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Eastern Africa Coastal Forest Ecoregion (EACFE) Programme Development

REVIEW OF TRADE ISSUES FOR MANAGEMENT OF TANZANIA'S COASTAL FORESTS

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EXECUTIVE SUMMARY

Coastal forests of Tanzania are distributed in six regions of Tanzania mainland covering 17 districts and Unguja and Pemba in Zanzibar. The coastal forests cover a total of 333,412 ha of which 263,932 ha are Central Government Forest Reserves (79.2%) and 66,950 ha (20.0%) are under public land. In addition 2,530 ha (0.8%) are under Game Reserves/National Parks.

Main objective of the review on flora and fauna trade in the coastal forests of Tanzania is to provide inputs for further developing the WWF – Eastern Africa Coastal Forest Action programme. The review was mainly based on national desktop studies and discussions with relevant stakeholders having an impact on trade issues on the EACFE.

The review showed that main underlying factors to uncontrolled trade on flora and fauna from the coastal forests include: rapid population growth, poverty, market failures, absence of proper definition of property rights and security of tenure, trade liberalisation and general policy failures. Other factors include: unavailability of alternative sources of products and services from the forests for subsistence livelihoods to the majority of users; use of inefficient utilization technologies on wood products; and poor enforcement of laws related to woodland management.

Various studies have confirmed that almost all of the coastal forest patches in Tanzania mainland are threatened by unsustainable extraction of charcoal, poles, timber and firewood, expanding agriculture and wild fires. Degradation is taking place both in government Forest Reserves and in unreserved forests on public land. Decline in government capability to police Forest Reserves particularly in Tanzania mainland over the past two decades due to shortage of manpower and finance has also exacerbated destruction of coast forests.

Socio-economic studies in Tanzania mainland have confirmed that products obtained from the coastal forests for subsistence are contributing to community livelihood and poverty reduction. The products include: fuelwood, building poles, sawn timber, herbal medicines, edible fruits, mushrooms, plant-derived oils, leaves and beverages, bamboo, gums, fodder, fibre, thatch grass, honey, candles, dyes, ornamental plants, wild meat and handicrafts.

Scarcity of timber resources resulting from uncontrolled timber trade has shifted commercial timber logging concentration from the coastal forests of Tanga, Morogoro and Coast regions between 1950 and 1990s to Lindi and Mtwara regions from mid 1990s onwards.

Tanzania has very conducive national strategies, sector policies and legal instruments empowering involvement of local communities and the private sector in flora and fauna trade. Existing strategies, sector policies and legal instruments with impact to trade on flora and fauna are described. However, various studies have confirmed that community awareness on the existing national strategies, sector policies and legal instruments reviewed is very low. Further more, multi-sectoral cooperation in policy

implementation is also low or non-existing at community level hence creating or contributing to conflicts in achieving sustainable forest management.

Legal trade on flora and fauna in Tanzania is through forest licenses and permits issued by the government. To control and monitor flora and fauna trade natural resource check points are established at strategic points. Literature review showed that legally traded timber products from the coastal forests of Tanzania mainland accounts for less than 20 percent of the total volume of wood products traded.

The natural resource check points are not effective as they only control trade on flora and fauna products if traders happen to pass through the check points of which only a few are doing so. Further, majority of check point staff are not trained and they demonstrated high inability to check consignments against accompanying documentation, identifying forged documents, identifying timber species and in some cases they were collaborating with illegal traders. Common methods to avoid forest royalties include species misclassification, under-declaration of volumes and transporting wood as planks or semi-processed furniture parts. Main products traded illegally from the coastal forests of Tanzania mainland in priority list are: charcoal, sawn wood, logs, poles, carvings and firewood.

Main driving force for illegal timber trade is to increase profit. However, field observations showed that traders on forest products could increase their profit margins and contribute to sustainable forest management if they could invest in efficient harvesting and processing tools to minimize wastage of timber arising from use of inefficient harvesting and processing methods.

Tanzania is a member of the Southern Africa Development Community (SADC) and the East African Community (EAC), and is part of The New Partnership for Africa's Development (NEPAD). Tanzania is also a signatory to various international conventions related to forestry, biodiversity and environmental conservation which are highlighted. However, community awareness on the regional agreements and international conventions is very low.

Major developments in Tanzania contributing to accessibility of coastal forest resources include: the Mkapa bridge across River Rufiji, the Mtwara Development Corridor initiative started in 1997, political and economic reforms that have converted the command-based economy into a market-oriented economy with liberalisation on trade and FBD initiation of forest certification process, starting with formulation of Criteria & Indicators for Sustainable Forest Management.

Based on information gained, strength, weaknesses, synergies and conflicts between frameworks with respect to EACFE resource trade/use are summarised. However, literature review showed that investment levels for sustainable processing and trade on forest products in Tanzania mainland is very low. Almost all coastal forest reserves in Tanzania mainland have no management plans.

Ngezi and Jozani forest reserves in Zanzibar provide best field practices on socially responsible schemes in operation. For example Ngezi FR has a detailed management

plan that was jointly developed through participatory efforts by local communities and forestry officials. However, evidences of socially responsible schemes in operation for sustainable management of the coastal forests in Tanzania mainland are rare due to shortage of manpower. Nonetheless, conservation efforts initiated by WWF and IUCN in the Coast Region of Tanzania mainland covering few small pilot forest areas through participatory forest management schemes provide some evidence of socially responsible schemes.

Sociological knowledge of traders on flora and fauna could enhance poverty reduction and sustainable forest management efforts. However, socio-economic data and information on traders of flora and fauna are few.

Sustainable trade of flora and fauna within the EACFE could provide unique economic opportunities to rural communities in improvement of livelihood and poverty reduction by wise utilisation of existing local resources. Based on best field practices, opportunities for increasing benefits in a sustainable manner from coastal forests are discussed. Main challenges for the Coastal forests of Tanzania include ecological threat posed by EACFE trade/use and evidence of unsustainable trade.

Main recommendations from the review are:

- Clear links between coastal forest resources utilization and livelihoods are evident in Tanzania. Understanding these linkages is important to firstly strengthen national efforts to eliminate poverty, and secondly to mitigate adverse impacts on the environment that may exacerbate poverty.
- The is an urgent need to increase forestry manpower to manage the coastal forests in collaboration with local communities through Community Based Forest management (CBFM)
- Concerted efforts are required to demarcate coastal forest reserve boundaries in the field to enhance clear land tenure followed by preparation of management plans for all the coast forest reserves.
- Harvesting quotas and strict control of allowable sizes should be introduced.
- Involvement of NGOs and other relevant stakeholders in management of coastal forests should be intensified to complement ongoing government efforts.
- Concerted efforts are required to intensify community awareness on existing policies and legal instruments related to the EACFE also efforts are required to monitor closely the trade of small logs and unfinished furniture.
- Efforts are required to minimize wastage of timber resources arising from use of poor technologies in tree harvesting, timber sawing and charcoal production also concerted efforts are required to minimize wild fires

Main conclusion of the review was that understanding flora and fauna trade dynamics within the coastal forests is a pre-requisite for ensuring sustainable management of the EACFE to enhance effective contribution to improvement of community livelihood and poverty reduction efforts.

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Lastly, I would like to say that all good things from this review report are common property, but the shortcomings are solely mine.

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ABBREVIATIONS AND ACRONYMS

ASDS	Agricultural Sector Development Strategy
CBNRM	Community Based Natural Resource Management
CBD	Convention on Biological Diversity
CCD	Convention to Combat Desertification
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
DANIDA	Danish International Development Agency
DFID	Department for International Development
EAC	East Africa Corporation
EACFE	Eastern African Coastal Forest Ecoregions
EAFFP	Eastern Africa Coastal Forest Programme
FBD	Forest and Beekeeping Division
FR	Forest Reserve
GDP	Gross Domestic Product
GR	Game Reserve
IUCN	The World Conservation Union
MEM	Ministry of Energy and Minerals (Tanzania)
MLHSD	Ministry of Land and Human Settlements Development (Tanzania)
MNRT	Ministry of Natural Resources and Tourism (Tanzania)
NEMC	National Environment Management Council
NEPAD	The New Partnership for Africa's Development
NFP	National Forest Programme
NGO	Non-Governmental Organisation
NPES	National Poverty Eradication Strategy
PRSP	Poverty Reduction Strategic Paper
RDFAPTF	Rufiji District Forest Action Plan Task Force
REMP	Rufiji Environment Management Programme
SADC	Southern Africa Development Corporation
SFM	Sustainable Forest Management
TANAPA	Tanzania National Parks
TAS	Tanzania Assistance Strategy
TASONABI	Tanzania Specialists Organisation on Natural Resources and Biodiversity
TAWICO	Tanzania Wildlife Corporation
TAWIRI	Tanzania Wildfilfe Research Institute
TCMP	Tanzania Coastal Management Programme
TFCG	Tanzania Forest Conservation Group
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
URT	Government of the United Republic of Tanzania
VPO	Vice President's Office
WCST	Wildlife Conservation Society of Tanzania
WMA	Wildlife Management Area
WWF	World Wide Fund for Nature (known as World Wildlife Fund in USA)
WSSD	World Summit on Sustainable Development

1. INTRODUCTION

1.1 Background

The eastern African coastal forests are found within two ecoregions, the Northern Zanzibar-Inhambane coastal forest mosaic ecoregion and the Southern Zanzibar-Inhambane coastal forest mosaic ecoregion. These two ecoregions cover around 260,000 km^2 of land and stretch along the coasts of southern Somalia, Kenya, Tanzania and Mozambique.

These two ecoregions, in particular the northern one, have been identified as a globally important region for biodiversity conservation. At least 1,366 species of plants and 100 species of vertebrate animals are strictly endemic to the region, and many tens of species are shared only with nearby mountains in eastern Africa.

1.2 Objective and activities of the review

Main objective of the review on flora and fauna trade in the coastal forests of Tanzania is to provide inputs for further developing the WWF – Eastern Africa Coastal Forest Action programme. Based on provided review terms of reference, the following activities were implemented:

- Compile available information on both local legal and illegal trade on flora and fauna from coastal forests,
- Look into broad trade issues that impact on the Eastern African Coastal Forest Ecoregions (EACFE),
- Examine forest certification in the region with focus on EACFE,
- Examine cross border, regional and international trade in relation to resources from EACFE,
- Review policy directions as regards forest products (wood and non wood) trade,
- Review existing trade regulatory mechanisms, including international agreements,
- Examine driving forces to trade issues as regards EACFE.

1.3 Methodology

The review was mainly based on national desktop studies and discussions with relevant stakeholders having an impact on trade issues on the EACFE. Continuous consultation and guidance from officials of the Forestry and Beekeeping Division, WWF-TPO, WWF-EARPO and TRAFFIC office in Dar es Salaam Tanzania were maintained to enhance intensification of existing experiences and best field practices on the EACFE. Concentration was on flora as data on fauna were not readily available.

2 TANZANIA COASTAL FORESTS

2.1 Geographic scope and distribution

Coastal forests of Tanzania according to Burgess and Clarke (2000) definition and site locations are distributed in six regions of Tanzania mainland covering 17 districts and in Zanzibar covering Unguja and Pemba. The Tanzania mainland regions and number of districts in bracket are: Tanga (4), Morogoro (2), Coast (5), Dar es Salaam (2), Lindi (2) and Mtwara (2). The coastal forests cover a total of 333,412 ha of which 263,932 ha are Central Government Forest Reserves (79.2%) and 66,950 ha (20.0%) are under public land. In addition 2,530 ha (0.8%) are under Game Reserves/National Parks (Annex 1).

2.2 Coastal forest sites for priority conservation

As an initial step, the WWF Eastern Africa Coastal Forest Action Programme has identified 14 Coastal forest sites for priority conservation of biodiversity in Tanzania (Annex 2). Trade data on flora and fauna for Tanzania are therefore concentrated on the identified initial priority sites but with a generic national coverage.

3. COASTAL FORESTS WITHIN THE NATIONAL SOCIO-ECONOMY

Management and trade of flora and fauna in the Coastal Forests of Tanzania are influenced by socio-economic and political structures. To enhance sustainable management of the Coast Forests and to understand ongoing trade on flora and fauna dynamics, a brief description of the Tanzania socio-economic and political framework is provided.

3.1 National Overview

3.1.1 Location

The United Republic of Tanzania is located along the east coast of Africa between parallels 1^0-12^0 S and meridians 29^0 – 41^0 E. Bordering eight countries and the Indian Ocean, the total area of Tanzania is 945,090 km^2 of which 62,000 km^2 are water bodies. The total land area of Tanzania mainland is 881,000 km^2 and that of Zanzibar is 2,000 km^2 (URT, 1999a). Most of the country is located at 1,000-1,500 m above sea level, although a lower plateau occurs south of the Rufiji Valley at 500-700 m above sea level. There are a number of mountain ranges including the highest peak in Africa, Mount Kilimanjaro at 5,895 m.

3.1.2. Population trends

The population of Tanzania is estimated at 34.6 million people (URT, 2003) of which 51% are women and about 46% are under the age of 15. Tanzania has experienced rapid population growth from 7 million people in 1961 and continues to grow at an estimated rate of 2.8% per annum (URT, 2003). Urban migration is a growing phenomenon with urban populations growing at seven to eight percent per annum. The percentage of the

population living in urban areas has changed from 15% in the 1970s to 25% in 2000 (MNRT, 2001 a).

Various studies have concluded that rapid population growth influence trade on flora and fauna by creating market demand of natural resources. Annex 3 provides some population data for the six coastal forest regions of Tanzania mainland and Zanzibar. The population of people in the regions with coastal forests in Tanzania increased from 3.6 million in 1967 to 9.7 million in 2002, an increase of 6.1 million people within the 35 years period. (URT, 2002a and URT, 2002b).

3.1.3 Economic activities and land uses

Agriculture is the mainstay of the Tanzanian economy, contributing 45-50% GDP, 75% foreign exchange earnings and employing around 80% of the population work force. However, only five percent of the mainland is utilised for cultivation whilst grazing occupies over one half (Table 1) Contributions of other sectors to the GDP based on 1998 estimates include industry (seven percent) and social services (two percent) (MNRT 2001a).

TABLE 1

LAND USE TYPES AND THEIR DISTRIBUTION IN TANZANIA MAINLAND

Type of land use	Area (000 ha)	%	Type of land use	Area (000 ha)	%
Grazing land	48,740	51.7	Small holder cultivation	3,880	4.1
Forests and woodlands	33,555	35.6	Urban development	1,600	1.7
Inland water	5,900	6.3	Large-scale cultivation	585	0.6

Source: MNRT (2001a).

3.1.4 Political and economic reforms

Since the mid-1980's, Tanzania has implemented various reforms in the political system, economic management and government administration. In 1992, a multiparty democracy system was introduced and successful multiparty elections were first held in 1995. The economic reform programmes that commenced in 1986 have converted the command-based economy into a market-oriented economy. Trade, exchange rates and interest rates are now fully liberalised. Public service reform has included the privatisation of most parastatals and local governments have been strengthened through the Local Government Reform Programme (URT, 2000). As a result, the country's GDP has been increasing for the last decade, reaching 6.2% in 2002, and inflation has declined by over 30% since the early 1990s to 4.3% in May 2003 (Mariki *et al.*, 2003; URT, 1999b). However, despite its high potential and progress in recent years, Tanzania continues to be ranked amongst the five poorest countries in the world, with currently over 11.4 million people living below the basic needs poverty line (URT, 2002b; VPO, 1998).

Nonetheless, Tanzania has a wealth of natural resources including minerals, wildlife, fisheries, forestry and beekeeping that are not yet wisely utilised for poverty eradication (URT, 2000 and DFID, 1999).

3.2 Forest and Woodland Distribution

Tanzania mainland has 33.5 million hectares (ha) of forests and woodlands that constitute approximately 36% of the total mainland area (Table 2). The majority are woodlands - mostly *Brachystegia-Julbernardia* savanna woodland - with a smaller area covered by montane forests, coastal forests and mangroves.

TABLE 2
TYPE, USE AND LEGAL STATUS OF FORESTS AND WOODLANDS IN TANZANIA

Description		**Area (000 ha)**	**Total area (000 ha)**
Forest type	Montane forests	1,141	
	Mangrove forests	115	33,555
	Woodlands	32,299	
Uses of Forest Land		23,810	
	Production forest area		33,555
	Protection forest area (mainly catchment areas)	9,745	
Legal Status		12,517	
	Forest Reserves		
	Forests/woodlands in National Parks etc.	2,000	33,555
	Non-reserved forest land	19,038	

Source: MNRT (1998a).

Around 12.5 million ha of the total forest area in Tanzania have been gazetted as Forest Reserves and a further 2,000 ha occur in National Parks and Game Reserves. All mangrove forests in Tanzania (115,000 ha) are gazetted Forest Reserves (Holmes, 1995).

The majority of reserved forests and woodlands are managed by the central government (10.9 million ha) with the remainder (1.9 million ha) managed by local government. Almost two-thirds (61%) of Tanzania's woodlands and forests are unreserved, lacking proper management (Table 2).

3.3 Degradation of coastal forests

Field experience and various studies have confirmed that almost all of the coastal forest patches in Tanzania mainland are threatened by unsustainable extraction of charcoal, poles, timber and firewood, expanding agriculture and wild fires (Burgess and Clarke, 2000, Sheil, 1992, VPO, 1997a). Degradation of coastal forests and deforestation is taking place both in government Forest Reserves and in unreserved forests on public land (URT, 2000; Salehe, 1995, TCMP, 2001, Ngusaru et al., 2001).

The situation of uncontrolled harvesting of flora and fauna from the coastal forests has been exacerbated by a decline in government capability to police Forest Reserves over the past two decades due to shortage of manpower and finance. Wells *et al*. (2000) claimed that whilst economic liberalization policies have facilitated systems of wood

supply and trade, it has also reduced the government's ability to control resource exploitation. Indeed, some large portions of Coastal Forest Reserves in Tanzania mainland have been cleared and turned to agriculture or wasteland of which Kazimzumbwi FR and Pande Game Reserve provides a good example (Kaale, 2003, MNRT, 2001a).

Kaoneka (2000) cited indirect or underlying causes of uncontrolled harvesting in the coastal forest of Tanzania mainland as rapid population growth, poverty, market failures, absence of proper definition of property rights and security of tenure and general policy failures. UNEP (2002) identified the effects of trade liberalisation as one root cause of accelerated deforestation. Other factors contributing to the degradation and deforestation of coastal forests include: unavailability of alternative sources of products and services from the forests for subsistence livelihoods to the majority of users; use of inefficient utilization technologies on wood products; and poor enforcement of laws related to woodland management (MNRT, 2001a).

3.4 Contribution of Forests to Tanzania Socio-economic Development

3.4.1 At national level

At national level, the forestry sector contributes an estimated 3.0-3.4% of total gross domestic product of which the Coastal Forests play a major part (IUCN, 2001; Mogaka *et al*., 2001; Roe *et al*., 2002; Turpie, 2000; UNEP 2002).

The forestry sector employs about three percent of paid labour and over three million people in the informal sector, selling charcoal, firewood, timber, honey and other non-woody products (excluding wildlife products). Fuel wood remains the most important use of wood and accounts for at least 92% of the country's energy use and around 95% of the total wood products consumed in the country. Per capita consumption of woodfuel is estimated at 1 m^3 per year (MNRT, 1998a).

3.4.2 Coastal forest products contributing to community livelihood and poverty reduction

Products collected free from coastal forests that contributes to community livelihood and poverty reduction include: woodfuel, building poles, herbal medicines, edible fruits, mushrooms, plant-derived oils, leaves and beverages, bamboo, gums, fodder, fibre, barks, thatch grasses, honey, candles, dyes wild meat and ornamental plants (Iddi, 1997). Various studies have confirmed that the value of non-marketed products from coastal forests to the local communities is immense but in many cases it is undervalued by policy makers (IUCN, 2001; MNRT, 2001a; Mogaka *et. al.*, 2001). Depending on market demand, many of the products collected free are also traded at local level hence providing income opportunities mainly to women. For example plant-based traditional medicines are widely collected free and traded in many areas of the coast regions. It is estimated that about 70% of Tanzanians use medicinal plants for curing illnesses (Marshall, 1998; MNRT, 2001a).

3.5 Tanzania Commercial timber species and logging trends

Common commercial timber species traded in Tanzania include: *Pterocarpus angolensis, Milicia excelsa, Ocotea usambarensis, Khaya anthotheca, Olea welwitschii, Brachystegia speciformis, Cephalosphera usambarensis, Afzelia quanzensis, Beilschiedia kweo, Millettia stuhlmannii, Brachylaena huillensis, Dalbergia melanoxylon, Newtonia buchananii*, and *Podocarpus* spp. (Bryce, 1967; Roe *et al*., 2002). The main sources of the common commercial timber species include the miombo woodlands of Tabora and Rukwa Regions, the coastal forests of Lindi, Mtwara, Coast, Morogoro and Tanga regions (Salmi and Mongela, 2000).

In terms of commercial timber logging trends, the coastal forests were subjected to heavy logging pressure during the 1950s and early 1960s, continuing until the 1980s mainly in Tanga, Morogoro and Coast regions. From 1990s onwards, heavy logging started in Lindi and Mtwara regions coastal forests and it is ongoing (2004) due to availability of timber resources and improved accessibility particularly as from 2003 through completion of the Mkapa Rufiji River Bridge. Pit sawyers supply over half of the sawn wood from the Coastal Forests of Tanzania (Wells *et al*., 2000).

3.6 Revenue Collection from Timber Trade

A total of almost TZS 3,412 million (USD 4.21 million, calculated at rate of USD 1.00 to TZS 810 on 31st December 2000) in forest revenue was collected by central government during 2000/2001, out of which two-thirds originated from plantations (projects) and one-third from timber harvested from central government Forest Reserves mainly from coastal forests (Salmi and Mongela, 2000).

3.7 Export of Timber

The forestry sector accounts for around 10% of foreign exchange earnings, derived from exports of timber (sawn wood, softwood pulp, paper and round wood), timber products, honey, beeswax, mushrooms and other non-wood forest products. Average annual export earning from forest products is around USD 14 million (MNRT, 1998a). In 1999/2000, a total of 7,965 m^3 sawn wood (worth USD 0.99 million) and 1,337 m^3 round wood (USD 0.38 million) was exported (Table 3). Major markets include Japan, Singapore, Hong Kong, India and Taiwan. Honey and beeswax exports average 4,860 tonnes and 324 tonnes per year respectively (MNRT, 2001a).

Data on inter-regional trade on flora and fauna were however, lacking. Discussions with some traders on sawn wood and carving indicated that a substantial amount of sawn wood from Tanga coastal forests is traded in neighbouring countries but mainly through un-officials channels. Sellers of wood carvings at Mwenge Dar es Salaam also reported that they were exporting and importing carvings from Kenya but mainly through un-officials channels.

TABLE 3
SUMMARY OF EXPORTS OF FOREST PRODUCTS, 1996/1997 – 1999/2000

Product	1996/97		1997/98		1998/99		1999/2000	
	Amount	USD (1,000)	Amount	USD (1,000)	Amount	USD (1,000)	Amount	USD (1,000)
Logs, m^3	2,178.0	436.0	9,525.0	6,191.6	3,896.5	718.0	1,366.7	382.4
Sawn timber, m^3	51.0	5.7	8,630.8	1,035.7	8,065.9	684.5	7,964.7	993.0
Blackwood, m^3	28.6	355.0	107.5	1,357.6	122.3	1,193.2	75.7	852.3
Floorings, m^3	329.7	998.0	1,125.5	3,405.6	67.8	128.4	45.7	76.3
Carvings, pcs	52,197.0	105.0	264,512.0	891.5	253,124.0	967.6	169,870.0	238.3
Tree seeds, tons	-	-	-	-	0.2	11.6	21.2	2.0
Beeswax, tons	202.0	678.0	316.0	1,044.8	332.0	1,202.7	251.0	1,229.8
Honey, tons	2.5	2.1	225.0	274.9	39.0	35.5	44.7	32.5
Others	-	-	-	-	3,645.3	481.2	-	9.7
Total		2,579.0		14,180.8		5,422.7		3,616.4

Source: MNRT (2001a).

4. POLICY FRAMEWORK THAT HAS AN INFLUENCE TO TRADE IN FLORA AND FAUNA WITH IMPACT TO THE EACFE

4.1 Revision of national policies

Over the past eight years, Tanzania has initiated a formulation and revision of national policies and strategies with the aim of realising a 50% reduction in abject poverty by 2010 and total eradication by 2025. National strategies reviewed with impact to EACFE include the National Development Vision 2025 (URT, 1999b), National Poverty Eradication Strategy (VPO 1998), Poverty Reduction Strategic Paper (VPO, 2000), Rural Development Strategy (RDS) and Tanzania Assistance Strategy (TAS) (URT, 2000). In recognition of the Rio Declaration on Environment and Development, Tanzania has also committed to implementing Agenda 21 through the review and development of appropriate policies, agendas and strategies.

At the sectoral level, fourteen national policies with impact to trade on flora and fauna have been revised namely: National Science and Technology Policy (MSTHE, 1996), National Environmental Policy (VPO, 1997a), National Fisheries Sector Policy (MNRT, 1997), Land Policy (MLHSD, 1997), Agriculture and Livestock Policy (Ministry of Agriculture and Livestock 1997), Mineral Policy (MEM, 1997), National Forest Policy (MNRT, 1998a), National Beekeeping Policy (MNRT, 1998b), Wildlife Policy of Tanzania (MNRT, 1998c), Tourism Policy (MNRT, 1999), National Policy on Women Development and Gender (Ministry of Community Development Women Affairs and Children, 2000), NGO Policy (VPO 2001a), Energy Policy (MEM 2001) and Water Policy (MWLD 2002). Furthermore, Tanzania established two biodiversity planning tools within the provisions of the Convention of Biological Diversity namely: the National Biodiversity Country Study (VPO, 1997b), National Biodiversity Strategy and Action Plan (VPO, 1999) that has some implications on the trade of coastal forests flora and fauna.

At policy level, it is acknowledged that, the majority of Tanzanian livelihoods depend on natural resources (MNRT, 1998a; URT, 2000). However, proven experience has shown that the quality and quantity of Tanzania natural resources, in particular coastal forests, is dwindling due to unwise utilisation consequently threatening living standards (Kahyarara et al., 2002).

4.2 Specific sector policy support to trade on flora and fauna

Some specific sector policy statements to trade on flora and fauna are cited to substantiate their support.

The National Environment Policy of 1997 emphasised that biological diversity services and their commercial enterprises could be visualised as the biggest source of foreign exchange in the future, helping alleviate poverty. The National Forest Policy (1998) further recognizes that *"trade in wood and non-wood forest products offer considerable potential for increased economic development through income and employment generation as well as export earnings"* The National Forest Policy (1998) further states that "*unregulated trade can instigate uncontrolled exploitation and has the potential of accelerating forest destruction and degradation through loss of biodiversity"*.

The Beekeeping Policy of 1998 states that "*Beekeeping has an important role in the economy of small scale farming households in the Forests of Tanzania"*. In most cases beekeeping activities are often combined with the collection of other forest and agriculture products hence intensifying income generation to rural poor families (MNRT 1998b).

The Wildlife Policy of Tanzania (MNRT, 1998c) encourages community involvement in wildlife management (Baldus and Siege, 2001). The National Tourism Policy (MNRT, 1999), states that "*Tanzania has 804 kms of what are among the finest unpolluted beach areas in Africa. The interspersed mangrove forests and coconut palms provide a serene atmosphere for repose and the coastline beaches offer unlimited opportunities for swimming, sport fishing and other water sports"* The National Tourism Policy seeks to assist in effort to promote the economy and livelihood of the people, essentially poverty alleviation, through encouraging the development of sustainable and quality tourism that is culturally and socially acceptable, ecologically friendly, environmentally sustainable and economically viable.

Various studies have confirmed that community awareness on the existing policies reviewed is very low, as such concerted efforts are required to raise community awareness on policy issues related to trade on flora and fauna and sustainable forest management (SFM) through workshops and seminars held at ward or village level. Multi-sectoral cooperation in policy implementation is also low or non-existing at community level hence creating or contributing to conflicts in achieving sustainable forest management (Milledge and Kaale, 2004).

5. LEGISLATION AND INSTITUTIONAL FRAMEWORK ON FLORA AND FAUNA TRADE

To support implementation of sector policies, Tanzania has also revised various legislations regarding land acquisition, ownership and utilization of forest and wildlife resources. Legal instruments with influence to trade on flora and fauna are highlighted.

5.1 Main Legal Acts with Impact to Trade on Flora and Fauna

The *Forest Act No. 14 of 2002* provides regulations on the trade of flora and fauna. *Part VI* provides details on permits and licenses. *Part VII* provides details on Trade in Forest Products while *Part XI* provides details on offences and penalties. The *Forest Act No. 14 of 2002* has replaced the *Forest Ordinance Cap. 389 of 1957* and the *Export of Timber Ordinance of 1953.* To facilitate enforcement of the Forest Act of 2002, new forest regulations have been formulated and they are expected to be approved in the near future.

The Land Act No 4 of 1999 defines land tenure structure in Tanzania (MLHSD, 1999a). Part III, subsection 7 gives declaration to hazardous land that provides opportunities for biodiversity conservation and control of the trade of flora and fauna. However, field experience has revealed that the majority of local communities in Tanzania are not aware of the *Land Act* of 1999 and how it affects their livelihoods.

The Village Land Act No. 5 of 1999 is complimentary to the *Land Act No. 4 of 1999*. The *Village Land Act* empowers the Village Council to manage all village lands in accordance with the principles of a trustee with the villagers being the beneficiaries (MLHSD, 1999b). The *Village Land Act* is very important to the sustainable management of coastal forests since the majority of the forests are surrounded by villagers that could contribute to their sustainable management through Participatory Forest Management Scheme like Joint Forest Management or Community Based Forest Management (MNRT, 2001b).

The *Plant Protection Act No. 13 of 1997* provides for regulation of plants and plant protection substances and the protection of natural environment against plant protection substances.

The *Local Government Act 1982* and *Local Government Finance Act, 1982* empower Local Councils to enact by-laws to levy taxes from forest produce in their area of jurisdiction. *The Local Government Acts* also empower Local Authorities to collect taxes from all forested areas within their areas of authority whether in a district, township, municipality or city, regardless of the type of forest reserve (central, local or public land). However, the *Forest Act* allows the revenue collection by local authorities only from the Local Authority Forest Reserves.

The Wildlife Conservation Act No. 12 of 1974 and the recent *Wildlife Conservation (Wildlife Management Areas) Regulations, of 2002* govern legal aspects on fauna and flora trade.

Other legal instruments with relevancy to management of coastal forests include:

- The Beekeeping Act, No. 15 of 2002.
- The Local Government (Miscellaneous Amendments) Act, 1999.
- The Tanzania Investment Act, 1997, No. 26 of 1997.
- The Marine Parks and Reserves Act, No. 29 of 1994.
- The Local Government (Urban Authorities) Act, No. 8 of 1982.
- The Town and Country planning Ordinance Cap. 378.

As for national strategies and policies, various studies have concluded that the majority of local communities and even government employees involved in flora and fauna trade from coastal forests are not aware of the existing legal instruments (Milledge and Kaale, 2004). Concerted efforts are therefore required to raise community awareness on legal instruments related to sustainable forest management and trade on flora and fauna for poverty eradication and improvement of community livelihoods.

5.2 Use of licenses and permits to control trade on flora and fauna

Licenses and permits govern the legal harvest, transport, sale and export of timber and timber products in Tanzania. Licenses for harvesting and transporting forest products are normally issued by authorized forest officers. Traders in forest products are also required to pay annual registration fees to the ministry of Natural Resources and Tourism in addition to business license to local authorities. In 2002, the respective annual registration fees for all forest produce dealers and traders were as outlined in table 4.

TABLE 4

ANNUAL REGISTRATION FEES FOR FOREST PRODUCT TRADERS

Trader Category	Tanzanian Shilling (TZS)	US Dollars
Dealers in sawmills, chipboard, plywood and pulp mills	200,000	195.12
Dealers in timber, logs, poles and curio shops	100,000	97.56
Dealers in charcoal and firewood	50,000	48.78
Dealers in wood furniture marts	50,000	48.78
Dealers in bee products for export	30,000	29.27
Dealers in other forest products	20,000	19.51

Source: URT, 2001.

5.3 Forest Product Royalty Rates

Forest Product Royalty Rates are set by the Forest and Beekeeping Division of the Ministry of Natural Resources and Tourism. The rates are updated regularly depending

on market forces. Table 5 provides a trend of forest royalty for the period 1997 to 2002 according to the *Forests (Amendment) Rules* (URT, 2001).

TABLE 5

ROYALTY FEES PAID FOR TIMBER IN TANZANIA, 1997-2002 (TZS PER M^3)

Class	Before 1997	5/1997 to 6/2000	7/2000 to 2/2001	3/2001 to 5/2002
I	50,000	60,000	70,000	70,000
II	20,000	25,000	50,000	40,000
III	10,000	15,000	30,000	30,000
IV	7,500	7,500	15,000	15,000
V	3,000	3,000	10,000	10,000

Source: RDFAPTF (2002), URT (2001).

Royalties (according to the *Forests (Amendment) Rules* (URT, 2001)) for wood harvested from central government Forest Reserves are sent to the Forest and Beekeeping Division headquarters in Dar es Salaam. District authorities retain royalties collected from wood harvested in district authority Forest reserves according to their by-laws.

5.4 Legal versus illegal trade

5.4.1 Legal trade system

According to existing forest legislation, harvest licenses must accompany all forest products harvested for trade from reserved and unreserved land, and the appropriate fees paid according to the product and species. Flora and fauna products that are traded with a valid license are legal while those without a license are illegal.

Various studies conducted on forest products trade in Tanzania have concluded that legally traded forest products accounts for less than 20 percent of the total volume of wood products traded (MNRT 2001a, Salmi and Monela, 2000).

Due to shortage of forestry revenue collectors, Milledge and Kaale (2004) indicated that timber revenue in the coast regions of Tanzania is only collected if harvesters and transporters of wood products happen to pass natural resource checkpoints (*see section 5.4.2)*. Since many traders bypass the checkpoints, a significant amount of revenue is lost. Potential revenues are further lost by the inability of some checkpoint staff to check consignments against accompanying documentation and/or collaboration between traders and checkpoint personnel.

Common methods to avoid royalties include species misclassification, under-declaration of volumes and transporting wood as planks or semi-processed furniture parts. The transport of so-called ‘off-cuts’ and wood pieces as furniture parts is increasingly becoming a common practice in Tanzania as a method of avoiding or to reduce royalty payments.

5.4.2 Natural Resource Checkpoints

To control legal trade on flora and fauna, checkpoints are normally established at strategic administrative boundaries for monitoring timber trade and collecting revenue. Check point workers are supposed to ensure that the transported products match the accompanying license(s), and ensuring fees are paid for any excesses.

A study on flora and fauna trade conducted by TRAFFIC/WWF in 2002 covering Dar es Salaam, Coast, Lindi and Mtwara regions revealed that an enormous amount of variation exists between checkpoints in the four regions in terms of their mandate, manpower and capacity. Some of the checkpoints visited were under the auspice of the central government, regional government, district government, village government, or a combination of the above (Milledge and Kaale, 2004).

Field observation revealed that most checkpoint officials are employees of village governments or district authorities, with fewer numbers of central government- forestry division personnel. However, there is no clear memorandum of understanding on the sharing of responsibilities between the village/district employees and central government. Without exception, all checkpoints visited in the four regions exhibited poor infrastructure, acute shortage of manpower and equipment, a factor that was reported to negatively affect motivation and possibly drive corrupt practices. In addition, most of the checkpoint officials were not trained in forestry and not conversant with timber identification, forest legislation and policy. Many checkpoint officials had problems in identifying forged documents and the harvesting of undersize or banned timber species (Milledge and Kaale 2004). Concerted efforts are therefore required to harmonise establishment and management of checkpoints by concern authorities to provide incentives to legal traders of flora and fauna by reducing or eliminating illegal traders.

5.4.3 Illegal Trade on Forest Products

Illegal trade on forest products is a critical problem within the coastal forests of Tanzania mainland as mentioned earlier (section 5.3.2) mainly due to acute shortage of manpower for managing the forests and in some cases due to corrupt government workers. Empowerment of villagers to manage the coastal forests through participatory forest management is advocated as a way of reducing illegal trade (Iddi, 2002, DANIDA, 2002, DANIDA, 2000, MNRT 2001b). However, district councils are experiencing acute shortage of skilled forest workers to implement the empowerment process of enabling villagers to manage forest resources surrounding them. Main products traded illegally from the coastal forests of Tanzania mainland in priority list are: charcoal, sawn wood, logs, poles, carvings, firewood and thatch grasses (Kaale et al., 2002).

Milledge and Kaale (2004) documented large-scale, illegal trade in timber products flourishing within the regions of Dar es Salaam, Coast, Lindi and Mtwara. Concealment and evasion were amongst the most common techniques to avoid payment of royalties. The most common practices used include: the utilisation of off-road truck routes to avoid checkpoints, travelling at night, locking trucks to avoid inspection, hiding timber products under other products (e.g. salt) and under-declaration or mis-declaration of products**.** For example, whilst Class II species may actually be harvested (TZS 40,000

(USD 39.02) per m^3), the license quotes less valuable, Class V species (TZS 10,000 (USD 9.76) per m^3).

The precise origin of timber is rarely checked in the field and many traders harvest timber in areas not specified on the harvest license. In some cases, harvest licenses are prepared after the trader has harvested and transported the products to a checkpoint of the trader's choice. Some surveys have estimated that five times as much timber passes north through Kibiti than is officially recorded and significant quantities leave mainland unrecorded by sea to Zanzibar. Around 80% potential revenue is currently being lost at Kibiti checkpoint through illegal trade. It is also estimated that official wood trade statistics from Rufiji District reflect a maximum of 20-30% of the actual legally traded volumes (Milledge and Kaale, 2004; Hamerlynck, 2003).

Traders involved in illegal trade on flora and fauna are local communities (villagers) and outsiders. Studies conducted in Coast region revealed that local communities were involved in illegal trade for subsistence income and they were operating at family level. However, outsiders' were mainly operating for high profit, by recruiting large quantities of labourers to work for them. Most of the outsiders have some business skills and high operational capital. Due to poor law enforcement by FBD for central government forest reserves uncontrolled harvesting with high wastage is taking place in the forest reserves. Punctuality in harvesting is regarded as the main theme for success by traders. For example one trader found producing charcoal using *Dalbergia melanoxylon* logs commented that *"If you find a tree and you do not harvest it immediately, opportunities of finding it the next day are low as other traders will harvest it"* (Kaale et al., 2002).

5.4.4 Driving forces for illegal timber trade

<u>To increase profit margins</u>

Profit margins have been identified by various researchers as a driving force for illegal timber trade. For example calculations made in Rufiji District have shown that the timber trade is not profitable if one had to pay all the desired royalties, taxes and environmental fees (RDFAPTF, 2002). The calculations showed that transport costs account for 40-50% of the total cost, while taxes account for 34-44 % and logging and sawing account for 13-15%. To remain in business a trader must explore opportunities of minimising paying of royalties and taxes.

However, field observations in the coastal forests of Tanzania mainland have shown that use of poor harvesting and processing technologies are resulting to very low recovery rates that is around 5-10% for sawmills on volume basis and 8-15% for charcoal on weight basis by using the traditional earth kilns hence lowering profit margins to traders (Jenkins *et al.* 2002; Monela *et* al., 1999; Kaale *et* al., 2000). Adoption of efficient timber harvesting and processing methods through investments in efficient working tools and training to reduce operational costs provide good opportunities of increasing profit margins to traders while contributing to SFM. FBD and other stakeholders could facilitate the training and provide guidance on type of efficient working tools to be purchased.

To avoid multiple-taxation

Under the current forest trade system there is evidence of multiple-taxation where the Central Government charges forest royalties, District Authorities charge forest levies and Village Governments charge forest fees. Timber traders are therefore made to pay many taxes for the same purpose and product hence minimizing their profit margins consequently encouraging illegal timber trade (Salmi and Monela, 2000). To minimize multiple taxation on flora and fauna co-ordinated efforts in setting forest royalty rates could be initiated by FBD in collaboration with District and Village governments.

Corrupt officials

Corrupt officials that collaborate with illegal timber traders are another driving force for illegal timber trade (Anon, 2002).

5.5 Relevant sections in regional agreements, policies and structures

Tanzania is a member of both the Southern Africa Development Community (SADC) and the East African Community (EAC), and is part of The New Partnership for Africa's Development (NEPAD) and the Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora that was adopted in Lusaka in 1994. All the regional agreements are advocating sustainable trade in flora and fauna as a component of poverty reduction and improvement of community livelihoods. For example the SADC- Forestry Sector Technical Co-ordination Unit has issued a "*Guide to Doing Business in the SADC Forestry Sector*" outlining flora and fauna trade opportunities in each SADC member state (SADC, 1999). However, community awareness on the regional agreements was observed to be very low hence the need to intensify community awareness on their existence and contribution to poverty reduction through inter-regional trade.

5.6 Relevant international frameworks and agreements

Tanzania is a signatory to various international and regional conventions related to forestry, biodiversity and environmental conservation. Implementation of these conventions has necessitated revision of policies including those used for the forestry sector. The UN Conference on Environment and Development (UNCED) in 1992 adopted globally authoritative Forest Principles and cross-sectoral recommendations on forest conservation (Chapter 11 of Agenda 21) encompassing holistic and cross-sectoral approach and stressing the sovereign right of individual countries towards sustainable forest management.

Relevant international conventions and agreements of which Tanzania is a member with influence to trade on flora and fauna include: the Convention on Biodiversity (CBD), Convention of International Trade in Endangered Species of Flora and Fauna (CITES), Convention to Combat Desertification (CCD), Convention Concerning the Protection of the World Cultural and Natural Heritage, Convention of Migratory Species of Wild Animals (Bonn Convention), Convention on Wetlands of International Importance

(Ramsar Convention), United Nations Forum on Forests (UNFF), United Nations Framework Convention on Climate Change (UNFCCC and the Kyoto protocol), the International Timber Trade Organization (ITTO) and the UNEP Convention for The Protected Management and Development of the Marine and Coastal Environment of the Eastern Africa Region. However, as for the regional agreements, the international conventions exist at policy level but they are not known at district and lower levels. Concerted efforts are therefore, required to intensify community awareness on the international and regional conventions related to trade on flora and fauna as a component of intensifying regional and international trade.

5.7 Relevant trade-related development initiatives

The Mkapa bridge across River Rufiji that was completed in 2003 has facilitated road transport from Dar-es Salaam to the Southern regions namely Lindi and Mtwara. The improved road accessibility would intensify trade on flora and fauna from the coast forests of Lindi and Mtwara regions. The Mkapa bridge project costed USD 29 million and it was financed by the Government of Tanzania, the Kuwait Fund for Arab Economic Development, OPEC Fund for International Development and the Saudi Fund for Development.

Another major effort is the Mtwara Development Corridor initiative started in 1997 and includes the construction of the Unity Bridge across the Ruvuma River, a 829 km Mtwara-Mbamba Bay road project, the Mchuchuma Colliery and Thermal Power Project, in addition to various mining, oil, gas, fisheries, agriculture and fisheries initiatives.

The Forestry and Beekeeping Division has initiated a process of forest certification, starting with formulation of Criteria & Indicators for Sustainable Forest Management that will facilitate trade of flora and fauna from coastal forests. However, these initiatives are still in the planning phase (see section 6.3.1).

Political and economic reforms have converted the command-based economy into a market-oriented economy. Trade, exchange rates and interest rates are now fully liberalised with encouragement of private investments from local and foreign investors.

5.8 Strengths and weaknesses, synergies and conflicts between frameworks with respect to EACFE resource trade/use

5.8.1 Strengths

The main strength for the EACFE resource trade/use in Tanzania based on the review are:

- Coastal forests with high biodiversity values exist.
- Villagers surrounding coastal forest have shown keen interest of conserving the forests through participatory forest management system.
- Various donors and local NGOs have shown an interest of funding and contributing to sustainable conservation of coastal forests.

- Some best field practices on conservation of coastal forests have been documented.
- The Ministry of Natural Resources and Tourism have demonstrated continuous support to sustainable conservation of coastal forests through formulation of enabling policies and legal instruments.
- Some quantitative research data on the contributions of coastal forests to community livelihoods exist.

5.8.2 Weaknesses

Main weaknesses for sustainable conservation of coastal forests in Tanzania include:

- Critical shortage of forestry manpower for managing the coastal forests both from central government and district local authorities.
- Un-ability of extension services to demonstrate to policy and decision makers the true economic and social value of coastal forest products and services to community livelihood and poverty eradication.
- Lack of Criteria & Indicators (C&I) for Sustainable Forest Management and for enforcing certification of forest products.

5.8.3 Synergies and conflicts between frameworks

Successful conservation of coastal forests in Tanzania will intensify the contribution of forests to improvement of community livelihood. It will further enhance development of priority sectors initially identified by the Poverty Reduction Strategy Paper namely: agriculture, water, health, judiciary and transport.

Identified conflicts between frameworks include:
District councils have intensified revenue collection from coastal forests as one of their main sources of revenue. However, district councils are not investing in sustainable management of their coastal forests. District councils are also weak in promoting tree growing in farmlands to reduce pressure from the coastal forests.

There are some conflicting legal instruments on wood products trade. As indicated earlier in section 5.1 the *Local Government Act 1982* empower Local Authorities to collect taxes from all forested areas within their areas of authority whether in a district, township, municipality or city, regardless of the type of forest reserve (central, local or public land) hence conflicting with the *Forest Act 2002 that* allows the revenue collection by local authorities only from the Local Authority Forest Reserves.

Strategies for implementing sector policies also create some conflicts due to lack of coordination. For example, the Agriculture Sector Development Strategy (ASDS) has excluded sustainable conservation and wise use of natural resources as a component for sustainable agriculture development. It states that "*Fisheries, forestry and hunting, normally included in the formal definition of the agricultural sector have been excluded*". Further more the ASDS has advocated that "*Tanzania's unexploited natural resource base of 44 million ha. of arable land, 50 million ha. of rangeland, abundant sources of surface and underground water and several agro-ecological zones, permits virtually unlimited expansions and diversification in crop and livestock production"*

Equitable sharing of benefits accruing from coastal forests between villagers, district councils and the central government is also a problem and a source of conflicting interests in conservation of coastal forests by different stakeholders (Iddi 2002, Salmi and Mongela 2000). So far, a transparent system of benefit sharing accruing from coastal forests between different stakeholders has not been formulated (MNRT 2001a).

6 MANAGEMENT

Stakeholders' analysis, current investments in the coastal forest and main gaps in forest management were reviewed.

6.1 Stakeholder Analysis

6.1.1 Policy and legal framework stakeholders

Stakeholders responsible for policy and institutional legal framework related to EACFE identified include:

- The Vice President's Office that is responsible for overall policy-making, co-ordination and planning with respect to the environment.
- The National Environment Management Council (NEMC), which is a national advisory body to the Vice President's Office on environmental issues.
- The Ministry of Natural Resources and Tourism that contains four divisions namely: Wildlife, Fisheries, Forestry/Beekeeping, and Tourism.
- Ministry of Regional Administration and Local Government that is responsible for Local Government Reforms in the District Councils of Tanzania Mainland.
- The Parastatal Sector Reform Commission (PSRC) that provides information to interested investors in Tanzania.
- The Investment Promotion Centre that deals with investment promotion, approval and monitoring.

6.1.2 Advocacy on sustainable conservation of Coastal Forests.

Various educational institutions, parastatals and NGOs are advocating on sustainable conservation of the Coastal Forests of Tanzania. Those which are active include:

- Sokoine University of Agriculture Sciences - Faculty of Forestry and Nature Conservation.
- University of Dar es Salaam – Institute of Resource Assessment.
- Parastatals under the Ministry of Natural Resources and Tourism namely: Tanzania National Parks (TANAPA), Tanzania Wildlife Research Institute (TAWIRI), Tanzania Wildlife Corporation (TAWICO) and Tanzania Forestry Research Institute (TAFORI).
- NGOs namely: WWF, TRAFFIC, LEAT, CARE-Tanzania, TFCG, WCST, TCMP and TASONABI.

6.1.3 Trade on flora and fauna

Stakeholders dealing with trade on flora and fauna in the coastal forests include:

- Ministry of Natural Resources and Tourism and the Ministry of Regional Administration and Local Governments.
- District Councils falling within the Coastal Forest Eco-region
- Village Governments falling within the Coastal Forest Eco-region
- Traders ranging from individuals, groups to medium scale timber dealers that either own sawmills or with export companies.

6.2 Investment level

Based on literature review and discussions with FBD officials, it was found that a total of 19 sawmills were operating within the coastal forests of Tanzania by March 2004 (Table 6). However, data on the sawmill investment levels and their annual logs requirements were not available. Efforts are required to collect the missing data.

TABLE 6
OPERATING SAWMILLS IN THE COASTAL FORESTS OF TANZANIA

Regions	Sawmills
Coast	1) Badr E.A Enterprise Ltd 2) Portfolio Investment Company Ltd 3) Mahmood International Ltd.
Dar es Salaam	1) Holtan (T) Investment 2) L-Line Sawmill 3) African Blackwood Enterprice 4) Smet Enterprises 5) Sukiyama Sawmill 6) Epac Resources Development Sawmill 7) Kessy Sawmill in Tabata 8) Reliable Sawmill 9) Piano Woodworks 10) Kwa Mwinyi Sawmill in Keko 11) Deeng Chinese Sawmill.
Tanga	1) Sikh Sawmill/MASCO
Morogoro	1) Mang'ula Sawmill
Lindi	1) Mingoyo Sawmill in Lindi District. 2) Boleyn Sawmill in Kilwa District
Mtwara	1) Prime Sawmill Ltd

Source: Unpublished FBD reports, Kaale et al., 2000.

High numbers of small traders (individuals or groups) are involved in production and selling of carvings, logs, planks, charcoal, poles and honey from the coastal forests (Milledge and Kaale, 2004). The traders' investment in transport facilities, working tools and construction of selling sheds. However, data on their investment levels were not available hence the need to collect it in the future. Mwenge carving village in Dar es Salaam is a good example of a group of traders who have invested in construction of selling sheds. However, a generic phenomena observed for owners of sawmills and small traders on flora and fauna is that they are not investing in sustainable management of the forests.

The Government of Tanzania (FBD), development partners (donors) and some NGOs have invested in management and conservation of the coastal forests, covering specific sites and with little coordination. To enhance sustainable management of the coast forests ecoregion, funding coordination by the different stakeholders is required. Annex 5 provides a summary of conservation investments in the coastal forests of Tanzania by

different stakeholders. However, some of the projects outlined in Annex 5 extend beyond coastal forests.

6.3 Main gaps in management

Main gaps in management include: lack of management plans and uncontrolled accessibility to both forest reserves and public land forests by illegal traders.

6.3.1 Lack of management plans

Reports from FBD confirmed that almost all coastal forest reserves in Tanzania mainland have no management plans. Maps of the reserves are not readily available in district forest offices and physical boundaries of the reserves are not properly demarcated in the field. Forest management programmes, such as forest surveys, inventories and species harvest quotas are also lacking. As a result growth and regeneration characteristics in the Forest Reserves are poorly understood; hence district officials are unable to provide data on sustainable harvesting and management of the forests. In many cases, government officials are unaware of what trade is actually taking place deep within the coastal forest reserves (Milledge and Kaale, 2004).

To enhance Sustainable Forest Management (SFM) the FBD has initiated development of Tanzania Criteria and Indicators (C&I) for managing forest resources through a participatory approach inline with the International Timber Trade Organization (ITTO) initiatives and guidelines on developing C&I for SFM. However, by March 2004, the C&I development initiatives in Tanzania mainland were still at planning phase but an initial draft had been produced for comments (MNRT 2001d).

The purpose of C&I is to provide an improved tool for assessing changes and trends in forest conditions and management systems at the national and forest management unit levels. While criteria identify the main elements or requirements of sustainable forest management, the indicators identify the information needed to monitor change, both in the forest itself (outcome indicators) and in the environmental and forest management systems used (input and process indicators).

If the indicators are made operational and appropriate prescriptions and standards are set, a sound basis would be created for measuring sustainable forest management in Tanzania. The initial draft set of C&I for SFM in Tanzania included seven criteria and forty-one indicators. The seven criteria constitute a broad framework encompassing all key areas and issues in the Tanzanian forest sector namely:

- Development, maintenance and improvement of forest resources, including their contribution to global carbon cycles
- Conservation and enhancement of biological diversity in forest ecosystems
- Maintenance and enhancement of forest ecosystem health and vitality
- Maintenance and enhancement of productive functions of forest and other wooded lands
- Maintenance and enhancement of environmental conservation functions of forests and other wooded lands

- Maintenance and enhancement of socio-economic benefits of forest and other wooded lands
- Adequacy and effectiveness of legal, institutional and policies frameworks for sustainable forest management

Due to lack of approved C&I for SFM in Tanzania and lack of management plans for specific forest reserves, certification of forest products from the coastal forests is not yet operational. However, efforts to initiate certification of forest products from government forest reserves and village land forest reserves are being prepared by the FBD in collaboration with other stakeholders.

6.3.2 Uncontrolled accessibility to forest reserves and public land forests

Most of the coastal forests in Tanzania are gazetted forest reserves (Section 3) however, in terms of field accessibility and trade on flora and fauna there is little difference between harvesting practices in gazetted Forest Reserves and public land forests. Currently, illegal traders are collecting forest products freely in all forested areas irrespective of their legal status particularly pit sawyers and charcoal burners who are widespread in the coastal forests.

7. EACFE RESOURCE TRADE/USE

7.1 Key resources and/or species in subsistence use

Section 3.4.2 outlined the main resources used for subsistence livelihood from the coastal forests in general. A study covering three central government coastal forest reserves namely: Pugu FR, Kazimzumbwi FR and Ruvu South FR and one game reserve – Pande GR involving 245 households identified eight forest products that were collected free by households from the coastal forests for subsistence. The products were: firewood, poles, withies, thatch grass, ropes (fibres), mushroom, wild fruits and traditional medicine. Valuation of the main forest products collected free and used for subsistence livelihood by the community showed that the products contributed about TZS 43,424 to villagers per capita income as compared to the average per capita income of Coast region of TZS 22, 624 in 1997 (Kaale et. al., 2002).

Forest products purchased by villagers for own use at subsistence level within the villages were: firewood, charcoal, poles, withies, thatch grass and ropes. Other wood products like mortar, wooden kitchen utensils, furniture and wooden doors are also purchased. Traders of forest products at village level were not paying forest royalties hence availability of forest resources within their villages was an important aspect for the community livelihood.

Villagers, through participatory efforts, involving men and women listed the top 23 tree species used for subsistence livelihood covering uses like: firewood, charcoal, withies and timber. Main species listed were: *Hymenocardia ulmoidea, Manilkara sulcata, Grewia conocarpa, Manilkara sanzibarensis, Pyrostria bibracteatsa, Diospyros verrucosa, Cynometra webberi, Afzelia quanzensis, Mangifera indica, Baphia kirkii,*

Diospyros sp., Albizia petersiana, Rinorea ardisifolia, Dalbergia melanoxylon, Brachystegia spiciformis, Acacia nilotica, Tamarindus indica, Hymenaea verrucosa, Margaritaria discoifea,,Dialium holsii, Annona senegalensis, Croton sp.

Tree species that were reported by villagers to be difficult to find in their coastal forests due to uncontrolled trade and utilisation hence leading to degradation were: *Pterocarpus angolensis, Milicia excelsa, Dalbergia melanoxylon, Afzelia quanzensis, Brachystegia spiciformis and Albizia versicolor.* Wild animals that are now difficult to find in the forests due to ongoing degradation were mentioned to include: lion, hyena, elephants and collabus monkey (Kaale et. al., 2002).

7.2 Key resources and/or species in commercial, localised trade

Analysis of harvesting licences and records from natural resource check points in Dar es Salaam, Coast, Lindi and Mtwara regions have shown that the key products in commercial trade are logs, planks (sawn wood), charcoal, carvings and firewood. The main species harvested and recorded in licenses by classes were:

Class 1: *Dalbergia melanoxylon.*

Class II: *Pterocarpus angolensis, Swartzia madagascarensis, Afzelia quanzensis, Millettia stuhlmannii, Milicia exelsa, Newtonia* spp.

Class 111: *Albizia versicolor, Brachystegia* spp., *Julbernardia globiflora.*

Class IV: *Albizia gummifera, Erythrophleum africanum, Bombax rhodognaphalon, Maeopsis eminii.*

Class V*:* *Hymenaea verrucosa, Trichilia emetica, Afrormosia angolensis, Grewia bicolor, Sclerocarya birrea, Sclerocarya birrea, Manilkara mochisia, Amblyogonocarpus obtusangulus and Sterculia quinqueloba.*

7.3 Key resources and/or species in commercial international trade

Reports from the Forest and Beekeeping Division in Dar es Salaam indicated that the main forest products from coastal forests involved in commercial international trade include:

- Carvings - mainly using *Dalbergia melanoxylon and Muhuhu species*
- Sawn wood (flooring timber) – mainly using tree species in classes I, II and III
- Logs - mainly *Swartzia madagascarensis*
- Sleepers – mainly species in class V.

Officials from FBD estimated that coast forests accounts for about 90 percent of the volume and value of forest products traded at international level in Tanzania.

7.4 Major trends over past ten years

The past decade has shown marked changes in timber trade dynamics, with a geographic shift in supply and changes in species composition influenced by accessibility to and abundance of forest resources. For example, with decreasing availability of *Pterocarpus*

angolensis, preference has turned to other species, notably *Brachystegia speciformis* and *Afzelia quanzensis*. Further, decline in availability and size of targeted species such as *P. angolensis* in western and central Tanzania has led to rising exploitation of less accessible sources including the coastal forests and miombo woodlands of Coast, Tanga, Morogoro, Lindi and Mtwara Regions.

Milledge and Kaale, (2004) reported that due to uncontrolled harvesting of **Class I** and **Class II** tree species in Rufiji District, in particular north of River Rufiji harvestable mature trees of those classes are very difficult to find. As a result, traders have shifted to lower classes mainly tree species in **Class V.**

7.5 Sociological Aspects of Traders on Flora and Fauna

To contribute to poverty reduction and enhance SFM in the coastal forests it is important to understand the sociological aspects of traders on flora and fauna. To meet this goal some sociological studies on traders of flora and fauna passing through the Kibiti checkpoint from October 2001 to January 2002 were conducted by TRAFFIC in collaboration with FBD and Rufiji District Council. Results showed that the age of timber product traders ranged from 18 years to 80 years old. Out of a sample size of 629 traders, 528 (84%) were aged between 26 and 40 years old. Traders over 41 years of age were all men. With respect to gender, women constituted the minority accounting for 11% of all traders surveyed (Milledge and Kaale, 2004).

Education levels of dealers in timber products ranged from primary school leavers to university degree holders. Out of the sample size of 586 traders, the majority (93%) were primary school leavers with five percent having completed O-levels. The remaining traders (two percent) had A-levels, diplomas and university degrees. There were no traders lacking any education recorded during the monitoring period (Table 7). Main conclusion from the study was that efforts are required to collect and analyse sociological aspects of traders in flora and fauna as existing information is very scanty.

TABLE 7
EDUCATION LEVELS OF TRADERS TRANSPORTING DIFFERENT TIMBER PRODUCTS VIA KIBITI CHECKPOINT

Description	**Primary**	**O level**	**A level**	**Diploma**	**Degree**
Charcoal	124	8	2		
Logs	8	1			
Logs, large	28	3			
Logs, small	187	6			
Planks	184	14	3	5	1
Poles, firewood, slabs, pallets, carvings and wood pieces	12				
Total	543	32	5	5	1

Source: Kibiti checkpoint records, 2001-2002.

8. OPPORTUNITIES

8.1 Economic benefits of EACFE trade/use

Sustainable trade of flora and fauna within the EACFE could provide unique economic opportunities to rural communities, district councils and the central government in improvement of livelihood and poverty reduction by wise utilisation of existing local resources. In some villages, trade in products from coastal forests are contributing up to 60 percent of total revenue earned by villagers. Revenue earned by district councils and the central government from EACFE trade is also high. For example a total of almost TZS 161 million (USD 155,000) was collected as revenue from timber products by the Ministry of Natural Resources and Tourism during 2000/2001 (MNRT 2001a).

8.2 Social benefits of EACFE trade/use

The livelihoods of most rural communities living within the Coastal Forests of Tanzania are heavily dependent upon the forest resources in the form of food, housing, fuel, medicines and income. For example, in Rufiji District, the net economic values of natural resource are worth about three times as much as agriculture (Hamerlynck, 2003). Reports from Rufiji have indicated that the decline in supply of certain timber species has heavily impacted the ability of the Rufiji people to make durable canoes, an essential tool for transport and access to markets. Also fuelwood remains the main source of domestic energy to rural communities with no viable alternative in the foreseeable future.

Furthermore, income gained from sale of forest products is helping villagers to pay school fees for their children, purchase medicine, agricultural inputs and building materials. Coastal forests are also contributing to local environmental conservation and climate amelioration for sustainable agriculture and water supply (Kaale et al., 2002).

8.3 Ecological benefits of EACFE trade/use

Income and services obtained from EACFE trade/use is providing incentives for conserving the ecological status of coastal forests. Conservation of the forests could also intensify ecotourism in the coastal forest ecoregion.

8.4 Evidence of socially responsible schemes in operation

Ngezi and Jozani forest reserves in Zanzibar provide best field practices on socially responsible schemes in operation. For example Ngezi FR has a very good management plan that was jointly developed through participatory efforts by local communities and forestry officials.

However, evidences of socially responsible schemes in operation for sustainable management of the coastal forests in Tanzania mainland are rare due to shortage of manpower. Nonetheless, conservation efforts initiated by WWF and IUCN in the Coast

Region of Tanzania mainland through participatory forest management schemes provide some evidence of socially responsible schemes but they cover rather a small forest area.

8.5 Opportunities for increasing benefits in a sustainable manner

Based on best field practices, opportunities for increasing benefits in a sustainable manner from coastal forests include:

- Preventing shrinkage of existing forest resources through participatory forest management scheme.
- Increasing accessibility of coastal forest products and services to the local community by ensuring equitable distribution of benefits to all stakeholders involved in conserving the forests.
- Intensify production of coastal forests through improved conservation practices and wise use of resources to minimize wastage.
- Promoting ecotourism.

FBD, through implementation of the National Forest Programme (NFP) with support from FINNIDA and DANIDA, has formulated cross cutting programmes and strategies to enhance sustainable forest management. Successful implementation of the programmes will intensify trade opportunities on flora and fauna for poverty eradication (Annex 5).

9. CHALLENGES

9.1 Ecological threats posed by EACFE trade/use

Main challenges for the Coastal forests of Tanzania include:

- Ensuring that coastal forests retain their integrity and benefits continue to be accrued into the long term by stakeholders at all levels, especially the rural poor.
- Evidence of coastal forests degradation and deforestation being caused by agricultural expansion and uncontrolled trade on timber, charcoal, poles and firewood.
- Insufficient management capacity and practices at all levels.

9.2 Evidence of unsustainable trade

Various studies have confirmed expectations that degradation of coastal forests is taking place in Tanzania mainland mainly due to unsustainable trade. However, few studies have been conducted to measure the growing stock in reserved and unreserved coast forests. Inventory of five coastal forests in Rufiji District covering: Utete, Weme, Mtanza, Kichi and Mbunju conducted in 2000 identified a total of 247 tree and shrub species out of which 24 were potential timber species, constituting an average of about 55 m^3/ha or 24% of the total volume of 230m^3/ha in the surveyed Forest Reserves. Results showed that all the five Forest Reserves had very low harvestable timber stocks of commonly-used timber species, with some preferred species already exhausted. Species that did not qualify for further harvesting in Utete Forest Reserve include: *Dalbergia melanoxylon, Hymenaea verrucosa, Julbernardia globiflora, Kigelia africana,*

Markhamia lutea, Newtonia buchananii, Sclerocarya birrea and *Vitex domiana* (Malimbwi, 2000).

10. RECOMMENDATIONS

Main recommendations from the review are:

Clear links between coastal forest resources utilization and livelihoods through trade on flora and fauna are evident in Tanzania. Understanding these linkages is important to firstly strengthen national efforts to eliminate poverty, and secondly to mitigate adverse impacts on the environment that may exacerbate poverty.

The prevailing acute shortages of forestry manpower to manage the coastal forests imply that their future integrity could largely depend upon the surrounding village communities to manage the forests through participatory forest management scheme. Ongoing effort by central and local authorities to empower local communities to manage coastal forests should be intensified. In addition, efforts should be made to adopt an ecoregion or landscape approach to enhance effective conservation of biodiversity.

Concerted efforts are required to demarcate coastal forest reserve boundaries in the field to enhance clear land tenure. Maps of the reserves should be produced and circulated to district and village offices that are involved in conservation of coastal forests. Also concerted efforts are required to conduct forest inventories and prepare management plans for sustainable management of the forests. The management plans should include descriptions on sustainable trade on flora and fauna from the reserves for improvement of community livelihood and poverty eradication through certification of forest products.

Due to uncontrolled harvesting in the coast forests, there is a rapid decline of the preferred tree species for sawn timber and low availability of allowable tree sizes for harvesting. Harvesting quotas and strict control of allowable sizes should be introduced.

Concerted efforts are required by the central government and district authorities to improve forestry manpower for managing coast forests and revenue collection. Efforts are also required to intensify involvement of NGOs and other relevant stakeholders in management of coastal forests.

Community awareness on existing national strategies, sector policies and legal instruments supporting conservation of coastal forests and traded on flora and fauna is very low. Concerted efforts are therefore required to intensify community awareness on existing policies and legal instruments related to the EACFE.

New trade on small logs that are collected from previously harvested areas have emerged particularly in Coast and Lindi regions. However, field observations in Rufiji district have indicated that traders are harvesting premature trees and they are trading them as small logs collected from previous logged areas consequently causing serious degradation

in the coastal forests. Concerted efforts are required to monitor closely the trade of small logs to ensure their originality and minimise opportunities of harvesting immature trees.

Efforts are required to minimize wastage of timber resources arising from use of poor technologies in tree harvesting, timber sawing and charcoal production. Reduction of wastage will improve profit margin of traders.

Awareness on lesser-known tree species and trade promotion for non-wood forest products and services should be intensify as a component of poverty reduction strategy to rural communities surrounding coastal forests.

Efforts are required to carry out studies for valuation of forest products and services and to incorporate bio-diversity and other values into the national accounting system.

Concerted efforts are required to minimize wild fires in coastal forests. Extension services on the detrimental effects of wild fire to coastal forests and their negative impact to community livelihood should be initiated.

11. CONCLUSIONS

The main conclusions from the review with reference to its objectives are:

- The coastal forests of Tanzania mainland are experiencing serious degradation and deforestation being caused by uncontrolled trade on flora and fauna.
- Supportive policies and legal instruments on flora and fauna trade exist but the majority of the local communities are not aware of the policies and legal instruments.
- There is lack of investments coordination for enhancing sustainable management of coastal forests at ecoregion level.
- Inter-regional trade between Tanzania and Kenya exist mainly on carvings and sawn wood. However, most of the trade is informal and data on traded wood volume and value are not available.
- Illegal trade on flora and fauna in the coastal forests of Tanzania mainland is very high, accounting for over 80 percent of the total products harvested.
- Opportunities of enhancing sustainable trade on flora and fauna from the coastal forests through government and community participation exist.
- To enhance sustainable management of coast forests, good knowledge on flora and fauna trade is a pre-requisite in order to enhance contributions of the coast forests to improvement of community livelihood and poverty eradication.
- To enhance certification of forest products, efforts are required to finalise preparation of the Tanzania C&I for SFM and make them operational.

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ANNEXES

ANNEX 1. DISTRIBUTION OF COASTAL FORESTS IN TANZANIA

Region	District	Forest name	Altitude	Area Ha	LEGAL STATUS & AREA HA.			
					FR	General	GR	NP
TANGA	Muheza	Kwamguni	180-1000	1,000	1,000	0	0	0
		Segoma	180-1000	1,168	1,168	0	0	0
		Kambai FR	180-800	1,046	1,046	0	0	0
		Manga	200-800	860	860	0	0	0
		Marimba	180-300	800	800	0	0	0
		Tongwe	220-649	1,200	1,200	0	0	0
		Kwani	0-200	2,500	2,500	0	0	0
		Horohoro	80	800	0	800	0	0
		Kilulu Hill (Moa)	200-267	160	0	160	0	0
		Mtapwa	140	400	0	400	0	0
		Kambai Public Lands	160-200	1,100	0	1,100	0	0
		Pangani Falls	20-160	100	0	100	0	0
		Mlungui	?	200	0	200	0	0
		Total Muheza Dist.		**11,334**	**8,574**	**2,760**	0	**0**
	Tanga municipal	Amboni Cave and Mkulumuzi Gorge	0-80	350	0	350	0	0
		Yambe Island	0-10	200	0	200	0	0
		Total Tanga Mun.		**550**	**0**	**550**	0	**0**
	Handeni	Kwasumba	580-640	2,900	2,900	0	0	0
		Mtunguru	580-760	2,932	2,932	0	0	0
		Gendagenda South & North	80-545	2,800	2,800	0	0	0
		Handeni Hill	790-1040	677	677	0	0	0
		Mgambo	300	2,000	2,000	0	0	0
		Mbuzini		50	0	50	0	0
		Total Handeni		**11,359**	**11,309**	**50**	**0**	**0**
	Korogwe	**Mafi Hill**	**600-1480**	**4,508**	**0**	**4,508**	0	0
	Pangani	Msubugwe	80-120	4,408	4,408	0	0	
		Mkwaja	0-100	1,000	0	0	1,000	0
		Total Pangani		**5,408**	**4,408**	**0**	**1,000**	0
	TOTAL TANGA REGION			**33,159**	**24,291**	**7,868**	**1,000**	**0**
MORO GORO	Morogoro	Magotwe	400-700	709	0	709	0	0
		Pagale Hill	300-500	3,200	3,200	0	0	0
		Kilandiwe Hill	400-657	200	0	200	0	0
		Msavula Hill	400-765	150	0	150	0	0
		Dindili	350-800	1,000	1,000	0	0	0
		Kitulang'alo	350-774	2,638	2,638	0	0	0
		Ruvu	200-480	3,100	3,100	0	0	0
		Kimboza	200-540	400	400	0	0	0
		Total Morogoro Dist.		**11,397**	**10,338**	**1,059**	**0**	**0**
	Ulanga	**Mselezi**	560-890	**771**	**771**	**0**	**0**	**0**
	TOTAL MOROGORO REGION			**12,168**	**11,109**	**1,059**	**0**	**0**
DSM	Kinondoni	Pande	100-200	1,230	0	0	1,230	0
	Ilala	Gongolamboto	100	1	0	1	0	0
	TOTAL DAR ES SALAAM REGION			**1,231**	**0**	**1**	**1,230**	**0**

Annex 1 continues

Region	District	Forest name	Altitude	Area Ha	LEGAL STATUS			
					FR	General	GR	NP
COAST/ PWANI	Bagamoyo	**Kiono/Zaraninge**	100-300	**2,000**	**0**	**2,000**	**0**	**0**
	Kibaha	Ruvu North	40-140	40,500	40,500	0	0	0
		Ruvu South		35,000	35,000	0	0	0
		Bagala	?	1,000	0	1,000	0	0
		Total Kibaha		**76,500**	**75,500**	**1,000**	**0**	**0**
	Kisarawe	Pugu	100-305	2,200	2,200	0	0	0
		Vikindu	40-80	1,800	1,800	0	0	0
		Kazimzumbwi	120-280	4,900	4,900	0	0	0
		Kisiju/Dendene	0-20	200	0	200	0	0
		Total Kisarawe		**9,100**	**8,900**	**200**	**0**	**0**
	Mafia	Mrora (Mlola)	0-20	300	0	0	0	300
		Kilindoni	0-20	1	0	1	0	0
		Total Mafia Dist		**301**	**0**	**1**	**0**	**300**
	Rufiji	Michungu/Kikale	0-15	1,000	1,000	0	0	0
		Namakutwa/Nyamuete	150-180	4,634	4,634	0	0	0
		Kiwengoma	250-740	3,300	0	3,300	0	0
		Kichi Hills	?	2,000	0	2,000	0	0
		Total Rufiji Dist.		**10,934**	**5,634**	**5,300**	**0**	**0**
	TOTAL COAST REGION			**98,835**	**90,034**	**8,501**	**0**	**300**
LINDI	Kilwa	Kitope Hill	?	3,400	3,400	0	0	0
		Tongomba	150-540	2,510	2,510	0	0	0
		Nangoma	500	1	0	1	0	0
		Mbinga	1600-1950	1,860	1,860	0	0	0
		Mitundumbea	500-650	8,550	8,550	0	0	0
		Ngarama N&S	45-480	41,700	41,700	0	0	0
		Pindiro/Bwatabwata	100-300	11,780	11,780	0	0	0
		Rungo	?	22,600	22,600	0	0	0
		Total Kilwa Dist.		**92,401**	**92,400**	**1**	**0**	**0**
	Lindi	Ndimba	75-150	2,680	2,680	0	0	0
		Matapwa	?	16,500	16,500	0	0	0
		Ruawa	150-460	2,950	2,950	0	0	0
		Kiwawa plateau	?	100	0	100	0	0
		Likonde plateau	?	100	0	100	0	0
		Noto plateau	?	1,000	0	1,000	0	0
		Chitoa	240-420	772	772	0	0	0
		Litipo	180-270	996	996	0	0	0
		Rondo	465-885	14,000	14,000	0	0	0
		Nyangamara	?	920	0	920	0	0
		Sudi	0-20	800	0	800	0	0
		Total Lindi Dist.		**40,818**	**37,898**	**2,920**	**0**	**0**
	TOTAL LINDI REGION			**133,219**	**130,298**	**2,921**	**0**	**0**
MTWARA REGION	Newala	Chilangala	?	600	600	0	0	0
		Mahuta	?	1,500	1,500	0	0	0
		Total Newala Dist.		**2,100**	**2,100**	**0**	**0**	**0**
	Mtwara Rural	Ziwani	50	5,000	5,000	0	0	0
		Mtuli/Hinju	274	27,400	0	27,400	0	0
		Mtiniko/Mnivata	182	18,200	0	18,200	0	0
		Total Mtwara Dist.		**50,600**	**5,000**	**45,600**	**0**	**0**
	TOTAL MTWARA REGION			**52,700**	**7,100**	**45,600**	**0**	**0**
Unguja	Unguja	Jozani	0-20	1100	1100	0	0	0
		Muyuni	0	1000	0	1000	0	0
		Total Unguja		**2100**	**1100**	**1000**	**0**	**0**
TOTAL NATIONAL COASTAL FORESTS				**333,412**	**263,932**	**66,950**	**2,230**	**300**

Source: Burgess and Clarke (2000)

ANNEX 2. WWF –HIGH-PRIORITY COASTAL FOREST CONSERVATION SITES IN TANZANIA

FOREST SITES	Area km ^{2}	Status	Plant Strict Endemics	Vertebrate Strict Endemics	Type of Threats	Level of Threats
Lowland East Usambara		FR/VF	>20	2	L	H
Rondo, Lindi	25	FR	>50	4	F, L	VH
Ruvu North	2	FR			C, L, AG	VH
Ruvu South	20	FR			C, F,L	VH
Pugu, Coast Region	10	FR	12	2	C,L,	VH
Matumbi-Kiwengoma, Coast-Lindi		VF	>3	2	C,L	H
Kiono-Zaraninge, Coast Region	17.8	VF	>2	0	C	VH
Litipo, Lindi Region	4	FR	>16	1	F, L	H
Kimboza, Morogoro Region	4	FR	17	1	C,L	H
Gendagenda, Tanga Region	28	FR	4	1	C,L	H
Kichi Hills	20	VF			L, C, AG	VH
Pande	>1	GR			F,L	H
Pemba Island (including Ngezi)	14.8	FR	>4	5		H
Jozani Forest	3	FR	>4	1		H

Source: Negussie (2004)

Key to legal status
FR= Central Government or Local Authority Forest Reserve
VF= Village forests/public land
GF= Game Reserve
Key to type of threat
AG = Agriculture,
C = Charcoal,
F = Fire
L = Logging for timber and building poles
Key to threat scores
H = High
VH = Very High

ANNEX 3. SOME POPULATION DATA FOR COASTAL FOREST REGIONS OF TANZANIA MAINLAND AND ZANZIBAR

	Land Area Km^2	Population density 1967	Population density 2002	Population 1967	Population 2002	Pop increase from 1967 t0 2002	Pop. Growth rate 1888-202	Average household size 2002
Tanga	26,808	29	61	771,060	1,642,015	870,955	1.8	4.6
Morogoro	70,799	10	25	682,700	1,759,809	1,077,109	2.8	4.6
Pwani	32,407	13	27	428,041	889,154	461,113	2.4	4.4
Dar es Salaam	1,393	256	1,793	356,286	2,497,940	2,141,654	4.3	4.2
Lindi	66,046	8	12	419,853	791,306	371,453	1.4	4.1
Mtwara	16,707	37	68	621,293	1,128,523	507,230	1.7	3.8
Zanzibar	2,460	149	400	354,815	984,626	629,811	3.1	5.3
Total Coastal Forest Regions				**3,634,048**	**9,693,373**	**6,059,325**		
Tanzania Mainland	881,289	14	38	11,958,654	33,584,607	21,625,953	2.9	4.9
National - Mainland and Zanzibar	883,749	14	39	12,313,469	34,569,232	22,255,763	2.9	4.9

Source: URT (2003).

ANNEX 4. CONSERVATION PROJECTS WITH IMPACT TO COASTAL FORESTS

Donor	Project	Area	Time	Funds million	Main activities
Danida	Participatory Forest Management Component	Morogoro, Lindi and Iringa		USD 8.0	• Sustainable use and conservation of natural forest ecosystems in cooperation with communities.
Danida	Woodland Management	Lindi region	2000-2003	USD 3.5	• Sustainable use and conservation of natural forest ecosystems in cooperation with communities
Danida	Udzungwa mountains Forest Management & Biodiversity Conservation	Iringa district	1999-2003	USD 2.9	• Development of environmentally sustainable and equitable use and management of natural forests and other biodiversity for communities adjacent to Udzungwa Mountains ecosystem
Finland	Regional Integrated project support (RIPS)	Mtwara and Lindi	1999-2005	USD 14.8	• Support to forest management at district level through involvement of local governments and communities, including creation of village forest reserve and collaborative management • Soil and water conservation • Marine environment protection in 3 coastal districts
Finland	National Forest Programme Coordination Unit	National	2003-2004	EUR 1.05	• Improving coordination and monitoring of NFP
Finland/ EU	East Usambara Catchment Forests	East Usambaras Tanga	1998-2001	USD 3.1 Finland USD 1.9 EU	• Management of the Amani Nature Reserve • Management of Watersheds in the East Usambaras • Involving and supporting local communities in farm forestry and land management • Strengthening institutional capacity to plan and execute sustainable forest management practices • Strenthening research and monitoring of forest ecosystems
Finland	NFP -ISP		Pipe-line		• Forest resources conservation and management and capacity building
EU/ SADC	Management of Miombo Woodland	Miombo areas in SADC	1999-2002	USD 2.0	• Institutional arrangement for miombo management, policy influences and low impact harvesting
GTZ	FOPIS				• Development of forest regulations
Ireland/ IUCN	Tanga Coastal Zone Conservation and Development		1998-2001?	UKP 3.2	• Management of the Tanga region's coastal environment, in the three coastal districts • Development of sustainable community based management of natural resources in collaboration with relevant partners

Annex 4 continue

Donor	Project	Area	Time	Funds million	Main activities
Nether-lands/ IUCN	Rufiji Delta and Flood Plain Management Project	Rufiji district	1998-2002	USD 4.0	• Capacity building • Ecosystems management • Biodiversity management • Community participation in natural resources management
NORAD	Catchment Forest	Kiliman-jaro, Arusha, Moro-goro, Tanga regions	2002-2006	USD 2.45	• Management of watersheds • Undertaking participatory management of catchment forests • Carrying out extension services • Training of staff and villagers • Provision of facilities and infrastructure development
NORAD	Mangroves management	Coastal zone	2002-2006	USD 1.9	• Conservation of mangrove forests • Undertaking participatory management of mangrove forests • Training of staff and communities
NORAD	Ruvu Fuelwood	Kibaha district - Coast region	2002-2006	USD 0.65	• Support to Community-based fuelwood production
WB	Tanzania Forest Conservation and Management Project (TFCMP)	Country-wide	2002 - 2007	USD 34.1	• Institutional reforms (establishment of Forest Executive Agency) • Involvement and participation of the private sector in conservation and forestry development activities • Conservation and management of the Tanzania Eastern Arc biodiversity resources
WWF/ DFID	Conservation of Lowland Cosatal Forests	Zara-ninge, Vikindu, Kazimzumb wi, Pugu, Matumbi forests	1996-2001	-	• Lobbying and support to gazettement of Zaraninge, Mlola, Kiwengoma and some village forests • Support in agroforestry activities • Development of extension materials and training of communities
WWF/ DFID/ NORAD	Mafia Island Marine Park	Mafia Island	1999-2004	USD 1.5	• Consolidating participatory management of the Mafia ecosystem that includes both mangrove forests and fisheries resources. • Support in control of illegal harvesting, anti-dynamiting • Support to income generating activities to to reduce pressure on dependence on the marine ecosystem

Source: MNRT 2001a

ANNEX 5 NFP KEY PROGRAMMES, SUB-PROGRAMMES AND STRATEGIES

Forestry Institutions and Human Resources Development Programme	
Sub-programme	**Key strategies**
Strengthening Institutional Set-up and Sector Co-ordination and Co-operation	- Establish formal mechanisms for cross-sector co-ordination between the forest administration and other government institutions at all levels. - Establish mechanisms for adequate sector and inter-sector co-ordination and consultations of stakeholders and regional and international co-operation in planning and management of forest resources. - Explore and full -utilise of opportunities provided under various international conventions and agreements.
Human Resources Capacity Building	- Build capacity of local governments to administer and manage forest resources. - Sensitisation of forestry staff on AIDS/HIV.
Forest Financing	- Develop new and innovative sector financing mechanisms involving key stakeholders. - Enhance self-financing mechanism though broadening revenue base for all products and services; improvement of revenue collection by product pricing and efficient collection of royalties and fees. - Facilitate, Establish and promote private and local community investment in forestry activities.
Strengthening Extension Services and Awareness Creation in Forest Management	- Develop cost-effective forest extension system, jointly with other stakeholders. - Promote gender awareness and involvement in forest programmes. - Promote indigenous knowledge on management and uses of forest resources at local level. - Promote political support by creating awareness for politicians and decision-makers.
Forest Research	- Integrate National forestry research master plan into national forestry programme (NFP). - Conduct research through partnership with other institutions.
Policy Analysis, Planning and Monitoring	- Develop competence for formulation and revision of forestry legislation. - Facilitate management guidelines for different forest type and by-laws at all levels. - Set national criteria and indicators for sustainable forest management.
Forest Resources Valuation	- Carry out special studies for valuation of forest products and services. - Incorporate bio-diversity and other values into the national accounting system.

Annex 5 continue

Forestry Legal and Regulatory Framework Programme	
Sub-programme	**Key Strategies**
Development of Laws and Regulations	- Prepare regulations and guidelines that support sustainable management (SFM). - Establish joint management agreement such as appropriate user rights for forest produce granted to local communities and forests managed in accordance with approved management plans. - Establish executive agency, Tanzanian Forest Service (TFS). - Areas of valuable key forest habitats and ecosystems with endemic species put under legal protection including updating them to nature reserves. - Develop regulations for bio prospecting in partnership with relevant stakeholders.
Harmonisation of Regulations	- Rationalise royalties on forest products to guarantee the competitiveness of forest products in local and international markets in relation to competing products. - Streamline procedures for administration of forest products and trade.
Development of Sector-specific Environmental Impact Assessment Guidelines	- Monitor all forest investments and development activities to ensure adherence to environmental impact assessment (EIA) guidelines
Forest Based Industries and Sustainable Livelihood Programme	
Sub-programme	**Key Strategies**
Forestry Products and Services Information Development	- Establish database and marketing information for mechanical and chemical industries, artisan products, Non-wood Forest Products (NWFP), wood fuel and charcoal markets. - Conduct baseline surveys on market information on NWFP, forest products and services. - Disseminate market information to producers, users and other relevant stakeholders
Products and Markets Promotion and Awareness Creation	- Create awareness on the demand and supply, markets, marketing and income-generation potential of forest products, NWFP and services and lesser-known species. - Create linkages between producers and consumers - Establish forest product certification system.
Forestry Industries Technology Development.	- Develop alternative affordable sources of energy in collaboration with relevant stakeholders. - Create quality standards for various products and facilitate adoption of appropriate technologies in harvesting and processing.
Infrastructure Development	- Improve infrastructure, mostly roads and information and communication technology, in forest plantations and natural forest.