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 Kruger 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

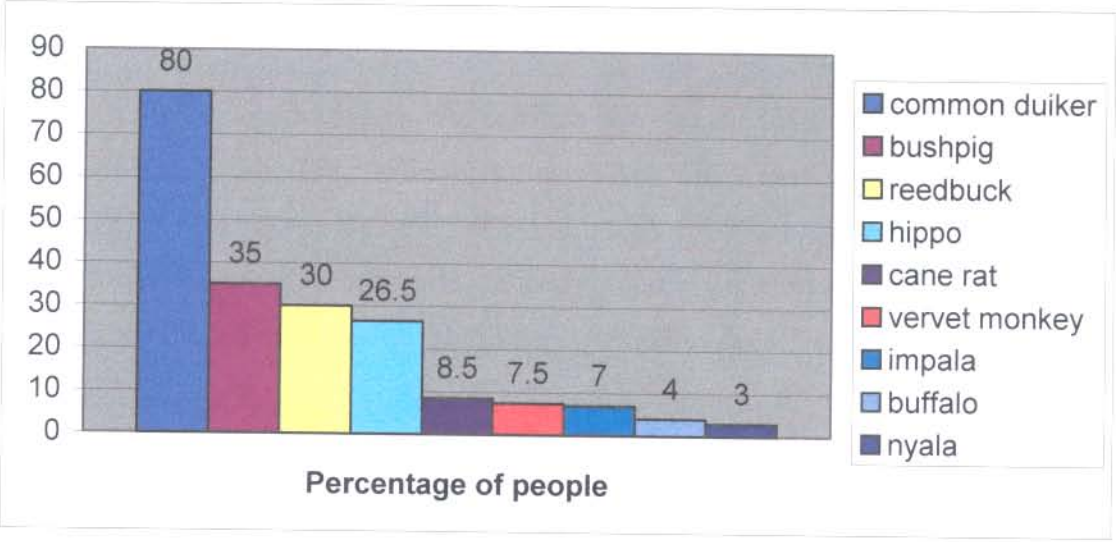
Considering the low number of people who rear domestic animals (see 3.2.1), it is clear that people in the research are extremely reliant on wild animals for meat. Besides the 87% of respondents who eat venison, 98.5% of the respondents eat fish, and a further 46.5% of the respondents eat wild birds. 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).

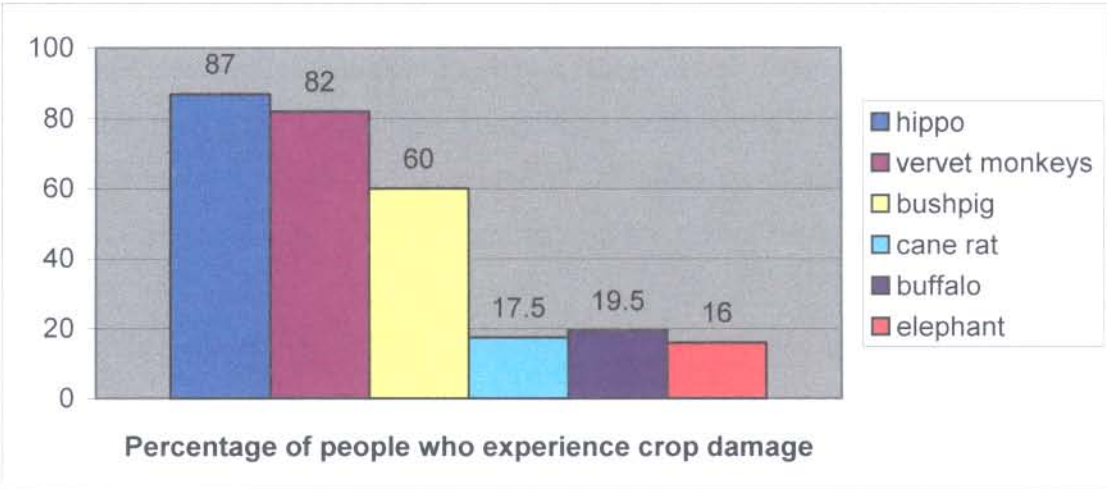
Native Americans in the northern parts of Canada not only burn the forests to increase bison, elk and deer populations, but also to increase the availability of wild berries, to reduce the numbers of harmful insects and to increase the availability of firewood (Bodley 1996:51). Indigenous peoples also 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).

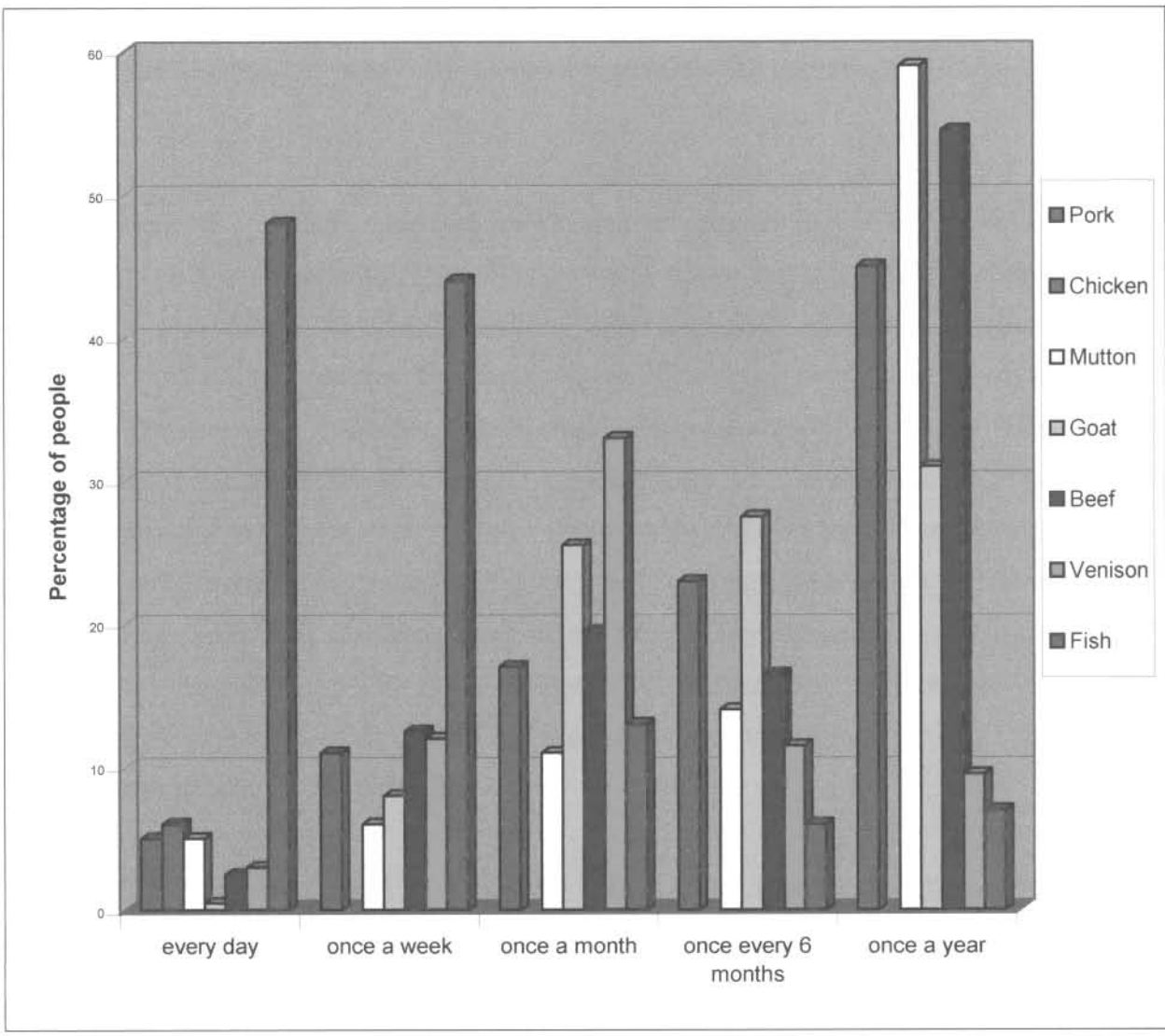
Most respondents (86%) said that they not only catch but also buy fish. The price of fish is extremely low. Fish at Catuane, for example, was sold at R1 per fish. People who live around Lake Piti said that in order for them to make money, they walk to Manguzi in South Africa with a large bag of fish (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*

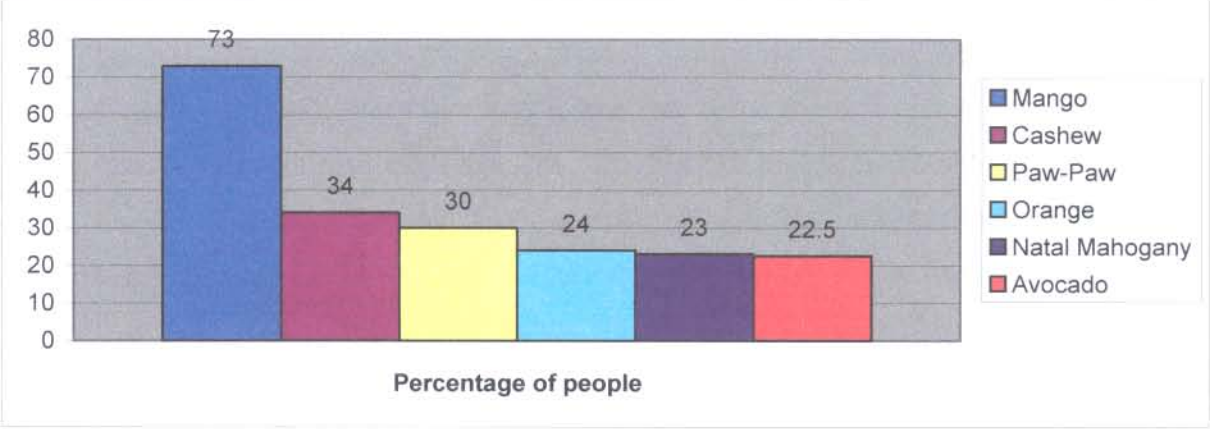
  Zulu names: *isimungumabele, isinungwane, umlungumabele* (Hutchings *et al.* 1996:152)

  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.