, tengendi, tsenga, tyenga* (De Koning 1993:191) Zulu names: *ugagane, ugegane, umthezane* (Hutchings *et al.* 1996:125)	This wood is a popular construction material: 14% of respondents use it to build houses and 3.5% use it to make roofs. The wood is used in the same way in northern KwaZulu-Natal (Pooley 1980:474). In other parts of South Africa the tough inner bark is used for making rope (Venter & Venter 2000).
Eucalyptus sp. (De Koning 1993:199) Portuguese name: *Eucalipto* (De Koning 1993:199)	As stated above, this wood is a very popular construction material. It is easy for people to cut these trees in the deserted plantations in the area. The wood is preferred to build houses by 48% of respondents and to construct roofs by 21% of respondents, because, they say, it is straight and strong.

Imperata cylindrica – Cottonwool grass (Russel *et al.* 1990:190) Ronga names: *luhlu, luhlwa, lixwa* (De Koning 1993:213) Portuguese names: *Capim espiga-de-prata/ capim pluma-de-prata* (De Koning 1993:213)	This grass grows in dense stands on riverbanks throughout the area. Leaf blades grow up to 1 500 millimetres long and between 2 and 12 millimetres wide (Russel *et al.* 1990:190). Most people (54.5%) use it as thatching for roofs. According to spokespersons, the roofs last for up to seven years before they have to be re-thatched.
Manilkara discolor – Forest milkberry (Pooley 1997:394; Van Wyk & Van Wyk 1997:94) Ronga names: *tinweva, nheve, nhuebe* (De Koning 1993:221) Zulu names: *umnqambo, umweba-wentaba* (Hutchings *et al.* 1996: 231)	The wood is used for building the walls of houses.
Phragmites australis – Common reed (Russel *et al.* 1990:269) Ronga name: *tihlanga* (De Koning 1993:236) Portuguese name: *caniso* (De Koning 1993:236) Zulu name: *umhlanga* (Pooley 1980:473)	Most homes in the area are built with this reed. The reed grows between 600 and 4000 millimetres tall (Russel *et al.* 1990:269). The reeds are widely distributed in swampy parts throughout the area. As many as 75% of respondents said that they use the common reed to build houses. The reed is also used by 6.5% of people as thatching for roofs (also see Pooley 1980:473).
Spirostachys africana – Tamboti (Pooley 1997:230; Van Wyk & Van Wyk 1997:108) Ronga names: *xihlati, xihlangamahlo* (De Koning 1993:252) Zulu names: *umthombothi, injuqu, ubanda* (Hutchings *et al.* 1996:173)	The wood is used for building the walls and roofs of houses. Similar uses have been recorded in northern KwaZulu Natal by Pooley (1980:475).
Strychnos madagascariencis – Black monkey orange (Van Wyk & Van Wyk 1997:250) Ronga name: *makwakwa, nkwakwa* (De Koning 1993:255) Zulu name: *umkwakwa* (Pooley 1997:418)	The wood is used to construct walls and the bark is used as a rope.
Syzygium cordatum - Water berry (Pooley 1997:372; Van Wyk & Van Wyk 1997:320) Ronga names: *amuhlu, mudoni, muhlu, muhlo, mushu* (De Koning 1993:257) Zulu name: *umdoni* (Grant & Thomas 1998:172)	The wood is used to construct the walls of houses.

Terminalia sericia – Silver cluster-leaf (Pooley 1997:364; Van Wyk & Van Wyk 1997:174) Ronga names: *nkonola, nconola, konono, mukununu* (De Koning 1993:260) Zulu names: *amangwe, umkhonono* (Hutchings *et al.* 1996:216)	The wood is used to construct walls and the bark is used as a rope.
Trichilia emetica - Natal mahogany (Pooley 1997:204; Van Wyk & Van Wyk 1997:468) Ronga names: *ankhuhlu, mukhuhlu, nkhuhlu* (De Koning 1993:264) Zulu names: *ixolo, umathunzini, umkhuhla* (Hutchings *et al.* 1996:158) Portuguese name: *mafurreira* (De Koning 1993:264)	Very few people (1%) in the research area use the wood from this tree to build houses with. Also, only a small percentage of people (2%) use it to construct roofs.
Typha latifolia ssp. **capensis** (De Koning 1993:267) Ronga names: *papala, pala pala* (De Koning 1993:267)	This grass is used in the same way as *Imperata cylindrica* for thatching roofs, but it is not nearly as popular. Only 2% of the people use it in this manner. It is much more popular as a material from which crafts are made.
Ziziphus mucronata – Buffalo-thorn (Pooley 1997:296; Van Wyk & Van Wyk 1997:232) Ronga names: *mpafa, passamala, shaia* (De Koning 1993:273) Zulu names: *isilahla, umhlahlankosi, umphafa* (Hutchings *et al.* 1996:193)	The wood is used to construct the walls of houses, although it is not used extensively for this purpose.

4. 2. 6. Plants used to make craft objects and utensils

Included in this section are plants used to make mats, baskets and other utensils, which people make either for personal use or to sell. In the vast majority of cases these artefacts are made for personal use, since most people do not have access to a market where they can sell their craft objects. It is only people in the vicinity of Ponta do Ouro and Ponta Malongane who really make crafts to sell to tourists. There is also a craft market next to the main road between Salamanga and the main camp of the Maputo Elephant Reserve. According to the old man who sells craft objects there, not many tourists visit the area. It can thus be assumed that most craft objects made by people in the research area are for personal use.

In-depth interviews were conducted with young men in the area who make a living out of making and selling mats to tourists who frequent the coastal region (Ponta do Ouro and Ponta Malongane). Most of these young men came to the area from Maputo because, they say, life in Maputo is too expensive. One young man arrived in the research area three years ago and is selling mats to make money to pay *lobolo* for his girlfriend who stays in Maputo. The craftsmen sell the mats right next to the main road from Ponta do Ouro to Ponta Malongane and also on the road from Ponta Malongane to Ponta Mamoli and to Zitundo. There is also an informal craft market at the entrance gate to the Ponta Malongane Resort.

Once a month, for a period of approximately ten days, reeds are cut in the swamps near the coastal lakes in the research area. According to spokespersons, this is a dangerous occupation, due to malaria-carrying mosquitoes and other insects, as well as snakes, in the swamps. The reed collectors regularly get sick and are not able to make or sell any crafts.

Crafters in the research area make three different sizes of mats from *Cyperus papyrus* plants. The largest mat is 1.2 by 3 metres. One person working on his/her own can make two of these mats per day. These mats are sold for R40. The second largest mat is 1 metre by 2 metres and is sold for R30. The smallest mat is 1 metre by 1.5 metres big and costs R20. One person can make up to five mats of this size in a day. According to spokespersons, this size enjoys the highest demand amongst tourists.

One craftsman said that he is able to make as many as 480 mats per year. From the sale of these mats, he can earn up to R10 000 per year. Compared with the money made by other people in the area (see 2.4.5), this is a small fortune. Sometimes, spokespersons say, they get orders from the tourist resorts to make mats that are used to decorate the chalets in the resorts. When that happens local craftsmen can make a lot of money at one time.

However, things do not always go that well. The demand for the mats fluctuates with the amount of tourists who visit the area. Spokespersons say they were especially hard hit by the recent floods in Mozambique, which caused few tourists to visit the area.

The craftsmen who flock to the area are part of the wider migration of people to the southern coastal region. This trend has already been discussed in detail above (2.4.3). None of the craftsmen interviewed in the Ponta Malongane region are natives of the area. They only moved there because they had heard from people in Maputo that there might be an opportunity to make money in the area. Since local craftsmen utilise natural resources to produce these crafts, the newcomers put extra strain on the environment. All the evidence suggests that more development in the area, especially planned tourism-based development, will entice more people from other areas in Mozambique to flock to the coastal area.

Cyperus is not the only plant utilised for crafts and utensils. *Hyphaene coriceae, Juncus Krausii* and *Typha latifolia* are also favoured for this purpose. The various plants utilised to make crafts and utensils are discussed below.

- **Acacia karoo** –Sweet thorn (Pooley 1997:130; Van Wyk & Van Wyk 1997:494)
  Ronga names: *goane, nkaya* (De Koning 1993:146)
  Zulu names: *isikhombe, umunga* (Hutchings *et al.* 1996:121)

  Traditional pounders (*mimusi)* and pounding blocks (*matshuri*) are made from the trunk of this tree.

- **Afzelia quanzensis** – Pod mahogany (Pooley 1997:150; Van Wyk & Van Wyk 1997:420)
  Ronga name: *hlamfuta* (De Koning 1993:150)
  Zulu names: *umdlavusa, umhlakuva, umhlavusi, umshamfuthi* (Hutchings *et al.* 1996:129)

  The wood is used to make furniture. Fishermen use hollowed out trunks of large trees as containers for the fish they dry. In certain African countries dugout canoes are made from the trunks (Venter & Venter 2000). The Tsonga people in South Africa sometimes use the wood for building and to make fire, but it is more favoured to make household utensils (Els 1996:268). The same

uses of this wood have been recorded by Pooley (1980:474) for people who stay in northern KwaZulu-Natal.

- **Agave sisalana** – Sisal (Van Wyk & Gericke 2000:298)
  Ronga names: *chikwenga, paka paka* (De Koning 1993:150)
  Zulu name: *uhlobo lomhlaba okwenziwa ngwano izindophi* (Doke *et al.* 1996:443)

  Sisal is an exotic aloe-like plant introduced to Southern Africa as a fibre crop (Van Wyk & Gericke 2000:298). It is found throughout the study area and is locally known as *paka paka* and *chikwenga*. Fibre is removed from the plant by pounding the thick leaves with a hammer or piece of rock. Thereafter it is possible to extract the pieces of fibre. The fibres are used to weave baskets and to make mats, but its use for baskets is very limited. Only 2% of respondents said that they use this plant material to make baskets, compared with 10% of respondents who use it to make mats. Sisal is commonly found throughout northern KwaZulu-Natal where it is used for the same purposes (Pooley 1980:472).

- **Albizia versicolor** – Broad leaved false thorn (Pooley 1997:122; Van Wyk & Van Wyk 1997:506)
  Ronga names: *ampiso, mbhesu, muvambangoma* (Liengme 1981:504)
  Zulu name: *umvangazi* (Grant & Thomas 1998:300)

  Traditional pounders (*mimusi*) and pounding blocks (*matshuri*) are made from the wood of this tree.

- **Cyperus papyrus** (Gordon-Gray 1995:66)
  Ronga names: *mabungu, mabungu* (De Koning 1993:187)

  Cyperus is extensively used to make mats. No less than 81% of respondents said that they use this material to weave mats. It is also used in large

quantities throughout northern KwaZulu Natal to make sleeping mats and sitting mats (Pooley 1980:473).

The widespread use of this plant has more to do with the availability of the sedge than with its quality as a material. Only 27% of the people said that it is the best material to weave mats from. Most (61.5%) feel that the salt-marsh rush (*Juncus krausii*) is the best plant to weave mats from. *Cyperus* is also used to weave baskets.

- **Hyphaene coriacea** – Lala palm (Van Wyk & van Wyk 1997:50)
  Ronga names: *milala, malala, anala* (Pooley 1997:52)
  Zulu name: *ilala* (Pooley 1997:52)

  Although this plant is mostly known for the alcoholic beverage made from its sap, the leaves are extensively used for weaving baskets. In fact, amongst the Ronga-speaking people, the greater part of the baskets are made from the leaves of this palm, a fact already reported by Junod in 1927 (Junod 1962b:119). Most people in the research area (75.5%) use the leaves in this manner. According to spokespersons, it is the best natural material with which to weave baskets. This was confirmed by the questionnaire survey in which 76.5% of respondents said that this plant is the best material for basket-making. The leaves of this plant are also popular to make baskets in northern KwaZulu-Natal. People there also use the leaves to make mats and as a binding material (Pooley 1980:473).

- **Imperata cylindrica** – Cottonwool grass (Russel *et al.* 1990:190)
  Ronga names: *luhlu, luhlwa, lixwa* (De Koning 1993:213)
  Portuguese names: *Capim espiga-de-prata, capim pluma-de-prata* (De Koning 1993:213)

  Baskets are woven with this grass, but it is not common. Only one respondent mentioned it as a material used for this purpose.

- **Juncus krausii** – Salt marsh rush (Van Wyk & Gericke 2000:318)

  Ronga names: *tinzulu, ntsulu*

  Zulu name: *incema* (Van Wyk & Gericke 2000:318)

  The majority of respondents (81%) make mats with this plant. Most (61.5%) said that it is the best material to make mats. Mats made from it are much stronger and last a lot longer than mats made from *Cyperus* and other species (Van Wyk & Gericke 2000:318).

  The plant is used in the same fashion in KwaZulu-Natal to make traditional Zulu sleeping mats called *incansi.* In KwaZulu-Natal this plant is an important source of income for rural people, but fears have been raised about the sustainable harvest of this resource due to intense harvesting pressure. However, destruction of this natural resource is not inevitable, since it has been shown that the plant can be cultivated in freshwater paddy fields (Heinsohn & Cunningham 1991: 1-5).

- **Phoenix reclinata** – Wild date palm (Pooley 1997:50)

  Ronga names: *mikinzu, musundu, mkindu* (De Koning 1993:236).

  Zulu name: *isundu* (Pooley 1997:50)

  Portuguese name: *palmeira de coconote* (De Koning 1993:236)

  The leaves are used in the same way as those of *Hyphaene coriacea* to weave baskets, but are not used to the same extent. In fact, only 4.5% of people said that they use these leaves to weave baskets, compared to the 75% of people who use the leaves of the lala palm (*Hyphaene coriceae*). In northern KwaZulu Natal branches of the wild date palm are used to make spoons and the main trunk is pounded to make brooms (Pooley 1980:473).

- **Phragmites australis** – Common reed (Russel *et al.* 1990:269)
  Ronga name: *tihlanga* (De Koning 1993:236)
  Portuguese name: *caniso* (De Koning 1993:236)
  Zulu name: *umhlanga* (Pooley 1980:473)

  Mats are sometimes made from *Phragmites* reeds, but their use is not common. The reeds are used in northern KwaZulu-Natal to make whistles (Pooley 1980:473).

- **Typha latifolia** ssp. **capensis** (De Koning 1993:267).
  Ronga names: *papala, pala pala* (De Koning 1993:267).

  The leaves are dried, rolled and woven together as mats. A relatively large percentage of people (24.5%) use *papala* in this manner.

4. 2. 7. Plant material used as traps

Since so few people admitted that they hunt wild animals, it is obvious that not much information was disclosed on the plants used to make traps for wild animals. Moreover, as was discussed, most people who hunt use wire or steel traps which they buy in stores at Manguzi in South Africa. Some plant species that are used to make traps for wild animals were, however, identified by spokespersons and are presented here. In many cases spokespersons said that it does not matter what type of plant is used, as long as its branches bend easily so that a trap can be constructed.

The situation with regard to plants used to catch fish differs markedly. People felt free to give information on this subject. Since more people catch fish than catch wild animals, and since it is not illegal to fish, it was also easier to obtain information on these practices.

The common reed (*Phragmites australis*) is the plant most extensively used to make fish traps. Of the people who catch fish, 60% use the common reed to make traps. In

northern KwaZulu-Natal *Phragmites* reeds are used in the same way. There, the reeds are also used to make 'fences' that direct the fish into the traps (Pooley 1980:473).

4. 2. 7. 1. Plants used to make traps for wild animals

The following plants are used to construct traps to catch wild animals:

- **Agave sisalana** – Sisal (De Koning 1993:150)
- **Dicrostahys cinerea** – Sickle bush (De Koning 1993:191)
- **Manilkara discolor** - Forest milkberry (De Koning 1993:221)
- **Strychnos spinosa** – Green monkey orange (De Koning 1993:255)
- **Strychnos madagascariencis** – Black monkey orange (Pooley 1997:18)

4. 2. 7. 2. Plants used to make traps for fish

The following plants are used to make traps to catch fish:

- **Albizia anthelmintica** – Worm bark false thorn (Pooley 1997:120)
- **Dicrostahys cinerea** – Sickle bush (De Koning 1993:191)
- **Hyphaene coriacea** – Lala palm (Pooley 1997:50).
- **Juncus krausii** – Salt marsh rush (Van Wyk & Gericke 2000:318)
- **Landolphia kirkii** - Landolphia (Moll 1981:284).
- **Phragmites australis** – Common reed (De Koning 1993:236).
- **Typha latifolia** ssp. **capensis** (De Koning 1993:267).

4. 3. VALUE JUDGMENTS REGARDING NATURE CONSERVATION AND DEVELOPMENT

4. 3. 1. The general sub-Saharan African worldview concerning nature

Most Europeans, or people who have stayed in cities and towns for most of their lives, view nature as something that is necessarily positive. Nature is seen as the direct opposite of the 'concrete environment' in which city people find themselves. Therefore nature is a beautiful and safe place to which people retreat on holidays (Müller & Müller 1999:130). Romantic artists like Wordsworth, Keats, Shelley, Victor Hugo, Beethoven, Chopin and Wagner all expressed their feelings about the beauty, grace and excellence of nature (Perry 1993:349-350). The European image of paradise, as described in the Bible, is in fact a garden filled with trees and animals.

In contrast to these emotionally charged perceptions of nature, there are the values held by people who, of necessity, live close to nature. To them, nature is not a far-off retreat, but an integral part of their often harsh everyday reality. Because nature is part of their usual everyday environment, no values of 'beauty' or 'rest' are attached to nature (Müller & Müller 1999:130). Different values are attached to elephants and hippos when there is a real possibility of conflict with them, as opposed to when they are watched on television from the safety of an armchair or from inside a car. Only once fear of the wild animal has been removed can it be appreciated for its majesty and beauty.

People who live intimately with nature usually distinguish between the part of their environment they exploit and the larger part, which is untouched. The first is usually the area near the homestead from where they fetch water, fruit and firewood. The other is unfamiliar bushes or woods, where people fear to tread. It is especially these areas, untouched by humans, that people far removed from the dangers of nature see as beautiful and want to conserve (Müller & Müller 1999:130).

Indigenous people do not always have similar positive feelings about these unknown places. They do not, however, see these areas purely in a negative light, but may see them as sacred places. It is in these areas that the most powerful medicinal herbs are

collected. A great deal of mystery is usually attached to these dark woods and areas of bush. In fact, far from wanting to conserve such area in Europe, in Medieval Europe, women who collected medicinal herbs in the woods were branded as witches and grouped with shepherds and blacksmiths as the outcasts of society (Müller & Müller 1999:130).

Sacred forests or *mintimo* in Matutuine are usually the burial grounds of great leaders. In the *isigodi* of Gala there are three such forests, Mphakhatini, Makhali and Sabzeni. Spokespersons say that Gala, the great *induna* from whom the *isigodi* got its name, is buried in Mphakhatini. No person, not even traditional healers, are allowed to enter the forest. There are only three reasons why a person may enter Mphakathini: if he wishes to sacrifice an ox to his ancestors, if he wishes to *phahla* (revere the ancestors), or if it is the funeral of the leader of the *isigodi.* Only the leaders of the *isigodi* are buried in Mphakathini.

The same strict rules do not apply in the *mintimo* of Makhali and Sabzeni. Many people have been buried there, but no great leaders. There are no rules that prohibit people from entering Makhali or Sabzeni, although spokespersons say that people rarely enter these forests. It is mostly the *izinyanga* who go there to collect medicine. When they do, there are certain rules which they have to adhere to. The *inyanga* is not allowed to eat any food or drink any liquids before he goes to the woods. If his stomach is full, the spirits that dwell in the forest will hide all the best medicines from his eyes and he will not be able to collect any plants. Also, if an *inyanga* collects roots, he must leave the holes he digs around the tree open, so that the spirits are not trapped inside the ground.

Spokespersons related that there are four sacred forests in the vicinity of Zitundo. They are all named after great *izinduna* who were buried there. *Mato de* Makhaza *e* Madingi literally means the bush of Makhaza and Madingi and is the place where these two leaders were buried. The other important sacred forests are *Mato de* Mkhomazi, *Mato de* Hihliza *e* Gubande and *Mato de* Magandi. As was discussed above (4.2.3), the *Mato de* Makhaza *e* Madingi is the place where the first-fruit festival is held. As was stated, the only time during the year when people are allowed to enter into the *Mato de* Makhaza *e* Madingi is during the first-fruit festival.

Mystery and ambiguity surround the forest of Makhaza and Madingi. Spokespersons say that only the tribal elders are allowed to enter the forest. They go there to *phahla*. The elders assemble in a circular formation in the centre of the forest. If the ancestors are pleased with them, a large snake, that looks like a cobra, slithers around the group of men until it has encircled them. They then put snuff on the snake's head to calm him. If the snake calms down, it means that the ancestors will grant the requests of the men. If the snake does not calm down it is necessary to sacrifice a chicken or goat to appease the ancestors.

People in the small village of Zitundo say that if a stranger walks into the forest of Makhaza and Madingi, he will get lost and will have to stay there until he dies. They say that a few years ago there were plans to build a road through Zitundo to Maputo. The developers came with huge bulldozers and wanted to clear a path through the sacred forest. The people warned them that this would evoke the wrath of the ancestors, but the developers laughed at them and called them superstitious. However, the bulldozer had only started to enter the forest when it broke down. It was apparently not possible for anyone to fix it and the plan for the road was abandoned.

Thus nature is not a far off, idealised place in the lives of the people in the research area. It is a dangerous place filled with magic and mystery and, of course, dangerous animals against which people have to guard themselves on a daily basis, despite the fact that they are dependent on nature to survive.

4. 3. 2. Value judgments on certain aspects of nature

4. 3. 2. 1. Value judgments on wild animals

The wild animal most feared by people in the study area is the hippopotamus. The reasons for this are obvious. Hippos are responsible for the largest amount of crop damage in the area, they have chased more people than any other animal and have also killed more people than any other animal. It therefore comes as no surprise that 120 (60%) of respondents said that they fear this animal. During qualitative interviews, spokespersons commented that a hippopotamus is normally not an

aggressive animal, but that, when it has a calf, it will chase a person without any apparent reason if that person happens to walk in its vicinity.

The wild animals most feared beside hippos are elephants (51% of respondents fear them), bushpigs (feared by 49.5% of respondents), crocodiles (feared by 49% of respondents), lions (feared by 44.5% of respondents) and buffalo (feared by 22% of respondents).

Thus, although most people in the area do not normally experience any interaction with elephants, 51% of respondents are afraid of them. What is most interesting in this regard is the fact that 44.5% of people express fear of lions. There are definitely no lions roaming free in the area, and only one respondent said that he knew of a person who had been killed by a lion. Thus, although these people have no contact at all with lions, and, except for the people at Salamanga, very little contact with elephants, there is a perception that lions and elephants are dangerous animals.

The majority of people (98%) said that they feared the animals mentioned above because they can harm people. The other 2% said that they fear these animas because these animals destroy their crops and cause them great hardships.

Respondents were also asked whether it is possible for human beings to take care of wild animals as they do with domestic animals. Most (54.5%) said that humans could not take care of wild animals. Of these respondents, 47% said that wild animals live naturally, 25% said that humans cannot take care of wild animals because they attack people. Of the respondents, 9% said that there are too many different types of wild animals for people to take care of, 8% of respondents said that wild animals are not peoples' to take care of and 2% of respondents exclaimed simply that it was impossible for people to take care of wild animals.

A large number of people (43.5%) said they felt that humans are responsible for taking care of wild animals. The most frequently given reason for this answer was that it would be better if humans were to take care of these animals. During the qualitative research phase, people who felt this way said that if humans control wild animals these animals could not destroy crops or cause any harm to people. The

difference between the European conservationist view as to why humans should care for wild animals and the one given here should be clearly highlighted. Although some people (14%) said that humans should take care of wild animals to ensure their survival, most of the people who felt that humans should take care of wild animals said that these animals could help people by working for them and providing them with meat.

To determine in more detail what local people's views on nature conservation were, respondents were asked whether it is possible for people who live in the research area to use up all the wild animals in the area.

The vast majority (76%) said that humans could not use up all the wild animals in the area. The main reasons given for this answer were that there are simply too many (37% of respondents answered thus), and that wild animals have to be conserved so that they can also be used in future (30% of respondents gave this answer). It is again important to note that the reason why people say wild animals should be conserved is because these animals have utilisation value. The idea that humans are the focus of a created universe is highlighted in this reasoning. Animals should be conserved so that people can use them in the future too. Wild animals should not be conserved for their own sake, but for the sake of human beings (see Els 1996:434-449).

Of the respondents, 24% said that humans could use up all the wild animals in their environment. It seems from the explanations given by this group that they interpreted this question as meaning whether humans may use up all the wild animals in the area, since 81% of these respondents said humans can (may) use up all the wild animals because they have to eat their meat when humans have no source of income.

4. 3. 2. 2. Value judgments on plants

The majority of respondents (72%) said that it is the responsibility of humans to take care of trees that grow naturally. The reason for this answer given by most of them (35.5%) was that trees are a part of nature that needs to be protected. A large number of people (22%) also said that trees are an important part of people's lives because people need them to survive and therefore trees need to be looked after.

Of the respondents, 27% said that it is not the responsibility of humans to take care of trees that grow naturally. The reason for this, the respondents indicated, is that nature looks after the wild trees and they therefore do not need the protection of people.

When asked whether it is possible for the people who live in Matutuine to use up all the wild trees in their environment, most people (56.5%) said that it is impossible because there are simply too many trees. Respondents also understood this question to ask whether humans may use up all the trees that grow naturally, in other words whether people have the right to use up all the wild trees. No fewer than 40% of the respondents said that people might use all the trees because they depend on the trees for various reasons.

4. 3. 3. Relationship between the personnel of the Maputo Elephant Reserve and the local people

As was discussed above (1.3.3.3), people have always lived inside the Maputo Elephant Reserve. It is estimated that between 5 000 and 10 000 people stayed inside the reserve in 1970. The utilisation of natural resources inside the reserve has always been prohibited, although people were allowed to harvest natural resources on a small scale for subsistence purposes. In the 1980s the situation changed, as people were forcibly moved from inside the reserve. During the Civil War the government lost control of the area and only regained it in 1993. During that time many people who had not fled to neighbouring countries moved back into the Maputo Elephant Reserve (De Boer & Baquete 1998:208).

At present, most people stay outside the Maputo Elephant Reserve and are concentrated in the villages of Bela Vista, Salamanga and Fabrica de Cal. A large number of people also stay on the Machangulo Peninsula to the north (see Map 2).

Conflict between the Maputo Elephant Reserve and the local population focuses on two factors, crop damage caused by wild animals, and hunting (poaching) activities inside the Maputo Elephant Reserve. Various people living on the border or inside the reserve blame officials of the Maputo Elephant Reserve for crop damages caused

by wild animals from inside the reserve. The occurrence and extent of such damage have already been discussed above (4.1.5). The effect of this situation is that the local population develops a negative attitude towards nature conservation in general and the Maputo Elephant Reserve in particular. According to Maputo Elephant Reserve rangers, people are compensated for crop losses caused by wild animals. However, local people say that they have never received any form of compensation and that when they complain to Maputo Elephant Reserve rangers about problem animals, they are told that the Maputo Elephant Reserve is a place for animals and that if they are dissatisfied with that situation they should move outside the Reserve.

Game rangers in the Maputo Elephant Reserve indicated that conflict with wild animals, especially elephants, is site specific and related to changes of seasons. For example, they said that they do not get complaints from people who stay in Gala about elephants that cause crop damage except when the mangoes ripen. This correlates with information from the people who live in Gala. According to the rangers, the highest incidence of elephant-human conflict occurs at Chia (the northern part of the area between the Futi and Maputo Rivers).

The negative relationship between the Maputo Elephant Reserve and the local population, brought about by crop damage, is worsened by hunting/poaching activities inside the Maputo Elephant Reserve. As has been discussed already, only very few people admitted to hunting wild animals. However, rangers said that the incidence of poaching was quite high. They said that local people express a lot of anger towards the rangers because they take down snares. They claimed that people sometimes put 'medicine' on the snares to keep other people from removing them. During qualitative interviews spokespersons said that the 'medicine' on the snares can cause all kinds of misfortune to befall a person. If a person takes down a snare this action brings him/her bad luck.

Despite this, the rangers say they take down the snares because, if they do not, they will lose their jobs and will not have money to buy food. They say that they catch many poachers in the Maputo Elephant Reserve. When they catch such a person they put him in a jail in the Maputo Elephant Reserve's main camp. According to the manager at the Maputo Elephant Reserve, no such jail exists. However, the building

is there for all to see. Offenders must also pay a fine, and if offenders have vehicles the rangers confiscate the vehicles.

It would thus appear that the situation between the local people and the personnel of the Maputo Elephant Reserve is strained. Rangers say that they are sometimes afraid to walk inside the communities because many people express hatred toward them and they thus do not feel safe there. This bad relationship has a negative influence not only on people's attitude toward the Maputo Elephant Reserve, but on nature conservation in general. This information does not correlate with the findings of De Boer and Baquete (1998:213) that 88% of local people have a positive attitude toward the Maputo Elephant Reserve. De Boer and Baquete (1998:213) found that most people like the Maputo Elephant Reserve because it is a part of their tradition and because it is a 'living museum'. De Boer and Baquete (1998:213) also found that the most prominent reason given for not liking the Maputo Elephant Reserve was the crop damage caused by wild animals. A marked difference in local people's attitudes toward the Maputo Elephant Reserve was found by De Boer and Baquete (1998:213) between people who saw the Maputo Elephant Reserve as the origin of wild animals who cause crop damage and people who did not. People who regarded the Maputo Elephant Reserve as the origin of wild animals who cause crop damage expressed more negative feelings toward it than those who did not view it as the place where problem animals originated from.

Research was also done to analyse the value judgments of Maputo Elephant Reserve game rangers on nature conservation. The aim was to discover whether they are employed in nature conservation because of their love and passion for nature or whether it is just another job that provided money to live from. From the discussion above it is obvious that the rangers enforce the rules of the Maputo Elephant Reserve because if they do this their jobs are ensured. They gave a similar answer when asked why it is necessary to conserve the elephants inside the Maputo Elephant Reserve. They said that if the elephants are not conserved, people will not visit the Maputo Elephant Reserve and they will lose their jobs. They did, however, also say that elephants are beautiful creatures that need to be conserved. When asked about this they said that it was because one rarely sees them, and when one finally sees them they evoke pleasant emotions.

Some of the Maputo Elephant Reserve rangers were trained as community rangers before they became rangers in a programme instituted by the Mozambican Wildlife Department at Tinonganini. The purpose of the programme, according to the rangers, was to teach people inside communities about the benefits and needs of nature conservation and to instruct them on ways to harvest natural resources on a sustainable basis. This programme was a self-help and capacity building programme and no money was paid to the community rangers. Thus when the opportunity arose for trained people to become rangers at the Maputo Elephant Reserve some of the people who had received training as community rangers applied for this position.

The game rangers interviewed said that they would continue to conserve nature even if they lost their appointments at the Maputo Elephant Reserve because they now understand the value of and need for nature conservation, despite their complaints that they get poor salaries, especially when compared with their counterparts in South Africa.

Some rangers have heard rumours about the establishment of a Transfrontier Conservation Area. They said that they think it is a good idea because it will mean that there will be more animals inside the Maputo Elephant Reserve. Because of that more people will visit the Maputo Elephant Reserve. They were also interested in the establishment of the Transfrontier Conservation Area, because it will bring a lot of animals they have never seen to Mozambique.

4. 3. 4. Value judgments on recent economic developments in the Matutuine District

According to the Mozambican constitution, all land belongs to the state. No land can be privately owned. The land and its resources is thus used on the communal utilisation pattern. A new land law is currently being drafted whereby a person will have a say on what happens on a specific piece of land if he or she has occupied that land for more than ten years. People were asked if they were aware of this new land law. Of the respondents, 54% said that they were indeed aware that the land law had changed.

People were also asked whether they would make their land available for the purpose of tourism development. Of the respondents, 43% said that they would lease out the land they live on for tourism development.

At Ponta Malongane, 74% of respondents said that they would be willing to make their land available for tourism development. This can be due to the fact that most people at Ponta Malongane are newcomers to the area without emotional ties to the land. The majority of people at Ponta Malongane are also positive towards tourism because they receive some benefits from it, however minimal.

At Ponta do Ouro, 51% of respondents said that they would be willing to make their land available for tourism development. This percentage is quite high and probably due to the influx of South African tourists to the area since the end of the Civil War and the end of Apartheid in South Africa. As was mentioned already (2.4.3), many people at Ponta do Ouro and Ponta Malongane have recently moved there, hoping to find work at tourism resorts.

The percentages of people who would be willing to make their land available for tourism development was also high at most of the other places where research was conducted. At Xuxa, 50% of the people and at Catuane 45% of people would be willing to lease out their land for tourism development. The picture was different at Zitundo and Salamanga. At Zitundo, only 34% of people said that they would be willing to lease out their land, and at Salamanga only 15% of people said that they would be willing to do so.

The most prominent motivations given for leasing out land was that it would develop the area, help the local population, or simply that the person who leases out land would receive money for it.

People who did not want to lease out their lands said that it was the only land they had and that they have nowhere else to go if they were to lease out their land. It is therefore no surprise that at places where people have been living for a long time, they were unwilling to give up their land, while the more recent populations of Ponta Malongane and Ponta do Ouro were willing to lease out their land.

Respondents were also asked whether they would be willing to participate in tourism development in the area. The vast majority (73%) said that they would be willing to participate. The figure was again highest at Ponta Malongane where 85% of people said they would participate in tourism development. There was also support for participation at Zitundo (84%), Xuxa (83%), Ponta do Ouro (82%) and Catuane (80%). It was only at Salamanga where the figure was lower than 80%. At Salamanga, only 51% of people said that they would be willing to participate in tourism development.

The most prominent reason given for willingness to participate in tourism development was a desire to be employed and to get money. The fact that this figure is high throughout the research area underlines the fact that there is a high unemployment rate. Most of the people who are against participation in tourism development said that they are too old and that they are tired of people who come to them with stories of development when it is clear for all to see that there is no development. In fact, a large number of people were not willing to answer that specific question because they say a lot of people come to the area and ask about development, but nothing ever gets done.

It is therefore not surprising that, when people were asked what their opinion was about development in the area, most of them said that there has been no development in the area. Most agreed that development is necessary, and people who live in Ponta Malongane and Ponta do Ouro pointed to the dive camps and said that they bring tourism and money to their area, but the only development people say have taken place are those on the coastline.

CHAPTER 5

CONCLUSIONS

5. 1. REVISITING KEY QUESTIONS

In order to evaluate the research results, the ten questions mentioned on page 32 and page 33 (see also Borrini-Feyerabend & Buchan 1997:58-67) are answered below. The aim of these ten key questions is to assess the natural resource utilisation needs of local people in a conservation initiative. It is also important that these aspects are considered in the planning for the Lubombo Transfrontier Conservation Area, as it could ensure that the elements of the economic aspect of the culture of the inhabitants of the area are included into the management of the conservation area.

1. How do the natural resources of the conservation initiative contribute to the livelihood of local people?

The responses of both spokespersons and of respondents to this question were discussed in detail in Chapters 3 and 4 under the headings of agriculture and animal husbandry, interaction between wild animals and humans and the utilisation of wild plants.

The people in the research area are extremely dependent on agriculture for their basic subsistence needs. They plant crops for both subsistence and commercial purposes, although few people actually sell the crops they cultivate. The most important crops are, in order of the number of people who plant those crops: cassava, maize, beans, sweet potatoes, sugarcane and groundnuts. People are thus extremely dependent on the soil in the area to make a living. Without access to areas that can be converted into agricultural fields, the local people of Matutuine will not be able, given the present economic situation, to survive. For this reason it would be ethically

irresponsible of the planners of the Transfrontier Conservation Area to remove people from the land without compensating them for their loss of a livelihood by implementing other forms of development.

Only a small minority of people rear domestic animals. This low figure can largely be attributed to the extreme poverty that prevails in the area. Poultry in the form of chickens are quite common, but very few people own goats and only a very small minority own cattle. Cattle are more common to the west of the Maputo River in the area surrounding Catuane than anywhere else in the study area. Although so few people own cattle and goats, they still attached value to these animals, mostly due to their perceived utilisation value (see 3.2.1). Although there are very few domestic animals in the research area, the utilisation of these animals contribute greatly to the livelihoods of the local people and is thus important (see 3.2.7 and 3.2.8).

Since so few people own domestic animals such as chickens and goats, they also have to rely on game for meat. The most important wild animals in this regard, in order of the number of people who said that they ate the meat from those animals are: grey duiker, bushpig, reedbuck, red duiker, hippopotamus, cane rat, vervet monkey, impala, buffalo and nyala.

Wild animals cause several problems for people living in the Matutuine district with regard to the destruction of crops. The following animals were identified as problem animals because they damage crops or are perceived as dangerous animals, known to have killed people in the research area: bushpig, hippopotamus, elephant, buffalo, vervet monkey and cane rat. Bushpigs and hippos were found to be problem animals throughout the research area. Elephants were really only problematic at Salamanga, which is situated right next to the Maputo Elephant Reserve on the Futi River. Buffalo were only problematic near Catuane, which is situated just north of the Ndumo Game Reserve in South Africa.

Although people hunt and eat wild animals, their utilisation of these animals for food is limited by the fact that fauna in the research area have been depleted due to historical events, such as the tribute system that existed between the Ronga and the

Zulu and the Mozambican Civil War. However, the utilisation of so-called bush-meat in the research area is a common practice where such meat can be obtained.
The fact that there are so few wild animals in the area increases people's reliance on fish as a source of food. Fish are caught for subsistence and commercial purposes in the sea, rivers and various lakes in the area. The main species of fish that are caught in the research area are: black tilapia, Mozambique tilapia and sharp-tooth catfish.

The poverty throughout the area and the fact that people cannot grow enough foodstuffs to meet their basic needs have made people extremely reliant on wild plants for their survival. Plants are used for various essential purposes.

As medicine the following species of plants were found to be important: sweet thorn acacia, moth fruit, broad leaved false thorn, cashew, wild custard apple, green thorn, coast silver oak, blue sweetberry, mitzeeri, pawpaw, sickle bush, African mangosteen, landolphia, umbrella tree, bursting beauty, broad-leaved resin tree, Natal karee, caustic vine, marula, tamboti, green monkey orange, black monkey orange, toad tree, silver cluster-leaf, Cape coffee, Natal mahogany, wild medlar, Natal sourplum and knobwood.

Fruit also plays an important part in the diets of people in the area. Fruit is collected from trees that grow wild and from trees that people plant themselves. The most important trees that people plant themselves are mango trees, cashew trees, papaw trees and orange trees. Fruit are also collected from the following wild trees; wild custard apple, Zulu podberry, jackal-berry, African mangosteen, landolphia, forest milkberry, Lowveld milkberry, coastal red milkwood, sugarcane, marula, green monkey orange, black monkey orange, water berry, toad tree, Natal mahogany, wild medlar and Natal sourplum.

Besides collecting fruit to eat, the people also collect various kinds of wild fruit are also used to make alcoholic beverages. By far the most important alcoholic beverage drunk in the area is palm wine (*ubusulu*) made by tapping *ilala* palms. Other species from which alcoholic beverages are made are; cashew, pawpaw, African mangosteen, landolphia, forest milkberry, wild date palm, sugarcane, marula, green monkey orange, black monkey orange, waterberry and maize.

In the absence of generated electricity in the research area, people rely more heavily on trees for firewood than they would have had there been other sources of fuel suitable for cooking. Wood is collected to supply in the demand for fuel. Although most dead and dry woods are used as firewood, the following species were identified as those mostly used or preferred in this regard: horned thorn, sweet thorn acacia, umbrella thorn, pod mahogany, worm-bark false-thorn, cashew, Zulu podberry, sickle bush, eucalyptus, coastal red milkwood, marula, green monkey orange, black monkey orange, waterberry, Jambolan-plum, toad tree, silver cluster-leaf and Natal mahogany.

For construction, people in the research area are also extremely reliant on natural resources. Most houses in the area are constructed from the common reed, thatched with cottonwool grass. Other plants used to construct houses are: horned thorn, sweet thorn acacia, umbrella thorn, sisal, worm-bark false-thorn, cashew, coast silver oak, papyrus, Zulu podberry, sickle bush, eucalyptus, forest milkberry, tamboti, black monkey orange, waterberry, silver cluster-leaf, Natal mahogany, *Typha latifolia* and buffalo-thorn.

Plants are also used to craft various objects and utensils, such as baskets, spoons and mats. Some people make these objects for commercial purposes, but for the most part they are made for personal use. The craft objects are sold, mainly in the coastal area (Ponta do Oura and Ponta Malongane) to tourists who frequent the holiday resorts. The following plants are used in this way: sweet thorn acacia, pod mahogany, sisal, broad leaved false-thorn, papyrus, *ilala* palm, cottonwool grass, salt marsh rush, wild date palm, common reed and *Typha latifolia.*

Finally, plant species used to make traps to catch fish and wild animals were identified: sisal, worm bark false-thorn, sickle bush, lala palm, salt marsh rush, landolphia, forest milkberry, common reed, green monkey orange, black monkey orange and *Typha latifolia.*

Natural resources are thus extremely important for the everyday survival of the people in the research area. This becomes even more evident when one looks at the financial status of the people. As was discussed above (2.4.5), there is an unemployment rate

of 65% in the research area. There are very few job opportunities and most people are happy to find casual work at the holiday resorts of Ponta do Ouro and Ponta Malongane. As was also discussed, only a small minority of people receive financial help from people outside the area and even fewer people receive pensions. All these factors, together with the fact that many more non-local people are moving in (especially in the coastal part), increase the pressures on natural resources.

2. How do the natural resources of the conservation initiative help meet people's cultural, religious and identity needs?

This question is closely related to the previous one, except that the focus is on natural resources used for cultural and religious needs. Since medicine cannot be separated from religion in the lives of the local people who inhabit Matutuine (4.2.1.1), the plants used for healing are also relevant here.

Besides plants used for religious and medicinal purposes, it was also shown that both domesticated and wild animals are used in traditional religious practices. Cattle, goats and chickens are used to venerate the spirits of the ancestors. Body parts, mainly the fat, of the following wild animals are also used for religious and medicinal purposes: vervet monkey, crocodile, spotted hyena, hippopotamus, lion, baboon and bushpig.

Special mention must be made of the cultural importance of the marula (*Sclerocarya birrea*) in the research area. As was discussed in detail above (4.2.3), a special first-fruit festival is held at the time when the marulas ripen. No one is allowed to brew *buganu*, the alcoholic beverage made with marulas, before the special ceremony is held. During the festival the ancestors are thanked for the fruit and only after the *inkosi* has drunk *buganu* is everybody else allowed to brew and drink it. This ceremony is of special cultural importance because it ritually re-establishes the position of the *inkosi* and the unity of his people.

The sacred forest where this ceremony takes place is also of special cultural importance. It was shown that there are various sacred forests throughout the research area and that the sanctity and importance of these places to the indigenous people should be taken into account in any development planning in the region.

3. Do local people perceive any need to conserve natural resources, specific species, habitats, etc.?

The answer to this question was sought by asking people whether it is possible for the people who live in the research area to use up all the wild animals, fish and plants found there. The resounding answer to this question was that it would be impossible since there are too many plants, fish and wild animals. This answer should, however, not be taken to mean that people are against conservation, but rather that they see nature, as was discussed in Chapter 4, as the eternal provider. Mbiti (1996:179) notes in this regard that African people in general believe that the universe was created for the sake of man, and because of that reason the creator ensures that man continually benefits from nature. Nature has always provided people with food and materials and people cannot conceive of any reason why this would end.

When spokespersons where asked about Transfrontier Conservation, most were very enthusiastic. However, this should not be taken to mean that people are necessarily pro-conservation, since most of them valued the idea primarily because they believe that it will bring employment opportunities to the area. The same amount of enthusiasm voiced for Transfrontier Conservation was also voiced for the development of a harbour at Porta Dobela, because people believe that it will bring employment opportunities to the area, despite the fact that this development will totally destroy the sensitive ecosystem of the research area.

What can be concluded is that the people in the research area do not value conservation *per se*, but that they value the benefits that will accrue from conservation developments, such as tourism (job opportunities). This is thus a classic example that conservation can work in Africa, and will be valued by African people, if they share in the benefits that accrue from conservation.

4. Are or where there indigenous customary resource management systems in the area and are they being affected by the conservation initiative?

The traditional authority structure was discussed in Chapter 2 (2.3). It was shown that the turbulent past of the people living in the research area has created a situation of

confusion and disorder. If there was a customary resource management system, it has also been disrupted. As was discussed, it is not necessary for a person to obtain permission from the *inkosi* and to pay homage (*khonza*) to him in order to settle on a piece of land. This is especially true in the coastal areas surrounding Ponta Malongane. In the traditional system, the fact that a person paid homage to the *inkosi* would entitle him to utilise the communally utilisable natural resources. At present, there is no control over the people who settle in the area and thus there is no control over the utilisation of natural resources.

The present situation can thus be described as a free-for-all system where everybody takes what he/she needs from nature. The present relatively low human population in the area allows this system to function, seemingly without too much negative effect on the ecosystem. However, an increase in the human population, mostly due to the influx of people into areas such as Ponta Malongane where they hope to find work, can rapidly alter the situation. If the human carrying capacity of the area is exceeded, what Hardin (1968) termed the Tragedy of the Commons could ensue. This situation develops when people who use a resource base communally start using it for commercial gain. In the process the communal resource base is destroyed. In the fear that they will not have access to communally utilised natural resources since so many people depend on it (even people outside their own region), people start to harvest natural resources before the natural resources have an opportunity to replenish themselves. In other words, the natural resources are not harvested on a sustainable basis. Over time, this creates a situation where the poorest people knowingly destroy the very resource base they are dependent on for their future because they have no other choice if they wish to survive the present.

5. Does the conservation initiative affect access to land or resources and the control over them for one or more stakeholders?

The exact boundaries of the Lubombo Transfrontier Conservation Area have not yet been established. It is generally accepted that the area between the Futi and Maputo Rivers, the so-called Futi corridor, will become a conservation area to link the Tembe Elephant Park and the Maputo Elephant Reserve. This area is by no means densely populated, but approximately 130 families (households) are living there. If these

people were forced to leave, then the conservation initiative would definitely affect their access to natural resources and it would affect the people living adjacent to this specific area. Plans would thus have to be made to ensure that resources can be utilised at sustainable levels by those people, or they should be first in line for employed by the management structures of the conservation area.

In order to persuade the local inhabitants to leave the areas they occupy at present, it would be necessary to buy or lease their land from them. This is a decision that will have to be made by the planners and developers of the conservation initiative. It was shown that 43% of the people in the research area are willing to make their land available for tourism development. This figure, however, was much higher on the coastal region where people have moved recently. People at places like Zitundo and Salamanga were not as willing to make their land available for development. This possibility therefore seems highly unlikely to bear positive results.

6. Are there major economic activities (e.g. mining, timber extraction) in the area which do or could affect the conservation initiative?

The current situation regarding major economic activities in the area was discussed in detail in Chapter 1 (1.3.3.3). The proposed Sappi programme for timber extraction in the area has been halted. The programme provided by Mr Blanchard for tourism development in the area has been halted due to his death in 1999. Blanchard's concession, encompassing the entire area, has since been subdivided into smaller concessions. However, there is a great deal of confusion regarding the sizes and boundaries of these concessions. The conservation initiative can only be implemented once this confusion has been cleared up.

A positive point is that many concessionaires in the area with whom interviews were conducted have the same aims for the area as that of the Peace Parks Foundation. They also envision restocking of the area with fauna and developing eco-tourism. It may therefore be possible to work with these people to ensure the successful implementation of the Lubombo Transfrontier Conservation Area.

The most problematic development in the area is the planned multi-million dollar development of the harbour at Porta Dobela on the southern boundary of the Maputo Elephant Reserve. When one looks at the situation at Ponta Malongane, with people from all over Mozambique moving there in the hope of finding employment, the projections for Porta Dobela are alarming. As was discussed in Chapter 1 (1.3.3.3), the development of the harbour will create many job opportunities. This will increase the number of people in the area and will in turn increase the pressures on the natural resources. These developments will not only destroy the natural beauty of the area and therefore the tourism potential of the area, but will also attract a landless mass of people living in squatter camps with accompanying levels of extreme squalor and poverty.

7. Are there incentives or disincentives to conservation in the local context?

As has been shown throughout the study, the local inhabitants of the research area are extremely reliant on natural resources for their survival. If conservation of these resources were to be defined as preventing people's access to them, then there would certainly be a disincentive to conservation in the local context. However, it has also been shown that there are no real employment opportunities for local people in the area. Therefore, if the conservation initiative were to create jobs and a further integrated rural development approach were to be followed for the local inhabitants, there would certainly be an incentive for conservation in the local context. Conservation would therefore be regarded in a positive light if it was geared to meeting the needs of local inhabitants.

8. What are the actual costs and benefits of the conservation initiative and how are they distributed among the stakeholders?

It is still too early in the process to answer this question in detail. The primary costs of the conservation initiative may be a loss of access to natural resources for local people. However, at the same time, they might benefit from tourism development in the area. Whether the cost (loss of access to resource utilisation) will be outweighed by the benefit (employment and development) is difficult to project. The natural beauty of the area and a dedicated effort to restock the area with wild animals will

certainly make it a prime tourism attraction in Southern Africa. If the local inhabitants were to share in those benefits, then surely that will outweigh the costs they have to pay for nature conservation in their environment.

9. What contributions can the stakeholders make to the conservation initiative?

The major contribution that can be made to the conservation initiative by the local inhabitants is the provision of labour, due to their low levels of education and skills training. The local people should be employed to construct tourist facilities and other endeavours necessary for the realisation of the conservation initiative. They should also be employed as labourers once the conservation initiative has been established. They can be employed as washers, cleaners, gardeners, mechanics and tradesmen. Local people can also be trained as game rangers. Initiatives like the Southern African Wildlife College, near the Orpen Gate of the Kruger National Park, provide local people with skills and enable them to benefit from nature conservation. The Peace Parks Foundation supports the Southern African Wildlife College, which is partly funded by the United States Agency for International Development and whose aim it is to train protected areas managers to manage those areas and their wildlife populations sustainably and in cooperation with local people (Peace Parks Newsletter 2000). The problem, however, is to establish a system whereby it can be ascertained that the local people are the benefactors and not people moving in from other areas. This aspect will determine the successful outcome of such an endeavour.

10. Are there solid social and economic opportunities to link conservation objectives with providing for local needs?

This question has already been answered in this concluding discussion. There are indeed opportunities to link nature conservation and socio-economic development in the establishment of the Lubombo Transfrontier Conservation Area. The Peace Parks Foundation has also committed itself to this goal. If the resource utilisation needs of the local people are fully comprehended and considered, then the local people can benefit from the Lubombo Transfrontier Conservation Area by the creation of employment opportunities and tourism development in the Matutuine district.

5. 2. FINAL REMARKS

It was stated in the introduction to this study that the greatest limitation of the research conducted was the fact that the area between the Futi and Maputo Rivers was not extensively surveyed. This area, known as the Futi-corridor, is extremely important in the design of the Lubombo Transfrontier Conservation Area, since this is the area targeted to link the Tembe Elephant Park and the Maputo Elephant reserve. Due to poor road conditions, large parts of this area were inaccessible during the time when the research was conducted. Research is, however, currently being conducted by a team of which the author is a member, under the auspices of the Peace Parks Foundation as a continuance of the research reported on here. This research focuses on the natural resource utilisation patterns of the people living in the Futi-corridor and on the demography of the area, and is a duplication of the research that was done outside the corridor. The research will be completed by the end of October 2001.

Further research will also have to be done on the South African side of the planned Transfrontier Conservation Area. This research will have to investigate the demography of the area surrounding the Tembe Elephant Park as well as the natural resource utilisation patterns of the people living in the area. A large part of that research will be done independently of the larger Lubombo Transfrontier Conservation Area programme by the author as a doctoral study on the interaction between people and the environment in Maputaland.

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PERSONAL COMMUNICATION

Boonzaaier, C. 1999. Associate Professor, Department of Anthropology and Archaeology, University of Pretoria.

Matthews, W. 2001. KwaZulu Natal Wildlife. Ecologist-Northern Maputaland.

Annexure 1: Questionnnaire used to conduct quantitative research

QUESTIONNAIRE NUMBER:

1	Male / Homem / wanuna /	1
2	Female / Mulher / Wasate	2
3	Age / idade / malembe	3
4	Single / solteiro / wo kala a nga si tekaka	4
	Married / casado / utsatile	5
	Divorced / divorciado / kuhambana (dlaya vukati)	6
	Widower / viúvo / mufeliwa (noni)	7
	Widow / viúva / mufeliwa (noni)	8
5	How many wives do you have / Quantas esposas tens / Uni vasati vangane	9
6	How many wives does your husband have / quantas mulheres o seú marido possui / uni vasati vangane	1
7	How many children do you have / Quantos filhos tens / uni vana vangane	1
8	How many daughters do you have / Quantas meninas tens / uni vana vangaki va xisati	1
9	How old are they / Quais sao as suas idades / Vani malembe mankaki	1
		1
		1
		1
		1
		1
		1
10	How many sons do you have / Quantos rapazes tens / Uni vana vangaki vava nuna	2
11	How old are they / Quais sao as suas idades / Vani malembe mankaki	2
		2
		2
		2
		2
		2
		2
12	What is the name of this area of Matutuine / Qual é o nome do posto administrativo desta área	
	Avito dza posto adiministrativo dza mbango lowu	
	Zithundo	1
	Catuane	2
	Catembe	3
	Machangulo	4
	Bela Vista	5
13	What is the name of this muganga / Qual é o nome deste circulo (Muganga) / A vito tsa circulo ledze	
14	Who is the secretary in charge of this area / Quem é o secretário desta área	
	Hi mani musanguele wa mbango lowu	
15	Who is the *inkosi* in charge of this area / Quem é o chefe de terras desta área /	
	Hi mani a musanguele (hosi) wa missava ya munganga lowu	
16	Who is the *induna* in charge of this area / Quem é o imduna desta área / Hi mani a nduna ya mbango lowu	

17	Number of buildings in homestead / Quantas casas existem neste local / Mimiti ya laki ka mbango lowu	
18	How many people are staying in this umuzi / Quantas pessoas vivem nesta casa Vankaki vano vatsamisako lani ka muti lowu	
19	Where did you stay during the war between Frelimo and Renamo? Onde e que esteve ou refugiou durante a guerra entre Frelimo é a Renamo A uli kwini ankama wa himpi wa Frelimo na Renamo	
20	Is this your permanent home / Esta é suá residencia permanente / A hinlho lei iaku a kale (nkarhi hinkwawo) Yes / sim / ina No / naõ / e-e	
21	If this is not your permanent home, where is your permanent home Se naõ é residência permanente, onde sera / Loko a hinlho lei ahiwaku, hi kiwini ingakone	
22	How long have you been living at this place / A quanto tempo vive nesta zona / Uanha ka mbango lowu a kale	
23	Where did you live before you came to live here / Onde é que vivia antes desta residência A unhakwini na ungasibuya haleno	
24	Why did you move here / Qual foi o motivo de mudança de residência / Ubuile ha hine haleno	
25	Where do your parents stay / Onde é que vivem os seus pais / Vatsama kwine vapapai vako	
26	Did you attend school / Frequentou alguma escola / Udondzile kwini shana Yes / sim / ina No / naõ / e-e	
27	Where did you attend school / Onde é que frequentou (escola) / Udondze kwini axicole	
28	What is the highest standard you passed / Qual foi a ultima classe que frequentou / Undondze ate classe muni	
29	Did you complete any study after school / Depois de ter frequentado a suá escola, sera que fez um outro curso Akama unga heta axicole, udondodzihini anlhe ka xicole Yes / sim / ina No / naõ / e-e	
30	What are these / Quais saô os cursos / Hinwini unga hamba	
31	Do you have a job / Sera que possui emprego / Uwa tisa ke Yes / sim / ina No / naõ / e-e	
32	If you have a job, how long have you had this job / Se tens emprego, diga o tempo que começou a trabalhar loko utisa, lhaia swako usungule rini a kutisa	

33	If you answer no, when last did you have a job / Se naõ, quando é que teve o último emprego Loko uku hinii, utise kwini ka ugamo	

34	What is (or was) this job / Qual é ou foi o tipo de emprego / Utisahini shana ou utise xahini	
35	How long did you have that job / Qual foi a periodicidade desse emprego / Xipimimo muni unga tisa lomo	
36	Why did you leave this job / Porque deixou de trabalhar / Haini unga tsika kutisa	
37	How many people do you have to care for / Quantas pessoas é que estao na suá responsabilidade Hivano vankake vatisaku nanwine	
38	Are there other people also supporting this family financially Se existe alguem que sustenta esta familia financeiramente / Kuni munwanhane a nkane male a pfunaka lakaya Yes / sim / ina No / naõ / e-e	
39	Who are they / Quem saô / Hivamane	
40	Where do they work / Onde é que trabalham / Vatisa kwini	
41	How long have they been working there / A quanto tempo é que trabalham nesse local / Vasungule kutisa rini	
42	Is there anyone living in this muzi who gets pension / Se existe alguem nesta casa que recebe pensaõ Akone lwe awolaca a penjseni Yes / sim / ina No / naõ / e-e	
43	How many cattle do your family own / Quantas cabeças de gado bovino possuem / Muni tihomo tingane	
44	Why do or don't you keep cattle / Porquê é que crias gado ou porque naõ crias Uvuela hini atihomo ou ahini ungafui	
45	How many goats do your family own / Quantos cabritos a suá familia possue / Timbute tingane munganatu	
46	Why do or don't you keep goats / Porquê é que crias cabritos ou porque naõ Uvuela hini a timbute ou ahini ungafui	
47	How many sheep do your family own / Quantas cabeças de ovelhas possuem / Uni swipongo swigake	
48	Why do or don't you keep sheep / Porquê é que crias cabeças ou porque naõ Uvuela hini a swipongoou ahini ungafui	
49	How many pigs do your family own / Quantos porcos a sua familia possue / Uni tinguluve tingani	

50	Why do or don't you keep pigs / Porquê é que crias porcos ou porque naõ / Uvuela hini atinguluve ou ahini ungafui	

51	How many donkeys do your family own / Quantos burros a sua familia possue / Uni timbongole tingani	
52	Why do or don't you keep donkeys / Porquê é que crias burros ou porque naõ Ufuela hini timbongole ou ahine ungafui	
53	How many chickens do your family own / Quantos galinhas a sua familia possue / Muni tiwuko minkake	
54	Why do or don't you keep chickens / Porquê é que crias galinhas ou porque naõ Uvuela hini tiwuku ou ahine mungafui	
55	How many cats do your family own / Quantos gatos a sua familia possue / Muni swingove swingane	
56	Why do or don't you keep cats / Porquê é que crias gatos ou porque naõ / Uvuela hini a swingove ou ahini mungafui	
57	How many dogs do your family own / Quantos caês a sua familia possue / Muni tingwana tingake	
58	Why do or don't you keep dogs / Porquê é que crias caês ou porque naõ / Uvuela hini tingwana ou ahini mungafui	

59	Do you eat the meat of cattle / Sera que comes carne de vaca / Wada a nhama ya homo	
	Yes / sim / ina	
	No / naõ / e-e	
	every day / todos os dias / hinkwau masiku	
	once a week / uma vez por semana / Kawe hi vike	
	once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tihomo	
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe	
	once a year / uma vez por ano / kawe hikuweta ka lembe	
60	Where do you get the meat of cattle / Onde e que consegue obter a carne de vaca / Uhikumisa kuine a nhama ya homo	
	I buy it / Eu compro / noxava	
	I slaughter my own animals / eu abato os meus animais / Nodlhaya a swiasi swanga	
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos Niyikuma hilho dza vangano, maxaca ou anixave	
61	Do you eat the meat of goats / Sera que comes a carne de cabrito / Wada a nhama ya mbute	
	Yes / sim / ina	
	No / naõ / e-e	
	every day / todos os dias / hinkwau masiku	
	once a week / uma vez por semana / Kawe hi vike	
	Once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya timbute	
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe	
	once a year / uma vez por ano / kawe hikuweta ka lembe	
62	Where do you get the meat of goats / Onde e que compras a carne de cabrito / Uxava kwini a nhama ya mbute	
	I buy it / Eu compro/ noxava	
	I slaughter my own animals / eu abato os meus animais / Nodlhaya a swiasi swanga	
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos Niyikuma hilho dza vangano, maxaca ou anixave	

63	Do you eat the meat of sheep / Sera que comes a carne de ovelha / Wada a nhama ya xipongo
	Yes / sim / ina
	No / naõ / e-e
	every day / todos os dias / hinkwau masiku
	once a week / uma vez por semana / Kawe hi vike
	Once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tipongo
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
	once a year / uma vez por ano / kawe hikuweta ka lembe
64	Where do you get the meat of sheep / Onde e que compras a carne de ovelha / Uxava kwini a nhama ya xipongo
	I buy it / Eu compro/ noxava
	I slaughter my own animals / eu abato os meus animais / Nodlhaya a swiasi swanga
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos
	Niyikuma hilho dza vangano, maxaca ou anixave
65	Do you eat the meat of pigs / Sera que comes a carne de porco / Wadanhama ya nguluve
	Yes / sim / ina
	No / naõ / e-e
	every day / todos os dias / hinkwau masiku
	once a week / uma vez por semana / Kawe hi vike
	once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tinguluve
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
	once a year / uma vez por ano / kawe hikuweta ka lembe
66	Where do you get the meat of pigs / Onde e que compras a carne de porco / Uxava kwini a nahma ya nguluve
	I buy it / Eu compro/ noxava
	I slaughter my own animals / eu abato os meus animais / Nodlhaya a swiasi swanga
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos
	Niyikuma hilho dza vangano, maxaca ou anixave
67	Do you eat the meat of chickens / Sera que comes a carne de galinha / Wadanhama ya whuku
	Yes / sim / ina
	No / naõ / e-e
	every day / todos os dias / hinkwau masiku
	once a week / uma vez por semana / Kawe hi vike
	Once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tiwhuku
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
	once a year / uma vez por ano / kawe hikuweta ka lembe
68	Where do you get the meat of chickens / Onde e que compras a carne de galinha / Uxava kwini a nhama ya wuku
	I buy it / Eu compro/ noxava
	I slaughter my own animals / eu abato os meus animais / Nodlhaya a swiasi swanga
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos
	Niyikuma hilho dza vangano, maxaca ou anixave
69	Do you eat fish / Sera que comes peixe / Uada anhama ya lnhlampfi
	Yes / sim / ina
	No / naõ / e-e
	every day / todos os dias / hinkwau masiku
	once a week / uma vez por semana / Kawe hi vike
	Once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tinhlampfi
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
	once a year / uma vez por ano / kawe hikuweta ka lembe
70	Where do you get this fish / De onde e que obtens o peixe / Uikumisa kuini a tinhlampfi
	I buy it / Eu compro/ noxava
	I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos
	Niyikuma hilho dza vangano, maxaca ou anixave

72 How do you catch it / como e que pescas / Utsevisakuini

73 How often do you catch fish / Qual e a periodicidade de pesca / Lhaya a nkama u tsevisaku a tinhlampfi

every day / todos os dias / hinkwau masiku
once a week / uma vez por semana / Kawe hi vike
Once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tinhlampfi
Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
once a year / uma vez por ano / kawe hikuweta ka lembe

74 Do you sell fish / sera que vendes o peixe / Uxavsakuini a tinhlampfi

Yes / sim / ina
No / naõ / e-e

75 Do you eat the meat of wild birds / Sera que comes a carne de pássaro / Wada a nhama ya swinhanhane

Yes / sim / ina
No / naõ / e-e
every day / todos os dias / hinkwau masiku
once a week / uma vez por semana / Kawe hi vike
once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya tinhanhane
Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
once a year / uma vez por ano / kawe hikuweta ka lembe

76 Which wild birds do you eat / Qual e o tipo de passaros que comes / hinhama muni ya swinhanhana udaka

77 Where do you get these wild birds / De onde e que obtens os passaros / Utikuma kwini atinhanhana

I buy it / Eu compro/ noxava
I catch it / caço / nophasa
I get it from friends or my family for free / consigo obter a travez de amigos, minha familia ou sem gastos
Niyikuma hilho dza vangano, maxaca ou anixave

78 Do you eat the meat of wild animals / Sera que comes a carne de animais selvagens /wada a nhama ya swiasi swa ~ova

Yes / sim / ina
No / naõ / e-e
every day / todos os dias / hinkwau masiku
once a week / uma vez por semana / Kawe hi vike
once a month / uma vêz por mes / kawe hikuela ka tlhano na dzimo ya swiasi swa nova
Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
once a year / uma vez por ano / kawe hikuweta ka lembe

79 Which wild animals do you eat / Que tipo de animal selvagem consomes / hi swiasi muni swanova udaka

80 How many masimo do you have / Quantas machambas possuis / Uni masimo mangani

81 Why do you make these masimo where you make them / Porquê é que fazes machamba e a onde
Haini uni masimo udlhala kwini

82	Which crops do you plant in these masimo / Que tipo de culturas plantas / udlala hayni ka masimo yaku

83	Which of these crops are the most important / Quais destas culturas sao mais importantes para si Hinphini swinga swalisimo udlhalakaphoni

84	Why do you say so / Porque dizes isso (justifique) / Hahini ulhayka leswo

85	Which of the crops that you plant gives you the most reliable harvest? Quais destas culturas garantem a melhor colheita durante o ano Hinlhovo muni ukunhikaka aswahombe ka lembe hinguadzo

86	Do you sell your crops?/ Sera que vendes a sua producao (culturas) Uxavisakwini leswi unga duala swone	
	Yes / sim / ina	
	No / naõ / e-e	

87	To who do you sell your crops / A quem vendes a sua produçaõ / uchawissela mani a mi janzo haku

88	How much money do you make from the sale of crops? Quanto dinheiro e que consegues com a venda dos produtos / imale muni uganhaku hikuchawissa amijanzo

89	Do you buy maize / Sera que compras milho / wachava ha chissama	
	Yes / sim / ina	
	No / naõ / e-e	

	Casava / Mandioca / antsumbula	
	Yes / sim / ina	
	No / naõ / e-e	

	sweet potatoes / batata doce / amihambu	
	Yes / sim / ina	
	No / naõ / e-e	

	potatoes / batata / mazambane	
	Yes / sim / ina	
	No / naõ / e-e	

	beans / feijaõ / itibanwene	
	Yes / sim / ina	
	No / naõ / e-e	

	ground nuts / amenduim / mazumana	
	Yes / sim / ina	
	No / naõ / e-e	

0	Cattle are : / Os bovinos sao: / Atihomu ti:	
	beatiful / bonitas / shonguile	Yes / sim / ina No / naõ / e-e
	bad / maus / tacajata	Yes / sim / ina No / naõ / e-e
	dangerous / pergosos / atilungaga	Yes / sim / ina No / naõ / e-e
	Why do you say so / porque (justifique) / himacamuni	
1	Goats are : / Os cabritos sao: / Atimbuti ti:	
	beatiful / bonitas / shonguile	Yes / sim / ina No / naõ / e-e
	bad / maus / tacajata	Yes / sim / ina No / naõ / e-e
	dangerous / pergosos / atilungaga	Yes / sim / ina No / naõ / e-e
	Why do you say so / porque (justifique) / himacamuni	
2	Dogs are : / Os caês sao: / Atinwana ti:	
	beatiful / bonitas / shonguile	Yes / sim / ina No / naõ / e-e
	bad / maus / tacajata	Yes / sim / ina No / naõ / e-e
	dangerous / pergosos / atilungaga	Yes / sim / ina No / naõ / e-e
3	Why do you say so / porque (justifique) / himacamuni	
4	Donkeys are : / Os burros sao: / Atibongola ti:	
	beatiful / bonitas / shonguile	Yes / sim / ina No / naõ / e-e
	bad / maus / tacajata	Yes / sim / ina No / naõ / e-e
	dangerous / pergosos / atilungaga	Yes / sim / ina No / naõ / e-e
5	Why do you say so / porque (justifique) / himacamuni	

96	Pigs are : / Os porcos sao: / Atinguluve ti:		
	beatiful / bonitas / shonguile	Yes / sim / ina	1
		No / naõ / e-e	1
	bad / maus / tacajata	Yes / sim / ina	1
		No / naõ / e-e	1
	dangerous / pergosos / atilungaga	Yes / sim / ina	1
		No / naõ / e-e	1
97	Why do you say so / porque (justifique) / himacamuni		
98	Is man responsible to take care of his domestic animals? Sera que as pessoas sao responsaveis pela domesticacao dos animais havanu hi vone vawoneleli ha swihari swa muti		
		Yes / sim / ina	1
		No / naõ / e-e	1
99	Why do you say so / porque (justifique) / himacamuni		
100	Name the animals that eat the crops in your insimu Mencione o tipo de animais que destroem as machamba / shi swihari muni swi honaku hamashimu		
101	Which of these animals are dangerous to man / Quais destes animais sao perigosos ao Homem hi swihari muni swi vangaku gozi ka vanu		
102	Why do you say so / porque (justifique) / himacamuni		
103	Which of these animals are beautiful / Qual destes animais e bonito / Hi swihari swinga shonga		
104	Why do you say so / porque (justifique) / himacamuni		
105	Have you ever been chased by a wild animal near your home? Sera que ja foi perseguido por algum destes animais / Swi sama swikunlhongolisa ke		
		Yes / sim / ina	
		No / naõ / e-e	
106	Name these animals / Mencione esses animais / Swihari muni		

7 Do you know of any person that was killed by a wild animal?
Conhecerá alguem que foi morto por estes animais / Aswihari leswi swidzama kudlhaya munu

Yes / sim / ina
No / naõ / e-e

8 When was that / quando e que isto aconteceu / Swi endjeki kwini

9 What animal was that / Que tipo de animal e que foi / Hi swihari muni

10 Which five wild animals do you fear the most / Quais dos cinco animais selvagens temes
Ka tlhanu waswiahari hi hini ui djavaku hintamu

11 Why do you fear them / Porque e que temes / Udjavela hini

12 Do you catch wild animals / Sera que fazes a caca de animais selvagens / Wa paca aswiahari swa nova

Yes / sim / ina
No / naõ / e-e

13 Why do you catch wild animals / Porque e que fazes a caca de animais selvagens
Ha hini upacasaka a swiahari swa nova

To eat / Para comer / Kuda
To use the skin / para usar a pele / Kutisisa a xikumba
To use the feathers / para usar as penas / Kutisisa a mavoia
|o use the fat / para usar a gordura / Kutisisa a mafuza
To use the bones / para usar os ossos / Kutisisa a masambo
to use the horns / para usar os chifres / Kutisisa a timondzo
To use as medicine / para usar como medicamento / Kutisisa swaku daha

14 How do you catch wild animals / Como e que cacas os animais selvagens / Upasisa kuini a swiahari

15 Which wild animals do you catch the most / Qual destes animais cacas mais / Swiahari muni udlhayaka hintamu

16 Which wild animal's meat do you like to eat the most?
Quais destes animais preferes para o consumo da carne / Swiari muni muzandzaka toni

117 Where do you catch these animals / O~de e que caças estes animais / Upaca kwini a swiari leswi

118 If you walk in the bush and you find a snare do you take it off
Se por acaso encontrares uma armadilha na machamba retiras / Loko hokuma a lihotso ka masimo unga susa ke
Yes / sim / ina
No / naõ / e-e

119 Why do you say so / porque (justifique) / himacamuni

120 Is it man's respnsibility to care for wild animals as he does with domestic animals
Sera que as pessoas possuem a mesma responsabilidade de domesticar os animais selvagens
Avanu lava vani rito ka utamele dzaswiari swanova
Yes / sim / ina
No / naõ / e-e

121 Why do you say so / porque (justifique) / himacamuni

122 Can man use up all the wild animals in the veld
Se a populacao utiliza todo tipo de animais que existe na floresta
Avanu vatisisa a swiari inguso ka nova
Yes / sim / ina
No / naõ / e-e

123 Why do you say so / porque (justifique) / himacamuni

124 Can man catch all the fish in the lake
Se a populacao pode pescar todo peixe que existe nas lagoas e nos rios
Avanu vanga tseva tinphlanfi ka ma tiva hinguayu
Yes / sim / ina
No / naõ / e-e

125 Why do you say so / porque (justifique) / himacamuni

126 Is man responsible to care for the trees that grow wild in the veld
Se as pessoas sao responsaveles em controlar as arvores que existem na florestas
A vanu hinguavu vani rito ka utamele dza nova
Yes / sim / ina
No / naõ / e-e

127 Why do you say so / porque (justifique) / himacamuni

128	Can the people who live here use all the trees in the veld Se as pessoas que vivem nesse local podem usar todas as arvores Kumbe a vanu va tsamaku kola vanga tisisa a minsinha hinkwaio	
	Yes / sim / ina	
	No / naõ / e-e	

129	Why do you say so / porque (justifique) / himacamuni

130	Which trees do you use to make fire with Qual e o tipo de arvores que usam para fazer fogo (lenha e carvaõ) Hinsinha muni utisisaku para tiunhi

131	Which of these trees do you use the most to make fire with Quais destas arvores utilizas mais para fazer lenha ou carvao Hinsinha muni utisisaku hintamu para kuamba a dzilu

132	Why do you say so / porque (justifique) / himacamuni

133	Who collects the firewood / Quem faz a recolha da lenha / Himani a zolaka tiunhi

134	How many times in a week do you fetch firewood / Quantas vezes por semana faz a recolha da lenha |zola kankaki a tiunhi hi vike

135	Are there times when you use more firewood than usually Existira alguma vez em que a recolha da lenha e feita fora do normal / Muzola a tiunhi ka nkama unga vanelaka

136	What do you use fire for / Porque e que utiliza o fogo / Utisiselahini a tiunhi

137	Which trees do you use to build houses with / Que tipo de arvores utiliza para construçaõ Misinha hini mulhayaku tona para ku yaka

138 Which of these trees do you use the most to build with
Quais destas arvores utiliza como preferência para construção / Hinsinha muni uyakaka a tinlhu

139 Why do you say so / porque (justifique) / himacamuni

140 From which trees do you collect fruit / Quais sao as arvores que colhe os frutos
Misinha hini mulhayaku tona para ku yaka

141 Which of these fruit do you use the most / Que tipo de frutos consomes mais /
Minsinha muni uadaka hamafuruti

142 Which fruits do you like the most / Quais destes frutos gostas mais / Hinsinha muni uzandzaku hone

143 What time of the year do you collect these fruits / Qual e periodo do ano que faz a colheita dos frutos
Xipimu muni ukayaku ha swakudwa

144 Which trees do you use for shade / Quais das arvores utiliza para sombra /Hinsinha muni utisisaku hone para tsuti

145 What else do you use trees for / Quais sao as outras utilidades das árvores
Matisisela wuini ka minsinha imbenhani

furniture / mobilia /		2
Stamping blocks / pilaõ / tshuri		2
xoe / igeja, ikhuba, xikomu / enxada		2
utensils (spoons) / utensilios /Combe, mukwa		2
sledge (isihlibhi, xilewi) / carroças / guedju		2
to keep away lightning / afugentar relâmpago / Kupandisa a rihati		2
|o keep away valoyi/ afugentar feiticeiros/ kupandisa a valoi		2
to make boats/ para fazer barcos/ kuenja a boti		2

146 What do you use reeds for / Qual e a utilizaçaõ de junco (palha) / Utisisela hini amaungu

147	Which plants do you use to weave baskets with / Quais sao as plantas que utilizas para fazer cestos Hinsinha muni utisisaku hone ka kuhamba mintsava

148	Which of these plants are the best to make baskets from / Quais destas plantas sao melhores para fazer cestos Hinsinha muni hungawakalhe ka kuhamba mintsava

149	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

150	Which plants do you use to weave mats with / Quais sao as plantas que utilizas para fazer esteiras Hinsinha muni utisisaku hone ka hamba tinkuku

151	Which of these plants are the best to make mats from Quais destas plantas produzem a melhor esteira / Hinsinha muni ungawahombe ka kuyaka tinkuku

152	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

153	Which plants do you use to make fishtraps with? Quais sao as plantas que utilizas para fazer a pesca tradicional Hinsinha muni utisisaku hone ka kutseva

154	Which of these plants are the best to make fishtraps with? Quais destas plantas sao melhores para fazer pesca tradicional / Hinsinha muni ungawahombe ka kutseva

155	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

156	Which plants do you use to make traps to catch wild animals with Quais sao as plantas que utilizas para cacar os animais selvagens Hinsinha muni utisisaku hone ka ku dlhaya swiari

157	Which of these plants are the best to make traps with / Hinsinha muni ungawahombe ka ku beka tiotso Quais destas plantas sao melhores para fazer caca

158	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

159	Which plants do you use to bind/ tie things with / Quais sao as plantas que utilizas para fazer cordas Hinsinha muni utisisaku hone para uamba a tingote

160	Which of these plants are the best to bind things with / Quais destas plantas sao melhores para fazer corda Hinsinha muni ungawahombe ka kuyaka tiotse

161	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

162	Which plants do you use to make roofs of houses with Quais sao as plantas que utilizas para fazer cobertura das casas Hinsinha muni utisisaku hone para uamba a kufulela ka hindlhu

163	Which of these plants are the best to make roofs with Quais destas plantas sao melhores para fazer a cobertura das casas Hinsinha muni ungawahombe ka fulela a hindlhu

164	Where do these plants grow / Onde e que elas crescem (plantas) / Swikula kwini

165	Which plants do you use to make beer with / Quais sao as plantas que utilizas para fazer bebidas
166	Which beer tastes best / Qual das bebidas e melhor / Hidwala muni swahombe
167	Which beer is the strongest / Qual das bebidas e forte / Hidzini ndza kupowisana
168	Do you sell beer / Vende bebida / Washavisa a swadlala
	Yes / sim / ina
	No / naõ / e-e
169	Do you buy beer / Se compras a bebidas / Washava a swadlla
	Yes / sim / ina
	No / naõ / e-e
170	How often do you make beer / Quantas vezes produzes essa bebida / Usweka kangani a swadlala
	every day / todos os dias / hinkwau masiku
	once a week / uma vez por semana / Kawe hi vike
	once a month / uma vêz por mes / kawe hikuela ka tlhano
	Once every six months / uma vez em cada seis meses / kawe hikuela ka tlhano wa tiweti na dziwe
	once a year / uma vez por ano / kawe hikuweta ka lembe
171	Which plants do you use to make medicine Quais sao as plantas que utilizas para fazer medicamentos / Minsinha muni utisisaku ka kuhamba musi
172	Do you plant trees / Plantas arvores / Udlala misinha ke
	Yes / sim / ina
	No / naõ / e-e
173	Which trees do you plant / Quais sao as arvores que plantas / Minsinha muni udlalaku hone
174	Why do you plant trees / Porque plantas arvores / Hahini udlala minsinha
175	Are you aware that under the new land law, you can acquire land as long as you have occupied it for ten years or more
	Yes / sim / ina
	No / naõ / e-e

176	Would you lease out your land to private sector for the purpose of earning revenue from tourism	
		Yes / sim / ina
		No / naõ / e-e

177	Why do you say so / porque (justifique) / himacamuni

178	Would you be willing to participate in tourism development and management of resources in Matutuine	
		Yes / sim / ina
		No / naõ / e-e

179	Why do you say so / porque (justifique) / himacamuni

180	What is your opinion regarding various developments in your area

181	Why do you say so / porque (justifique) / himacamuni