EASTERN AFRICA REGIONAL PROGRAMME OFFICE

EASTERN AFRICA COASTAL ECOREGION PROGRAMME

Consultant Report for Trade (on flora and Fauna) Issues within the Coastal Forests

By
M. T. E. Mbuvi; Research Officer.
Kenya Forestry Research Institute, Gede Regional Research Centre,
P. O. Box 201, --
Tel 254 42 32022, o733809951, e-mail kefrigede@africaonlne.co.ke; mtembuvi@hotmail.com
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Issues to add:
Kiepeo records, FD permits system, Licensed wildlife user in EACF, Local authority forests information, Photos, Guiding costs

Introduction

The area of closed canopy forests within the Coastal region is about 82500 hectares (9.9% of the Coast Region) with an addition of about 3000 hectares of plantations. Major forest blocks are Shimba hills, Arabuko-Sokoke forest, Witu and the rest are fragments of small forests which harbour unique species some of which are known to be endemic and or rare or threatened. In Kenya and Tanzania almost all the Coastal forests parches are threatened by expanding agriculture, over-harvesting of woody materials from forests and in some cases urbanization and mining (Negussies, 2002). In the early years these forests have been degraded through unsustainable commercial exploitation for timber. The participation of the local people has been as an endeavour to sustain their livelihood and uplift their socio-economic welfare. This has occurred through licensed and un-licensed utilization. Trade in Coastal forests is rather diverse ranging from a school boy trapping a Mice (kazora) in Arabuko-Sokoke forest (ASF) for stew during supper, a wood carving group in Lunga-Lunga along the Kenya-Tanzanian border getting *Brachylaena huillensis* billets by bicycle from Tanzania to a Handcraft cooperative shipping a container of certified carvings to a overseas customer. The trade is also very old ranging from Mangroves poles by the Arabs to European traders in the late 1800 to the mid 1950s' when most of the valuable timber was removed from the forests mainly for export. Generally within all these periods the trade has occurred through both licensed and un-licensed forms.

Data Collection method

Though the principle method of data collection was to be through literature review, the available information was found to be scanty. Where the information was available like in Arabuko-Sokoke Forest it was found to be over 10 years old and or not informative enough. Kenya Wildlife Service (KWS) records show people arrested and not where they were taking the meat or what is the price along the trade chain. Therefore, Rapid Trade Appraisal Survey (RTAS) was undertaken to supplement the available data on trade in the Coastal forests of Kenya. This involved interviews at selected forest sites which were led by known knowledgeable people from those target forest sites. The survey also targeted key organizations involved in Trade in Coastal forests products. Forest Managers involved in the management of Coastal forests were also interviewed. The Forest Department (FD) suspension affected this survey.

Literature Review

FD Records have a limitations in that they deal mainly with Licensed forest products. Information on un-licensed forest use is not adequate as it records the offence and not the value of the products or where (market/s) where the products were being taken or the trade trends. Most of the un-licensed trade in not reported also as it happens without their knowledge or sometimes the issues are settled in the field. Fortunately, the forest adjacent communities have all these information though not documented. The licensed use of forest products data for the region since the ban on exploitation in indigenous forests in 1999 is not available as there has not been any extraction in government forests a key provider of licensed and un-licensed forest products.(Add Local authority forest management data) There is also no documentation of the use of products that communities do not require a license to extract from the forest like herbs, wild fruits and water even where they are sold in local and regional markets.

KWS records are more on large mammals like elephants, Buffaloes which are rarely killed with very minimal data on trapping of animals by forest adjacent communities for domestic use or trade.

Traded forest products

Licensed and unlicensed commercial or semi-commercial utilization Gazetted forests focuses on building poles, carving wood and hardwood sawlogs (KIFCON, 1994). The situation does not seem to have changed since then except that other products are coming and their value overtaking the traditional traded products from the Coastal forest with eco-tourism and Butterfly farming being good examples. Individuals in the Coastal region still have large land holdings from where they have been trading on forest products ranging from timber logs to the un-licensed trade in wild mat. The latter is done with the consent of the farmer a commission is paid to the owner by the hunter.

Table 1. East African forest traded products

Traded forest products	Coastal Forest/s	Comments
Timber	Gazetted, Trust land and Individual forests	Banned in Government forests. Available in farmers' farms and trust land forests. The key on-farm species are Mango, *Gmelina arborea, Ecalyptus spp. Milicia excelsa*[1], *Azardirachta indica* Trust land forest in Malindi are supplying *Brachystegia speciformis* timber o Malindi and even Mombasa. Gazetted forests are supplying un-licensed timber from *Brachystegia speciformis Milicia excelsa* currently initially they used to provide timber from Afzelia quenzensis,
Poles	All major forests including exotic poles from Casuarina plantation in ASF	Banned in Government plantation. *Casuarina equisetifolia* remains a key on-farm species. Some indigenous species providing these products are *Visimia orientalis, Nesogordonia parvifolia, Brachylaena huillensis, Mangroves spp., Cynometra webberi, Manilkara sulcata, M. sanzibarensis Grewia plagiophylla, Hymenea verrucosa Zanthoxylum chalybeum and Pachystela brevipes,*
Wild meat (Game meat)	All forest.	Not allowed but it is a common practice in all coastal forests
Game viewing and Bird watching	ASF, Shimba hills and Mwalungaje and other forests also	Shimba hills and Mwalungaje are good examples with ASF leading in Bird watching.
Fish	ASF pools	The fish are used both in the household and the village.
Guiding	ASF, Shimba hills and Mwalungaje and other forests also	Well established in ASF and Kaya Kinondo.
Wild fruits	ASF, Shimba hills and Mwalungaje, Brachystegia woodlands north of	Key fruits with potential are Landorphia kirkii, *Adansonia digitata, Tamarindus indica, Saba sp, Vitex* sp etc

[1] Some farmers in Kwale have trees in their farms which are bought at over 30000/=

	Malindi and other forests also	
Wildlife (Life animals)	Forest near urban centers and major roads	This very discrete trade in Pets, snakes, birds etc
Eco-tourism	Kaya forests	This is developed in Kaya Kinondo and ASF forests. It has potential to expand
Culture (sacred sites)	Kaya forests	This well developed in Kaya Kinondo
Water	Marenje, Shimba hill (Marere water works) and ASF	National Water and Pipeline corporation Marere water works. In ASF there are pools, ponds and wells that supply water.
Murrum	ASF and Mrima	This occurs occasionally in ASF and Mrima forests.
Ballast	Mwache forest	To supply the building industry in Mombasa and its environs.
Biodiversity and Scenic sites	All Coastal forests	The trade here is that communities are getting Integrated Development and Conservation projects as a result of the Biodiversity value of the forests. A Tourist attraction.
Charcoal	Hardly in Gazetted forests but in Trust land ad individual forests	This is trade involves export of charcoal to the middles East. It was reported that a sack costs 2000/= in Dubai
Hotels and Bandas	Shimba hills and Mwalungaje	There is a hotel in Shimba hills forest and Bandas in Mwalungaje wildlife sanctuary. There are plans to build community bandas in ASF
Wood carving billets	ASF, Shimba hills and the medium forests of Kwale	Mainly through un-licensed trade. *Brachylaena huillensis* remains the most preferred species. This species is over exploited in both Gazetted, trust land and individual farmers forests. Currently farmers are getting supplementary billets from Tanzania. The other species are: *Azardirachta indica*, *Mangifera indica*, *Gmelina arborea*, *Combretum schumannii*, *Oldelfidia somalensis*. Kenyans Kamba community are settling in Tanzania to circumvent being arrested by Tanzanian authorities as they will exploit the resource as locals and then sale to their Kenyan brothers.

Policy framework that has an influence to trade in the EACFE

Policy on flora and fauna trade is fragmented and not explicit. International conventions like CITES guide trade also in the country. The legislation is very fragmented in the Forest Act cap 385, Timber Act cap 386. Other acts are the Wildlife Act and the local authority act that also have aspects of trade issues concerning the EACF. The forest acts sets a framework for setting royalties for determined forest (flora) products and there is no regional control though KEPHIS has an office in Kilindini port and Lunga-Lunga border. Most of the trade like in *Brachylaena huillensis* occurs without any reference to those offices.

Management
The table below summarizes the stakeholders involved in the management of the Coastal forests.

Table 2. Some Institutions involved in EACF management

Institution	Role	Capacity (Forests/Area of operation)
Forest Department[2]	Management of the forests	There is a provincial forest Officer in charge of District forest Officers in all Districts. There are Foresters and Forest Guards in all forests stations. In Forest Extension, some Divisions are not manned by foresters.
Kenya Wildlife Service	Management of wildlife and or support in forest management	There is a Assistant Director in-charge of the region with wardens in all the KWS stations .Most of the wardens have assistants in addition to Rangers.
Kenya Forestry Research Institute	Research in all aspects of forestry	Regional office in Coast at Gede and Running activities/trials and projects in six districts of the region.
Communities	Forest management and rural development and livelihoods.	The oldest initiative in Mwalungaje Community Sanctuary. Other community forest management structures have developed in Arabuko-Sokoke forest, Mrima, Marenje and Dzombo (MRIMADZO) forests, Shimba hills, Tana Delta, The Kaya forests etc.
East Africa Wildlife Society	Forest management	Kenya Marine Forum USAID support. Other two programmes with GTZ support in Tana Delta and Kwale.
National Museums of Kenya	Preservation of monuments and Conservation of forests	Coastal Forest Conservation Unit and conserving the forests around monuments like Gede Ruins. Kipepeo project. Butterfly Exhibit in Mombasa with USAID support
National Environment Management Authority (NEMA)	Coordinating environmental matters nationally	Regional officer at Mombasa and will be piloting EMCA implementation in Malindi and Kilifi in the Coastal region.
Local authorities	Some of these forests are: Mwangea, Madunguni and Brachystegia woodland north of Malindi	Forest management. None of the Local authorities have trained foresters in-charge of local authority owned forests.
Volunteers from USA and JICA	Provision of technical support	Participation in diverse conservation projects.
Nature Kenya	Forest management and Rural livelihoods	Two projects in ASF one supported by USAID and the other by KNH a Germany NGO.
Birdlife	Biodiversity	Runing Important Bird Areas programme. Sies ASF

[2] This was the case before the suspension of the officer in November 2003.

International	Conservation	Mrima etc.
Arocha Kenya	Biodiversity conservation and Livelihoods issues	Bird monitoring in ASF and School bursary programme.

Some East African Coastal Forests o-going Projects

Project/Donor	Forest Site	When started and level of funding	Key activity
Kaya Kinondo Eco-tourism project/WWF EARPO	Kaya Kinondo	-	Developing eco-tourism in a sacred forest
Arabuko-Sokoke forest Community Conservation Initiatives/BCP-EU	Arabuko-Sokoke forest	2002, 18 million	Electric fence and Strengthening forest Based Income generating activities.
Sustainable Management of ASF by and for the Stakeholders/ USAID	ASF	2003, 78 million	Strengthening forest management and improving the livelihoods of the forest adjacent community.
Tana Delta Conservation BCP/EU	Tana Delta	-	Improve forest management and rural livelihoods.
Kipepeo project/USAID	ASF but to cover other forests	-	Creating and local exhibit to expand the markets for butterfly pupae
Kipepeo project/JICA	ASF	Self sustaining	
Shimba Ecosystem restoration. WWF and Bamburi	Shimba hills and Mwalungaje forest	400000 US$	Managing the Shimba hills and the Mwalungaje elephant Sanctuary Ecosystems
Farm Forestry and Natural Resources Conservation Project	To the North-East of ASF	2001, over 100million	On-farm forestry reducing pressure on EACF.

Gaps

- There is lack of formal cross border working relationships between the Forest Department s in Tanzania and Kenya. The District Forest Officer Kwale and his Tanzanian counterpart do not have a system to even manage the obvious trade in *Brachylaena huillensis* billets. This is also the case with Mangrove poles.
- Data on un-licensed trade is a missing link that is required so as to have the true value of our forests nationally and locally.
- The management of forests through partnerships is an emerging approach that will require officers, communities and other stakeholders trained as this is a skill that is lacking.
- There is no project supporting trade in conventional forest products like trade fuelwood, poles, timber or wildfire utilization

- Forest Department and Kenya Wildlife Service remains the principle organization (appendix 1) involved on the management of the Coastal forests. This scenario is changing gradually with other partners especially communities increasingly taking an active role.

East African Coastal Forests Resource trade/use

This has been captured through Rapid Trade Appraisal Survey (RTAS) that was conducted in selected coastal forests. The RTAS was also supplemented by literature review.

Table 3. Some Key organizations trading in Coastal Forest products

Trade Activity/year started	Trade activities involved	Products	Clients/Customers	Trend over 10 years	Form of authorization	Opportunities and Challenges
Kipepeo started in 1993	• Butterfly pupae sales. • Butterfly research. • Honey sales. • Dried moth.	• Pupae. • Publications. • Honey/wax.	• Butterfly farms. • Research institutes. • Zoos. • Public honey.	• Increased production against a set ceiling of what can be bought.	• A letter authorizing the trial from KWS.	• Limited markets. • Income in short period. • Growing industry abroad. • Venturing into other markets and products like bee venom. • Improving honey quality
Bioken started in 1980	• Snake exhibition. • Snake handling training. • Awareness creation. • Venom marketing. • Hotel snake shows. •	• Snakes. • Venom. • Rescued bush babies, duikers and orphaned antelopes	• Tourists, Researchers and schools children. • Local communities.	• 1994-1999 good, 2000 – 2003 bad and 2003 to date worse because venom production has gone high through experience but markets are not reliable.	• No formal license but KSPCA laws apply including CITES.	• Government controls on wildlife trade. • Paying for work permits • Financial constraints • Mushrooming snake farms. • Diversification to tortoise, Monitor lizard, crocodiles and snake shows in hotels\venturing to international

						markets for tourists and venom. • Participate in the training of health workers on snake bite treatment issues in future.
Falconry started in 1982.	• Breeding birds of prey like Buzzards, owls kites vultures etc. • Rescue Centre for monkeys and bush babies.	• Snakes, Tortoise, Monkeys, Baboons and squirrel for viewing..	• Tourists; 8 years ago good (400 visitors per month) 2 years ago bad (200 visitors per month). • They have 40 birds from initial 5.	• Charges non-residents 250/= to 150/= while residents pay 100/= to 50/= per person.	• Policy not clear and KWS has al lot of restrictions.	• Competition from other farms. • Not allowed to sale newborn birds but release them in suitable habitats. • Health Risk by interacting with domestic animals like chicken.
Baobab Farm Bamburi started in 1971	• Quarry rehabilitation. • Snake farm. • Aviculture. • Game farming of Oryx, Elands, Buffaloes, Hippopotamus, Ostrich, Dik diks etc.	• Crocodile skin (in the past) • Fish sale. • Crocodile meat. • Timber and firewood • Antelope meat. • Ornamental plants	• Hotels, construction industry and residents. • Tourists in 2003 about 100,000 visitors	• 1994 to 2001 sold an average of 30,000 seedlings per month. • 2002 to 2004 selling 4000 seedlings per month. • Production scaled down because of less demand as a result of mushrooming	• KWS authority but they have to consult to crop their animals.	• EMCA is positive on mining. • Diversification to specialized tourism like bird watching ad activity tourism –constructing a school or planting trees. • Utilization policy not clear • Forest products use ban affecting trade.

	• Butterfly exhibits.			private nurseries. • Lack of seeds. • Lack of expertise. • Theft of timber and lenient punishment systems.		

In ASF there are other groups that have benefited from the Kipepeo initiative and they have started Butterfly farming also. They are Mgurureni Vizeruzeru Butterfly farmers group (2003) and Mida Butterfly farmers (1993).
There seems to be inadequate awareness on the policy guidelines on trade in wild animals found in the Coastal forests as is the case in the whole country. The application procedure looks simple but most applicants have been missing clear management plans.

(b) Forest Products Trade from Selected Forest Sites

Diani forests Kwale
These are private patches of forests. The information also applies to Kaya Ukunda and Kaya Diani. The owners of private forests employ security guards but there is still unlicensed/un-allowed extraction.

Table 4. Selected traded forest products from Diani forests Kwale

Product	Use/status (Licensed-L, Not licensed-NL/Not Allowed NA	Frequency of use/user (Snack, main meal, eaten by old or young)	Level of use (Local/Regional/National	Quantity of trade (Bags, Tins, etc.)	Price (at the source and along the Chain)	Status (Plenty, just enough, low in the forest)	Comments over the last 10 years (eg. Marketing reducing or increasing, farmers domesticating
Honey	NA	Rare. Harvested by old and used	Local	Bottles	150/=/litre	Low quantity	Activity not very common

		by all.					
Firewood	NA	Daily	Local	Bundles	20/=/bundle	Just enough	Marketing increasing.
Charcoal	NA	Rare	Regional/Local	Sacks/Tins	10/=/tin and 300/= sack	Low quantity	Increase in demand/trees decreasing.
Poles	NA	Rare	Local	Pieces	400/= per 20 pieces	Plenty	Increasing Deforestation.
Lianas	NA	Mature ones used	Local	-	-	-	-
Fruits (Baobab)	NA	Snack	Local	Bags	200/= per 50kg sack	Just enough	Mature trees being ct or drying up.
Suni (Dik Dik)	NA/NL	Rarely done/Appetizer soup	Local	Whole	200/= each	Low quantity	Number of sunis decreasing.
Monkey pets	NA/NL	Rarely done	Local	Whole	500/= each pet	Plenty	Number decreasing compared to 10 year ago. But currently increasing.
Ecotourism	Allowed	Daily	Local/International	Per person	50/= local and 350/= international		No eco-tourism 10 years ago. Currently increasing.
Timber	NA	Rare	Local/Regional	Per feet	Local 5/=/foot, Regional 8/=/foot	Low quantity	Species for timber declining.
Thatching grass	NA	Periodical	Local	Bundles	100/=/bundle	Low quantities	Was not used 10 years ago.
Wild pig	NA	Rare/Soup appetizer	Local	Per animal	10/= per piece and 400/= whole animal	Low quantities	Number decreasing compared to 10 year ago.

Other products traded from these forests are:

- Carving wood
- Medicinal plants
- Rope making

Appendix 2 (a – d) has additional information from other Coastal forests.

There is heavy trapping of small mammals and antelopes in the forest by the local community who are also involved in unlicensed wood harvesting (Kanga, 1996). This was also echoed by the ASF adjacent communities. There is a steep decline in the edible animals in ASF except with Baboons which are increasing because of KWS protection. Trade in wild meat around ASF goes as far as Garsen in Tana River district and Tsavo East National Park. This is mainly in dried meat. Hunters in Tsavo kill the animals and dry the meat after slicing it into long strands. The dried strands are sold each at 20/= per 20 kg bundle of meat strands. At ASF the strands will be cut and apiece of meat sold at between 5/= to 10/=. This is mainly meat from large game. People from Garsen have been arrested in Malindi transporting dried Dik-Dik which they sale at 250/= in Mombasa (per. Comm.. Mr. Mashauri).

The Arabuko-Sokoke forest community also reported earning from trade in medicinal plants that occurs by chance whereby collectors pay the local people for money to collect plants. One such herbalist collects weekly to sale at Mombasa. The herbalist makes a of 1000/= per trip. The other herbalist only collects when an order is placed and some are international. Established herbal clinics like that of Dr. Githae in Nyeri and other towns also makes occasional collections from his clinic.

There is trade in cycad (*Encephalatus hilderbradtii*)which is sold at Watamu from 200 to 1000/= depending on size occasionally they are transported to Nairobi for landscaping (authors observation, 2002). Dried meat is sold more expensively than fresh meat around ASF.

The period between 1991 and 2004 has shown a big increase in the value of the traded products and the number of products.

Table 5. Traded products comparison in 1991 and 2004

Product	Price/Situation comment in 1991 Mogaka, 1991)	Price/Situation comment in 2004
Wild honey	An individual could not collect 4 litres of honey from the forest.	A farmer can collect more than 200 litres of honey per year from Modern hives (hardly any wild honey).
Charcoal	40 - 60/= per sack	150 – 300/= per sack
Water 25litres	0.20/=	20 litres 5/= (Fungomeli et. al. 2001
Fruits	Very little marketing	Collection for sale in Mombasa.
Trapping animals	Traps at the forest edge (1km)	Traps all over the forest
Carving	*Brachylaena huillensis*	Additional species *Combretum schumannii* and *Oldfieldia somalensis.* Carving from on-farm trees like *Mangifera indica* and *Gmelina arborea*
Timber	Licensed (Saw mill) and un-licensed	Un-licensed/ No saw mill.

Trading patterns of Key Coastal Products/Species

This can be explained by a review of reports on three forest traded products.

Casuarina poles survey (Choge and Mbuvi, 2002)

This is the main on-farm pole producing species. They are used in roofing but currently it has started being used for fencing posts and timber.
The trade is characterized by

- Neighbours buying from each other where the selling price is determined by the diameter at ground level (DGL). With each inch going for 100/= where by a pole of six inch at DGL will normally go for a minimum of 600/=.
- Brokers mainly control the trade in Casuarina from the farms of small scale farmers. This has been reducing the benefits of Casuarina trading to the farmers.
- There are large-scale farmers who even offer poles on credit to merchants seriously undercutting the small scale farmers, whose trading option is to form a cooperative.
- The trading is done within the Coastal region mainly.

Neem products survey (Choge and Mbuvi, 2002a)

- The trade is on timber, Bark, oil, Billets for carving and Leaves. Leaves and Bark are for medicinal and soap making. The billets are for wood-carving. Oil is for both soap making and medicinal use.
- Trade in Medicinal and soap making from Neem is not sustainable ecologically.
- Neem oil based trade is ecologically sustainable but it is economically expensive for local community who may require initial support.
- Timber trade is threatening all the other Neem based trade.
- Neem trade is both local, regional and International but requires to be done in a formalized transparent way unlike now where its trade out of Kenya is secretive.

Mangrove (Luvanda et. al., 1997)

Though not part of the Coastal forest it is exploitation and trade has a direct relationship with the exploitation of the Coastal forests. In that;

- It provides poles for house construction which currently are not enough and there is trade from Tanzania to meet the shortfall.

Brachylaena huillensis (Muhuhu)

- This is both local, regional, national, trans-boundary and international at the point of product use.
- It is trade that has over-exploited *Brachylaena huillensis* available in the Coastal forests forcing the farmers to start using alternative species like Neem, get from other up-country forests and increasingly acquire products from Tanzania.
- Certification is bringing in both social and economic sustainability to the trade.
- Trials in Gede have shown that these species could be grown and harvested in 30 years.

Table 6. Kipepeo products

Year	Scale of production		
	Least producers	Medium producers	Large producers

Opportunities

Certification is economically and a conservation responsible scheme but it requires to be expanded to capture other traded products. Certification of forest products is an opportunity that will make traded products have not only a regional markets but also global market. This needs to be expanded to include other products like the fruits which already have a regional market. The sale of fruits like *Landorphia kirkii* bring cash to the family.
Most of the Sunnis hunters in Matsangoni area of ASF hunt to sale the sunni mainly to buy Maize flour and not for eating. This an indication this trade acts as a source of income. Most of the people are usually arrested transporting, drying, selling and or transporting meat rarely are the arrested eating the meat.
There are numerous opportunities for increasing the trade. This would include domesticating the trees that are producing the traded forest products. The other areas that may require serious though is the domestication of small game like the rats and mice.
There should be pilot attempts to allow cropping of some animals like Baboons and Monkeys whose populations are increasing. This will require certified capture methods.
Kenya is in the process of updating its Natural Resources Management (NRM) policies and already here is EMCA which has proved to be very inclusive.

Challenges

- Exploitation of the resource is shown by analysing a trend analysis of the resources exploitation over three forests sites

Table 7.Tree use trend analysis if selected East Africa Coastal forests

Forest	Trees currently threatened	Trees that have bee over-exploited/exhausted (evidence of stumps)
Arabuko-Sokoke forest	*Newtonia paucijuga, Nesogordonia africana,*	*Afzelia quanzensis, Brachylaena huillensis, Milicia*

	Brachystegia speciformis, *Pleurostylia africana, Combretum schumannii, Encephalatus hildebrandtii,* Mangoes	*excelsa*,
Dzombo forest	*Combretum schumannii, Dalbergia melonoxylon,*	*Afzelia quanzensis, Milicia excelsa* (cleared), *Manilkara sanzibarensis, Lanchocarus busseii*
Mrima forest	*Combretum schumannii*	*Afzelia quanzensis, Milicia excelsa*

- Ecological threat The exploitation of the traders by the middlemen is a conservation risk as the harvesters will over-harvest as they struggle to compensate the middlemen's commission. This also applies to the trading form through unlicensed trans-boundary trade and a long marketing chains reducing the profit. This is compounded by inadequate resources and capacity by the department in-change of managing the forest and un-flexible policy and legislation that does not allow multiple stakeholders participation in forest management.
- Economic threats: Unlicensed trade denies the government revenue and does not bring out the actual value of that particular species products making it not a priority to have a management strategy as the species value is likely not to be documented formally. Users of the resource are not the Forest Adjacent Community meaning that the resource value is known and enjoyed by non-residents as is the case with wood-carving in most forest sites.
- The setting of traps all over the forest as in ASF is an indication that the trade is not any longer sustainable. The reduced sightings of Adders duiker in ASF is an indication that they have almost been cleared. Absence of exploitable Afzelia for timber in most Coastal forests and the presence of stumps of *Brachylaena huillensis* that are over 50 centimetre against current billets of a diameter 10 centimetres is an indication of a trade that has been selectively removing all the large trees in the forest eventually leaving nothing exploitable.
- The trade poses several social problems. The noticeable one and requiring attention is the threat of HIV/AIDS in the carving camps along the Kenyan-Tanzanian border. Taking the case of Kiifi District in 2001, the estimated population then was 578590 out of this 65.35% was food poor[3], with overall poverty[4] affecting 66.8% and hard core poverty[5] affecting 43.02% (GoK, 2001). This is similar trend in the Coastal districts.
- Causal factors: High poverty levels among the Coastal forest adjacent community drives them to the forest as a source of their livelihood. Negussie (2002), listed other cause to be:
  i. Expanding agriculture,
  ii. Charcoal production and consumption
  iii. Uncontrolled fires (not a major threat in Kenya Coastal forests),
  iv. Unsustainable logging
  v. Unplanned settlement
  vi. Destructive mining.
  vii. Economic/development policies not containing conservation objectives,

[3] These are people who cannot afford the average food requirements per person and he then falls below rural poverty line.
[4] These are people who cannot meet the minimum cost of food and non-food items essential for human life and therefore are below the national poverty line.
[5] These re households which cannot meet the basic minimum food requirement after spending their income.

viii. Inadequate institutional and financial capacity
ix. Land tenure. Most small holders do not have title deeds and there is a large proportion of population without land (GoK, 2002a)
x. Lack of institutional coordination and integration of sectoral policies and
xi. Insecurity specific to Boni and Lugi forests norh of Kenya.

- Developing relationships with the private sector to further develop the traded products.
- Linking the trade in flora and fauna to conservation
- Other factors are climatic unreliable rainfall, one crop growing season and low soils fertility.

Discussion

Licensed and un-licensed trade in both flora and fauna remains a major trading activity in all coastal forests. This is mainly for trade and to a small extend for domestic use. In the Coastal; forests trade in forest products occurs within the following forms:

- Trade in consumptive/consumable forest products
- Trade in non-consumptive products like Tourism and guiding in the forest

From the survey it was learned that there are the following types of trade:

1. Licensed trade where the government has issued a license or a permit for utilization and or marketing. eg Kipepeo, firewood etc
2. Un-licensed but allowed. This is where the government does not arrest or harass operators/sellers of forest products. These are products not in the list of items that should be licensed. People are not prevented from harvesting generally but have no right over them as they could still be arrested or harassed. This is common with wild fruits and herbal plant products.
3. Un-licensed and not allowed. This is where the operators/sellers are arrested when found by the government because the activity is called poaching. This is common with protected trees by presidential ban or under CITES. This is also the trade done by the FAC through hunting. This is either through ignorance or limited options for other sources of livelihood. This is the case with wild meat use or trade by the communities.
4. Not allowed. This occurs in forests that are individually owned and people acquire materials without the authority of the owner. Transporting the products will still require permit from Forest Department.
5. Not allowed and not licensed. Refer to trade in forest products found in private land but people acquire the materials through poaching. This is common with wildlife utilization which is not allowed by law regardless of the location of the animals.

Trade occurs in all the above forms and the products are sourced from individual, local authority and gazetted forests. Some of the products a re also sourced from Tanzania especially wood carving billets. The procedure of licensing is not well known by the communities especially with wild animals though there should be no utilization regardless of the location. To be ahead of the law some woodcarvers have bought land in Tanzania and settled so that they would exploit the resource with minimal interruption by law agents.
Potential for expansion is explained by 2 cases of up-coming new trade opportunities:

(a) Trade opportunities diversification and expansion

Trade in EACF has the potential to increase and diversify into non-forest income generating activities as it has been demonstrated by Kaya Kinondo forest (KKF) in Kwale and Arabuko-Sokoke forest (ASF) in Kilifi and Malindi Districts. While in KKF the trade activities are led by Kaya Kinondo Community Development Group in ASF it the Arabuko-Sokoke Forests Management Team (ASFMT) and other partners especially the forest adjacent community.. They are both Integrated Conservation Development Projects (ICDP) and they are trading in Coastal forest products. In both forests all forms of trade occur. The table below summarizes the trade and other activities that though not trade they have been initiated to add value to the forest.

Table 8. Trading activities in two selected East African Coastal forest

Arabuko-Sokoke forest	Kaya Kinondo
Eco-tourism	Eco-tourism
Community groups engaged in Tourism activities: Arabuko-Sokoke tour guides association and Spine tails safaris[6].	Employed community guides
Sale of brochures.	Sale of artifacts by women
Support to forest adjacent schools.	Support to forest adjacent schools
Plans for village banks.	Village banks operational
Strategic partnerships; USAID, Community, Government Departments, etc	Strategic partnerships; WWF, Community, Government Departments, etc

The above activities have developed independent of each other and what they now require is;

- Networking to exchange ideas and experience.
- Scaling up and expanding to other sites.
- Adding value through product diversification or strategic partnerships with hotels and tour companies for enlarged/inclusion in their circuits.

(b) Fruits with Regional market taking the case of *Landorphia kirkii*

From 2000 survey (Mbuvi and Muthini) it was clear that this fruit has a regional markets along the Coasts of Tanzania and Kenya. It ripens early in Tanzania and late in Kenya. When it is ripe in Tanzania traders bring it up to Kongowea market in Mombasa and by the time it starts to ripen in the Brachystegia woodlands north of Malindi, the fruiting season in Tanzania is complete and traders together with taking it to Kongowea they take some to Tanzania. This fruit apart from being eaten as a snack it is also sold as juice in some juice parlours in Mombasa. Unfortunately farmers are not domesticating this fruit. Currently a 1kg packet of the fruit is selling at 100/= at Mombasa old town(cover photo and appendix 3). There are other Coastal forest products with national and international trade. These are carvings, Neem seed, Neem leaves and Neem soap.

- There is a trend of less visitors visiting the East african Coastal Forest related trade establishment over the last 10 years. This could be attributed t tourism slump.
- Markets for EACF products seem to be increasing but the uantities of these traded products are likely to be reducing. This is making the trade unsustainable and calls for better management approaches.
- Lack of landscape management approach management is a key challenge of most projects.
- Increased wildlife as is the case in Mwalungaje posses a major threat to conservation and is likely to impact negatively to community relationships with the Government.
- There exists trade both licensed and unlicensed. This information seems is available to most of the stakeholders.
- Wildlife trade is being done under very unclear legislation framework. The potential for owners of large farms like Bamburi need to be allowed to “own” animals born in their farms. This will enable them recoup some of their costs.
- The sources of some of the products are defined just as well as the use points. This makes management easy and market development feasible.
- There are some plant products that have a regional market that require formalization and support to add more value.
- There is need to harmonize criteria for determining the status and levels of availability of forest traded products between the community and the scientists/conservationists as shown by the Shimba hills status of the traded products. This could be done through participatory resource assessment.

[6] This is a private company established by one of the guides which has also in cooperated three other guides. It has rented an office in Gede township and has a computer.

- Trade diversification opportunities require innovativeness and strategic partnerships as it has been demonstrated by the Kaya Kinondo Eco-tourism project. Tourists are allowed to visit a sacred site under specified conditions.
- Poor soils fertility in forest adjacent community farms results in farmers efforts towards farming not being rewarded equitably. This leaves the forest as the alternative source of livelihood.
- Trade trends are emerging whereby there is python selling in MRIMADZO forests and Shimba hills forests. There is selling of dried wildlife meat from all forests. His requires either regularization or a system hat enables tracking down so as to establish the true value of these products, establish what is being traded on, its quantities, regulate the trade and ensure equitable benefits.

Recommendation and the way forward:

- From the current analysis it is clear that there is both licensed, allowed not allowed and not licensed trade within the Coastal forests of Kenya and that some of these trade in regional and international. There is therefore need to undertake a detailed status of trade in Coastal forest products in each forest. This will provide baseline data that is necessary for monitoring.
- A regional network needs to be established that will develop trade within the Coastal forests. For example in eco-tourism visitors to ASF will be encouraged to visit Kaya Kinondo and other forests in Tanzania.
- Products with regional use/demand need to be regularized and their development facilitated. This should include marketing support. Domestication should be a priority reduce pressure on the wild sources and any trade barriers removed. This will be possible even with the East African Community.
- Most of the wild animals trade is un-licensed. This requires deliberate interventions to provide economic and legislative incentives towards making the trade legal or providing alternatives.
- Wild game farming. This needs to be like forestry, where the farms are allowed to trade with their products after certification by KWS that the animals are from their farms.
- The Government has in addition to licensing also support the merchants with marketing. This could be through provision of information, organizing trade fairs etc.
- Local authorities need to improve forest management. This could be done through partnership with FD or other stakeholders with forest management capacity or through employing qualified forestry resource managers and developing the framework that will facilitate sustainable forest products trade.
- Forestry products for trade and domestic use need to be developed outside of the Coastal forest in peoples farms as a way of meeting the increasing demand. This should target the high value species.
- The management approach of the Coastal forests has to involve other partners especially the forest adjacent community.
- Non-forest based trade need to be developed targeting the forest adjacent communities as a way of addressing the high poverty levels if the forests are to be managed sustainably.
- Legislation need to be clearly worked and updated to address the current conservation realities.
- Value adding schemes like certification require expansion but have to be also sensitive to the poverty levels within the Coastal region. Their potential to exploit the poor will require to be checked. It has been demonstrated that the price of honey seems to have been set at fixed price by big companies trading in honey. These companies could be left to bulky and market with transparent marketing information sharing system.

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Personal Communication

1. Mr. Ochieng The forester Buda forest Blocks.
2. Mr. Mashauri. A KEFRI Para taxonomist based in Gede Regional Research Centre.

Attachments:

Appendixes

Appendix 1. Table 9. Detailed Organizational Capacity of Key Departments

Organization capacity	Trade products licensed	Un-licensed activities	Challenges and opportunities
Kenya Wildlife Service Regional Office with stations in: Mombasa, Kiunga, Mokowe, Lamu, Malindi, Watamu, Arabuko-Sokoke forest, Kisite-Mupunguti, Shimba hills, Baomo and Tana river. Most stations have a Warden and one or two assistants.	• Two Crocodile farms • Snake farms • Falconry • Ostrich farming • Tourism • Bird shooting • Kipepeo farm	• Crocodiles in snake farms • Snake farms • Plant sale and export • Un-licensed trade in wild meat by communities	• Terrorism • Centralized licensing system. • Marketing skills and infrastructure poorly developed • Lack of clear policy on wildlife utilization. It should be noted that there is an upcoming workshop on wildlife utilization. • Simple licensing procedure but the process appears is not known by the community or they fail to include all the requirements. • Ignorance by the local people of existing laws on game trade. • Lack of standard ways of monitoring trade and the current centralized licensing. • Failure to file returns by some traders on time or at all. • Poor records in local offices. • Unknown market and sources of game meat and plants. • Lack of coordination between departments dealing with wildlife utilization that is fisheries, KWS and FD. • Improve community participation in natural resource management and trade.
Forest Department Provincial office, District Offices in Malindi, Mombasa, Kilifi, Lamu, Taita-Tavetta, Tana River and Malindi. Each District has stations and Divisional Extension offices. Occasionally Some Extension offices are not manned by foresters.	• Firewood collection. • Pole cutting (banned). • Mangrove pole cutting. • Campsites • Eco-tourism bandas	• Poaching of forest products without permit.	• Policy allows exploitation. • Wild animals destroying habitat. • Unilateral slapping of bans from time to time. • Decreasing volumes of traded products from Government forests. • Uncontrolled harvesting and trade from non-FD managed forests. • Policing difficulties. Each District office has a vehicle but most stations have no vehicle or motorbike making the effectiveness of the officer impossible. A case is Buda Station which covers six scattered forest blocks and the Mangroves of Kwale District and the forester does not have any means of transport. • Un developed on-farm forestry. • Land available for tree planting.

Appendix (2). aArabuko-Sokoke forest (ASF)

This is a gazetted forest managed by FD with support from KWS through a Memorandum of Understanding (MOU). This partnership has expanded in the last ten year to include KEFRI and NMK and currently modalities of formalizing forest adjacent communities and the wider society are being developed This does not seem to have stopped unlicensed and licensed trade in forest products. As while in 1992 FitzGibbon and Fanshawe, were of the opinion that trapping and severe hunting for Aders duiker and the Sokoke Bushy-tailed Mongoose was reducing their populations, currently the presence of the later in ASF is in doubt. This appears to be the scenario as the market for the products is increasing within a set up where the products are decreasing in the forest and adjoining woodlands. This poses a threat through over-exploitation likely leading to decimation of the resources.

Table 10. Some traded products from Arabuko-Sokoke forest

Product	Use/status (Licensed-L, Not licensed-NL/Not Allowed	Frequency of use/user (Snack, main meal, eaten by old or young)	Level of use (Local/Regional/National	Quantity of trade (Bags, Tins, etc.)	Price (at the source and along the Chain)	Status (Plenty, just enough, low in the forest)	Comments over the last 10 years (eg. Marketing reducing or increasing, farmers domesticating
Muhuhu *Brachylaena huillensis*	NL	Old and young for selling	National Regional and International	Small pieces transported in sacks	50/= at Kaembeni and 150/= at Mombasa	Found in the forest	Market Increasing.
Mbwagazembe *Newtonia paucijuga*	NL	Old people for timber only	Regional	Shatters for Doors, Beds and windows	350/= at Dida and 400/= at Kilifi	few	Market Increasing.
Mkwaju-*Tamarindus indica*	Allowed	All ages	Local/Regional	Fruits	Source a bag (50kg) at 250/= at Mombasa at 400 Malindi. I kg sacket is 50/= at Old Town streets Mombasa	Few	Demand available.
Pepeta (*Dialium orientale)*	Allowed	Mostly young	Local	Fruits	I bag of 50kg is 50/= at source while at the Market is 200/=	adequate	There is demand.
Mabuyu (*Adansonia*	Allowed	All ages	Local and regional	Fruits	1 bag of 50/= goes for 100/= at source and	adequate	There is demand.

digitata)					300/= at Malindi		
Mbirandu *Oldfieldia somalensis*	NL	Charcoal old and young, Timber and carvings	Local Divisional	Sacks and Shatters	100/= at Dida and 150/=Kilifi for timber 100 per piece in Dida and 150 Kilifi	Out side ASF	Market Increasing/getting scarce.
Mrihi (*Brachystegia speciformis*)	NL	Young and Old	Local and Regional	Door frames and timber planks	300/ apiece next to the forest	Reducing	Demand increasing.
Musokoke	NL	Old people, for poles	Local	Bundles of 20 pieces	800/= at Kilifi and 400/= at Dida	Adequate in the forest	Market Increasing.
Muyama	NL	Old for fittoes	Local	Bundles of 20 pieces	50/= at Dida and 70/= at Kilifi	enough	Market Increasing.
Mfunda *Cynometra webberi*	NL	Charcoal. Old and young.	Local/Regional	Sacks	Dida 100/= and at Kilifi 150/=	adequate	Adequate.
Mudzetsi *Manilkara sulcata*	NL	Poles	Local/Regional		800/ at Kilifi and 500/= at Dida	enough	Market Increasing.
Munago	NL	Posts	Local/Regional		Dida 70 per pole and 100/= Kilifi	few	Market Increasing.
Ngwerezi Ken rat	NL	Whole family	Regional/Local	Whole	30/= at Kaembeni and 40/= at Kilifi and Mbale at 40/=	Adequate	Very many.
Loma Ant Eater	NL	Whole family	Regional/Local	Whole	Kahingoni at 100/= and Matsangoni at 120/=	Low	Market educing.
Sunni (Kapala)	NL	Whole family	Regional/Local	Whole	Dida at 70/= while at Matsangoni 100/=	Low	Market increasing.
Tohe (Type of bush buck)	NL	Whole family	Regional/Local	Pieces/whole	Ngerenya a piece at 20/= and Dida 30/=, Matano-Manne at 40/= and Matsangoni 50/=	Low	Market reducing/ used to be found in forest adjacent bushes. Currently only in the forest.
Dik-Dik	NL	Whole family	Household and local up to Matsangoni	Whole/pieces	Dida at 100/= and Kilifi at 150/= or 50/= at Mabuani and 150/= at Gede		Dried Dik-Dik goes for 250/= at Mombasa.
Tortoise (Kasa)	NL	-	Watamu	Mature	300/=	few	Unpredictable market.

Africn wood owl (Kimburu)	NL	-	Not defined	Egg	1000/=		Has not been traced to date.[7]
Puff Udder	NL	-	Snake farms	Mature	100/=	plenty	
Kulungu	NL	Whole family	Household / local	Whole/pieces	Kahingoni at 100/= and at Matsangoni at 150/=		
Guiding	Allowed		Local	-	-	Developing	Local guides formed a company.
Mushroom	NL but allowed	Whole family	Household / local	-	-	Plans to introduce mushroom farming	9 edible mushrooms determined.
Kulungu (Bush Buck male)	NL	Whole family	Household and local area	Whole and pieces	Whole 1200/= and a piece like leg 300/= to 450/=	Many in ASF	
Ziziphus mauritiana	NL/Allowed	Snacks by whole family	Household, village, regional	In packets	Small sachets for 10/= 20/=	Marketing increasing in most markets	Commonly sold in Kilifi and Mombasa
Duikers (Common and Red)	NL	Whole family	Household and local	Mainly pieces	Whole 700/=; pieces range from 50/= to 150/=	Numbers have reduced	Adders duiker rarely seen
Kaba (Bush Buck female)	NL	Whole family	Household / local	Whole/pieces	Dida at 70/=, Vitengeni at 60/= and Matsangoni at 120/=.		

[7] During the survey We bought a young Owl at Mida at 300/ (it had been on offer by the roadside) though they were asking for 1000/=. From discussions (in Gede and Dida areas of ASF) it was evident that requests for this kind of owl is occasional and the price offered for a life bird is 1000/=. There has been demand for the eggs of Sokoke Scolps Owl with some tourists offering about 50000/= claiming some zoos want to buy. This pushed the hunt for these products to the Marafa; Brachystegia woodland north of Malindi. There is a risk as this forest is not protected.

Appendix 2 (b) Mrima, Marenje and Dzombo (MRIMADZO) forest

These are gazetted forests that are surrounded by villages around them.

Table 11. Traded forest Products from Mrima, Marenje and Dzombo (MRIMADZO) forest

Product	Use/status (Licensed-L, Not licensed-NL/Not Allowed	Frequency of use/user (Snack, main meal, eaten by old or young)	Level of use (Local/Regional/National	Quantity of trade (Bags, Tins, etc.)	Price (at the source and along the Chain)	Status (Plenty, just enough, low in the forest)	Comments over the last 10 years (eg. Marketing reducing or increasing, farmers domesticating
Swara	NL	Three times a week. Both old and young	Local	Whole animal	Trappers sale at 200/= and then sold at pieces at 58/= getting approx. 500/=.	Low	The numbers decreasing. Trappers also exchange a whole animal with 1 debe[8] of Maize which is equivalent to 250/=
Columbus Monkey	NL	Occasional		Skin sold. Meat not eaten	Skin goes for 700/=	Constant	Market for skins at Ukunda
Baboons	NL	Occasional	Local and limited	Whole	70/=	Over populated	Only the Makonde people eat them
Dik-Dik	NL	Occasional	Local	Whole mainly	At 100/= to 150/=	Low	Population decreasing. Sold at palm wine drinking dens.
Kanga	NL	Occasional	Local	Whole	50/= locally		
Njiwa	NL	Occasional	Local	Whole	30/=		
Kololo	NL	Occasional	local	Whole	50/= locally		
Wild pigs	NL	Occasional	Local and household	Whole and pieces	Trapper sales at 500/= then it is cut into pieces and cooked. The pieces and the soup are sold Approx. 1000/=	Low	Population reducing. Meat consumed at palm wine drinking dens.
Kongoni	NL	Occasional	Household and village	Pieces	Around 1 kg at 50/= to 100/= a piece	Low	-
Nyati (Buffalo)	NL	Occasional	Household and village	Pieces	Around 1 kg at 50/= to 100/=	Low	Available in Marenje forest only
Local guiding for researchers	NL but allowed	Occasional	local	-	A minimum of 200/= per day.	-	Un-predictable
Puff udder	NL	Occasional	Regional	Skin	-	Low	

[8] 1 Debe is 25kg tin

Python	NL	Occasional	Regional	Skin and fat	Live one goes for 1000/=	Low	Market available in Mombasa

The three forest sites are observing increasing baboon populations which they claim used to be under control when the Makonde people (a community that has settled in the area from Tanzania) were free to hunt them. The Digo and the Duruma control their hunting now hoping to benefit through eco-tourism. Those that are caught are sold very cheaply to them.

They reported that in 2003 there was a person who used to buy widow birds nests for 10/= but he was arrested at Kisite by KWS. This stopped the trade. Herbs have had a market but it is highly unpredictable.

The animals for trapping are getting less resulting in few getting involved in the activity. The current initiative of involving the community in forest management, is likely to lead to less forest use through un-licensed use. They reported that the pits dug during mining have contributed to a reduction in the number of Swaras as they fall in them and eventually die.

Appendix 2. (c) Shimba Hills forest

No details are available of the volumes, or the value, of forest produce removed annually for subsistence purposes (KIFCON, 1994). Commercial exploitation of indigenous forest areas in the Shimba forest reserve ceased in 1986 (ibid). This does not apply to those products traded on through un-licensed means whose rate may have increased.

Table 12. Traded products from Shimba hills forest

Product	Use/status (Licensed-L, Not licensed-NL/Not Allowed	Frequency of use/user (Snack, main meal, eaten by old or young)	Level of use (Local/Regional/National	Quantity of trade (Bags, Tins, etc.)	Price (at the source and along the Chain)	Status (Plenty, just enough, low in the forest)	Comments over the last 10 years (eg. Marketing reducing or increasing, farmers domesticating)
Butterfly	NL	Few	International	Pupae in Tins	N/A	Plenty	Market increasing
Buffalo	NL	Few Old people	Local	Whole and pieces	Black market	Many	Market reducing
Dik-Dik	NL	Few	Local	Whole and pieces	Black Market	Few	No market out side the village
Wild pig	NL	Few	Local	Whole and pieces	Local	Plenty	No market out side the village
Warthog	NL	Few	Local	Whole and pieces	-	Plenty	No market out side the village
Porcupine	NL	Few	Local	Whole and pieces	-l	Few	No market out side the village
Elephant	NL	Very few	International	Tusks	-l	Plenty	Market reduced
Phython	NL	Very few	International	N/A	Curio shops	Plenty	Low market
Fuelwood	NL	Adequate used by old	Local	Headlot	38/= FD and 100/= at the market.	Plenty	Increasing market
Fito and Poles	NL	Adequate Old people	Regional	Scores	40/= at FD and 450/= at the market	Plenty	Reducing markets
Timber	NL	Use old trees adequate	National	Running feet, pieces	Size dependent	Plenty	Reducing markets
Billets for carving	NL	Old trees	National/International	Billets	Curio market	Plenty	Reducing markets
Mukuwa (Bark	Allowed	From young trees	Local	Bundles	Black market	Plenty	Reducing markets

strings)							
Mariga (Fruit)	NL	Ripe	Regional	Packaged	Black market	Plenty	Reducing markets
Grass	NL	Adequate, old people	Local	Bundles	Black market	Plenty	Reducing markets
Herbs	NL	Adequate old people	Local/Regiona l	Bundles	Black market	Plenty	Reducing markets
Flowers	NL	Mature	Local/Regiona l	Packaged	Black Market	Plenty	Reducing market

Appendix 2. (d) Mwangea forest

This is a forest managed by Kilifi County council. FD and CFCU have shown interest to be enjoined in the managed to improve on the effectiveness of its management.

Table 13. Trade forest products from Mwangea Forest

Product	Use/status (Licensed-L, Not licensed-NL/Not Allowed	Frequency of use/user (Snack, main meal, eaten by old or young)	Level of use (Local/Regional/ National	Quantity of trade (Bags, Tins, etc.)	Price (at the source and along the Chain)	Status (Plenty, just enough, low in the forest)	Comments over the last 10 years (eg. Marketing reducing or increasing, farmers domesticating
Gwase (Ant Deer)	NL	Family	Household/village market –vitengeni	Pieces	Vitengeni 60/= and 80/= Kilifi)	Low	Market increasing.
Kulungu (Bush buck male)	NL	Main meal Family	Household/ sold at Kaembeni	Pieces	20/= Kaembeni (over 20km from Mwangea)	Low	Market increasing.
Sunni-Kapala	NL	Family	Household. Within the villge	Whole	60/= Mwangea	Low	Market increasing.
Mbala Bush Buck female	NL	Family	Household. Within the village	Whole	70/= Vitengeni	Low	Market increasing.
Wild pig (Nguruwe)	NL	Main meal whole family	Local/Regional	Pieces	40/= per piece in Mwangea and 50/= Vitengeni	Enough	Reducing.
Zebra (Punda Milia)	NL	Main meal whole family	Local	Pieces	30/= per piece at Mwangea and 40/= @ matano manne.	Low	Reducing.
Kavii (Dik-Dik)	NL	Main meal whole family	Local	Whole	70/= @ Mwangea and 80/= @Malanga	enough	Reducing.
Fungu Golden Elephant Shrew	NL	Main meal whole family	Local	Whole	2/= @Mwangea and 4/= @ Matano Manne	enough	Reducing.
Mudzetsi *Manilkara sulcata*	NL	Poles and Fruits whole family	Local/Divisional	Bundles for 20	80/= at Mwala Ndida and 100/= @ Malindi.	Low	Were very many but nowadays very few.

Mkone *Grewia plagiophylla*	NL	Whole family for building	Local/Divisional and regional	Bundles of 20	80/= Vitengeni ad 120 Kilifi town	Enough	Market increasing.
Murihi *Brachystegia speciformis*	NL	Timber used by the old	Regional/Local	Shatters	350/= Malindi and 300/= Viengeni	Scarce	Market increasing.
Munago	NL	Fencing poles used by the old	Regional/Local	-	50/= Mwangea and 75/= at Malindi	Scarce	Market increasing.
Muhuhu *Bracylaena huilensis*	NL	Old and Young, Carving	Local, Regional/National/ International	Billets	70/= at Mwahera and 150/= at Mombasa	Low	Market increasing.
Mukulu	NL	Old and Young/ Timber and fuel wood	Local/regional	Pieces/headlots	300/= at Mwangea ad 350/= at Mombasa	Low	Market increasing.
Mugoroli	NL	Old and Yound/ Timber and fuel wood	Local/regional	Pieces/headlots	300/= at Mwangea and 350/= at Kilifi	Low	Market increasing.

Appendix 3. *Landorphia kirkii* fruit marketing

Table14 (a) The Average wholesale price of the fruit in relation to distance from the forest and season in different location during the 2000 harvesting season.

Market point	Forest edge	Gede	Marereni	Malindi	Kilifi	Mombasa
Distance from forest edge	O kilometres	5 kilometres	40 kilometres	25 kilometres	30 kilometres	125-110 kilometres
Start of ripening	70/=	120/=	300/=	300/=	400/=	1000/=
Peak ripening	50/=	100/=	250/=	250/=	300/=	800/=
End of ripening	70/=	120/=	300/=	300/=	400/=	1000/=

Table 14 (b). The Retail price of the fruit in relation to distance from the forest and season (2000).

Market point	Forest edge	Gede	Marereni	Malindi	Kilifi	Mombasa
Distance from forest edge	O kilometres	5 kilometres	40 kilometres	25 kilometres	30 kilometres	125-110 kilometres
Start of ripening	50 cents per fruit	50 cents to Ksh 1 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 50 to Ksh 60 per 2kg bag

Peak ripening	--	Ksh 1 to Ksh 2 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 60 to Ksh 100 per 2kg bag
End of ripening	50 cents to Ksh 1 per fruit	Ksh 1 to Ksh 2 per fruit	Ksh 2 to Ksh 2.50 per fruit	Ksh 1 to Ksh 3 per fruit	Ksh 2 to Ksh 3 per fruit	Ksh 80 to Ksh 100 per 2kg bag

The 2 kg packed was costing 100 by 2004 in the old town streets a sign that the price is appreciating.
The other fruits with similar trading characteristics are Tamarind *Ziziphus mauritiana* (cover page photo in a basket) and Baobab.

List of participants