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**PROPOSAL FOR A  
MANAGEMENT PLAN FOR LIPARAMBA GAME  
RESERVE/MBINGA DISTRICT**

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## **FOREWORD**

At the initiative of the Mbinga District and in particular the District Game Officer, Mr. Ndimbo, a Game Reserve has been created in recent years in the most south-western corner of the country.

Upon the request of the District, the GTZ Wildlife Programme in Tanzania has rendered assistance in the preparation of a proposal for a Management Plan for this reserve. It has been prepared by a graduate intern to our programme, Mr. Richard Shilunga, in corporation with the District Game Officer, other District officials and villagers.

It should be kept in mind that this paper is only an input for a future management plan. It serves however, the purpose of a general source of information about the largely unknown Liparamba Game Reserve.

Dr. Rolf D.Baldus

## **Chapter 1: General Description**

### **1.1 Historical background**

Liparamba Game Reserve was officially gazetted in 3<sup>rd</sup> August 2004, after consultation with the elders of Liparamba village and other villages found adjacent to the reserve that's apparently expected some return from conservation. The word Liparamba originated from the word Viparama that was the Matengo language means klipspringer. The animals were found at Liparamba hill.

Formally the elders for traditional worshipping used the hill, normally once a year to thank god for what has been done for them for the whole year and asking more assistance and brace from him for the coming next year. The worshipping activities were accompanied with killing klipspringers, cooking, eat and drink local beer.

Before gazettelement the area was under customary regime. This kind of property right favour African leaders especially chief. All hunting activity in the area was excluding others except those from the royal family. During coronial era Germany and British use the area for hunting activities for specific animal species e.g. Buffalo, Lion, Leopard and exclude others from utilization of the resource.

After independence the area was found under open access regime where by, any one have the right to use the resources. During that time Forest officials and Wildlife officials under district level demand the area for different use according to what were proposed to the Government through Ministry of Natural Resource and Tourism. Lack enough the wildlife officials under the strong leadership of Mr. Ndimbo.P.H. Wine. Mr.Ndimbo who's currently a District Game officer and acting project manager of the reserve (founder of Liparamba).

The animal species found in the reserve were Klipspringer, Waterbuck, Sable antelope, Yellow and Olive aboons, Black and white colobus monkey, Hippo and crocodile. Others are Elephant, Lion and Leopard. Also different bird species, Amphibians and Insects

The reserve was dominated by Miombo species, which was almost undisturbed. The surrounding villagers economic activities were Agriculture, Fishing, mining and few of them practice livestock keeping such as cattle goat sheep and pigs.

Liparamba Game Reserve is currently administered by the Wildlife Division as a National project with an acting project manage. The immediate surrounding of the LiparambaGR includes eight villages: Liparamba, Mipotopoto, Ndondo,

Mitomoni, mpepo, Mtua, Tingi, and Nakawale that lie under Songea district administration.

However the Liparamba Ecosystem comprises about 570.99sq km of relatively undeveloped. The Liparamba ecosystem were surrounded by the areas developed to the point that larger wild mammals such as Elephant, Buffalo, and Antelopes from Mozambique are restricted to the Liparamba ecosystem by mining activities and illegal hunting activities

## **1.2 Location, boundaries and area size**

Liparamba Game Reserve is located on the southern highland of Tanzania at Mbinga District in Ruvuma Region. The reserve is situated about 58km south of Mbinga and about 175km from Songea town. The location co-ordinates of the reserve are 11°.30" south latitude and 35°.05" up to 35°.25" longitude east. The northern boundary of the reserve is River Lumeme. Mtomoni village, River Kipingi form the southern boundary. River Ruvuma form the eastern boundary and River Mkuiusi, River Beira , part of Liparamba, Mipotopoto villages and part of Kipingi River form western boundary

The eastern boarder containing high population of wild animals relatively to the rest of the area and having a positive effect on fresh water ecosystem due to the high concentration of Hippo and crocodile also River Ruvuma play a greater role on ecological value.

Administratively LiparambaGR fall under Mbinga district, however on the eastern boundary there was one village situated immediately after crossing Ruvuma River called nakawale, which is administered, under songea district. The area size is about 570sqkm accessible by Dar-es-salaam-Songea highway. Then from Songea –Mbinga –Liparamba by non all-weather surface road

Factors determining Liparamba ecosystem boundaries

- 1) Use of most nearly rectangular area including the most substantial area of unsettled land with native vegetation of Miombo species concentrated more on the northern part of the reserve
- 2) Approximate correspondence to water sheds between upper reaches of Ruvuma River and tributaries of Lumeme river, river Lunyele, river kilasi and inclusion of the remain water shed of Ruvuma river which is the main non seasonal river flowing through the reserve
- 3) Excluding large villages of long standing i.e. Liparamba, Mipotopoto, Mitomoni, Ndondo, Mpepai, Mtua and Nakawale

## **1.3 Buffer Zones.**

Beside the protected areas the Liparamba ecosystem comprises village land and hills on the southern part, which was bordered with Mozambique, contains heavy forest, which serve as migratory route of wild animals from Mozambique.

Of vital importance is the southern east buffer zone comprising vast uninhabited area of both sides of Ruvuma and kipingi rivers. Population of Sable antelope, Buffalo, Waterbuck and eland are dispersed here mostly of

the time and this area serve as the migratory route of other animals to and from Mozambique during dry seasons.

Equally important is the Western buffer zone, which comprise uninhabited portion of village land of Liparamba, Mipotopoto and Mitomoni that serve as a second migratory route of animals from Mozambique

The Northern buffer zone comprise the area adjacent to Manyigu and Ndondo hills, Mpepai and Mtula villages which serve as the dispersal area of wild animals especially during the dry season where green pastures were available along the river Lumeme

#### **1.4 Physical features, Geology, soil and Hydrology.**

##### **Physical features**

The Liparamba Ecosystem comprises wetland high hills, escarpments and plateau at attitude between 600 and 1160 above the sea level. The topography varies from flat (much on swamps area on eastern border) to high hills and undulating (Northern, Southern parts) of the Reserve

##### **Geology**

The geology formation of LiparambaGR has been categorised as Neogene's in origin, characterized by imbedded sediments of sandy with few isolated layers of pure clay materials. Gravel, mostly quartz, with some feldspar is also to be found scattered in clay matrix

The south-eastern parts of the Game Reserve, which include Ruvuma and Kipingi river are dominated by quaternary (Pleistocene) sediments due to alluvial deposition.

##### **Soil type**

Black cotton soil in grassy low lands on south eastern along and adjacent Ruvuma River with scattered Acacia plant species

Deep red clay and sands of medium fertility along medium and low slopes

Deep red clays, dark grey over red sands haplic oxisol and umbric regosols with thin dark humus layer on higher hills plateau and the ridge of the escarpments

Soil are said to be of poor to moderate nutrient contents (mghogho, 1999) and are poorly drained due to the high clay content even on low slops resulting on difficult access during the wet seasons.

##### **Hydrology**

All rivers flows towards LiparambaGR are part of the Ruvuma River.

Ruvuma River is the biggest among of the Rivers found in LiparambaGR which originated from Matogoro hills in Songea District and moves eastwards to the Indian ocean via Tunduru, Masasi, Mtwara and finally to Indian ocean

Other big Rivers that flow their water to Ruvuma River through the Reserve are Mkurusi which is originated Mpepo along Manyingu hills to Lumeme River. The Mkurusi River flow first to Lumeme before Lumeme pour water to Ruvuma, River Beira, and Nakatupi.

River Nakatupi originate from Manyigu hill, River Beira originated from Itanda hills all these Rivers finally empty to Lunyere before Lunyere finalize to Ruvuma.

River Kipingi originated from Mipotopoto high land empty their water to Ruvuma River and River Kilasi originated from Liparamba highland flow to Ruvuma River

With the exception of Ruvuma River, all other rivers within the Reserve are ephemeral sand Rivers, which are mostly dry at the surface but perennially moist at depth during the dry seasons. The River flow mainly during the long rain season and partially during the short rains. The peak flows (floods) are expected during March/April when the heavy rain occurs.

## **1.5 Climate**

The climate is typical of tropical, with temperature variation of 1.4°C. The overall mean annual maximum temperature is 24.7°C. The overall mean annual minimum temperature being 13.6°C.

May to July are the coolest months of the year while October and November are the hottest months.

Average annual precipitation range from 1450mm (Liparamba, Mitomoni) to 1680mm (Ndondo and Manyigu hills) with the highest rainfall in higher attitudes. There is one rain season and one dry season, with the main rain in March and April. The dry season July to September some time prolong to October. The heavy rain season fall March to April with 1800mm. 96% in April. The relative humidity in LiparambaGR is high ranging from 88% in November to The average Monthly variation is 8%, the overall mean annual relative humidity is 86%

## **1.6 Vegetation communities**

The Liparamba Ecosystem supports the following vegetation types.

- 1) Zambezian Miombo wood land (indigenous)
- 2) Zambezian swamps and riparian forest (indigenous)
- 3) Afromontane rain forest and undifferentiated forest

### **1. Zambezian Miombo woodland.**

Forest in Liparamba Ecosystem consists of mixed stands of many species of Miombo trees and shrubs. *Branchystegia* and *Julbernardia* are dominant species. Normally there occur on a moderate to a well-drained soil between

altitude 600-1400 metres above the sea level and rarely occur 1500 metres above the sea level. Some endemic plant species such as *Pterocarpus angolensis*, *Khaya anthoseca*, several *Dalbergia* species and *Breonadia salicina* need to be conserved for the benefit of the present and future generation. For example *Pterocarpus angolensis* have a high value and demand in the market that make more use in furniture and other constructive uses. It is due to this reason these tree species receive the first national priority conservation.

In mpepo area a high diversity of tree and shrub species for medicinal uses which at the moment must be strictly conserved. Other plant species found in the area was parasite, epiphytes, herbs and lianas

Trees of height 5-30m form denser closed forest of almost 100% ground canopy with few or no glasses. The forest was found along the hills. The area of open trees and scatted shrubs have about 78% of ground cover with glasses and few or no shrubs.

## **2. Zambezan swamps and riparian forest**

The zambezan swamps and riparian forest was dominated by species of *syzyglum*,

*Uapaca* and *Treculia Africana* that was mainly occurring between attitude 600-1400 metres above the sea level along river stream and swamps area. The species were found in the area associated with shrubs and glasses.

## **3. Afromontane rain forest and undifferentiated forest**

The Afromontane rain forest occur above attitude 1500 metres above the sea level with annual rainfall over 100mm. This Forest occur only at few places within the reserve especially at Matengo high lands.

Afromontane undifferentiated forest occurs on ridges and hilltop at attitude high than 1600 metres above the sea level and varies over short distance in species composition and structure due to internal variation in gradients of elevation, exposure, slope and rainfall.

### **1.7 Endemism to Liparamba Ecosystem**

The Reserve contains more than 130 endemic plant species, out of them about 52 used as medicine and others used as source of food for primate. Currently the Liparamba GR is the only area in Mbinga District that is still intact and represents the biodiversity of the entire district. Many other areas in Mbinga District have been heavily affected by human development activities such as settlement and to some extent mining activities. The Reserve is very important in term of cultural and traditional beliefs of the people surrounding it. For example the traditional rain maker and traditional headers use the water holes, which are found at the foot slope of famous Manyigu hill. Their washing bodies for the notion of getting success for what they are planned to do. Also use the Liparamba hill for ritual players and collection of medicinal materials.

## **1.8 Wildlife population**

### **Liparamba Game Reserve**

The Large mammals of Liparamba Ecosystem are mainly Tropical/Savanna forms, of a composition intermediate those of Miombo Wood land and uphill tropical forest. The Large Mammals communities of Liparamba Ecosystem are depleted in early 1980s due to heavy poaching. The most susceptible Mammals were Elephant, Black Rhino, Lion and Leopards. However currently the number of large mammals start increase after the gazettelement of the Reserve.

Since the Reserve was new, there were no any wild mammals count conducted in the area. So this is challenge to the Wildlife Division.

According to the District Game Officer and acting project Manager of the reserve Mr. P. H. Ndimbo, information on the wild animal species observing in the Reserve are Warthog, Wildebeests, Baboons, Reedbuck, Waterbuck, Buffalo, few Zebra, Bush pig, Wildcat, Leopards, Lions, occasional Elephants, Hare, Klipspringers, Greater Kudu, Eland, Velvet Monkey and Colobus Monkey. Others are Hippopotamus, crocodile, different species of fish, Amphibians, Birds and Insects.

Some of the Bird species found in the Reserve are Helmeted guinea fowls, Francolins, Egyptian gees, pigeons, King fisher and wavers.

## **1.9 Threats to the Liparamba Game Reserve.**

### **Liparamba Game Reserve in General**

Subsistence and commercial poaching threaten the Wildlife population. Especially the migrating animals are threatened because of moving into inhabited area especially to the villages found adjacent to the Reserve. On the long run pressure on wood and land resources for Agriculture and Settlement will build up with a grooming population and there fore threaten the LiparambaGR as a hole. Uncontrolled encroachment of villages to the southern west buffer zone will lead to blockage of migratory corridor hence threat to the Reserve Uncontrolled development of tourist facilities and number of tourist can in the long run threat to Liparamba Game Reserve.

Encroachment and blockage of Elephant migratory from and /or to Liparamba by Mineral dealers especially in Lutombochi area in Mozambique on a long run is threat to Reserve.

### **Ruvuma River Ecosystem**

The Ruvuma River is of vital importance to the Reserve being the only permanent natural water source in the entire reserve in the dry season especially buffaloes, waterbuck, elephant, Hippo and Crocodiles need this area to survive in LiparambaGR in a long run. Both these animals are of greater importance for attracting tourist and therefore assuring the sufficient income for the Reserve.

The Ruvuma River Ecosystem as a whole is the one of the biggest tourist attractions in LiparambaGR can offer, with many different bird species black and white Colobus Monkey, Hippopotamus and Crocodiles.

### **Economic activities of villages in Liparamba Game Reserve**

Currently there is no any village found inside the reserve, but there some villages found adjacent the buffer zone of the Reserve exercising Mining activities on the upper bank of the Lumeme and Lunyere Rivers. Both rivers flow through the Liparamba Game Reserve before they drain into Ruvuma River. The use of Mercury for gold smelting may pollute the River biodiversity and other living organism throughout its length within LiparambaGR and Ruvuma River. The Mzingo river which is in Mozambique and drain into Ruvuma River is also potentially polluted as mining activities occur at large if not stopped or controlled at moment would causing threat to the Reserve on a long run.

#### **1.10 Income of the Reserve.**

Currently there is no tourism activities set aside or any type of wildlife utilization, however the reserve was expected to start operate income generating activities after the completion of General Management Plan which will guide what type of wildlife resources could be allowed in the reserve and after increasing the number of wildlife mammals. According to the acting project Manager report it shows that the Wildlife Division through Tanzania Wildlife Protection Fund last year set a budget of 20,000,000/= Tsh for running daily conservation activities.

#### **1.11 Socio-Economic of surrounding communities**

##### **Distribution and utilization of Natural Resource**

##### **Existing land use pattern of Liparamba ecosystem**

The Liparamba Ecosystem embraces a different form of land uses according to the location of the area. LiparambaGR under the Director of Wildlife exercise conservation of wild fauna, flora and other related activities of conserving, utilizing and managing the natural resource. Land outside the core-protected areas was used for other activities as according to the priority of the users.

##### **Agriculture**

The villagers living around/Adjacent the Liparamba Ecosystem grow crop for cash and subsistence. Cash crop includes paddy rice and tobacco. Subsistence crop includes Maize, Cassava, Beans, Simsim and Sorghum. The food crop grown is enough to feed communities, therefore no addition supply of food is required from out side the village. The village of North-East part of the ecosystem, which comprise Mpepai, and Mtua plant Maize, Simsim, Beans and Cassava for subsistence and Coffee

for cash.. In addition to Agriculture Matengo and Yao do keep Goats, Sheeps and Pigs as a source of protein.

The communities of Liparamba, Mipotopoto, Mitomoni, Ndondo and Tingi villages

Cultivates/produce Maize as a staple food, which is depends on it for all over the year as source of carbohydrate and other ingredients needed by the body for efficiency functioning. However some times they keep livestock as source of protein. Nakawale village also exercise subsistence farming, maize is the main food crop while Simsim and Tobacco are the cash crops.

Shifting cultivation is the mode of farming and this practice involves slash, clear and burning a larger area in the process of farming preparation. This is one of the main causes for uncontrolled bush fires, the other cause being deliberate firing by poachers in pursuant of Game.

Shifting cultivation is opted because the use of fertilizers is not practised due to inadequately money to afford buying fertilizers. If the area is cultivated for long period the yield could be poor due to insufficient nutrient supply by the soil. Although men, women and children participating in farming it is usually men who decide on how to spend the money.

## **Hunting**

Source from the District Game officer confirm that Ngoni are the main poachers followed by matengos and Yao do the least.

The villagers of Liparamba, Nakawale and Mtua are efficient hunters. All the villages were blamed of being responsible for decline in wildlife population in LiparambaGR. Game meat form important source of protein to Ngoni people. Most of hunting activities is carried out illegally. Traditional hunters do not buy hunting licenses because they cannot afford the fees as well as the fire arms required by the law. Most of the communities are Christian, so illegal hunting are non-species specific, however they prefer Waterbuck and sable antelope species.

The principal methods used in hunting are wire snares, setting nets and driving the games in to the net and using both breech and muzzle loading firearms. Poached meat is processed in the bush and then brought to the village for sale.

It is difficult to trace the market price because of illegal nature of the industries. Unconfirmed source indicate that the price of game meat is 200 Tshper kg almost the some as beef.

## **Fishing**

Nakawale village was mainly depending on fishing activities and the main income generating activity is fishing. Only men are involved in fishing activities. The industry is faced with problems caused by insufficient market access. They exercise in Ruvuma River. The whole process of fishing activity is unsustainable, report from the acting project manager stipulated that some time fishermen use illegal fishing method such as poison, explosion and unrecommended nets which result to kill of untargeted fish size species. If this continues to be practised in a long run it cause threat to the reserve.

## Forest products

Honey is collected from the wild as well as from the hollowed logs by smoking fires to keep the bees calm, occasionally getting out of control and destroy forest. Other products from the forest are poles as a source of building material, ropes, fuel and medicine Formally forest also serve as a ritual and burial sites. Generally the entire member in the household engage in the activities relating to the use of forest product but the responsibility of collecting fire wood is spearheaded by women.

### 1.12 Demography

The Liparamba Ecosystem accommodates about 18306 people however 14706 can be included in the community wildlife management areas. Due to out-migration population growth is believed to be below 2% (Fao, 2001). In the southern highlands strip it is probably significantly lower. In Mitomoni village for example the official population statistics suggest that there has been basically no population growth since 2001. Although it is difficult to establish exactly population densities in the area, it is probably below 12 inhabitants per sqkm. Administratively the communities are divided in to two districts Mbinga and Songea. In term of ecology they are grouped according to the buffer zone occupy in relation to LiparambaGR as a core protected area. In this regards the village are grouped according to where they are located in relation to buffer zone

District	Buffer zones	Village	Population
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Mbinga	Northern	Mpepai Mtula	5203 1560
	Southern-east	Mitomoni	1550
	Western	Mipotopoto	1876
		Liparamba	2395
		Ndondo	1872
		Kipingi	1850
Songea	Southern-east	Nakawale	2001

**Source: Village Government Document 2003**

In the northern buffer zone the population is dominated by the so-called Wamatengo and wayao tribes, whose main economic activities is Agriculture. Usually subsistence farming of maize, Simsim and Tobacco is small amount for cash purpose. Animal husbandly is only carried out in Mtula village. Types of animals kept are pigs, goats and few cattle.

Development priorities in most of these villages are social services such as health centres, dispensary and schools.

In the southern-east buffer zone the prominent ethnic group is Wangoni. However the communities are much more diversified.

**1.13 Community based Conservation**

To conserve wildlife in a small area like LiparambaGR in a sustainable manner, it is essential to involve the local communities into the conservation effort.

In Africa conservation areas were established with the aim to obtain foreign exchange through tourism. Some protected areas were even depopulated for this reason and utilization of the natural resources was prohibited. The revenue made through tourism, however, was not made by local communities. "Foreigners" made business at the expenses of local communities whose resource are found their land. Lack of involvement in conservation activities lead to promote illegal and uncontrolled hunting, having reduced some of the wildlife population (Elephant, Buffalo and Sable antelope) more than 80% in LiparambaGR.

The target must be to create ecological awareness within the rural communities and to establish a legal and sustainable utilization of resources.

To reach the aim of Community Wildlife Management (CWM), a building-up phase is needed to achieve sufficient contact and confidence towards the local villagers. Meeting must be organized involving all groups concerned to allow participatory planning of the approach and definition of targets. Contact between the villagers and the wildlife division shall be continuously held through CWM staff.

The Communities and district concerned was informed about the planned changes in wildlife policy and legislation which, when effected will empower the village communities with responsibilities of managing and utilizing natural resources in their area in a sustainable manner.

The Communities adjoining LiparambaGR have negative attitude about Game Reserve. The traditional methods of policing protected areas have antagonized them. They often bear the brunt of anti – poaching, wildlife damaging their fields and worse they do not benefit legally.

In principle they accept the concept of Community wildlife management area (CWM), where local communities have mandate to set aside areas, practice and carry out wildlife conservation.

Currently the village communities do not receive tangible benefits from wildlife although they had give almost all their land to be gazette as a Game Reserve. Also damage to crops by elephant and people getting wounded or killed by buffalo were complains raised in Liparamba, Ndondo and Mutomoni villages. In the past years despite the damage inflicted by raid wildlife the communities are neither compensated, nor have any kind of advantage through the Game Reserve up to now.

#### **1.14 Description of Socio – Economic situation, social amenities and services, communication and infrastructure of each village.**

Concerning Inhabitants the Liparamba Ecosystem can be divided three (zones). The Northern, Southern east and Western zones. The following villages are situated to the Northern zone (Mipepai and Mtua). The Southern east zone contains two villages from North to South (Nakawale and Mitomoni) and Western zone include four villages, starting from North to South are Ndondo, Liparamba, Mipotipoto and Kipingi villages.

##### **Northern buffer zone**

Due to the fact that some of the villages are situated very far from the LiparambaGR only the important ones concerning community wildlife management area (CWM ) will be mentioned and presented with a village profile.

Mpepai and Mtua are the different villages with one common centre inhabited by 6763 people and 842 families with different tribes but dominated with Yao tribe.

Both villages maintain vast farming areas with houses spread out over a big area. Main cash crops are simsim, coffee and small amount of Tobacco. Maize, Cassava and Beans is mainly grown as a subsistence crop. One of the main problems is water that has to be fetched from a well about 2km from the village primates and bush pigs cause substantial damage to the crops and also elephant sometimes knock down coffee shrubs in the vicinity of the farming area. The villages also complain about the bad road conditions especially during the rain season. The villages have 1 dispensary, 13 milling machine, one secondary school and 2 primary schools.

## **Southern buffer zone**

The Zone contains two villages Makawale and Mitomoni. Nakawale lie administratively under Songea district while Mitomoni under Mbinga District.

**Nakawale** The village is situated adjacent to Ruvuma River immediately after crossing the River. 2001 inhabitants from 618 families are member of Wangoni, Wayao and Wamatengo. Their economic activities comprise farming Including Maize, cassava and sorghum for food and coffee for cash. Fishing is another important activity assuring regular protein consumption and as source for earning cash. problem is the lack of Secondary School and crop damage by wild animals such as Hippopotamus. Worth mentioning is the existing of a milling machine, two shallow well and one primary school. The village has only one dispensary. Also villagers of this area are expert for illegal hunting activities.

**Mitomoni** has 1550 inhabitants and 228 families from Wamatengo, Yao, Ngoni and Wandendeule. The village is situated south to Mipotopoto village about 38km from Liparamba center. The main cash crop is Cashew nuts and simsim at the same time, fishing activities play an important role in the village; pigs and goats are kept by some of the villagers as the source of protein and money. Food crops include paddy rice, maize and cassava. In term of social services the village have one primary school, one dispensary, The Social problem include lack of clean water supply, poor road especially during the rain seasons.

## **Western buffer zone**

**Ndondo** is inhabited by the Wayao, Ngoni and Wandendeule people with a total population of 1872 with 314 families it is situated in Mbinga district in Ruvuma Region. The main economic activities comprise subsistence farming, Livestock keeping and hunting. Social services include 3 primary schools, 5 milling machines and market. A seasonal road connecting Ndondo village with a non – all weather from Liparamba to Mbinga town. Main problems expressed are lack of clean and safe water, dispensary and crop damage by primates and Elephants.

**Liparamba** – Is the home of Wamatengo, it contain 2395 people and 472 families. It is one of the few villages that is accessible in the rain season containing a one completed and two incomplete primary schools, a dispensary, three milling Machines and Market. Subsistence farming is the main economic activities, however, hunting and honey gathering is the main source of cash income. Also the village has one Secondary School and one Sub – pharmacy.

The main social problem experienced is lacking clean and safe drinking water, permanent supply of energy (electricity and permanent crop (as a source of cash).

## **Mipotopoto and Kipingi**

Administratively Mipotopoto and Kipingi is one village because most of the social services are shared.

It contain 3726 people, with 760 families. The main economic activities comprise growing of cashew nuts as a cash crop, Illegal hunting, and honey collection from the wild. The food crop includes maize, cassava, beans and simsim. The Social services include one primary school and market. The main problem is lack of permanent supply of clean and safe water, no dispensary and poor roads especially during the rain seasons.

### **1.15 Outstanding Resource Values, Purpose and Significance of the Reserve.**

#### **Outstanding Resource Values.**

The Tanzania southern highland frequently contains critical catchments, Forests, wetland, important rivers and hotspot areas, which is important for biodiversity conservation. All these features contain a diversified habitat for supporting a rich biological diversity containing valuable assortments of natural resource. Such habitat include Miombo Forest, Ruvuma river (wetland) and vast of grass beds, which provides essential nursery and feeding areas for many tropical and savannah wild animal species. It is estimated that 90% of fresh water dependants survive on the expenses of Ruvuma River. Other resource found at Liparamba GR are Nhilongombe salt lick and Likwabapai plain. However there are no outstanding resource values, Liparamba GR can be classified as only remain untouched natural forest contains Miombo plant species in Mbinga district that need to be conserved. The need and justification for a reserve is to rescue indigenous Miombo plant species (*pterocapus Angolensis*), to preserve and conserve Ruvuma river and its ecosystem under extreme pressure to create economically and ecologically sustainable environment for future generation. Fishing from Ruvuma river being the most important income for the surrounding communities at present has to be taken under consideration as seriously as game management to promote tourism.

#### **Economic significance**

Wildlife based tourism and eco-tourism are the one most important foreign exchange generating income in Tanzania. Thus, the economic significance of LiparambaGR is a direct result of its ecological value to the district The fact that Liparamba GR is the only remaining undisturbed Miombo plant species in Mbinga and bird life along Ruvuma river. The undisturbed Miombo species may play a greater role on eco-tourism activities on a near future.

Liparamba GR can accelerate the development of the tourist industry in the area and lead to expansion of Mbinga district. The concept of community involvement further more assures economic benefits to the poor village communities in the area. The developments of tourism will have trickle-down effects and multiplier effects also supporting and accelerating development in other sectors. Therefore it is not only for ecological reasons essential to sustain the Liparamba ecosystem but also economic of great importance.

## **Conservation Significance**

Unless government takes appropriate actions and user of wildlife resource, population pressure and associated level of economic activity will further increase the already evident over-exploitation of wildlife resource environment degradation of many wildlife habitat

Liparamba GR is the only protected area in southern highland with concentrated number of hippopotamus along the Ruvuma River. Considering the relative small size of the Game Reserve it contains a wide varieties of wildlife

The relatively small size of the protected area poses a problem, since it is not viable for seasonally dispersed mammals. The strong interaction between nature and local communities in the area make it necessary to develop buffer zone i.e Wildlife Management Areas, involving local communities in conservation.

## **Chapter 2: Management Issues/Problems.**

The primary purpose of LiparambaGR is to conserve undisturbed miombo species and their associated wildlife species. They are, however, a number of important issues that will need to be addressed in managing the reserve to achieve this primary objective. These issues are concerned firstly with the threats to the natural resources of LiparambaGR and to its integrity as a protected area, and secondly with fundamental administrative and operational constraints to managing Liparamba.

### **2.1 Conservation issues**

#### **Illegal subsistence hunting**

The Wangoni, Wayao and Wamatengo living in southern east buffer zone have traditionally hunted wildlife, using nets, muzzle-louders and snares. Most of the hunting is carried out illegally. Traditional hunter do not buy hunting permit because they cannot afford them as well as the required five arms. In the early 180s wildlife populations have got under sever pressure.

#### **Illegal trophy hunting**

Nothing was known about the history of illegal trophy hunting in Liparamba GR. However it is in fact that early 180s black Rhinos and elephant have been extract in originally being indigenous to the area and about few elephant remain in Liparamba ecosystem at present.

#### **Crop – raiding by elephant and primate**

The growing rural population is facing substantial crop raiding by primate and elephants. Mainly eating maize and cassava, although their numbers are very low at present.

### **Illegal lumbering inside Liparamba Game Reserve**

Lumbering is mainly taking place in the Miombo forest especially to the northern part of the reserve and along the Ruvuma River. The most destructive activities are charcoal making activities using the big trees in the Miombo. Also poles from miombo as a source of building materials illegally taking from the area.

### **Impacts of licensed hunting**

Tourist hunting does not take place in Liparamba Ecosystem due to the fact that the Reserve is still new and no any hunting blocks and quota have been established/set aside. However resident hunting has an impact on wildlife in the past years when the area was under district management, people had been allowed for subsistence hunting during hunting seasons in unsustainable manner, as the result lead to decrease of wildlife population.

## **2.2 Administrative and operational issues**

In the early 1980s and through most of the 1990s LiparambaGR was not gazetted all management procedures were under district level. So rate of poaching was high which lead to decline of the wildlife resources. In 2000 the Reserve was gazette, it is now an urgent matter to rehabilitate Liparamba GR as an effective protected area. The major management issues are as follows.

### **Establishment of Infrastructure.**

The access to LiparambaGR is relatively good during the dry season; it is not accessible during most of the rainy seasons. Roads inside the reserve are in a bad condition was not well established because the reserve was very new. This makes the reserve very difficult to manage in operational terms. For existing current situation there is an urgent need to develop a better roads culverts, bridges and drifts that can facilitate both daily operational and tourism activities.

### **Establishment of Communication**

The reserve requires a full network of patrol roads and an effective communication network. Currently there is no radio communication network. A good road network is essential to administration and security, as well as effective radio network.

### **Insufficient staff, and lack of morale and discipline**

LiparambaGR is small in size, has one among of the Game reserve in Tanzania that have high number of game scout per square km. However, discipline and morale are very low exacerbated by inadequate financial remuneration to staff and lack of sufficient administrative hierarchy in the Wildlife Division.

### **Lack of Scientific information on which to base Management decisions**

Information from the acting project manager said that there is no any scientific research opportunity carried out in the reserve and adjacent area of the reserve since gazettement of the reserve. However for conservation and management purpose of wildlife/natural resources there is a need for meaningful scientific background for effective environmental administration in LiparambaGR. No up to date data have been gathered to determine the impact of both legal and Illegal hunting on wildlife populations. These data are needed in the present stage of establishing management activities and in the future to come up with hunting quotas after the number of wild mammals were increased as well as for the CWM area, which allow a sustainable utilization of wildlife.

### **Undeveloped planning for game – viewing tourist**

Up to now there has been no management plan with guideline for the location of camps, the measurement of environmental impacts and the fee structure. Up to now only one public campsite has been established at the northern part of the Reserve. Due to small size of the reserve and the nature of the resource they have it is of great importance to put up strict guidelines on amount of tourists allowed to enter the Game Reserve per day and investment facilities.

### **The negative attitude of local communities to conservation**

in the past before the gazettement of the reserve the local communities use the area for illegal hunting and honey collection. After gazettement the relationship between the local communities and Reserve officials is not promising. However recently, game wardens and game scouts have been reported to have happily supported by the surrounding communities, on the conservation activities Now Warden and staff are in line with game reserve requirements, however, to secure wildlife in the long run depends on the good will and co-operation of the neighbouring people and this can be practically viable if local people can share in the benefits to the gained from wildlife conservation. These need to be combined with a “public relations” exercise to raise public awareness to conservation issues.

### **Inadequate funding**

Since from gazettement of the reserve the only source of fund has changed from municipal to center Government, the wildlife division. With constraints on Government finances, Liparamba has very seriously starved of funding. At present Liparamba Game Reserve needs an annual budget of at least 60

million to be run with any degree of effectiveness. Therefore in coming days tourism (specific eco tourism) has to be promoted.

### **2.3 People's Issues.**

Poverty alleviation and hunger eradication are urgent issues to be settled in Tanzania. There are many reasons that lead to poverty, lack of capital, no market access, poor infrastructure, inadequate knowledge are only some of them. The Government of Tanzania has taken numerous measures to help impoverished household. Generally the areas around Game Reserve and National parks belong to the least developed in most African countries. Especially adjacent to small-protected areas like LiparambaGR it is essential to integrate local communities.

#### **Low living standard**

Most of the villagers adjacent to LiparambaGR have low living standards. One of the most affected villages is Mipotopoto due to poor soil. This lead villagers to poor crop harvesting and low income..

#### **Infrastructure**

The infrastructure is very poor in most of the villages. No roads, no communication networks in all villages.

### **2.4 Management objectives and strategies of the reserve**

The Liparamba GR is of great ecological importance, However Liparamba GR has a number of problems, especially the direct and indirect threats of wildlife populations and vegetation communities. This chapter specifies the goals, objectives and strategies for the management of Liparamba GR to solve these problems.

#### **Conservation objectives**

**Goal 1:** To conserve the wildlife population of Liparamba GR and its adjacent areas

It is of vital importance that security in the reserve and adjacent areas is improved to ensure that wildlife population increase to appropriate levels. Specific objectives and strategies include the following.

**Objective 1:** To stop illegal hunting for meat in Liparamba GR.

**Strategy:** Areas where meat poaching is prevailed will be adequately patrolled

**Objective 2:** To enable local people to benefit from wildlife

**Strategy:** Community wildlife scheme shall be established in adjacent areas, in which local people will be allowed to utilize wildlife on their own land in a sustainable manner. This scheme will enable local communities to share benefit of wildlife conservation, rather than hunting illegally.

**Objective 3:** To ensure that poaching of vulnerable or endangered species particularly of Elephants, Black rhinos and Sable antelope is stopped and to ensure that population of these species may recover to appropriate level

**Strategy:** An effective system of law- enforcement will be established. This will require a number of major changes in the way Liparamba GR currently managed, including the following:

- Liparamba GR be provided with a sufficient number of vehicle to fulfil its needs for effective ant poaching patrols
- As far as necessary new patrol roads be constructed and existing roads improved, to allow access to all parts of Liparamba GR.
- However, effective anti-poaching will mainly depend on foot patrols
- Communication be improved throughout Liparamba GR. Radio networks will be established between the HQ and the vehicles to ensure that the reserve is managed and administered efficiently and that of the response to critical situation is rapidly and appropriate and effective
- Enough food should be provided to village game scouts when they are on field patrol
- Patrol frequency and effectiveness, and the moral of patrol staff be improved through good leadership. In addition patrol staff will adequately be rewarded for their work through the provision of appropriate allowances.

**Objective 4:** To ensure that community based consumptive wildlife utilization in Liparamba ES is conducted in sustainable manner and in accordance with wildlife regulations

**Strategy:** Consumptive wildlife utilization will not take place in LiparambaGR itself and therefore will only be promoted in communal areas or private land. However the decision of the later depends on the owner. Consumptive wildlife utilization in Liparamba ES contains community wildlife management, resident hunting and may be in future tourist hunting. At present there is no quota established for hunting activities until the population of wildlife increase. The following strategies will be adopted to ensure that these utilization activities are conducted in a sustainable and humane manner.

- A monitoring programme will be established to assess the impact of permitted hunting in communal area on the wildlife resources on Liparamba ES. Key wildlife data will be collected by Liparamba GR staff on patrol, Tanzania wildlife conservation monitoring (TWCM) and ground counts
- On the basis of data obtained by monitoring programmes quotas for all wildlife utilization activities in communal areas of Liparamba ES will be set in a joint session between the Liparamba GR staff and the Regional Game officer and the wildlife Division head quota.
- In the area immediately adjacent to Liparamba GR where elephant and primate crop-raiding takes place, it will be the policy of LiparambaGR

to advise scare tactic to minimize the loss of few elephants left in Liparamba ES. Only in last resort, if human life is threaten will elephant and other predator species such as Lion and Leopards be shot

**Objective 5:** To ensure that the need to protect vegetation and wildlife is balanced with non consumptive and consumptive utilization of Liparamba ES resource

**Strategy:** The Liparamba GR must fulfil its primary function, namely to conserve biodiversity, while at the some time it must generate revenue from the utilization of its resources. This call for the integrated and planned approach to the way the different of Liparamba ES is used. Liparamba ES will be utilised in different zone due to different status of conservation. Liparamba ES comprise Liparamba GR and communal areas. Zonation will be as follows

- Intensive protection zone: Northern part of the reserve and along the Ruvuma River where most of the wildlife ecological process and breeding activities exercised must be intensively protected
- Minimal disturbance zones; Liparamba GR will reserve the rights to declare certain areas to minimal disturbance zones, in which specified kind of development will be prohibited or minimized
- Tourist game viewing: The area along Manyigu and Ndondo hills will be reserved for activities associated with tourist game viewing, ecotourism and walking safaris. No hunting will be permitted in this area. Area of east part of the reserve where most concentration of lager mammals occurs sustainable hunting be allowed
- Community wildlife management areas: These zones will be managed and utilised by the communities in the sustainable manner

## **Goal 2: To conserve the vegetation communities of Liparamba GR**

The protection of vegetation communities forms the starting point for the conservation of biodiversity in Liparamba GR. If these communities are destroyed, the animal species that depend on them will also disappear. Specific objectives and strategies include the following.

**Objective 1:** To protect the Liparamba GR from illegal lumbering

**Strategy:** Border areas that are prone to illegal lumbering will be adequately patrolled. Extending the road network and improving communication will facilitate this

**Objective 2:** To properly define the boundaries of Liparamba GR.

**Strategy:** In order to improve law enforcement, the border of the Liparamba GR will be properly surveyed and demarcated.

**Objective 3:** To protect the miombo plant species within the Liparamba GR

**Strategy:** Assure the protection of miombo plant species such as *pterocapus angolensis* inside the boundaries of Liparamba GR through improvement of law enforcement and discovering way to utilize the resource in a sustainable manner

**Objective 4:** To protect the water holes and water falls around Manyigu hill.  
**Strategy:** To ensure regular patrol of the area to avoid traditional healer and rainmaker to destroy the hole and the structure in general.

### **Administration objectives**

#### **Goal 3: To restore the effectiveness of administration of Liparamba GR**

Before the Liparamba GR gazettelement the management of the reserve was not effective. It should be recognized that the role of administration of Liparamba game reserve is to ensure that the area is effectively managed in a line with its conservation objectives. Specific objectives and strategies include the following:

**Objective 1:** To achieve financial self- reliance for Liparamba GR

**Strategy:** Eco-tourism will be promoted in an environmental sustainable manner. To achieve financial independence, Liparamba GR retain for its own use in management at least 50% of all revenues generated through non-consumptive use of the resource

**Objective 2:** To improve the administration and command structure

**Strategy:** To achieve the required standards of management for Liparamba GR, it be necessary to break from the traditional way of civil service structure

- Structure will be introduced that clearly defines the line of command in Liparamba GR. Within this structure the duties and responsibilities of staff will be clearly be defined.
- Staff will be trained or retained to a high level of competence for their posts. That training will be on the job in Liparamba GR, or at suitable training location in Tanzania example Mweka, SUA and Pansiansi.
- The staff of Liparamba GR will be adequately remunerated for their work, and will be provided with adequate accommodation and facilities.

### **Peoples objective**

#### **Goal 4: To enhance living standards of village communities adjacent to Liparamba GR.**

Currently there is a little development to the villages adjacent to Liparamba GR. Growing population pressure and natural resources degradation will soon worsen the situation in the Western buffer zone, especially when wildlife has been extinct without having any alternative to supply sufficient amount of protein for women and children.

**Objective 1:** To improve living standards in the adjacent area to Liparamba GR.

**Strategy:** To assist and support development in the village adjacent to liparamba GR by involving them in to community wildlife management,

enabling them to make profit through eco-tourism, tourism and initiate an extension service to give advice and assistance in Agricultural and economic problems

### **Chapter 3: Implementation of the GMP**

#### **Boundary Demarcation**

To define and demarcate clearly and indisputably the border of Liparamba Game Reserve.

#### **Current status**

The existing original boundaries of Liparamba Game Reserve were defined in 1998 and are included in the wildlife conservation act of 1974. All villages adjacent the reserve was well involved in the whole process of demarcation. Therefore no any argument of complains arise from the local communities on the existing boundaries of the reserve.

#### **Programme and Implementations**

After identifying and demarcating the existing boundaries with involvement all stakeholders which was affected in one or other way on the gazettelement of the reserve the following action will be implemented for effective management of the reserve.

##### **1: Methods of alignment:**

The existing boundary will be determined using highly accurate Differential Global Positioning System. This will render boundaries less open to subsequent dispute and will facilitate the collection of accurate date on boundaries for use in Geographic Information System (GIS) at a later stage.

##### **2: Method of demarcation**

When the boundaries of Liparamba Game Reserve do not follow a well defined physical features such as river, line of hill, the boundary will be cleared using methods selected to suite the type of terrain, the main consideration being minimal disturbance and damage to the environment, particularly as regards to soil erosion and durable boundary line in addition, the entire boundary will be marked at 1 to 3km intervals with concrete and stone beacons set well in to ground to prevent their removal. This activity is of highest priority.

### **3.2 Zoning of management and utilisation**

#### **Objectives**

To ensure that all forms of utilisation are conducted in accordance with the paramount objective of conserving biodiversity and environment of the ecosystem.

### **Current status**

To assure that Liparamba Ecosystem can both full fill its conservation purpose and provide the opportunity for sustainable utilization of resources, it need to be zoned for different use. Currently the area is not zoned for different utilisations so there is a need of zoning the area for diversified uses such as area for Eco-tourism, and hunting quota for future plan.

### **Programmes and Implementation**

Liparamba Game Reserve will be managed for the conservation of biodiversity, tourism-game viewing and eco-tourism. No other form of utilization will be, allowed inside the borders of Liparamba Game Reserve, however on the future, when the wildlife population is increased hunting quotas will be established/set aside for both subsistence and tourist-hunting. Father more, harvesting of natural products by rural communities will not be allowed until their zones have significant number of wildlife. With a retention scheme in place and improved management, this policy will allow the dispersal of wildlife to buffer zones where rural communities will be encouraged to participate in and fully benefit from the Management of Wildlife.

### **3.3 Law enforcement**

#### **Objectives**

- To increase the number of Law-enforcement staff in LiparambaGR from 2 to 7 in the next five years and to maintain number at the same level.
- To increase the number of village game scout from 5 to 15 in the reserve for effective foot patrol in the reserve.
- To ensure that at least one third of law enforcement staff are on patrol at any time.
- To provide a high mobility equipment for the fast deployment of any time.
- To enlarge the system of out posts and ensure they are adequately manned, especially in future protected area.
- To establish full equipped ranging posts for better petrol and proper management of the wildlife resources.
- To ensure that major items of out posts and stores are available for law enforcement staff to carry out their duties.
- To enlarge the system of out posts and ensure they are adequately manned, especially in future protected area.
- To establish full equipped ranging posts for better patrol and proper management of the wildlife resources.

- To ensure that major items of out posts and stores are available for law enforcement staff to carry out their duties.
- To ensure that law-enforcement staff are trained in the use of all type of fine arms employed in LiparambaGR and that all staff are responsible for the weapon issued.
- To establish a system of rewards for arrest and confiscation by law enforcement staff.
- To insist morale and discipline in the junior ranks by ensuring the regular participation of officers on law enforcement patrols.
- To establish a database of known offenders in co-operation with the chief preventive officer, and to expand the use of cost-effective techniques of law enforcement such as intelligence-gathering and informer net works.

### **Current Status**

The law-enforcement is one of the most crucial aspect of management in LiparambaGR. The total breakdown of law enforcement in LiparambaGR in early 1980s has lead to decline in animal populations.

Furthermore, the traditional use of wildlife by local people has change in to non-sustainable commercial use, in which a growing population pressure in combination with a modern fire arms and wire snares are used to kill large numbers of animals. Thus to counteract poaching today, a well trained, well-equipped and motivated field force is needed as well as awareness raising and involvement of adjacent communities.

Currently the LiparambaGR management have improved the condition of transport. The issue of law enforcement staff, uniforms and other equipment are not yet improved. However, results of law enforcement remain unsatisfactory and the present game scout force could still not handle any rise of poaching activities successfully. The reasons include the still inadequate training, inadequate or no existing incentives and lack of discipline. Further issues remain the lack of punishment for offenders who have been apprehended. Wildlife scout have to arrest poachers with minimum force, sometime under great risk to their own life. Once delivered to court, offenders are rarely if ever-sentenced poachers arrest is not easily task need competent law enforcement staff well equipped and motivated. This is not practiced in Liparamba Game Reserve because of shortage supply of modern equipment such as firearms and motivation.

In area outside LiparambaGR, the establishment of community wildlife management scheme in the buffer zones aims to reduce traditional and commercial meat poaching by giving the villagers right to use wildlife on their own land, and by doing so to enable villagers to feel that they are the custodian of their wildlife. The training and employment of village game scouts will create and additional anti-poaching force.

### **Programmes**

- Law enforcement must be as cost-effective as possible. To this end, records will be kept to provide information on cost-effectiveness over long term.
- Methods will not be confined to patrolling within LiparambaGR but will in future also include more cost-effective techniques. Such as information gathering system should be operating within 2-4 years after the release of this plan, and be maintained and updated over the long term.
- The conventional law enforcement capability in Liparamba Game Reserve will be enhanced through improving training, through the distribution of more and better equipments, through creating incentives of increased night allowances and through disciplining those who do not perform well in the field or who transgress rules.

The needs to enhance the effectiveness of other techniques of law enforcement such as intelligence networks determine the following programmes as priority.

### **Consolidation of internal security**

The first priority is to implement without delay the many measures detailed in this plan for increasing manpower and equipment and for consolidating management and finance. These measures are a necessary pre-condition for efficient law-enforcement.

### **Mobility of Wildlife Rangers:**

Priority is placed upon ensuring that a minimum of one-third of law enforcement staff is out on patrol at any time. Patrol rations and fuel be stored in sufficient quantities to allow for quick deployment at any time.

### **Firearms for wildlife Rangers;**

They be sufficiently well armed, and sufficiently trained in the use of firearms, to be able to counter threats from well armed poaching gangs as well as not to overreact in situation not posing a threat. All patrols normally consisting of 6-8 wildlife rangers will be issued with 4 shotguns and 2 AK-47 guns or semi – automatic rifles.

### **Equipment for Wildlife Rangers:**

Wildlife Rangers will be well equipped for living in the field for many days at any time. This equipment will include uniforms and camping equipments.

### **Out posts:**

The areas, which are suitable for establishing out posts, are Liparamba game post, Mitomoni and Mtua game posts.

### **Control, Incentives and disciplinary action:**

The senior wildlife wardens will be responsible for assuring that wildlife rangers undertake patrolling duties as instructed, through regular and unscheduled checks. Disciplinary action will be taken against law enforcement staff who neglect their duties or who break regulations. The regular payment of night allowances is perquisite for expecting good patrol work, and payment will be linked to actual achievement.

#### **Good leadership:**

Officers participate in foot patrols as part of their normal duty, and set an example to their staff by taking an active part in anti-poaching work. Every senior wildlife warden (SWW) and assistant SWW will spend at least 7 nights per month on field patrols and the efficiency of officers will be rated by their effective participation in such duties.

#### **Co-operation with Districts and villages:**

SWWs will seek active and regular contact with district authorities and with neighbouring village wildlife communities, and will co-operate with village Game Scouts.

#### **Rewards to the public and to informers:**

Increasing contact with villages will lead to a wealth of information on illegal activities and poachers. An intelligence network be established to increase the efficiency of anti-poaching field operations, and a network of informers will be Identified and maintained. The payment of rewards to informers is made from the retention fund using well-published rates.

### **3.4 Roads and Radio Communications.**

#### **Objectives**

- To establish an effective and efficient radio network to improve communication throughout LiparambaGR.
- To ensure that every area in LiparambaGR can be reached in 24 hours by patrols.
- To create a system that controls vehicle and people on transit through the reserve.
- To establish all-weather air fields in LiparambaGR to facilitate administration work.
- To create a well-planned roads system that serve both for the Management and utilization of LiparambaGR.

#### **Current status**

## **Roads**

The bad drainage of LiparambaGR presents management with challenges in maintaining roads communication. currently there are no all weather roads in the reserve making it in accessible in the rainy seasons. Although a public road exist on a map leading from North to South between Mpepai and Mitomoni villages is used, only in day season. Other roads inside the reserve need to be established for both patrol purpose and management task.

## **Radio network**

At present there is no any radio network established in the entire LiparambaGR. The situation making it impossible to communicate with any of the ranger post with headquarter of the Reserve.

## **Programmes**

### **Roads**

A primary purpose of developing roads and airfield in Liparamba Game Reserve is to support law enforcement and to facilitate tourist game viewing and eco-tourism in a future

The Mbinga District Council will support promoting the rehabilitation of the road between Mbinga and Liparamba Village.

All existing roads in Liparamba Game will be rehabilitated regularly, due to unfavorable soil conditions. Further roads will be constricted to meet tourist demands and minimum impact on natural resources. Also traits will be designed to the reserve especially on the north part of the reserve to meet the need of eco tourism.

### **Radio Communication**

Each Ranger post needs a radio and the office should have one spare for emergencies. Communication by mean of Radial call to a certain extent also possible and should be taken under account.

## **3.5 Tourist Game-viewing**

### **Objectives**

- To develop tourist-game –viewing in Liparamba GR in combination with eco tourism in an environmental sustainable manner.
- To promote exclusive law-volume, high-cost tourist game-viewing and eco-tourism in the long run.
- To develop the necessary roads and infrastructure for game viewing.
- To develop the necessary traits and other facilities for eco tourism

- To ensure that tented camps are given long leases on payment of concession fees.
- To require an environmental Impact Assessment for any present and future development.

### **Current Status**

Tanzanian's tourist industry is largely confined to the north of the country. This is because many of Tanzania's major tourist attractions, for example the Serengeti National Park, Ngorongoro Crater, Lake Manyara National Park and Kilimanjaro National Park are close to each other and can therefore form a northern circuit. In LiparambaGR and other reserves which is situated to "Southern Circuit" the situation is different because the area was not very much known by tourists another reason is that in LiparambaGR the wildlife population is still low and the reserve is relatively new.

The bad drainage situation in LiparambaGR makes it impossible to conduct game drive during rain seasons, thus unattractive for tourism.

### **Programmes:**

The development of game-viewing and eco tourism in LiparambaGR will do much to expand the tourist industry in southern highland regions. Crucial for development of the area are appropriate wildlife population for game viewing and undisturbed miombo forests for eco-tourism.

### **General policy:**

Tourism development must be guided by strict environmental considerations in order to allow a sustainable non-consumptive utilisation of the sensitive miombo ecosystem. Exclusive low-volume high-cost tourism will be promoted in the long run. Walking safaris eco tourism, and other specialized low impact, but high value activities will be promoted. The LiparambaGR Management will, as deemed necessary, restrict the number of beds per camp and the number of camps, the frequency of movement on Ruvuma River and off-road drives.

### **Development needs:**

The development of tourism and eco tourism in Liparamba Game Reserve will call for careful, long-term planning and considerable financial outlay.

Aspects requiring regulations are as follows

- Ensuring Involvement of Local Communities
- Number of camps, their location and numbers of beds
- Number of trails must be limited
- Degree of permanence of infrastructure minimum requirement for standards of camps.
- Environmental standards of camps, for water and waste disposal
- Permissible activities and restrictions
- Use of rivers.

Camps will receive tenancy agreement for a period of at least ten years, subject to certain conditions. Sub leasing of sites by tenants to other operators be strictly prohibited.

The development of tourist infrastructure in LiparambaGR requires management planning across a range of services. The first priority in tourist and eco tourism planning will be to preserve the integrity of LiparambaGR and minimize disturbance of the wildlife and vegetations. Scenic harmony in the design and sighting of buildings, roads and signposts will be supervised. The disposition of roads, campsites and picnic sites is such that the concentrated impact of tourism will be minimized.

## **Road**

Most important is the rehabilitation of access road to LiparambaGR. The road from Songea-Mbinga-LiparambaGR (230km) has to be graded to reduce travelling time from about 8 hours to 2.15 hours.

## **Tourist camps**

Permitted tented camps will not be limited to one already exist on Northern east of LiparambaGR (Mkuyu), one could be established at Mkui and one near Kilasi. The Number of bed per camp should not exceed 25. Tented camps are defined as those in which guests eat and sleep under canvas.

## **Community Camping Sites**

As some general camping facilities are unavailable and further more village communities adjacent to the reserve should be involved in to tourist activities, community camping sites be encouraged. Village communities should be supported to choose a site on their own communal village land, build traditional but appropriate facilities, open up small traditional restaurants.

Community camping sites can create benefit sharing, actively involving the surrounding communities and if advised properly can be part of the tourist concept for Liparamba GR, it will be difficult to reach a standard of high value tourism. This kind of tourism will be mainly catering for individual medium budget tourism in contrast to organized high budget tourist. However overland-truck will not be allowed to use such camping sites having a too negative impact on the cultural integrity of involve communities. Resident tourist, field practical will be targeted main groups community camping sites will be addressing. The community camping sites will be supported and supervised by the Liparamba GR management.

Controlled community camping sites with exact guidelines should be promoted because it will in future be difficult to stop camping sites from being established on communal land. Supporting community campsites could create awareness within the village communities and stop uncontrolled development. Community camping sites should be established near the village land to minimize the environmental impacts.

## **Walking Safaris**

Walking safaris be promoted in Liparamba GR especially at the Northern part of the reserve, and will be in future one of the main attractions of Liparamba ES. On the Northern part of the reserve a walking path (trail) be established including e.g viewpoints, Elephant paths through the thick forest and tree hides to view animals and undisturbed reserve. The armed wildlife ranger, who will be provided by a rifle by the Liparamba management, to accompany all is walking safaris. Besides armed wildlife ranger knowledgeable members of the surrounding communities should be involved as a guides.

## **Fee Structure**

Visitors who stay at tented camps will have to report to the Liparamba GR headquarter after and before arriving, to assure that fees are paid correctly marking this crucial point indisputable for both sides.

Tourist camps situated on communal land will have to pay bed-night fees nearby village community. Camping fees for community camping sites will be paid directly to the communities.

The fees charged will be as to TANAPA

## **Camp Vehicles**

In order to ensure the fees due to LiparambaGR from entry of vehicles in to the reserve are paid, and to limit the numbers of vehicles actually stationed within LiparambaGR, the number of vehicles stationed at each camp will be limited to three, two light vehicles and two, one truck.

## **Liparamba GR Visitors regulations**

The following regulation be made available to all the gates and tourist camps. Well come to Liparamba GR, Tanzanian's only Game Reserve on the southern highland which is undisturbed. Tanzania has protected this important ecosystem for future generation. You are visitors to this reserve, responsible to future generation to leave this beautiful place as you found it. The following rules have been prepared to help you get the most out of your stay. We hope that your visit will be enjoyable and memorable one.

- 1. One official entry point exist to Liparamba GR, the gate near the Lumeme bridge coming from mbinga district centre to Liparamba GR. Entry at any other places is an offence. All visitors have to pay the respective entry fees.**
- 2. A 50km/hr speed limit exists for all vehicles. Wild animals often cross or rest on the road, and this limit is supposed to protect both them and you. Any accident involving injury to or health of an animals has to be reported to a gate or any wildlife ranger at the first opportunity**

- 3. Off-road driving should generally be avoided. Only light vehicles (weight not more than 3000kgs) may leave established roads, and this should only be in case of difficult road conditions**
- 4. Night driving is prohibited between 1900-0600 hours. Visitors should only enter if they can be sure of reaching their destination by 1900hours. Entry at any gate after 1800 hours is not permitted**
- 5. Camping is only allowed at the established camping sites. Visitors are required to pay their entry and camping fees in advance at the gates. Special camping sites are available only by written permission of the Liparamba management.**
- 6. Disposal of litter is forbidden at any place other than those provided at the campsites and at the gate. Fires may not be kindled away from campsites, as uncontrolled fires are a major cause of habitat destruction. No cut or removal of vegetation is allowed. No subject, animate or inanimate, may be removed from the reserve**
- 7. No person may enter the reserve with possession of any weapons, explosive materials, trap or poisons without an official permit**
- 8. Visitors are forbidden to bring any wild or domesticated animals or any plants in to the reserve.**
- 9. Visitors may not get out of their vehicles in the vicinity of any animals for any reasons. Wild animals are dangerous.**
- 10. Under no circumstance will the Liparamba management be held responsible for any damage or other reasons in the reserve.**

### **3.6 Ecological Monitoring**

#### **Objectives**

- To encourage applied research that addresses the need of management.
- To introduce a programme of ecological monitoring to Liparamba GR, with emphasis upon-ground based monitoring to supplement aerial censuses

#### **Current Status**

Ecological monitoring is the systematic measurement and evaluation of the dynamic of an ecosystem. Ecological monitoring serves the important function of alerting management to both desirable and undesirable trend in the environment. Monitoring therefore involve the collection of wide range of information on climate, vegetation, wildlife, Humans and human-wild life

interaction. Scientific research differs from ecological monitoring in a number of ways. Empirical research normally involves long-term studies of natural situation that may not necessarily be related to management objectives. Nevertheless, some research can also provide data and insights that are of considerable relevance to management.

### **Programmes**

Establishment of monitoring and research capacity within Liparamba GR will not be necessary encouraged. However the following programmes can be introducing for effective daily conservation activities

### **Aerial Census**

A comprehensive aerial census to monitor wild life populations will be carried out atlas after every three years. Because of vegetation cover in Liparamba GR, supplementary ground assessment will be carried out to extend the usefulness of aerial surveys. Special aerial surveys and reconnaissance flight will be carried out when the need arises.

### **Data Collection**

The senior wildlife wardens are responsible for the compilation of relevant data from foot patrols by wildlife rangers on patrol.

### **Research.**

All proposed research work in Liparamba GR will be screened during the Liparamba management meeting, and will require prior approval by the Liparamba GR management. Applied research linked to specific management need will be given preference. The Liparamba GR management wishes to avoid a situation where researchers follow their own interests and academic needs unless that matches with the need of management. Researchers will cover all their cost including per diems of wildlife rangers assigned to the project. Foreign-sponsored research projects in LiparambaGR should include the budget component for Tanzania counter part staff. If there are conflict of interest between researchers and legitimate commercial users of Liparamba GR, the interest of the later will prevail.

## **3.7 Building and environmental impact**

### **Objectives**

- To provide adequate accommodation and office facilities to all staff in Liparamba GR.
- To establish a new headquarter building at Liparamba village
- To minimize environmental impact around all staff building in Liparamba GR.

## **Current Status**

The situation of housing for staff at Liparamba GR is still worse since gazettelement of the reserve. A need for construction of house to accommodate the senior wildlife wardens, rangers and other wildlife junior staff. At present the office buildings is insufficient. The existing office is located at Mbinga District centre with insufficient facilities and workers; also there is a need for workshops and storage rooms, sheds for vehicle and repaired for existing staff office.

In short Liparamba GR is still new, need more effort for establishing administrative and management facilities.

Environmental pollution in Liparamba GR is still insignificance.

## **Programmes**

Liparamba GR will provide a fair living standard for all its personnel. This will comprise a minimum of two bedrooms and a living room, a small kitchen, a shower and a latrine outhouse, per employee. The gate near Lumeme Bridge be establishing for all visitors and tourist entering and exit Liparamba GR. No building without authority. There is no building development of any description without the permission of the chief Wildlife Warden.

## **Environment pollution**

The following action will be taken to minimize/mitigate the impact of environmental pollution in Liparamba GR.

**Environmental Impact:** An expert in environmental impact will inspect all Liparamba GR facilities and village communities in all buffer zones to advise on how such impact can be reduced. Appropriate measures will be implemented following the report of the expert. Further planning will be taken under account measures recommended to minimise environmental impact. The mining activities conducted near the boundary of Tanzania and Mozambique at the south-western zone need specific environmental impact study.

**Waste disposal facilities:** All areas that surround the Liparamba GR including all buffer zones and places only temporarily inhabited, for example Picnic and Camping sites will need to have adequate waste disposal facilities, for disposal all wastes used by the tourists. Then after the waste especially those non-perishable ones produced by tourist camps should be taken out of the reserve.

**Routine Inspection of station:** SWWs. Untidy quarters will be treated, as disciplinary offence carry out regular briefing on environmental impact and routine inspection  
SWWs to ensure that tidiness are maintained around offices and workshops, and that litter and refuse are disposed off. General directive be issued by the CWW to this effect.

## **Tourist game-viewing, eco-tourism and Community camping sites**

All existing camps maintain a high standard of camp tidiness and sanitation at all time. A shooting up number of visitors will require to drawing up of regulations governing the disposal of solid and liquid wastes. All camps will be encouraged to hire appropriate technical expertise to advice on measures that can be adopted to minimise environmental pollutions in Liparamba GR and all buffer zones.

**Further development:** All proposed further developments will require that an environment impact assessment (EIA) be carried out before any construction begins. In the case of private sector developments, the developer will meet the cost of EIA, but Liparamba GR management will make the choice of consultation.

### **3.8. Administration**

#### **Objectives**

- To facilitate and provide back up of LiparambaGR staff in execution of their primary duty of safeguarding the natural resources of the reserve.
- To adopt a system of ranks for Liparamba GR staff that ensures that lines of command are clear and indisputable, and promote good leadership.
- As benefits an armed service, to instil military system of discipline among Liparamba GR.
- To promote effectiveness of existing staff through training, and to ensure that staff recruited for posts in Liparamba GR are suitably trained and capable.
- To rectify the poor salaries and allowances of Liparamba GR staff.

#### **Current Status**

Liparamba GR was established under the Wildlife Act of 1974. It is managed as a National Project of a Wildlife Division, which presently comes under the Ministry of Natural Resource and Tourism. The project manager of Liparamba GR, whose officially duty station is in Mbinga is directly responsible to the Director of Wildlife for the management and administration of LiparambaGR. Other subordinates (SWW) assist the project manager. The manpower of Liparamba GR numbers were 3 (three) staff. This provides a protective coverage of around 190sqkm per staff. This is insufficient number of staff at present and need to be increased without delaying.

#### **Programmes**

#### **Ranks of staff**

The Liparamba GR management will revise its entire staff nomenclature and relate ranks to common and more favourable terms, which will include Wildlife

Warden and Rangers. All post title will bear the identification of Wildlife in order to convey a sense of unity and Identity through all ranks. The nomenclature to be used in Liparamba GR will include four major grades as Follows:

**The officer grade:** The officer grade will start with the Chief Wildlife Warden (CWW) who is in command of Liparamba GR. The assistant will be a senior Wildlife Warden (SWWs).

**The Wildlife Ranger Grade:** This grade will distinguish the law enforcement staffs of Liparamba GR who bear arms in the execution of their duties. The ranks will range from the Wildlife Ranger (WR) at the low end and corporal at the high end. More ranks are not needed due to the small size of the reserve.

**The Supportive Grade:** This grade will include most of the remaining support staff, which will be classified as Wildlife assistant (W/Asst). None of the personnel in this grade will bear arms in the execution of duty.

### **Salaries and Allowances.**

Allowances will be paid according to Government regulations which aim to satisfy two main criteria

- They will be an incentive to provide all Liparamba GR staff with reasonable remuneration
- They will be an appropriate reward and inducement for law enforcement staff engaged on detachment and patrol duties.

The rates of allowances will be adjusted to meet changing circumstance and the following categories of allowances will be paid.

**Night/ patrol allowance:** This allowance will be paid in accordance with prevailing Government rates for every night spent off the normal duty station. However, the number of allowances that are paid to individuals will be divided in a flexible manner by the project manager (CWW) so that this allowance can be used as an incentive and can be cut in case of bad performance. The payment of night allowances requires the scouts to provide their own patrol food. Therefore reduction from night allowances will be made in order to pay for the patrol food. As a guideline 10us\$ should be paid per day to the rangers as incentive if available.

**Special duty allowance:** This allowance will be paid to the staff that does not go on the patrol. The project manager will divide a system of allowance that are linked to performances and achievements.

### **Discipline, Term of service and Morale**

This Management Plan provides the basis upon which the effectiveness of Liparamba GR as a conservation area can be upgraded to an extend being able to promote trophy hunting, eco-tourism and development in the southern highland of Tanzania. The plan addresses the need for increase manpower strengthening, for attractive term of service, for incentives and for provision of the service and equipment. There is an indisputable case for introducing by

law a disciplinary code for all personnel of the Wildlife Division. Once adopted, the management of Liparamba GR will implement fully the measures empowered by such disciplinary code. In the mean while, the Liparamba GR management will under take the following:

**Enforcing discipline:** Discipline will be enforced by all regal methods, most particularly in the cutting or waiving allowances.

**Dismissal of staff :** Staffs that transgress regulations will be handled to appropriate authorities to see their dismissal and appropriate punishment, if necessary.

### **3.9. Finance and Donor Support**

#### **Objective**

- To enable the Liparamba GR to be financially self –reliant through the appropriate use of the available fund issued as a budget.

#### **Current Status**

Up to now Liparamba GR is financially insufficient, this is due to the fact that the reserve is still new, no any utilization activities were introduced. The only donor support received were from TWPF and GTZ-CWM, which provide internship student from SUA for natural resources inventory, data base and draft of document which can be used for development of management plan on later stage.

The financial implications of this management plan are high. However as a developing country, Tanzania does not have resources to manage its extensive network of wildlife and Protected areas adequately. Thus while a long-term aim Liparamba GR to be financially independent. This stage will only be reached after a considerable amount of money is invested in to the area, including access roads and infrastructure within the reserve.

#### **Programmes**

Tourism game viewing, eco-tourism and on a later stage trophy hunting (when the number of wild animal is increase) will be promoted by publishing a tourist guide for LiparambaGR and by establishing the acquired infrastructure.

**Volunteers:** The project manager (CWWs) will ensure that volunteers provided to LiparambaGR have sufficient practical experience in their particular profession, are full competent and fulfilled a need.

### **3.10 Management of Liparamba GR in relation to Neighbouring Protected Areas**

## **Objectives**

- To work in cooperation with neighbouring protected areas to ensure effective conservation of natural resources and promotion of mutual interests.
- To promote enhanced law enforcement and tourist flow between Liparamba GR and proposed Litumbandyosi GR in a near future.

## **Current status**

The survivals of Liparamba GR depend on the proper conservation of the Liparamba ES and the migratory route/corridor. The southern west buffer zones include the corridor that connects Liparamba GR to Mozambique. The corridor is vital for free movement of wildlife from Liparamba to Mozambique and vice versa. Due to mining activities conducted at Mozambique, the corridor is partially blocked due to increase of human population in the area. Liparamba GR left as isolated protected Area with no gene exchange flow. If the situation leave without intervention for a long time the reserve will be perish.

## **Programmes**

The following programme should be implemented to promote and assist in the effective conservation of biological resource of neighbouring protected areas.

- To protect the Wildlife migratory corridor that allows ecological exercise between Litumbandyosi proposed Game Reserve and Liparamba GR from further encroachments by the surrounding communities.
- To stop the mining activities conducted at the border of Mozambique and Tanzania.

### **3.11 Management of Liparamba GR in Relation to District and Local Communities.**

#### **Objectives**

- To enhance the living standards of rural communities from direct benefit driven from wildlife uses.
- To promote the involvement of rural communities in the management of wildlife occur outside the border of Liparamba GR, by establishing wildlife management Areas.
- To reduce illegal use of wildlife resources and Lumbering in and around Liparamba GR.
- To co-operate with District and Village authority in the management of wildlife
- To manage Liparamba GR in a manner that is compatible with the development and Land use management objectives of the relevant District as whole.

## **Current status.**

The Liparamba ES accommodate eight villages of about 9860 People. All villages have been proposed to be involved on community wildlife management areas. Thus were due to the fact that villages have enough communal Land sufficient for establishing WMA. Further arrangement in term of public meeting is on the process to capture the attitude of local communities on the wildlife conservation and management on their own land.

## **Community wildlife management programme**

For the village communities wildlife is important source of meat, honey, beeswax and forest product. The absence of conservation law enforcement agent in the area is an indication that the local communities have some responsible in sustaining the natural resource in the area. The Wildlife Division has scarce resources to control the entire LiparambaES. Therefore the survival of ecosystem will depend on the acceptance to shoulder responsibility in conservation.

## **Wildlife management Areas (WMA) for Liparamba GR.**

Wildlife Management Areas should be established basing on the type of wildlife utilisation. It is recommended that community hunting should be allowed/ conducted on the western buffer zone, Eastern south buffer zone and Northern east buffer zone.

The village community will be responsible in managing all natural Resources. Further tourism development should take under the question of involving the communities in all spheres of benefit sharing including job opportunities, the village buying shares in various investments under talking and community camping sites.

## **Supports from District**

The authorities in the district understand the problems of man-made boundaries and are ready to support out the bottleneck and come up with an acceptable structural set-up. It is therefore recommended that villages should decide if they wish to have one Natural Resource Committee on each separately. They should also decide the mode of village scout patrols whether the patrols should carry out separately or jointly.

## **Activities**

- The project pursues a cautious approach in creating awareness and building confidence with the target groups
- Ensure that Liparamba ES is managed as an ecosystem by removing bottlenecks, brought about by political/ administrative structures.
- Pursue a careful recruitment, selection and training of facilitators, capable of disseminating correct information to the target group during the initial phase of the programme

- Create and promote transparency among all the actors
- Establishing village natural resource committees taking in to account specific needs of particular committees.
- Select and train village game scouts at the community based wildlife management-training institute, Likuyu.
- Train local readers and natural resource committee members.
- Promote sustainable self help projects
- Schedule measurable patrol activities of village game scouts.
- Assist in setting sustainable quota for sustainable buffer zones.
- Assist villages to acquire tittles deeds and establish Wildlife management areas.
- Assist in hunting processing and marketing of products
- Create mechanisms that will promote transparency in financing and managing accounting for the community to countercheck possible thefts or misappropriation of community assets.
- Facilitate the establishment of community camping sites.

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