

**Annex 6.**

Social and cultural values: Hunting

Two types of illegal hunting can be identified, poaching carried out by local people in which the meat and revenue stays in the local villages and poaching carried out by 'outsiders' for sport and for more distant markets. Information on poaching is notoriously difficult to come by but it does seem that illegal hunting is an important activity for households in the area. In some areas 10 % of households are involved in poaching of some form (Haule, 1997) and 'bushmeat' is a more significant source of meat for local people than domesticated meat (see Table 10). The main reason for the high use of bush meat is price. In 1997 the per kilogram price of bush meat was TSh 381 compared to TSh 611 for fish and TSh 1000 for beef (Haule 1997).

Table. Last "meat eaten" response from five villages in Kilombero and Ulanga Districts

Type of meat	% of total households
Buffalo	39.5
Puku	19.7
Cattle	16.6
Hippo	8.7
Bush pig	5.2
Chicken	4.1
Elephant	3.1
Goat	1
Antelope	1
Wart hog	1

Source: Haule (1997)

Local hunting is mainly undertaken in the wet season as large mammals move from flooded grasslands up into the higher areas, a migration which brings them into contact with human settlements. Local hunting takes place using a variety of methods but rifles and snare traps seem to be most common (Ulanga District Game Office *pers. com*, Chettleborough *pers. obs.*). Hunting is an exclusively male task (Haule Kennedy 1997).

Poaching activities by outsiders come in a variety of forms. In the wet season of the year 2000 a gang of over twenty people, armed with automatic rifles and equipped with boats, entered the flooded grassland from the Kilombero side and spent a week in the area. They killed several elephants, from which they took the ivory, and numerous animals for meat. This type of operation is increasingly common and the numbers of elephants killed in recent years is increasing (R. Shallom *pers com*). Poachers in smaller units are known to use the Kilombero River for access and to transport meat away (Ulanga District Game Office, *pers. com*). It is suspected that the TAZARA railway is an important conduit for illegal wildlife products.

**Annex 7.**

Social and cultural values: Utilisation of Forest and Miombo

Communities adjacent to the Forest Reserves, under special arrangements, are allowed to collect firewood (dead and fallen wood) and medicinal plants for family use. The nature of this use is only documented for Nambiga where it was found that the high availability of miombo and riverine forest resources in the vicinity limited the need by local people to enter the reserve (Hinde et al, 1999). It is probable that the most common type of utilisation of reserves is illegal logging undertaken by commercial interests from outside of the District (Hinde et al, 1999). It is likely that commercial interests are also driving illegal logging in other reserves.

Illegal logging is a significant but unquantified activity in the miombo woodland. Miombo woodland also provides local people with a range of resources varying from firewood, building poles to food and medicine (Table 11). Firewood collection is from 27 confirmed species with *Pericopsis angolensis* and *Brachystegia spiciformis* being preferred. Food collection is from 14 species and utilizes fruits, tubers, fungi and honey. Traditional medicine is also an important use of the miombo and utilizes 149 species for the treatment of a wide range of diseases and disorders (see Chettleborough *et al.*, 2000 for a full list). Communities are very dependant on the “free<sup>1</sup>” resources of miombo for:

food during what is known as the “hungry period” (January-March),  
 fuel (firewood is main fuel for communities),  
 traditional medicine (this is often taken before modern medicine).

Other uses of the miombo are extraction for charcoal and for construction of fishing boats.

Charcoal production is usually for sale to Mahenge, Ifakara or

passing lorries, but its extent or impact is not known. The fishing industry in the area uses species such as Mvule (*Miletia excelsa*) and Mninga (*Pterocarpus angolensis*) for the manufacture of canoes. They also utilise firewood species for the drying of fish. The impact of these activities is not known although it is probable that the latter is the more significant considering the longevity of canoes constructed from these hardwoods.

Large-scale commercial enterprises also utilize areas that were once miombo woodland. The Kilombero Valley Teak Company currently own 28,000 ha of miombo woodland and have to date converted 3,663 ha to teak (see section 4.9 for more details and environmental impact).

Table 1. Importance of different uses of miombo resources.

Rank	Resource Type	No. Species Utilised (1)
1	Firewood	32 (27)
2	Building	12 (11)
3	Medicine	160 (149)
4	Food	27 (14)
5	Utensils	
6	Other (2)	

Source: Chettleborough *et al.* (2000)

<sup>1</sup> Although collected without charge, estimates for the economic value of goods derived from miombo by local people range from US\$100-US\$320 per household per year (Campbell, 1997).

Resource collection in local communities is gender differentiated. Women collect firewood whereas men collect most of the other resource types. Traditionally medicinal collection and honey manufacture were specialist activities carried out by a select few men. However, both District Councils and KVTC are now trying to encourage the development of honey manufacture in most villages and are including women in these efforts. As previously mentioned, local people also show distinct preferences for certain species especially for firewood and building. This suggests that the value of a woodland or forest area to local people is more dependent on its composition and not just on the number of trees present. The impact of selective use of resources on the miombo community structure is unknown and merits investigation.

Miombo resources are usually obtained from public land over which the District Forest Office has responsibility for management. Although most resource use types are free, licenses must be bought for timber extraction and tax must be paid on items such as charcoal and winnowing plates (made from bamboo). These taxes provide significant income to the District Councils. For instance between November 2000 and April 2001 Ulanga District obtained TSh 5,577,390 from forest products on public land. In theory timber extraction is regulated by the licensing system but it is rarely enforced and unlicensed logging is widespread.

Unplanned agricultural expansion, illegal commercial logging and introduced practices from immigrants have reduced miombo and forest resources with a number of impacts on people's livelihood. Evidence for this scarcity is:

Women walk over 3 km for firewood.

Increasing use of inferior species as preferred species more difficult to find.

Introduced (damaging) resource collection methods used e.g. cutting of live trees, ring barking to kill trees so that legal collection of dead wood can be undertaken nearby rather than having to travel longer distances.

Loggers now must walk 5 km into the Mahenge hills to find timber.

Drying up of some water courses

Women and children are the most affected by resource scarcity. Women report that the excessive time taken to collect firewood limits the time they can spend on child-care and restricts their involvement in income earning activities. The increasing scarcity of firewood also limits crucial activities such as the boiling of water for sterilisation. The drying up of water courses such as the Luvilli near Itete has led to a greater use of remaining dry season water sources and has subsequently led to increased incidences of water borne infections amongst young children (Itete Health Clinic, *pers comm.*)

**Annex 8.**

## Land tenure / ownership

There are several existing operational and non-operational large-scale developments in the Kilombero wetland catchment area. They include private plantations, farms and tourist hunting companies to state prison farms.

Table. Large scale commercial stakeholders and ownership in Kilombero Valley

Company	Product	Land Ownership/Operational Area
Kilombero Valley Teak Company	Teak	28,000 Ha
Kilombero Sugar Company	Sugar	7,000 Ha
Escarpment Forest Company	Pine, Eucalyptus	15,000 Ha
Wild Footprints Ltd.	Hunting	Kilombero South Hunting Block
Kilombero North Safaris Ltd	Hunting	Kilombero North Hunting Block
Kilombero Holdings Ltd	Rice	5,000 Ha
Idete Prison	Rice	6,000 Ha
Tanzanian Nut Fields	Macademia Nuts	??
Mofu Farm	Rice	500 Ha
Mbingu Farm	Agriculture	3000 Ha
M'mula Rubber Estate	Rubber	??

**Notes on Kilombero Valley Teak Company (KVTC)**

KVTC is a CDC (Commonwealth Development Corporation) backed company that aims to plant at least 13,000 Ha of teak in a series of plantations in both Kilombero and Ulanga Districts. CDC will invest £29 million in the project including a \$ 12.5 million investment in a sawmill at Ifakara. At peak production they will produce 50,000 m<sup>3</sup> of timber a year producing an export commodity that will bring in hard currency and reduce the pressure on indigenous teak forests in Southeast Asia. This is particularly pertinent to Burma which, at current logging rates, will have no teak forests left in 30 years (KVTC *pers comm*). KVTC cut down indigenous miombo woodland in order to establish the plantations.

KVTC currently own 28,159 Ha in the valley on a 99-year lease. They will not be able to achieve their target for planted area with their current land, because much of it is unsuitable for teak (e.g. the water table is too high, soil type is unsuitable) or their own environmental guidelines preclude them from planting. The environmental guidelines are based on a pre-planting Environmental Impact Assessment (EIA) carried out in 1992 and precludes planting on evergreen areas, steep slopes and close to water courses as well as prescribing a mosaic pattern teak and miombo within plantation areas (IIED, 1992). KVTC have management responsibility for the remaining unplanted land and are expected, by the Government, to conserve these areas. In order to achieve their targeted planted area KVTC are currently trying to obtain an area of miombo covering 10,000 Ha to the east of Mavimba (Ulanga District) in the Mahenge Highlands.

Table. KVTC land in Kilombero Valley.

District	Total land (Ha)	Planted to date (Ha)	Total to be planted (Ha)	Remainder (Ha)
Kilombero	4,751	992	1482	3,269
Ulanga	23,408	2662	6412	16,996
<b>Total</b>	<b>28,159</b>	<b>3,654</b>	<b>7,894</b>	<b>20,265</b>

Concern has been mooted in some quarters about the potential environmental impacts of this development although little concrete data is available yet. Frontier-Tanzania have been investigating the impact on large mammal migrations and biodiversity since 1998 although all conclusions are only preliminary (see section 3.5). A full Environmental Impact Assessment, planned for 2002 will provide additional information.

The relationship KVTC enjoy with local communities is a paradoxical one. KVTC employ up to 1,000 people from the local area. They have also just started a 'social fund' in which communities demarcate KVTC boundaries and protect plantations from fire. In return for this the company provides money to a social fund that can then be used to make a contribution to a suitable community development project. KVTC have also started a local NGO which assists communities establish bee-keeping projects in the Lupiro area.

However local communities generally have a negative opinion of the plantations (UCLAS, 1999; village visits). Part of this may be to do with the fact that the process of acquiring the land in the first place involved local leaders but not the wider community. In addition to this many feel bitter that KVTC own so much land that they will not use and have requested that it be handed back to the villages. However, KVTC state that they are compelled by their agreement with the government to manage these areas and cannot give them back (KVTC *pers comm.*).