REPORT 2

APPLICATION OF CRITERIA FOR SELECTING FOUR DISTRICTS WITH THE HIGHEST POTENTIAL FOR THE MJUMITA/TFCG PROJECT

"Making REDD work for Communities and Forest Conservation in Tanzania"

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East and Southern Africa Katoomba Group

EXECUTIVE SUMMARY

This report is an analysis of different districts in the Eastern Arc and Coastal Forest ecosystems based on the site selection criteria developed in Report 1 for implementing the project "Making REDD work for Communities and Forest Conservation in Tanzania". It uses available information both from documented sources and through consultation with Tanzania Forest Conservation Group staff and other key stakeholders in Dar es Salaam to generate details that enable characterization of the districts according to the criteria.

Available information was sufficient to enable selection of potential districts because it covered all the indicators necessary for assessing technical feasibility of the project (forest size, carbon density, compelling baseline, and biophysical risk) as well as feasibility of project implementation. Information about the PFM status in various districts was also readily available. Information on replicability and co-benefits was not readily available and was not used in this analysis.

The information obtained was used to score and rank districts for potential implementation of the project. The preliminary total scores were further reviewed qualitatively focusing on key criteria. Firstly, districts where total forest area was too low were removed from the selection. Secondly districts where there was likelihood of duplication of activities with other organizations that are developing REDD projects were also excluded. Therefore, the top districts selected were Kilolo and Kilosa in the Eastern Arc, and Liwale, and Lindi Rural in the Coastal forest ecosystem.

List of acronyms

CBFM	Community-Based Forest Management
CF	Coastal Forests
DD	Deforestation/ forest degradation
E. Arc	Eastern Arc forests
JFM	Joint Forest Management
MJUMITA	Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania
PFM	Participatory Forest Management
REDD	Reduced Emissions from Deforestation and forest Degradation
TFCG	Tanzania Forest Conservation Group
VEC	Village Environment Committee
VLFR	Village Land Forest Reserve
VNRC	Village Natural Resource Committee
WWF	World Wide Fund for Nature

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Introduction and context

Site selection criteria developed in Part 1 were applied to score and rank the districts in the Eastern Arc and coastal forest ecosystems to select the highest ranking four districts (two in the Eastern Arc Mountains and two from the Coastal forests) as the next stage towards selecting sites for the TFCG/MJUMITA project, "Making REDD work for communities and forest conservation in Tanzania". The information sources included documented sources as well as consultation with TFCG staff and other key stakeholders in Dar-es-Salaam. This report describes the analysis carried out based on the criteria and concludes with the four districts that were selected.

Selection of high potential districts

TFCG preselected fourteen districts in the Eastern Arc and coastal forest ecosystems where TFCG and/or MJUMITA are already active. Later, Liwale District was added. Some information about the pre-selected district is outlined in Table 1. See below for an explanation of the data sources and implications of the data presented therein.

Table 1. Districts pre-selected by TFCG

Region	District	Eco-system	Total Forest area in 2000 (ha)	Defor' rate 1990-2000 (%/ year)	Forest Area under CBFM [1] (ha)	Predomi'nt forest type under CBFM	Forest Area Under JFM [2] (ha)	Predomi'nt forest type under JFM
Dodoma	Mpwapwa	E Arc	12,200	2.4	11,500	Miombo	64,185*	Montane
Iringa	Kilolo	E Arc	88,300	4.8	15,735	Miombo	177,267*	Montane
Iringa	Mufindi	E Arc	36,000	3.3	5,689	Miombo	20,086	Montane
Morogoro	Kilombero	E Arc	86,400	3.1	9,019	Miombo & Montane	135,981*	Montane
Morogoro	Kilosa	E Arc	464,100	0.2	40,628	Miombo	73,513	Montane
Morogoro	Morogoro Rural	E Arc	114,600	1.8	166,988	Miombo & Montane	95,021	Montane
Morogoro	Mvomero	E Arc	46,300	2.4	4,431	Miombo	29,356	Montane
Tanga	Kilindi	E Arc	181,200	2.1	10,186	Miombo	5,126	Coastal
Tanga	Korogwe	E Arc	23,500	2.0			2,801	Montane
Tanga	Lushoto	E Arc	38,600	3.3	6,187	Montane	19,826	Montane
Tanga	Mkinga	E Arc			1,370	Miombo		
Tanga	Muheza	E Arc	49,500	0.5	5,249	Montane & coastal	38,281	Montane/ coastal & mangrove
Lindi	Kilwa	CF	172,000	0.3	116,328	Miombo & coastal	15,987	Mangrove
Lindi	Lindi Rural	CF	337,800	0.3	4,623	Miombo	7,894	Mangrove/ coastal
Lindi	Liwale	CF		n/a		Miombo & coastal	98,420	Coastal

* Questionable figures calculated from the National JFM data indicating a JFM area greater than the total forest cover in the district obtained from CABS CI (2000)[3].
Abbreviated text: E. Arc = Eastern Arc; CF = Costal Forest; Predomi'nt = Predominant; Defor = Deforestation

District characterisation

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[1] National Census for Participatory Forest Management - Community-based forest management (CBFM)

[2] National Census for Participatory Forest Management - Joint forest management (JFM)

[3] CABS CI 2000. 1990-2000 forest cover and change in coastal forests of Tanzania and Kenya.

Pre-screened districts were characterised based on detailed information according to the indicators that had been developed for each criterion (see Report 1). Information was obtained from the national census for participatory forest management - JFM and CBFM, district profiles and through consultation with TFCG staff and key stakeholders. The summarized information about the districts is presented in Appendix 2. The necessary information to satisfactorily and reliably rate each key indicator was not always readily available. The ranking and selection of the highest-potential districts is therefore subject to certain limitations but presents the best practically feasible outcome in the current situation of data availability. The following sections describe the process of scoring and ranking the pre-screened districts.

Compelling baseline

Although the desired information for this criterion should ideally include the last five years, district-level deforestation information was only available for the years 1990 to 2000[4]. This leads to the caveat that deforestation rates could have potentially changed significantly in the last 10 years. Annual deforestation rates ranged between 0.2% and 4.8%. Based on this, the scoring was conducted as follows.

Scoring:

3 = Deforestation rate > 2%

2 = Deforestation rate 0.5-2%

1 = Deforestation rate < 0.5%

Forest size

Information on aggregate areas designated as forests was obtained from CABS CI (2000). Although actual project sites have not yet been identified, the overall existing forest area can at least give an indication of the potential project area size. Districts were ranked highly if they more than satisfied the project objective of working in at least 50,000 ha. In addition, the size of forest blocks under community management was scored. This was based on the assumption that a future REDD project would be designed to include community-managed forests. Large blocks of forests where CBFM was operational were preferred to small ones in order to avoid high transaction costs in future project implementation. A potential caveat in this approach is that the actually threatened forest area (which would determine carbon credit potential) may not correlate well with existing PFM areas; however, the approach adopted was the most feasible based on existing data.

Scoring for aggregate forest area:

3 = >100,000 ha

2 = 50,000-100,000 ha

1 = < 50,000 ha

Scoring for CBFM average block size

3 = > 2,000 ha

2 = 700-2,000 ha

1 = < 700 ha

Scoring for JFM average block size

3 = > 5,000 ha

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[4] CABS CI 2000. 1990-2000 forest cover and change in coastal forests of Tanzania and Kenya.

2 = 1,000-5,000 ha

1 = < 1,000 ha

Carbon Density

District-level biomass (carbon) measures in terms of tonnes per ha are not available to the project at present, therefore scoring was based on forest types with distinct differences in biomass stock. The key distinction here was high-biomass forests (montane, coastal or mangrove), described as ever-green versus low-biomass forests (miombo, i.e. open woodland).

Scoring:

3 = Presence of > 20,000 ha of evergreen forest

2 = Presence of 5,000 -20,000 ha of evergreen forest

1 = Predominantly open woodland with < 5,000 ha of evergreen forest

Leakage risk

Scoring of leakage risk was based on type and level of deforestation pressure (including how mobile the involved agents and drivers are). In the absence of detailed analysis and data on DD (deforestation/degradation) drivers and agents, this was necessarily somewhat subjective. The assessment was done in consultation with TFCG staff and other stakeholders such as WWF and Clinton Foundation based on their experience regarding the level of threat of key deforestation drivers in the pre-screened districts. For example, in general fire, mining and subsistence agriculture were assumed to have low leakage risks, commercial agriculture and grazing were assumed to have medium risk, while charcoal and illegal logging were assumed to have high risks (although timber harvest leakage may not involve high carbon losses). In scoring, not only were the top three drivers considered, but also their level of pressure on deforestation and forest degradation (Table 2).

Scoring:

3 = DD driver localized and exerting low pressure to forests in the district

2 = DD driver mobile, but exerting low pressure; or driver localized with medium or high pressure

1 = DD driver mobile and exerting high pressure

Table 2. Leakage risk

District	Top 3 DD Drivers	Mobility	Level of pressure
Mpwapwa	Fire	Low	High
	Illegal timber	High	Low
	Charcoal/mining	High	Low
Kilolo	Fire	Low	High
	Agriculture	Medium	Low
	Fuelwood/Illegal timber	High	Low
Mufindi	Fire	Low	High
	Agriculture	Medium	Low
	Fuelwood/Illegal timber	High	Low
Kilombero	Fire	Low	High
	Agriculture	Medium	High
	Illegal timber	High	High
Kilosa	Fire	Low	High
	Agriculture	Medium	High
	Illegal timber/ charcoal/mining	High	High
Morogoro Rural	Fire	Low	High
	Agriculture	Medium	Low

District	Top 3 DD Drivers	Mobility	Level of pressure
	Illegal timber/ Agriculture	High	High
Mvomero	Agriculture	Medium	High
	Fire	Low	High
	Illegal timber	Low	Low
Kilindi	Charcoal	High	Low
	Fire	Low	High
	Agriculture/Illegal timber	Low	Low
Korogwe	Illegal timber	High	Low
	Fire in lowlands	Low	Medium
	Agriculture/ mining	Low	Low
Lushoto	Illegal timber	High	Low
	Agriculture	Medium	Low
	Fuelwood	Medium	Low
Mkinga	Fire	Low	High
	Illegal timber/fuelwood	High	Low
	Agriculture	Medium	Low
Muheza	Fire	Low	High
	Illegal timber/fuelwood	High	High
	Agriculture	Medium	Medium
Kilwa	Fire	High	High
	Illegal timber/charcoal	High	High
	Agriculture	Medium	High
Lindi Rural	Fire	Low	High
	Illegal timber/charcoal	High	High
	Agriculture	Medium	High
Liwale	Agriculture	Medium	High
	Fire	Low	High
	Illegal timber	High	Low

Biophysical risk

The most significant biophysical risk in Tanzanian forests is fire. Forest damage due to pests appears not to be a common problem in any of the districts nor is damage due to storms or floods. However, fire may be a natural and beneficial component for miombo ecosystems (depending on intensity, frequency and timing). Nonetheless, absence or very low incidence of fire was the preferred scenario. Based on information on top deforestation/forest degradation drivers per district, scoring was done as shown below.

<u>*Scoring:*</u>

3= Fire threat is low or absent

2 = Fire is a significant DD driver

1 = Fire is a top DD driver

Potential interventions

The scoring process addressed only those interventions for REDD that specifically address deforestation or degradation drivers (Table 3). General interventions such as supporting development and implementation of land-use plans, forest zoning, advocacy for benefit-sharing in JFM, creating awareness, promoting improved governance, promoting income-generating activities, training and capacity building were excluded as being applicable in almost all areas and therefore not useful for the ranking process.

Districts were ranked highly if interventions to address the top three deforestation degradation drivers were perceived to be feasible within a realistic project time frame and sustainable by local communities. This process was necessarily highly subjective at the current preliminary stage and was based on information obtained from consultation with TFCG staff, Jane Goodall Institute, Clinton Foundation the Royal Norwegian Embassy and WWF. See Table 3.

Scoring:

3 = Interventions for addressing all three top DD drivers feasible

2 = Interventions for addressing only two of the top DD drivers feasible

1 = Interventions for addressing only one or none of the top DD drivers feasible

Opportunity cost

Opportunity cost was scored very crudely in consultation with TFCG staff based on the nature of the top drivers of deforestation and the potential for these to be reduced through incentives provided by the project including direct REDD payments. This was sufficient at this stage of analysis resulting in selection among districts, but more solid analysis will become critical at the site selection stage.

Scoring:

3= DD gains outweighed by potential incentives from the REDD project

2= DD gains barely offset by potential incentives from the REDD project

1= DD gains greater than potential incentives from the REDD project

Table 3. Interventions perceived by TFCG to address DD drivers

Deforestation driver	Perceived Intervention	Potential for effective-ness	Likely opp'ty cost	Case studies/ further information
Agricultural encroachment & mining	Promoting improved agricultural practices - e.g., fertilizers, improved seed, agroforestry, perma-gardens, irrigation	High	Medium-high	Involve extension officers Include encroachers REDD beneficiaries
Charcoal	Better kilns; forest zoning; byelaws; patrols; efficient stoves, briquettes	Low	High	Requires strong government enforcement especially if near highway/urban centre[1,2]
	Nurseries and community woodlots	High	Low	JGI experience: school nurseries are more effective than community nurseries
Fire (for clearing for agriculture)	Byelaws; fire lines	Medium	Medium	JGI experience in Masito-Ugalla: controlling fire and cattle grazing is not easy
Illegal timber harvesting and mining[3]	Byelaws; patrols; awareness; tree planting	Medium	High	JGI Masito-Ugalla experience: paying community guards to patrol works
Fuelwood	Tree planting; stoves; byelaws	High	Medium	

[1]WWF study on viable income-generating activities for East Usambara and Coastal forest landscape

[2]A policy brief by World Bank on charcoal revenue

[3] Simon A.H. Milledge, Ised K. Gelvas and Antje Ahrends 2007. Forestry, governance and national development: lessons learned from a logging boom in Southern Tanzania – an overview**.** TRAFFIC East/Southern Africa.

Participatory Forest Management status

Districts were given both a JFM and a CBFM score as outlined below, based on the National JFM and CBFM data obtained from TFCG. In general, sites where community involvement in forest management had been initiated were preferred as this clearly defines from the start the target communities already tied to a specific forest area.

Scoring for CBFM:

3 = Bylaws approved by village assembly; Management plans signed by district; VLFR[5] declared by district

2 = Bylaws approved by village assembly; Management plans signed by district; VLFR not declared by district

1 = Bylaws approved by village assembly; Management plan not signed by district; VLFR not declared by district

Scoring for JFM:

3 = VNRC[6] / VEC[7] formed; Bylaws approved by village assembly; JFM agreement signed

2 = VNRC / VEC formed; Bylaws approved by village assembly; JFM agreement not signed

1 = VNRC / VEC formed; Bylaws not approved by village assembly; JFM not agreement signed

Criteria not scored because of lack of information

Governance is a potential key criterion, but could not be scored at this stage because information was not easily accessible and the indicators could not be sufficiently operationalised.

The biodiversity criterion was used descriptively, but was not scored as it was considered to have been already addressed in the TFCG pre-screening exercise.

The potential for replicability was not scored at this stage as it would make more sense in the process of pinning down actual forest blocks within the two districts that will finally be selected.

The need of a forest block to be in a single district is another criterion that would make more sense at the stage of pinning down actual project sites. This has been partially addressed here already in comparing forest area coverage per district.

The presence of strong implementation partners and community organizations are highly desirable. These criteria were also left for the next stage of selection when details of the top four districts would be available.

Poverty levels and population density will be very relevant at the more fine selection between actual forest blocks (project sites).

Benefit sharing is an issue to be considered in more detail again at the later stage of site selection. It would appear that the actual potential for institutional set-ups will depend on the actual forest blocks chosen, their formal (land tenure and use right) status, and the community set-up around them. In general CBFM seems to offer more potential for community access to benefits although the sharing mechanisms within community organizations need to be analysed. Under JFM on the other hand, it is not clear what the benefit sharing arrangements will be between communities and government. Nonetheless JFM was given equal status in ranking between districts.

Selection of top four districts

The aim of this exercise was to select the two top scoring districts in both the Eastern Arc forest ecosystem and the Coastal Forest ecosystem, respectively. The total scores based on the above

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[5] Village Local Forest Reserve
[6] Village Natural Resource Committee

[7] Village Environment Committee

scoring system were computed as shown in Table 4. This preliminary information was further reviewed qualitatively to enable realistic selection of districts. Firstly, districts where total forest area was too low were removed from the selection (Table 5).

Mpwapwa district was ranked lower because it mostly has small forest patches that are likely to result in high transaction costs. Therefore, among the top Eastern Arc forests, Kilolo and Kilosa were selected.

In the Coastal forest ecosystem, although Kilwa scored highly, it was not selected because of the risk of duplication of activities with the Mpingo Conservation Project, which is being developed into a REDD project. In this case Liwale, was the top scoring district in this ecosystem. In addition, Lindi Rural was selected although its CBFM process is far behind because it had a compelling baseline and potentially low opportunity costs. Furthermore, a CBFM process in its early stages may indicate that a REDD project could have an especially positive impact on forest management in the area by supporting the process.

In conclusion, the top four districts selected were Kilosa, Kilolo (Eastern Arc forests), Liwale and Lindi Rural (coastal forests).

Table 4. Summary of results

Region	District	TFCG/ MJU-MITA present	Base line	Forest type	Fo'st size	CBFM area	CBFM status	Avrg CBFM patch size	JFM status	Avrg JFM patch size	Rel'stic Intv'n		L'kage	Fire	Opp cost	Total
Eastern Arc																
Iringa	Kilolo	2	3	2	2	2	2	2	2	2	2	3	3	1	3	29
Dodoma	Mpwapwa	3	3	2	2	2	2	3	1	1	3	3	3	1	1	28
Morogoro	Kilosa	2	2	2	3	3	1	3	2	3	3	2	2	1	2	28
Morogoro	Morogoro Rural	2	2	2	3	3	1	2	1	3	3	2	2	1	2	27
Morogoro	Kilombero	3	3	2	2	2	1	2	1	3	3	2	2	1	2	27
Tanga	Kilindi	2	3	2	3	2	1	1	2	2	3	3	3	2	1	27
Morogoro	Mvomero	2	3	2	2	1	1	2	1	2	2	2	3	2	2	25
Coastal forests																
Lindi	Kilwa	3	2	2	3	3	2	3	2	2	2	1	1	1	1	26
Lindi	Liwale	1	1	2	3	3	1	3	1	3	2	2	2	2	2	26
Lindi	Lindi Rural	2	1	2	3	1	3	1	2	2	2	2	1	1	1	22
Tanga	Mkinga	3	1	2		1	1	1	2	1	3	3	3	1	2	21

Table 5. Districts removed because forest sizes were too low

Region	District	TFCG/MJU-MITA present	Base line	Forest type	Fo'st size	CBFM area	CBFM status	Avrg CBFM patch size	JFM status	Avrg JFM patch size	Rel'stic Intv'n	L'kage	Fire	Opp cost	Total
Tanga	Lushoto	2	3	3	1	2	3	1	2	2	3	3	3	1	29
Iringa	Mufindi	3	3	1	1	2	3	3	1	2	3	3	1	3	29
Tanga	Muheza	2	1	2	1	2	2	1	2	2	3	2	1	2	23
Tanga	Korogwe	3	2	3	1	1	3	1	2	2	3	3	2	3	29

Abbreviated text: Fo'st = Forest; Avrg = Average; Rel'stic = Realistic; L'kage = Leakage; Opp = Opportunity

Appendix 1. Stakeholders consulted

No.	Institution	Person(s) Contacted
1	WWF	Peter Sumbi
2	Valuing the Arc	Shadrack Mwakalila
3	Clinton Foundation	Erneus Kaijage; Molly Bartlett; Peter
4	World Agrocorestry Centre - ICRAF	Aichi Kitalyi
5	CAMCO	Jeff Felten
7	Institute of Resource Assessment	Professor P. Yanda
8	Royal Norwegian Embassy - Tanzania	Yassin Mkwizu
9	Jane Goodall Institute	Emil U. Kayega
10	FBD	Evarist Nashanda
11	VPO	George Kafumu