

**MINISTRY OF NATURAL RESOURCES AND TOURISM**



**FORESTRY AND BEEKEEPING DIVISION  
SURVEY ON  
OFF - FARM  
INCOME GENERATING ACTIVITIES**

**DRAFT REPORT**



**MANAGEMENT OF CATCHMENTS FORESTRY IN MOROGORO  
REGION**

**APRIL 2004**

## SUMMARY

The baseline survey on Income Generating Activities (IGAs) was carried out in all four Districts of Morogoro Region. From each district two piloted FRs for JFM practices were involved. The IGAs are implemented within the context of National Forest Policy to involve local people in the Management of Forest resource with established rights and benefits sharing. As from the onset of JFM in Morogoro region in 1998 people have been encouraged and started some alternative income generating activities. However since then, there was no baseline survey carried out to establish the existing and potential income generating activities. Therefore the baseline survey aimed at finding out the existing and potential income generating activities around FR under JFM. Field visits, Consultative village assembly meetings, reports and semi-structured questionnaire were the methodologies used to collect data. Beekeeping, fish farming and weaving products were identified as the main Income Generating Activities in the project area that to some extent, contributed to an increased household income. Other IGAs include commercial tree/fruit nurseries and selling of tree/ poles. About Tshs.2813250 were realized, as recorded collection that account for about 6.4% of the expected collections. Insufficient information on IGAs was the factor behind this low figure.

Most of the potential IGAs were diverted to agriculture and livestock sectors, to improve home garden and livestock keeping (hybrids), including poultry. The project concentrated, mainly on forestry related activities. It was observed that IGAs are site specific; depend on environment, market, social and economic activities of the people. While beekeeping was practiced at a wide range, fish farming was limited to few areas with permanent water supply. To some villagers' beekeeping was quite a new activity attached with culture and as such the adoption was slow. However results from the survey clearly indicate that income and employment generating activities undertaken in some parts of Morogoro Region have a high potential to contribute to poverty alleviation while conserving reserved forests.

The study recommends transparency in revealing available records like revenue through IGA among villagers, continual support of forest adjacent community in expending source of income and employment generating activities both short and long-term opportunities. Given on-going decline in forest cover especially in areas outside the protected area, tree planting in farms (agro forestry) and woodlots is recommended.

## 1 INTRODUCTION

Joint Forest Management (JFM) focuses upon providing alternative sources of forest income (buffer zone developments), employment opportunities, improved legal access to the resource, and /or beneficial shares from revenue being earned from the forest paid in cash or more often in form of local social services. It has been established that the main cause of the pressure in the reserve is the lack of alternative sources of forest products and other income generating activities (Zilihona, *et al* 1998). The same authors suggested that people living around the forest reserves should be allowed traditional forest product uses upon agreed regulations. Agroforestry, involving planting of some desirable indigenous trees and domestication of wild fruit tree should also be encouraged. This is likely to reduce pressure on the natural forest, thus contributing to biodiversity conservation and community well being (Zilihona, *et al.*1998).

Tanzania has high potential for Non – Wood Forest Products (NWFP). The most important are tourism, game, bee products especially honey and bee wax, trainband and gum arabic (MNRT 1998). Other NWFP include fruit, nuts, fibers, medicinal herbs, forage and thatch for roofs. The bulk of non-wood products, however, still remain unknown and undeveloped. Yet some of these products have significant positive impact on rural households in terms of generating cash income and supplementing everyday diet (MNRT, 2001).

Some studies carried out in Tanzania showed that 58% of household income was derived from wild honey, charcoal, fuel wood and wild fruits. The adjacent community depends on products from forest reserves for their income and food. Forest products collected include wood for charcoal and fire wood, timber, building materials, medicine and small animals (meat), fish (in rivers passing in the forest), wild animals, fruits, weaving materials, water and cultural/ritual sites.

## **2. LEGAL FRAMEWORK**

### **2.1 Beekeeping**

Beekeeping deals with management of bees and processing of bee products from natural forests, plantation or other habitats (MNRT, 1998). Beekeeping is a source of food (honey, pollen & brood), raw material for various industries (bee wax, candles, cosmetics, textiles, lubricants etc), medicine and income for Beekeepers. It is estimated that beekeeping generates about USD 1.2 mil. annually for the economy from sales of honey and bee wax (MNRT, 1998). Almost all beekeeping is currently practiced through traditional methods. Constraints faced by beekeeping include lack of appropriate equipment as well as handling facilities. Knowledge in honey and beeswax handling to maintain quality and quantity is poor.

### **2.2 Tree Planting and domestication**

The National Forest Policy statement No.13 stipulates that investments in Non – Wood Forest Products industry, produce development and marketing will be encouraged, in order to utilize the full potential as well as to domesticate and commercialize the products with high demand (MNRT 1998).

Furthermore, the National Forest Policy states that, establishment of private woodlots and plantation for wood fuel production will be encouraged and supported. Private individuals will be encouraged to establish woodlots in their farms. The use of alternative affordable sources of energy will also be promoted through research and extension (MNRT, 1998).

### **2.3 Employment**

Improving living conditions of the people is the key issue to alleviate land use problems that enhance deforestation pressure. One way to do this is to increase income from activities outside forestry. Extra income can be generated through casual employment, small – scale enterprises from N T F Ps such as baskets and mat weaving, as well as shop keeping, transport and ecotourism (MNRT, 2001).

### **2.4. Justification and importance of the study**

In most of developing countries rural communities depends on forest to meet their daily requirements in terms of consumptive and non – consumptive uses. Some of these products have been turned into commercial business to earn cash income. As human population increase, pressure on forest resources increases, hence increase in rate of deforestation and forest degradation. Under the concept of people centered forestry against tree centered forestry, ways and means to empower local communities in the management of forest resources should be explored to strike a balance between peoples demand and

conservation. Actual benefits accrued from forest reserves are limited and unsustainable, thus a need to look into alternative income generating activities, that can reduce pressure from the forest reserves

It was against this background aforementioned that a survey was conducted to establish the existing and potential income generating activities that may contribute to improve livelihood of forest adjacent communities and subsequently reduce pressure to the respective forests.

### 3 METHODOLOGIES

The data on what should be undertaken as income or employment generating activities was obtained through consultative village assembly meetings. Also semi-structured questionnaires on IGAs were distributed to forest adjacent villagers in the piloted forest reserves to acquire the potential income and employment generating activities. The piloted forest Reserves with districts in brackets were Nawenge and Mselezi (Ulanga); Matundu and Nyanganje (Kilombero); Kimboza and Mkindo (Morogoro/Mvomero); Palaulanga, Mamboya and Ukwiva (Kilosa). From the consultative village assembly se meetings, individuals and organized groups were recorded, showing their requirements pertaining to IGAs. Experts on beekeeping, fisheries, community development and forestry were used to sensitize and create awareness on IGAs. Those who showed willingness to establish IGAs (early adaptors) were supported and trained so as to extend the knowledge to the rest of villagers Training and study tours were conducted to promote IGAs by practical demonstrations to villagers in beehive construction, introducing bee colonies and best practices in honey collection including provision of harvesting gears. In fish farming, practical demonstrations were done in selecting sites for fishponds, layout and construction of standard pond size, introducing fingerlings maintenance and harvesting.

Through practical demonstration, other villagers showed willingness to join in. Secondary data were obtained from official work reports from each district.

## 4 MAIN FINDINGS

From the baseline survey, the major IGAs currently in practice include, beekeeping, fish farming, tree planting and agro forestry practices (although site specific). Weaving for mats is widely practiced although its contribution as IGAs was difficult to establish. Since majority of villagers depends on agriculture, they were of the opinion that, improved crop yield and animal husbandry and some horticulture could contribute substantially to improved livelihood.

Some individuals and groups such as Njerahera, Mfanyakazi, Mlimani and Jaribu Kujiendeleza Kiuchumi (JAKUKI) in Ulanga Districts; Walio katika Mapambano na Juhudi za Kujiendeleza Kiuchumi (WAMAJUKUU) in Kilosa District as well as Mwanzo Mgumu in Kilombero District, have started enjoying their early harvest. In Ulanga district, four groups including one women group are involved in making use of NTFP, such as mats, hats and baskets. Also in Kilombero district, two women groups and 10 households are involved in similar activities. Records on how much is harvested and contributed to household income is not yet known. The early adopters in tree planting through coppicing system have started harvesting poles for sale. Other products that have started entering into markets include weaving products, sales of tree/ fruit seedlings, and sales of energy saving stove, bee products, and fish (Table 1).

**Table 1: Summary of IGAs per districts**

District	Beekeeping		Fishfarming		Matting		stoves		Seedlings		planting	
	B/hive	%	Ponds	%	Nb	%	Nb	%	Nb	%	Ha	%
Ulanga	119	22.5	2	3.4	76	27.5	314	48	57794	8.98	28	22.6
Kilombero	205	38.7	23	39	180	65.2	90	14	55000	8.54	27	21.8
Mrogoro	106	20	31	53	20	7.25	162	25	98000	15.2	45	36.3
Kilosa	100	18.9	3	5.1	0	0	92	14	433100	67.3	24	19.4
Total	530	100	59	100	276	100	658	100	643894	100	124	100

The survey as per table 1 also revealed beekeeping and energy saving stoves to be more pronounced in Kilombero and Ulanga Districts respectively, where as weaving/matting (i.e. production of baskets and mats) is much more employed in Kilombero District. Energy saving stoves was found to be more useful and having benefit to them. It increases cooking efficiency in terms of cost and time. There is reduction in firewood consumption from three to one head load per weak, Kisawasawa villagers commented.

The least adopted activity was fish farming that account for only 2%. The activity was mainly constrained by environment, including climatic/ hydrological conditions. Prolonged drought in the last year resulted into drying of fishponds in some places; in this case permanent water supply was found to be s necessary for selection of site for fish farming.

Rising of tree seedlings and beekeeping were widely applied at large scale in all districts. These are activities central to the Department of Forestry and Beekeeping Divisionthat has a long history of practicing tree planting and beekeeping.

The level of environmental consciousness among the forest adjacent communities may explain the difference in levels of tree planting from one district to another. Existing and perceived future shortage of wood and NTFP compelled some people to plant more trees to meet future demand and conserve environment. Tree planting has been slow in areas where trees outside the reserve were still available. Most villages in Kilombero and Kilosa are in remote areas where wood demand was not perceived as an immediate problem.

Beekeeping was more pronounced in areas with a long history / culture of practicing such activities as demonstrated in Kilombero 39% and Ulanga 33% A survey on potential IGAs revealed major divergence from forestry related activities to Agricultural activities. Improved livestock keeping (Hybrids), vegetable farming and brick burning were the major activities suggested by majority of villagers.

From the existing and potential IGAs, Actual (A.C) and Expected income generation (E.C) per district was calculated (Table 2). Actual income generated was based on available/ existing information / records from the field, while expected were based on current/rates/tariffs.

**Table 2: Actual (A.C) and Expected (E.C) income generation per district**

District	Item	Beekeeping Honey (lt)	Wax (Kg)	Fishfarming Fish (kg)	Matting (pcs)	S/stoves (No)	Seedlings (No)	Total
Ulanga	Production	1785	64	224	76	314	57794 (5780)	
	Up(Tshs)	2500	1000	1000	3500	1000	200	
	A.C(Tshs)	300000	64000	20000	140000	60000	400000	984000
	E.C(Tshs)	4462500	64000	224000	266000	314000	1156000	6486500
	Production	3975	110	2576	180	90	55000 (5500)	
Kilombero	Up(Tshs)	2500	1000	1000	3500	1000	200	
	A.C(Tshs)	6250	0	145000	0	3000	0	154250
	E.C(Tshs)	9937500	110000	2576000	630000	90000	1100000	14443500
	Production	1590	57	3472	20	162	98000 (9800)	
Morogoro	Up(Tshs)	2500	1000	1000	3500	1000	200	
	A.C(Tshs)	250000	48000	108000	0	123000	196000	725000
	E.C(Tshs)	3975000	57000	3472000	70000	162000	1960000	9696000
	Production	1500	54	336	0	92	433100 (43310)	
Kilosa	Up(Tshs)	2500	1000	1000	3500	1000	200	
	A.C(Tshs)	120000	30000	0	0	0	800000	950000
	E.C(Tshs)	3750000	54000	336000	0	92000	8662000	12894000
<b>Total</b>	A.C(Tshs)	676250	142000	273000	140000	186000	1396000	2813250
	E.C(Tshs)	22125000	285000	6608000	966000	658000	12878000	43520000

Table calculations (linked with Table 1) were based on the following facts:

**(1) Fishponds:** 10m x 15m has capacity of 300 fingerlings. Harvesting after 7 months is expected to produce 112 kg of fish [*Lishela* , *personal communication*].

**(2) Honey:** Average production per beehive is 15 litres, and 28 lt of honey produce 1kg of wax [*Urassa. Personal communication*]

**(3) Seedlings and energy saving stoves:**

Only 10% of the seedlings and energy saving stoves (figures in brackets) were considered for sale.

From the survey, about Tshs 2813250 were collected from various sources of IGAs (table 2). The amount account for only 6.4 % of the expected collection.

The reason behind was that some of the production areas have not yet started to produce, most of the beehives were sited at the end of 2003 and early 2004. Also poor records especially at individual level exacerbate this. Example some of the produced wax and cooking stoves were sold but no records were available. Percentage contribution of each IGAs to the total collection is portrayed in fig 1a and 1b.

Actual collection (fig 1a) showed that Honey (44%) and sales of seedlings (36%) takes the lead.

Honey production is expected to contribute to about 50% followed by fish farming 15% by and seedlings 30% in income generation (Fig.2). The expected were built upon the actual income, which might not always be the case. Income generation per District showed that Kilombero district generated less than any of the remaining districts (fig. 3). However the district has high potential in income generation compared to other districts. The indicated potential collection may be increased if record keeping is improved and IGAs diversified.

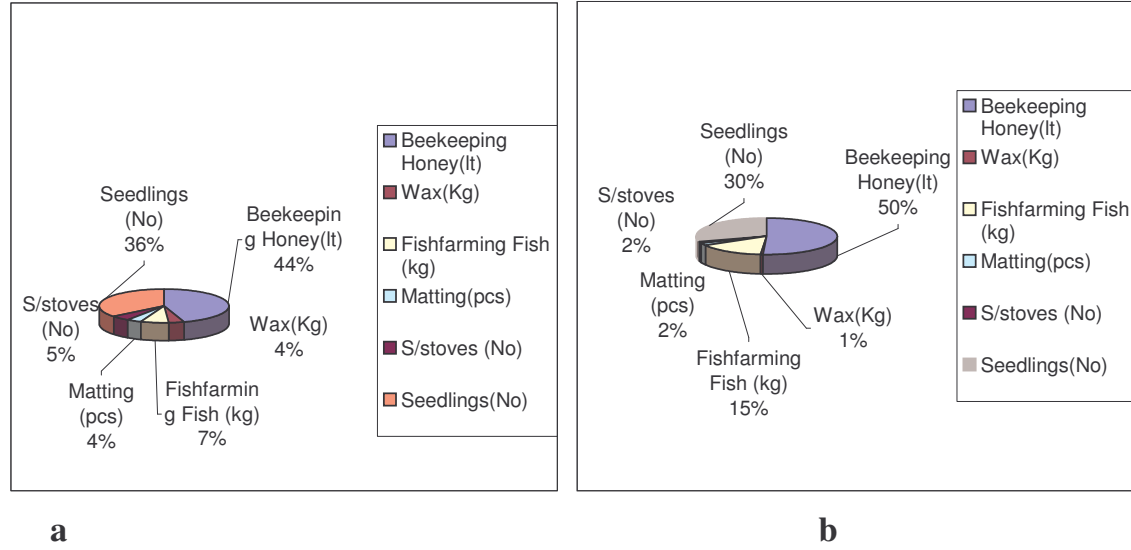


Fig. 1. Actual (a) and expected (b) collection from each item of production

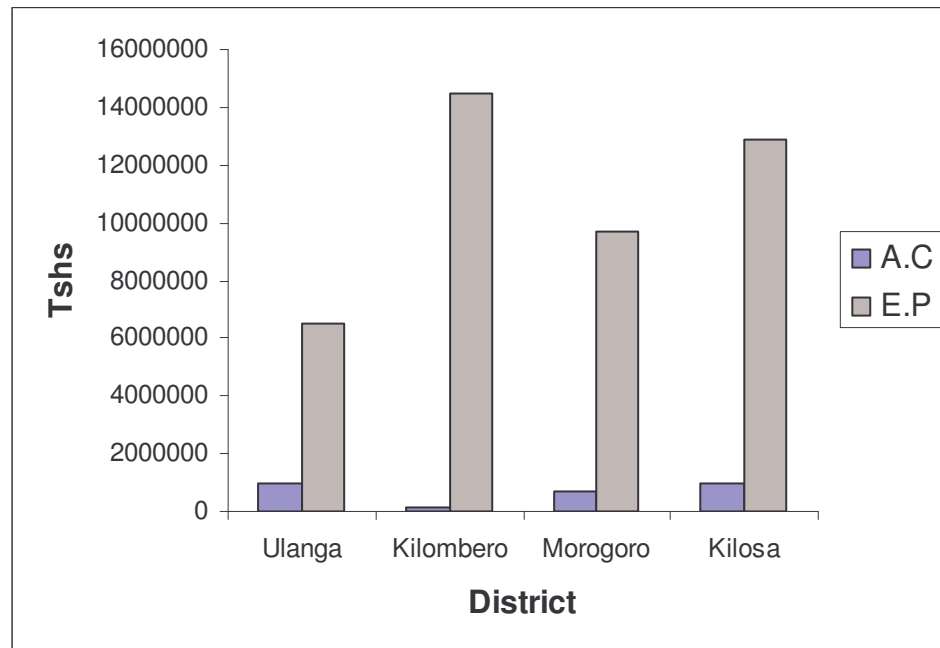


Fig.2. Actual and Expected collection per district

## 5. LESSONS LEARNT

- Forest adjacent villagers have started to realize that they can earn their living with less dependence in the reserved forest.
- More environmental groups are now coming up with idea of forest conservation, but since groups have limited capital.
- Supporting them to establish IGAs have been found to be an important incentive to them.
- Some villagers were not ready to disclose some of the information with fear on the restrictive exploiting the resource as a result it was not possible to get all the information needed.
- Integration and coordination with other sector and NGOs was found to be important, as some of these organizations carryout similar activities.

## **6. CONCLUSION AND RECOMMENDATIONS**

Some individuals have started to realize the benefit accrued through JFM. They were facilitated and supported in establishment and running of alternative IGAs and employment activities. From this study it was observed that documentation and transparency on giving information about IGAs and its contribution to household income have been very low in most parts of the Project areas. Only 6.4% of the expected collection were recorded, this calls for an urgent need to build a culture of openness to researchers and field workers in record keeping to keep track with efforts in promoting IGAs to villagers.

It is therefore recommended to establish a record keeping book at district and villager level as well as promoting willingness amongst stakeholders of giving information by the interviewers. Diversification of alternative IGAs is another area to pay attention.

## REFERENCES

- MNRT (1998) National Beekeeping Policy Government Printers, Dsm pp 57
- MNRT (1998) National Forest Policy Ministry of Natural Resources and Tourism.  
Government Printers, DSM spp 59
- MNRT (2001) National Forest Programme in Tanzania. Ministry of Natural Resources and  
Tourism. pp 143.
- MNRT (2002) forest Act No. 14 of 2002. Ministry of Natural, Natural History 87 319 – 326
- Zilihona, I, Shanyali, C. Mabula, C.K and Hamisy, C. (1998). Human activities threatening the  
Biodiversity of the Udzungwa Scarp Forest Reserve, Tanzania Journal of East African  
Nature.