



REPORT 3

CHARACTERISATION OF HIGH RANKING DISTRICTS FOR THE MJUMITA / TFCG REDD PROJECT

“Making REDD work for Communities and Forest Conservation in Tanzania”

March 2010

East and Southern Africa Katoomba Group

EXECUTIVE SUMMARY

This report lays out the process and results of a field exercise aimed at collating data necessary for the selection of the two districts where project activities for the TFCG/MJUMITA will be sited. It follows on from Step 2 where the four districts of highest potential were selected based on documented information and consultation of stakeholders in Dar es Salaam. The report characterizes the four districts with the highest potential for inclusion in the project. The report was prepared on the basis of consultation with stakeholders in each of the four districts and field visits.

List of acronyms

CBFM	Community-Based Forest Management
CBO	Community based Organization
COCOBA	Community Conservation Bank
DANIDA	Danish International Development Agency
DADIPS	District Agricultural Development and Investment Projects
DAP	Di-Ammonium Phosphate
DD	Deforestation and forest Degradation
DFO	District Forest Officer
DNRO	District Natural Resource Officer
EAMCEF	Eastern Arc Mountains Conservation Endowment Fund
FBD	Forestry and Beekeeping Division
GEF	Global Environment Facility
FSC	Forest Stewardship Certification
JFM	Joint Forest Management
LAFR	Local Authority Forest Reserve
LIFA	Liwale Farmers Association
MJUMITA	Mtandao wa Jamii wa Mimitu Tanzania
MUHIMA	Muungano wa Hifadhi ya Mazingira Angai
NFR	National Forest Reserve
NGOs	Non Governmental Organisations
PFM	Participatory Forest Management
PFM-UTUMI	Participatory Forest Management – Utunzaji wa Mimitu
REDD	Reduced Emissions from Deforestation and forest Degradation
SACCO	Savings and Credit Cooperative Organisation
TFCG	Tanzania Forest Conservation Group
VLFR	Village Land Forest Reserves
VNRC	Village Natural Resource Committee
WWF	World Wildlife Fund

AUTHORS

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INTRODUCTION

This report presents the process and results of a field exercise which was the third step towards selecting the two districts in which the TFCG / MJUMITA project will be sited. It follows from Step 2 of the site selection process where criteria were used to select the four most likely districts for locating project sites based on documented information and consultation of key stakeholders in Dar es Salaam. The field exercise enabled characterisation of the four districts in detail according to site selection criteria, based on information from focus group consultations with key stakeholders at the district level. This report presents comparative district-level details under each criterion. This is aimed at facilitating selection of the two highest-ranking districts.

METHODOLOGY

Focus group discussions were conducted with Kilolo, Kilosa, Liwale and Lindi Rural district officers in forestry, planning, agriculture, community development, environment and natural resources, and NGOs in environment and natural resource management.

Discussion issues included:

- Forest types existing and their sizes
- Tenure status of forests
- Rates of deforestation
- Drivers and agents of deforestation and forest degradation
- Interventions to address DD drivers
- Opportunity cost – estimated value / income from deforestation degradation activities and who the key agents are and whether these can be addressed through REDD
- Benefit sharing mechanisms and experience
- Governance
- Relevant district, NGO, CBO and private sector initiatives – ongoing or planned

RESULTS

In the Eastern Arc, both Kilolo and Kilosa have over 100,000 ha of montane forest. In the coastal districts, Liwale has large expanses of mainly miombo woodlands under CBFM and in general lands. Of the four districts Lindi Rural has the least total forest area, but with a significant area of evergreen forest including coastal forest types and mangrove (Table 1).

Table 1. Forest type and size

Forest type	Kilosa		Kilolo		Liwale		Lindi Rural	
	Total area (ha)	Average patch size (ha)	Total area (ha)	Average patch size (ha)	Total area (ha)	Average patch size (ha)	Total area (ha)	Average patch size (ha)
Evergreen (montane, coastal or mangrove)	103,419	13,952	168,622	21,077			43,148	3,322
Miombo	56,123	3,741	27,152	1,234	236,750	One patch	20,944	2,094
Total forest area (ha)	159,542		195,774		236,750		64,092	

2. Tenure

In general, large blocks of evergreen forests are national forest reserves mostly under joint forest management. In Kilosa and Kilolo, almost all of the montane forests are national forest reserves (NFR) while protected miombo woodlands are mainly in village land forest reserves (VLFR) or community forest reserves. For example in Kilolo, some of the land under CBFM is owned by clans under customary ownership, which is legally recognized.

In Liwale, protected forests are predominantly VLFRs except for Nyera Kipelepele, which is a NFR. Lindi Rural is a special case where NFRs include coastal, miombo and mangrove forest types. Forests under VLFR also include coastal and miombo types. Lindi Rural also has Local Authority Forest Reserves (LAFR) of both the coastal and miombo types. There are also significant areas of forest and woodland in Lindi Rural which are not reserved.

3. Compelling baseline

Information about forest threats focused on estimated forest loss and its major causes in the past 5-10 years (Table). Figures were mainly estimates by the stakeholders rather than being based on a systematic forest change analysis except in certain instances for Kilosa and Kilolo. Stakeholders were not aware of the deforestation/degradation rates in some of the remote catchment forests.

Table 3. Perceived annual forest losses in the last 5-10 years

<i>Deforestation/ degradation driver</i>	<i>Kilosa</i>	<i>Kilolo</i>	<i>Liwale</i>	<i>Lindi Rural</i>
Fire	Medium	High: 20-200 ha/y	High: up to 30% burned	High: up to 60% burned
Agricultural encroachment	Low	Low: Up to 8 ha/y	Low: 10-25 ha/y	High: about total loss of 20%
Illegal timber harvesting		Low: 80 stems/y	Low: 10-40 stems/y	High: 50-1,000 stems/y
Charcoal	High: Morogoro-Iringa highway	High: 240-1200 bags/y	Low: up to 10 ha/y	
Grazing	Low: except in Kihilihili			
Gold mining			So far, about 50,000 ha	

Forest loss is higher in miombo woodlands than in evergreen forests, which are mostly under central government protection. There is more forest loss in general land than in protected forests. The district with the most threatened forest is Lindi Rural. Kilosa on the other hand was the least threatened.

A significant fire risk exists in all four districts. In all the other districts, forest loss due to fire is considered to be substantial, apart from Kilosa where it is considered to be moderate. In Kilolo district, the estimated forest area affected by fire annually ranges from 20 ha to 200 ha. The proportion of the total forest area affected by fire annually is estimated to be 30% in Liwale. In Lindi Rural, fire can affect up to 60% of the forest area in miombo forests about 10-20% of the total area in coastal forests. Wild fires often originate from clearing of farmlands during the dry season (September-November). Other causes are hunting, honey harvesting and charcoal production.

After fire, agricultural encroachment is the biggest deforestation-degradation driver. Its impact is, however, considered to be major only in Lindi Rural district and only medium in all others. However, most districts confessed they did not have accurate current figures since they rarely patrolled. In certain locations such as Image, Kilolo district, agricultural encroachment evolved into long-term settlement.

In Kilosa, although a large part of the land is either under companies or under some national elite (absentee landlords), there is no land shortage and land is fertile. Nonetheless, local landholdings are only 1 ha/household with less than optimum productivity due to poor farming practices. For example, average maize yield is only 2-30 bags/ha yet optimum is 74 bags/ha. Cultivation is mainly along valleys, avoiding the difficult hilly terrain. Agricultural encroachment into forests, which is estimated at about 20 ha/y, is for commercial crop production e.g., maize, beans, rice, garlic and even marijuana. This occurs mostly in remote catchment forests, which are rarely patrolled by the poorly facilitated government officials. The most threatened forests are isolated blocks such as

Uponela, Mamboto and Ikwaba central forests. Also North and South Mamiwa forest blocks which are surrounded by villages. Forest boundaries are not clearly defined. They were last surveyed in the 1950s. Agricultural encroachment is increasing due to a high influx of Sukuma immigrants whose cultivation is more extensive covering about 4 ha/ household.

As in Kilosa, encroachment on forest land in Kilolo is mainly for production of commercial crops, especially taking advantage of the poorly demarcated forest boundaries. Only 11 out of 105 villages have land-use plans. Annual forest losses range from 1 ha in the case of maize and sunflower growing to 10 ha for farmers growing garlic. Farmers encroach on forested land to look for more fertile land. This is more affordable than purchasing inputs to enhance farm productivity. For example in order to get optimum yield per acre per year, farmers need 50 kg of DAP (Tsh 50,000) and 50 kg of Urea (Tsh 35,000). Even with 50% government subsidy, this cost is too high.

In Liwale, two thirds of the total land area is Selous Game Reserve and only one third is for settlement and forests. Agricultural encroachment was estimated to result in an annual forest loss of 10-25 ha and so far over 400 ha of protected forest area is encroached. Farmers who encroach on protected forests are generally poor. They practice subsistence agriculture because they lack market access for high value crops. In Lindi Rural, agricultural encroachment has affected about 20% of total forest area in coastal forests. In the mangrove forests, the area lost to agricultural encroachment is estimated at 400 ha/y.

Charcoal is also a key deforestation / degradation driver due to the Iringa-Morogoro-Dodoma highway in Kilosa and the Kilolo-Dar es Salaam highway in Kilolo. Estimated charcoal extraction in Kilolo is about 240-1200 bags/year. In Liwale, forest loss due to charcoal is about 10 ha per year.

Illegal timber harvesting is a major deforestation degradation driver in Lindi Rural where annual removals range from 50 stems in coastal forests to 300 stems in the miombo forests. Annual illegal timber harvesting is 80 stems in Kilolo and about 10-40 stems in Liwale. In Kilosa, illegal timber is not perceived to be a major deforestation driver.

Other deforestation degradation drivers are gold mining in Liwale which is estimated to have resulted in extensive forest degradation, and grazing in Kilosa, especially in Kihilihili which had about in 60,000 head of livestock in 2009 alone.

4. Likelihood of effective project interventions

Fire

All districts use a bylaw requiring farmers to apply for permits from village / district executive officers in order to use fire on their farmland. The applicant is required to have ten persons to prevent the fire from exceeding the farm boundaries. The requirements of the permit are so well known that farmers in Kilolo follow the necessary procedures as a practice although they do not seek for permits. Nevertheless, wild fires originating from farmlands occur. Fires are also caused from harvesting honey or hunting. Forest officers have trained beekeepers in techniques of avoiding forest fires while harvesting honey. The village government uses a patrolling committee to create awareness and report fires. The fine for wild fires is Tsh 50,000 regardless of the area damaged. This is often too low and not enforced since it is difficult to establish the origin of fires. VNRCs are taught to make fire breaks, but village governments cannot afford to pay the labourers to implement this.

Illegal timber and charcoal extraction

Patrolling is the common method used to prevent illegal timber and charcoal extraction. This is very expensive especially if the VLFR is remote. One bag of charcoal is sold at about Tsh 10,000 within the forest. Because of the high and immediate returns involved, control of these illegal activities by just community members, without police back-up, can be dangerous.

Illegal timber and charcoal extraction mostly involves the local youth employed by or selling directly to middlemen with access to transportation to urban consumers. In Liwale and Kilosa, alternative livelihood projects (e.g., fish farming, bee-keeping) were promoted by WWF. The effectiveness of these would be greatly enhanced if stakeholders that had been gaining from the forest commercially were included. In Kilolo, livestock-related income-generating activities such as chicken, dairy goats, pigs, fish farming and bee keeping have been successful in diverting young men from illegal timber and charcoal extraction. These however have a maturation period before results can be observed.

An inventory of forests on general land was made in Kilolo and zones for charcoal extraction established (Ifua, Udekwa, Mgowelo, Irindi, Nyanzo). Charcoal producers were required to be registered companies and apply to the Village harvesting committees, which would forward its recommendation to the district harvesting committee for approval. This has not been successful because registration of companies is expensive (Tsh 200,000). In 2009 out of the 14 companies that expressed interest in charcoal extraction, only 3 went through this process and none has been approved by the district harvesting committee.

Agricultural encroachment

Patrolling is the most common method for catching and preventing encroachers. Districts are however not sufficiently facilitated to implement this. Remote forests are usually not patrolled because of lack of transport and man power. In Lindi Rural, for example, there are only 3 officers who are in charge of 28 wards. Forest ward officers have no means of transportation.

Forest boundaries need to be re-surveyed, cleared and marked with boundary markers that cannot be easily shifted. In Kilolo, beacons used to mark JFM forests were shifted. Under CBFM, development of landuse plans will go a long way in demarcating areas set aside for forest conservation.

In all districts, the decreasing soil fertility on farms due to poor agricultural practices was the major driver of cultivation into forests. There is a general shortage of agricultural officers to promote good farming practices. The Kilosa district government, for example, is poorly financed with no agricultural extension officers or *shamba dharasa*. In Liwale, 'Mgani-jamii' (Community extension workers) have been introduced, but these are not adequate in terms of coverage and capacity.

Another key driver for cultivation inside forests is the need to grow commercial crops (Table 4). This may be addressed through alternative income generating activities and enhancing income generation from agricultural practices on farm e.g., via value addition.

Table 4. Revenue generated from crops commonly grown inside forests in Kilolo

Crop	Yield (per ha per year)	Revenue (Tsh per ha per year)
Maize	2,470 – 3,705 kg	988,000 - 1,852,500
Beans	10 - 12 bags	988,000 – 1,235,000
Garlic	14,820 – 19,760 kg	1,482,000 - 1,852,500

Grazing and gold mining

There was no information on how these drivers are tackled. The general feeling was that grazing was transient and did not cause permanent serious damage to the forest.

Declaring areas under CBFM is ideal for REDD because community leaders cannot easily reallocate the same land area to other land-uses without permission from the district government. This can, however, also cause communities to become reluctant to 'tie up' land as local forest reserves thus limiting their options to engage in potentially more profitable alternative land-uses.

Project activities should be built into existing local government structures for sustainability beyond the NGO term. In Lindi, there's good collaboration between the Village Government, the DFO and DNRO. The project should avoid raising community expectations.

Government officers should be facilitated to monitor all forests. These remote forests are sometimes encroached for subsistence agriculture and settlement because communities know that the government rarely patrols them.

5. Cost-benefit sharing

In general, communities find participatory forest management too costly. For example, in Kilolo, patrolling, which used to cost the government over Tsh 100,000 per event, has been passed on to communities under JFM, yet the government claims 50% of proceeds from confiscated products. In Liwale, communities adjacent to Selous Game Reserve incur high costs from property destruction by wildlife. Estimated annual losses are 50,000 ha of crop, 5-10 human lives and 10-20 livestock. Crop damage by wild animals was also cited in Kilosa and Kilolo.

Since no production occurs in catchment forests, JFM communities benefit mainly from forest services such as protection of water sources and non-timber forest products. The Kilolo communities also generated funds from payments for boundary clearing fees levied from visiting researchers and schools, which they used in communal development projects (e.g., schools, dispensaries). Nonetheless the general feeling was that JFM gains were very little compared to the costs.

Some VLFR under CBFM are too remote or too large for communities to manage. Forest management plans (e.g., follow-up of law cases, patrols, boundary marking) are only partially implemented or not at all. For example, in Kilosa and Liwale, the long and costly court cases have made law enforcement very burdensome to communities. In Kilolo (Boma ya Ngombe), giving VLFR plots to individuals to grow their own trees has worked very well as an incentive for forest management. However, these limited benefits are too little to sustain recurrent enforcement and patrolling costs.

All in all community benefits ought to be increased if community involvement in forest management is to be meaningfully sustained. Stakeholders that had been gaining from the forests commercially should be included in alternative livelihood projects. Also the claim on land by clans should be taken into consideration in evaluating property rights and distributing benefits.

6. Fund channeling

Fund channeling information was obtained only from Kilolo. SACCOs¹ (e.g. West Kilombero under WWF) worked but they tended to exercise tough rules and excluded non-members. VNRCs have bank accounts e.g., Kidabaga, Lulanzi, but these are located far from the beneficiaries. Community banks,² which would be more inclusive have not been tried. Kilolo also has a rotating fund - established by WWF (COCOBA). In general, communities need capacity in financial management and leadership.

Table 5. Population density

District	Total population	Population density (persons/km ²)
Kilosa	489,513	30.761
Kilolo	205,081	28.4

¹ Savings and Credit Community Organisations - the community group provides the collateral in order to obtain money from a bank or a government grant

² Community banks – same as above, but money comes from community members themselves

Liwale	90,755	7.15
Lindi Rural	215,764	12

Table 6. Presence of strong potential implementing partners

District	Existing organisation	Major activities supported
Kilolo	MAWAKI (Kilolo peoples's organisation) in Boma la Ngombe	Tree nurseries, bee keeping and fish farming;
	Technoserve	Agricultural enterprises; Marketing groups to Nairobi, Mombasa and Comoros
	Concern	Land use planning;
	CBO called DESC in Boma la Ngombe	Organic agriculture
	WWF	Forest conservation, land use planning, trained game scouts
	Kilolo district government	Kilimo kwanza – Tsh 56 million per village in Ukwega, Boma la Ngombe, Kidabaga and Makungu for the community development project for road construction. 56 m Tsh in Idete, for fish farming
	EAMCEF with Kilolo District Council	Energy saving stoves in 6 villages; also promoting woodlot establishment using Grevillea, Acacia mearnsii, Acrocarpus, Eucalyptus, Casuarina and pine.
	Denmark (DANIDA) through	Iringa Soil & water Conservation project” and “Natural Woodland & Catchments Forests conservation” (PFM).
Liwale	DADIPS	Market groups
	LIFA (Liwale Farmers Association) under Action Aid,	Sale of cashew nut, have 47 groups, 9,000 members,
	MUHIMA (Muungano wa Hifadhi ya Mazingira Angai) formed of 13 villages,	Management plan and by-laws, constitution,
Lindi Rural	PFM-UTUMI under DANIDA support until 2004	4 vehicles

References

Kilolo District Council. Kilolo district profile

Ministry of planning, economy and empowerment. Poverty at the district level in mainland Tanzania. The United Republic of Tanzania. Brief 2. Poverty and human development report. 2005. Research and analysis technical working group of the MKUKUTA monitoring system. Ministry of planning, economy and empowerment.

Ndalahwa F. Madulu. Population distribution and density in Tanzania: experiences from 2002 population and housing census. Institute of Resource Assessment, University of Dar Es Salaam

Appendix. People contacted

Kilolo

- | | |
|-----------------------|-------------------------------------|
| 1. Bernard Kamara | Asst. Forest Officer II |
| 2. Bernard Mpande | Bee keeping officer |
| 3. Venance Mwaikambo | Community Development Officer |
| 4. Rhoda Kinyamagoha | |
| 5. Juliana Pilla | Land Natural resource & environment |
| 6. Peter P. Nyakigera | District Forestry officer |
| 7. Amwene B. Chanai | Environment & forest officer |
| 8. Godfrey Mwita | Natural resource officer |
| 9. Joseph Seif Mchome | Forest Officer |
| 10. Edward Mbembe | Agricultural officer |

Kilosa

- | | |
|-----------------|-------------------------------------|
| Haule Othmar | District Natural Resources Officer |
| Frederick Jacob | District Catchment Forestry Officer |
| Senduu | Land Officer |

Liwale

- | | |
|------------------------|-------------------------------|
| 1. Bonaventure Mkole | Agricultural Officer |
| 2. Moses Mkoweke | Community Development Officer |
| 3. Omari B. Chinguile | Economist |
| 4. Nassoro A. Mzui | Forester |
| 5. Charles J. Mkama | Water |
| 6. Nancy M. Mpangile | |
| 7. James N Kabuta | Forester |
| 8. Frederick D. Mallya | Economist |