

## COVER PAGE

<b>Project name:</b>	MJUMITA Community Forest Project (Lindi)
<b>Project location:</b>	Lindi Rural District and Lindi Municipality, Lindi Region, Tanzania
<b>Project Proponent:</b>	Multiple project proponents (villages) represented by MJUMITA
<b>Contact Person:</b>	Rahima Njaidi, Executive Director, MJUMITA
<b>e-mail and phone:</b>	<a href="mailto:rjaidi@gmail.com">rjaidi@gmail.com</a> +255 22 2669007
<b>Auditor:</b>	SCS Global Services
<b>Auditor Contact Person:</b>	Francis Eaton, Coordinator, Greenhouse Gas Verification, Natural Resources Division, SCS Global Services
<b>Auditor e-mail and phone:</b>	<a href="mailto:FEaton@scsglobalservices.com">FEaton@scsglobalservices.com</a> +1 510 452 8027
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## SUMMARY OF THE PROJECT'S EXPECTED CLIMATE, COMMUNITY AND BIODIVERSITY BENEFITS

Operating within the Coastal Forests of Eastern Africa biodiversity hotspot, the community-led project will fulfil the following objectives:

### Climate

- To reduce emissions of greenhouse gases from unplanned deforestation on village land through sustainable forest management.
- To enhance the carbon stock within village forest reserves by allowing natural regeneration

### Community

- To maintain forest ecosystem services and a sustainable supply of forest products through an equitable and effective system of participatory forest management.
- To generate individual cash incomes from REDD for investing in improved agricultural practices and other enterprises and for livelihood diversification with a particular focus on poorer households and women.
- To improve the quality and availability of public services and infrastructure.

### Biodiversity

- To conserve threatened and endemic species.
- To conserve an extensive area of Eastern African Coastal Forest.

The project will work with ten communities initially with the possibility of including other communities within the project zone in future following a programmatic approach.

### Gold Level criteria

The project aims to meet the following gold level criteria:

**GL 1: Climate change adaptation benefits:** The project will increase small-scale farmers resilience to climate change as well as channeling funds for community development projects including health facilities and water storage and supply infrastructure that will reduce community vulnerability to the increased prevalence of disease and the water shortages that are predicted for the area as a result of climate change. By establishing community based forest management and improving agricultural practices, the project will safeguard biodiversity values against the predicted increased pressure from shifting cultivation due to climate-change related stresses.

**GL2. Exceptional Community Benefits:** Community benefits lie at the heart of this project. Project design has been led by communities and communities are the legal managers of the entire project zone. From its inception, the project has aimed to demonstrate a pro-poor model for REDD.

**GL 3: Exceptional Biodiversity Benefits:** The project area includes populations of the Critically Endangered primate, the Rondo galago as well as three plant species categorized as Endangered by IUCN; and four plant species categorized as Vulnerable by IUCN. By protecting the habitat of these species the project aims to prevent population declines within the project area.



# MJUMITA Community Forest Project (Lindi)

Project Design Document (PDD)  
For Full Validation Using the  
Climate, Community and Biodiversity (CCB)  
Project Design Standards Third Edition – December 2013

Version Date: 16/04/2014



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## Acknowledgements

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The design of the 'MJUMITA Community Forest Project (Lindi)' was facilitated by the Making REDD work project team:

Executive Director – TFCG:	Charles Meshack
Executive Director – MJUMITA:	Rahima Njaidi
Project Manager:	Bettie Luwuge
Forest Enterprise Coordinator:	Someni Mteleka
Technical Advisors:	Nike Doggart and Theron Morgan-Brown
Lindi Site Coordinator:	Nuru Nguya
Project Officers (Lindi):	Raymond Nlelwa, Baraka Samwel and Hamza Omari
GIS Officer	Sylvia Kalemera
Agriculture Officer (Lindi):	Mohamand Nyamangaro
Monitoring Officers:	Emmanuel Lyimo (2009–13), Habibu Said (2013) and Mwillla Mbegu (2014)
Drivers:	Joel Mbasha and Hezron Swago

With the support of Lindi District Council and Lindi Municipal Council:

Name	Department	Title
Charles Mwaipopo	Department of Land and Natural Resources	DNRO ( District Natural Resources Officer)
Selemani Ngaweje	Livestock and Fisheries Development	DFsO ( District Fisheries Officer)
Stanford Mahimbo	Dept of Land and Natural Resources	DFO ( District Forest Officer)
Manace Nkuli	Department of Land and Natural Resources	DLO ( District Land Officer)

Name	Department	Title
Ally Namila	Department of Agriculture, Irrigation and Cooperatives	PAFO (Principle Agricultural Field Officer)
Abdallah Musa	Department of Land and Natural Resources	DLS ( District Land Surveyor)
Joyce Kazana	Livestock and Fisheries Development	Fisheries Officer
Ally Nnunduma	Department of Planning and Statistics	Planning officer
Gasper Msese	Department of Land and Natural Resources	Game Officer
Patric Senga	Department of Land and Natural Resources	District Game Officer
Grace Mbaruku	Administration Department	DED ( District Executive Director)
Dr. Nassor Hamid Nassor		District Commissioner
Vicent Fikiri	Department of Primary Education	Cultural Officer
F. Matunda	Department of Agriculture, Irrigation and Cooperatives	DALDO
Abubakri Sinani		Tandangongoro Ward Agricultural Officer (WAEO)
Ismail Cosmas		WAEO Rutamba
Mponjori Mwakosya		WAEO Milola
Juma Ponera		Ag WAEO Nangaru
Saidi Mkingie		WLEO (Ward Livestock Extension Officer)
The Late Yustin Mdachi		Former WAEO - MATIMBA
Oliver Ng'utto	Department of Community Development	Community Development Officer
Lucy Lyakurwa	Department of Community Development	Community Development Officer
Ezra Apiyo	Natural Resources (Lindi Municipality)	Municipal Natural Resource Officer
Mohamed Chimbuli	Natural Resources (Lindi Municipality)	Municipal Forest Officer

The Project Design Document was written by Nike Doggart, TFCG Technical Advisor.

The project design has been guided by members of the Project Advisory Committee including:  
 Evarist Nashanda, Mohammed Borry, Anna Lawuo and Gerald Kamwenda, Tanzania Forest Service  
 Othmar Haule, Kilosa District Council  
 Charles Mwaipopo, Lindi District Council  
 Freddy Manyika and George Kafumu, Vice President's Office



Thabit Masoud, Amour Bakar and Ally Thani, CARE Tanzania  
 Lameck Noah, Beda Karani and Edward Kimweri, Regional Secretariat - Morogoro  
 Zawadi Jilala, Regional Secretariat – Lindi  
 Julitha Masanja, National REDD Task Force (NRTF)  
 Sanford Kway, Prime Minister’s Office – Regional Administration and Local Government  
 Shukuru Nyagawa, Edmund Mabhuye and Dr Emma Liwenda, Institute of Resource Assessment  
 Esther Yamat, Cassian Sianga and Carol Sorensen, Tanzania Natural Resources Forum (TNRF)  
 Erneus Kajjage, Clinton Climate Initiative  
 Professor Salim Maliondo, Climate Change Impact, Adaptation and Mitigation (CCIAM) programme, SUA  
 Professor Kessy, Dr Suzan Augustino, Dr Katani and Professor Maliondo, Sokoine University of Agriculture  
 Gloria John Massao, Mpingo Conservation and Development Initiative  
 Mary Swai, Tanzania Traditional Energy Development Organisation (TaTEDO)  
 Ronnakon Triraganon, Regional Community Forestry Training Centre  
 Dr Sara Namirembe, Forest Trends (Katoomba Incubator)

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Mohamed Makunda	Ruhoma Village Natural Resource Committee member
Said Liochocho	Kiwawa Village Natural Resource Committee member
Ismail Mmonyonyo	Kiwawa Village Natural Resource Committee member
Fadhili J Mtambule	Kiwawa Village Natural Resource Committee member
Said Issa Mawala	Mkanga Village Natural Resource Committee member
Bakari A.Lyiumu	Mkanga Village Natural Resource Committee member
Said Likwena	Mkombas Village Natural Resource Committee member
Mohamed Mandutta	Mkombamosi Village Natural Resource Committee member
Rajabu Mohamed Mtopella	Muongano Village Natural Resource Committee member
Said Mussa Ngapaliji	Muongano Village Natural Resource Committee member
Bakari Mfaume Nangonji	Ruhoma Village Natural Resource Committee member

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Elia Mulungu on the birds of the project area.

The National REDD Task Force have provided valuable oversight to the project development process.

## GENERAL SECTION

### G1. Project Goals, Design and Long-term Viability

#### Project Overview

##### G1.1. Identify the primary Project Proponent which is responsible for the project's design and implementation and provide contact details.

As all of the project area is on communally owned village land, the project proponents are the participating project village councils who have overall control over the project area and responsibility for implementing the project's core activities. However, MJUMITA has signed a communications agreement (Annex 2) with all project proponents and will serve as the authorized representative in all interactions with CCB and VCS on behalf of the project proponents. MJUMITA is responsible for submitting the VCS and CCB project description to a VCS validator/verification body, monitoring activity data, compiling and submitting monitoring reports for verification, and marketing any VCU issued to the project on behalf of the project proponents. Therefore, MJUMITA is listed as the primary contact.

Contact details: Rahima Njaidi, Executive Director

Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania (MJUMITA),

Plot 323, Msasani Village, Old Bagamoyo Road, PO Box 21527,

Dar es Salaam – Tanzania

Tel / Fax: +255 22 2669007

Email: [mjumitaorg@mjumita.org](mailto:mjumitaorg@mjumita.org)

[www.mjumita.org](http://www.mjumita.org)

The full list of current project proponents and their contact details is as follows:

No.	Name of Village	Name of Chairperson	Name of Village Executive Officer	Village Postal Address	Phone Numbers*	
					Chairperson	Village Executive Officer
1	Muungano	Juma M. Njangari	Rashid S. Rashid	P. O. Box 328 Lindi, Tanzania	0682 400547	0682593698
2	Mkombamosi	Rashid Mwishaweji	Chande A. Khalifa	P. O. Box 328 Lindi, Tanzania	-	0787370207
3	Makumba	Yusuph S. Pangani	Rashid B. Mpwili	P. O. Box 328 Lindi, Tanzania	-	0685296221
4	Likwaya	Mwalim K. Tanga	Hereswida Mathew	P. O. Box 328 Lindi, Tanzania	0783 270129	0782592267
5	Mkanga 1	Athumani Kimete	Anzigar Lilai	P. O. Box 328 Lindi, Tanzania	0689 618090	0787311753
6	Nandambi	Rashid S. Kibaba	Selemani Kitenge	P. O. Box 328 Lindi, Tanzania	0789 872884	0786048736
7	Kinyope	Musa Athumani	Hamis A. Mwinyimad	P. O. Box 328 Lindi, Tanzania	0689 306008	0782591072

No.	Name of Village	Name of Chairperson	Name of Village Executive Officer	Village Postal Address	Phone Numbers*	
					Chairperson	Village Executive Officer
		Pilanga				
8	Ruhoma	Said H. Katambi	Curben A. Chitanda	P. O. Box 328 Lindi, Tanzania	-	0686167333
9	Milola Margharibi	Issa Abdallah Pilipili	Hamis J. Mzee	P. O. Box 328 Lindi, Tanzania	0788 951190	0688347913
10	Kiwawa	Said M Manyanya	Ally M. Akalola	P. O. Box 328 Lindi, Tanzania	0684 977834 neighbor	0787753990

\* Dialling instructions: Outside of Tanzania - replace the zero at the beginning of the number with +255. Inside Tanzania – dial as written.

## G1.2. Define the project's climate, community and biodiversity objectives

The project adopted the Conservation Measures Partnership Open Standards approach to project planning and the project design process was guided by the Manual for Social Impact Assessment of Land-Based Carbon Projects (Richards & Panfil 2010).

Through the social impact assessment and participatory development of a theory of change as implemented at village and landscape level by the project (see Mwampamba *et al.* 2011), the following objectives were identified by the stakeholders.

### Climate

- To reduce emissions of greenhouse gases from unplanned deforestation on village land through sustainable forest management.
- To enhance the carbon stock within the village forest reserves by allowing natural regeneration.

### Community

- To maintain forest ecosystem services and a sustainable supply of forest products through an equitable and effective system of participatory forest management.
- To generate individual cash incomes from REDD for investing in improved agricultural practices and other enterprises and for livelihood diversification with a particular focus on poorer households and women.
- To improve the quality and availability of public services and infrastructure.

### Biodiversity

- To conserve threatened and endemic species.
- To conserve an extensive area of Eastern African Coastal Forest.

When asked to prioritise objectives, communities prioritised sustainable forest management first followed by improving agricultural practices and then improving public services. Conservation of threatened and endemic species was not cited as a priority by community members but does reflect national policy objectives and the objectives of the Civil Society Organisations involved in the project design. The high biodiversity values of the site were also a key consideration in the selection of the Noto / Chitoo plateau as a piloting site for REDD.

Based on these objectives the project aims to bring about the following net-positive climate, community and biodiversity impacts.

### **Positive Climate Impacts**

The positive climate impacts are defined in the VCS Project Design Document.

**Gold Level 1:** Communities are less vulnerable and more resilient to climate change; and biodiversity values are better conserved even during times of climate-change related increases in deforestation.

### **Positive community impacts**

- Community-owned forests will be managed in a participatory, effective and equitable way.
- Forest products will continue to be available and accessible to all community members including the poorest households according to access rules agreed in a participatory way.
- Villages will be better governed.
- Communities will have more secure land tenure
- Water sources will be better protected
- Soil erosion will be reduced
- Individual incomes will be boosted and diversified by receiving REDD payments.
- Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.
- REDD revenues will contribute to improving public services and infrastructure.
- Villages will have village offices.

**GL2. Exceptional Community Benefits:** Community benefits lie at the heart of this project. Project design has been led by communities and communities are the legal managers of the entire project zone. From its inception, the project has aimed to demonstrate a pro-poor model for REDD.

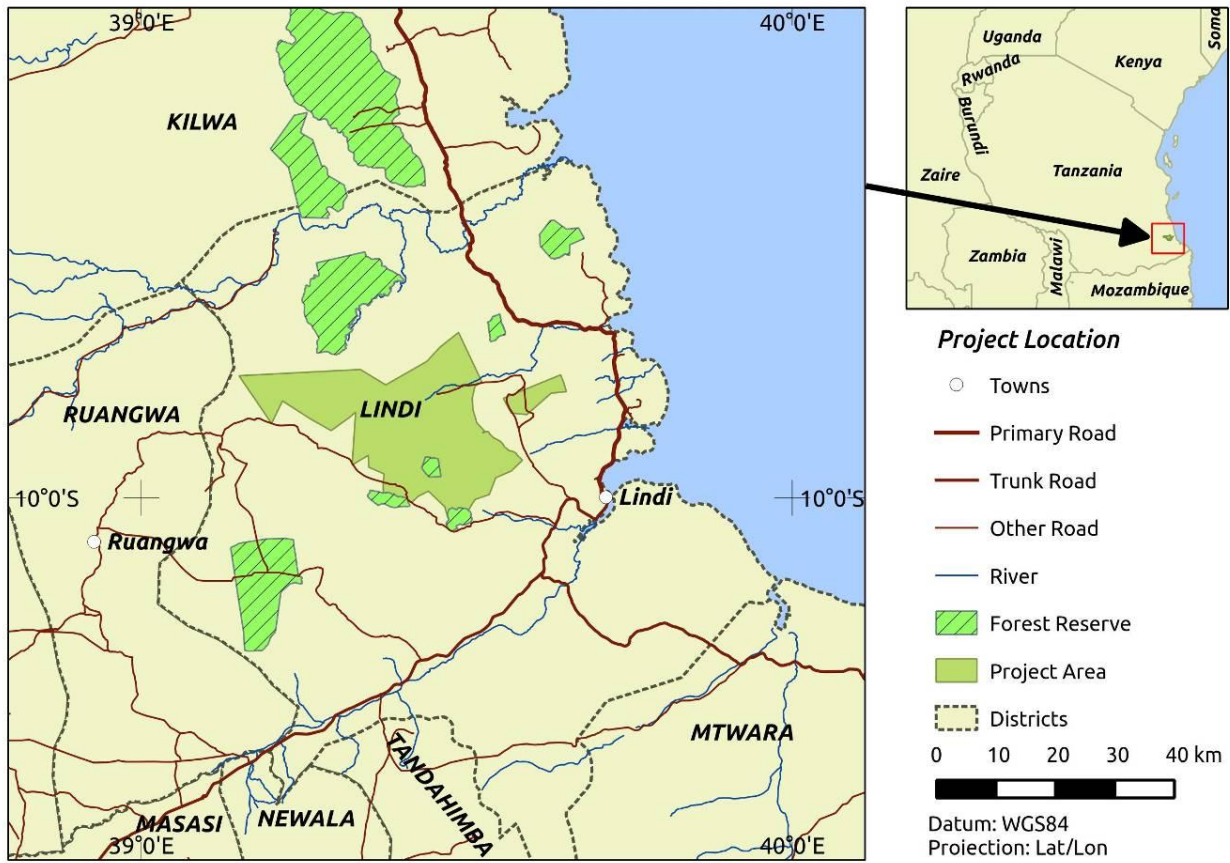
### **Positive biodiversity impacts**

- Populations of threatened and endemic species persist within the project area.
- Extensive areas of Eastern African Coastal Forests continue to exist within the project area.
- There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers.
- Communities and other stakeholders are actively engaged in the management of Eastern African Coastal Forest within the project area.

**GL 3: Exceptional Biodiversity Benefits:** The project area includes populations of the Critically Endangered primate, the Rondo galago as well as three plant species categorized as Endangered by IUCN; and four plant species categorized as Vulnerable by IUCN. By protecting the habitat of these species the project aims to prevent population declines within the project area.

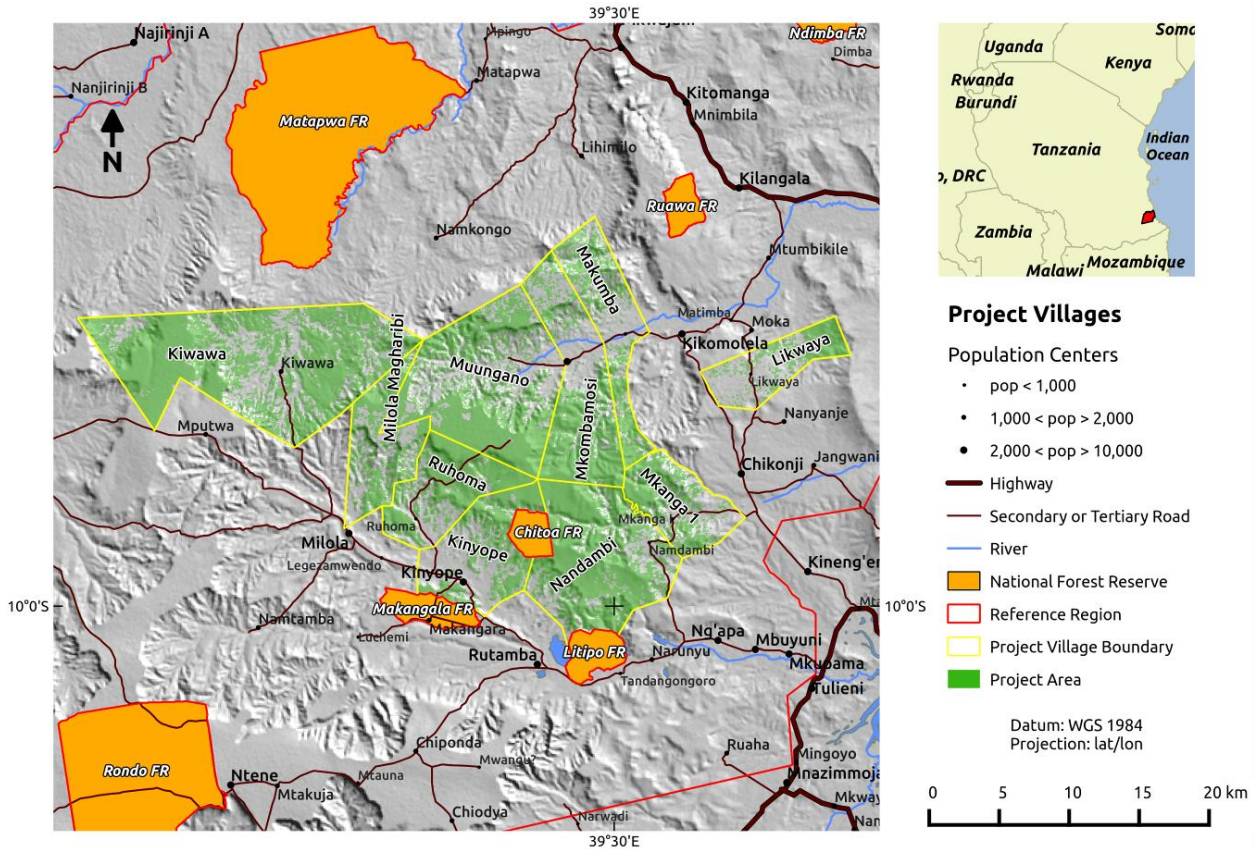
**G1.3. Provide the location (country, sub-national jurisdictions(s)) and a brief overview of the basic physical and social parameters of the project.**

### **Location of the project area**



**Map 1: Project area location**

The project is located in Lindi District, Lindi Region, Tanzania approximately 30 km inland from the Indian Ocean in south-eastern Tanzania (see Map 1). The project area includes forest within 10 villages: Kinyope, Kiwawa, Likwaya, Makumba, Milola Magharibi, Mkanga 1, Mkombamosi, Muungano, Nandambi and Ruhoma.



**Map 2: Boundaries of the Project Zone villages responsible for managing the Project Area.**

## Biophysical description of the project area

### Topography

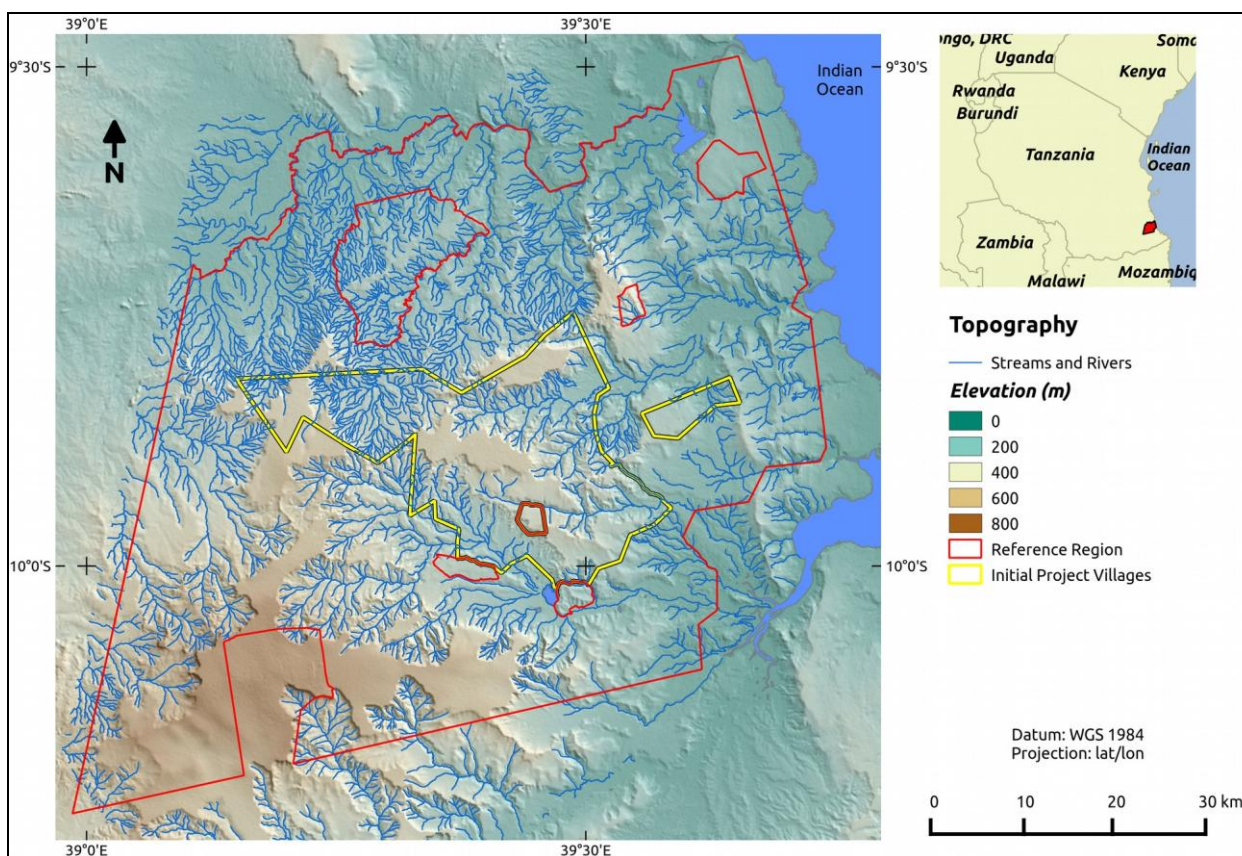
The project zone extends for 40 km from North to South and 54 km from East to West. At the centre of the landscape, the Mnangaru River has cut down into the Pliocene surface leaving a 3 km wide valley, now the site of Muungano, Mkombamosi, Makumba and Kikomolela Villages. To the north, the Likonde plateau rises up the steep escarpment from the valley floor at around 215 m asl to the plateau top at 300 – 380 m asl. The Likonde plateau undulates gently descending in the east towards the coastal plain. To the west the Likonde plateau meets with the Jurassic surface at Kiwawa and along the watershed between the Mnangaru and Milola basins.

**Table 1: Above ground water sources within the project villages.**

Village	Above ground water sources within the project villages according to the Village Land Use Plans
Kinyope	Kinyope River, Milola River, Nanjaja Lake. Various small springs.
Kiwawa	Mianga River, Kiwawa River, Matapata River, Mchinjidi River, Mtenga River and the Mkonga spring.
Likwaya	No above ground water sources. Water is a serious problem in Likwaya.
Makumba	Michindu River, Mnangaru River and Likandilo River.
Milola Magharibi	The Chiwerere River is the most important. Also important is the River Nihinu and the Kikumbi and Kipunga streams.
Mkwanga 1	Mkomole River.
Mkombamosi	Mnangaru River, Likandilo River and the Lihengepula River and the streams (mainly ephemeral) that flow into them.



Village	Above ground water sources within the project villages according to the Village Land Use Plans
Muongano	Milola River and Muungano River.
Nandambi	Mkomole River
Ruhoma	Kikumbi and Kipunga streams.



**Map 3: Project area streams, rivers, and topography.**

South of the Mnangaru Valley, the Noto plateau rises up, steeply in the west and more gently in the east. The highest point in the landscape lies at the north western edge of the Noto plateau at 534 m a.s.l.. From north-west to south-east the plateau descends gently down towards the coastal plain. To the south the narrow Mkomole Valley divides the Noto plateau in the north from the Chitoo plateau in the South. The Chitoo plateau is lower than the Noto plateau extending up to only 340 m asl on its western edge. As with the Noto plateau, its western escarpment rises steeply from the Milola Valley whilst the eastern side descends gently down to the coastal plain.



**Image 1: View southwards across the Mnangaru Valley from the Likonde plateau to the northern face of the Noto escarpment.**

To the south of the Noto plateau are a series of shallow lakes.

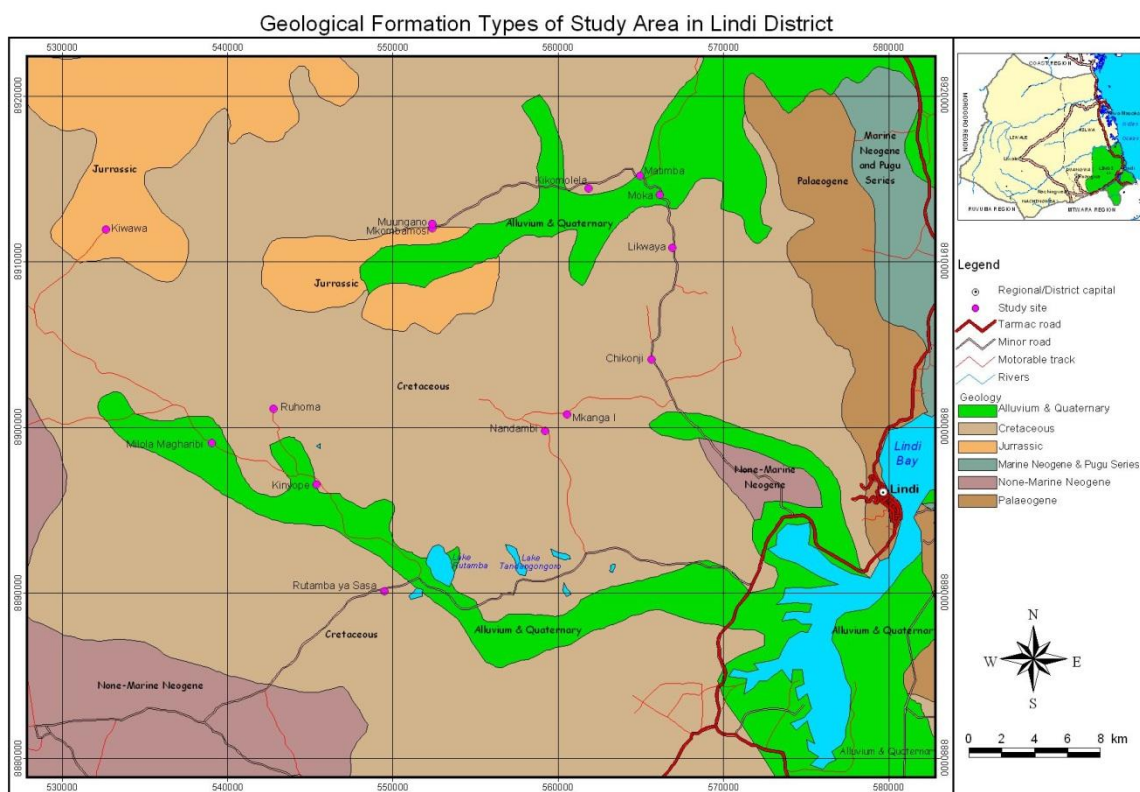
*Soil*

The landscape is characterised by a gradation or ‘catenary succession’ of soils from the well-drained, sandy loams and loamy sands of the plateau tops down to the dark cracking clays and sandy clays formed from lacustrine and riverine alluvium in the valleys and floodplains (Burgess et al. 2000a). Typical of many parts of coastal Tanzania, there is high local variability in the soils reflecting different substrates, slope angles, vegetation and drainage. Broad-scale maps (e.g. ILRI 2005) are therefore misleading.

Clarke 1995 describes the soils of Chitoo Forest Reserve, on the south-western edge of the Chitoo plateau as ‘Red brown sandy soils prone to retreating scarp erosion at the plateau edge’ whilst he describes soil samples from Litipo Forest Reserve, at the southern edge of the landscape as having ‘a pH that ranges from slightly acidic to neutral. The texture of the soil is sandy and the moisture content low. The leaf litter is fairly shallow and there is no fermentation layer due to the quick turnover of minerals and ions. Soil profiles from the riverine forest show more of a mineral horizon.

### Geology

The Lindi plateaux are remnants of a lower-Cretaceous sandstone layer, warped and uplifted during the Miocene. Rivers have subsequently gouged out valleys from the original Miocene ‘swell’ combined with gravity-driven retreating scarp erosion. Three of the six fragments of this Miocene swell lie within the project landscape. This includes the Chitoo plateau in the south, divided by the narrow Mkomole river valley from the Noto plateau (Clarke and Burgess, 2000). More recent neogene sandstone is also present.



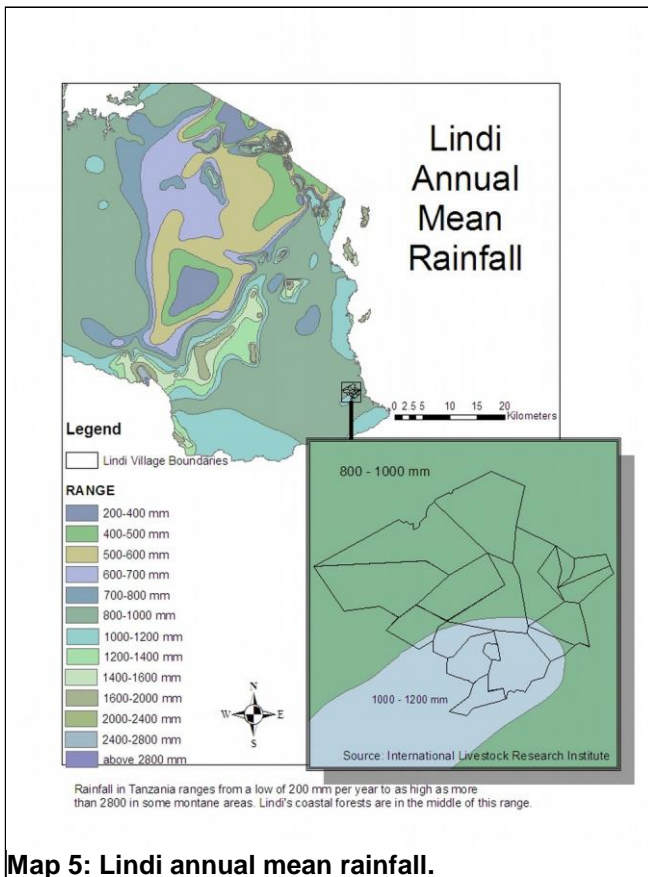
**Map 4: Project area geology.**

The valley floors are characterised by quaternary deposits and alluvium. Older, Jurassic formations are exposed around Kiwawa Village and at the head of the Mnangaru River in Muungano Village.

### Climate

Clarke (2000) describes the climate of the Eastern African Coastal Forests as being 'characterised by high temperatures and incident sunlight with little seasonal or annual variation, combined with very variable rainfall patterns.'

The position of the Inter-Tropical Convergence Zone (ITCZ) determines the direction of the prevailing winds and rainfall patterns in the project area. Between October / November to February / March when the ITCZ lies to the south of the project area, the north-easterly trade winds prevail whilst between May and September when the ITCZ lies to the north, south-easterly winds prevail (Clarke 2000).



**Map 5: Lindi annual mean rainfall.**

Meteorological data from the project area are scarce, particularly from the plateau tops. The closest meteorological station is in Lindi at 37 576624E 88940221S at 41 m asl (Clarke 2000). A rainfall station was operational at Rondo Ntene (10°08'S, 39°15'E, 758 m altitude) on the nearby Rondo plateau from 1954 – 1973; at the Ngurumahamba Estate (12 km east of Litipo) between 1932 – 1962; at the Rutamba Tanganyika Refugee Service (10°02'S, 39°30'E, 300 m) from 1969 – 1973; and at the Naitivi Plantation (10°02'S, 39°33'E, 90 m altitude) from 1934 – 1957 (Clarke 1995)

Across the District, annual mean rainfall varies from 800 mm in the lowlands to an estimated 1200 mm on the plateaux. Over the time that they were operational, the various rainfall stations described the above recorded annual mean rainfalls that ranged from 1074 mm at Rutamba; 1096 mm at Naitivi Plantation; and 1215 mm at Rondo Ntene. There is considerable variation in the total annual rainfall. For example the

Ngurumahamba Estate rainfall station, recorded a peak annual rainfall of 1418 mm and a minimum of 667 mm over the 30 years that it operated between 1932 and 1962 (Clarke 1995).

The rainfall pattern in Lindi is bimodal with rains between November and January (*vuli*) and between March and May (*masika*). Clarke (1995) reports that the rainfall stations at the Rutamba Tanganyika Refugee Service; at the Naitivi Plantation and at Rondo Ntene all recorded an average monthly rainfall of less than 50 mm between June and October. The seasonal pattern of precipitation varies annually.

Loveridge (1944) describes a significant occult precipitation effect from both the morning and evening mists that gather over the Rondo plateau and a similar phenomenon may also affect the Noto, Chitoo and Likonde plateaux.

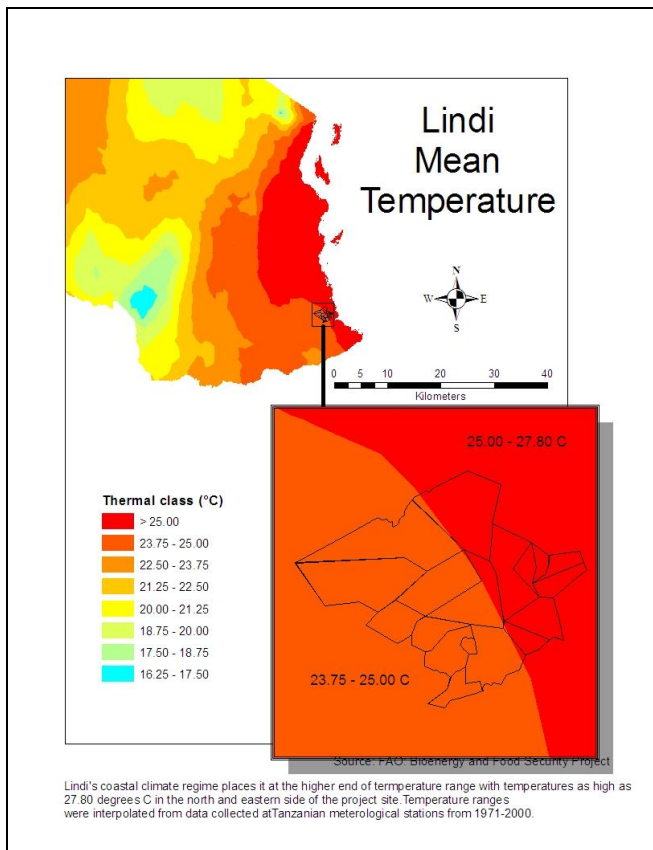


The mean annual temperature across the District ranges from 24°C - 28°C.

Tropical storms are rare in the Coastal forest belt although high winds periodically cause tree falls.

#### Vegetation

The project area and project zone (hereafter referred to as the project landscape) are part of the Zanzibar-Inhambane regional mosaic (sensu White 1983a and b). As its name suggests, this is a mosaic of different vegetation types. Within the Zanzibar-Inhambane regional mosaic, Clarke (2000) defines the East African Coastal Forests as an 'archipelago-like regional sub-centre of endemism'. They are forests dominated by Swahilian near endemic tree species. Clarke (2000) identified the typical formation as East African Coastal Dry Forest with four variants, of which three have been recorded within the project landscape: Coastal Scrub Forest, Coastal Brachystegia Forest and Coastal Riverine/Groundwater/Swamp forest. The fourth variant, the Coastal



**Map 6: Lindi Mean Annual Temperature.**

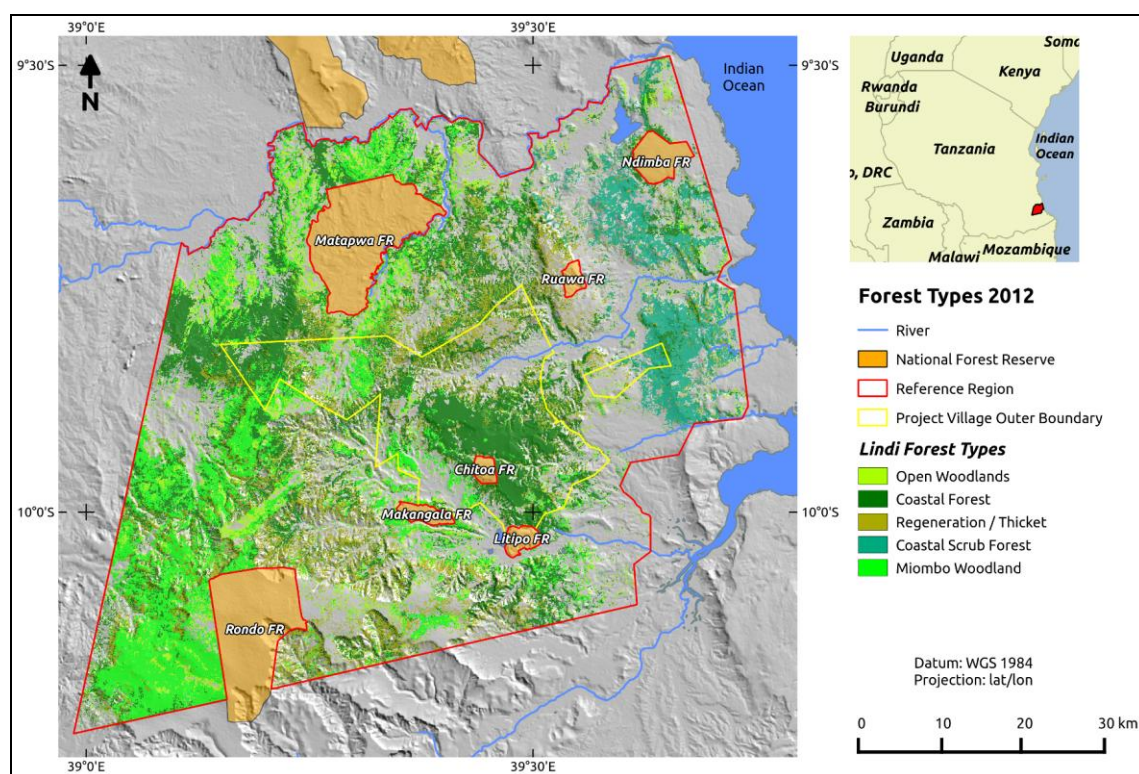
Afromontane Forest was not recorded in the project area.

Like many parts of the Eastern African coastal forest ecoregion, the project landscape includes a mosaic of different vegetation types. The project area is centred on the mixed dry forest of the Chitoo and Noto plateaux and the Likonde escarpment (labelled as Coastal Forest in Map 7). These are characteristic of the East African Coastal Dry forests; are botanically diverse; and are home to several endemic and threatened plant species. The dry forests are bordered by Coastal Brachystegia forest and miombo woodland to the west and south-west; and mixed Coastal scrub forest along the eastern side of the project zone. To the north, on the Likonde plateau, there is mosaic of Coastal dry forest and thicket transitioning to the Brachystegia-dominated woodlands to the west. These vegetation types are interspersed with agricultural land, agroforestry fallows and thicket / regenerating areas. There are occasional patches of acacia woodland to the north-west of the project area (included in the Open Woodland class in Map 7).

**Coastal dry forest:** between 200 m and 534 m asl, this is a variable forest type on the tops of the Chitoo and Noto plateaux; along the Likonde escarpment; and in the north-west corner of the project zone. Canopy height ranges from 10 – 25 m with emergents up to 35 m.

To the north of the Mnangaru river, the Likonde escarpment is botanically diverse. Based on botanical surveys carried out by TFCG in 2010 and 2011, the dominant tree species in the centre and east of the escarpment are *Pteleopsis apetala* (Ngwindi), *Hymenaea verrucosa* (Nkumbi), *Grewia conocarpa* (Ng'ungulu), *Hymenocardia ulmoides* (Mmalala) and *Scorodophleus fischeri*. The canopy height ranges from 10-12m, canopy cover is more than 70% while ground cover is less than 40%. The height of emergent trees is about 20-25m tall including *Bombax rhodagnophalon*, *Milicia excelsa*, *Ricinodendron heudelotii*, *Terminalia sambesiaca* (Nkulyungu) and *Dialium holtzii*. Understorey shrubs include *Chassalia umbraticola*, *Erythrococa pentagyna*, *Pentas bussei* and *Acalypha neptunica*. Lianas include: *Vitex ferruginea*, *Rhoicissus tridentata*, *Dalechampia scandens*,

*Dictophleba acida*, *Tylosema fagrescens* and *Dichapetalum* sp. The ground cover includes herbs such as *Begonia oxyloba*, *Cinnobotrys pulchella*, *Habenaria* sp. and *Scleria* sp. Whilst this forest, and the forest on the top of the Likonde plateau, has been severely reduced due to clearance for agricultural land, some patches remain, particularly on the steeper slopes.



**Map 7: Project area forest types.**

Further west along the plateau, there are some relatively undisturbed forest patches remaining. These remaining patches are dominated by *Azelia quanzensis* (Mbambakofi), *Milicia excelsa* (Mvule), *Hymenocardia ulmoides* (Mmalala), *Zanthoxylum chalybeum* (Namavele), *Pouteria leucantha* and Bamboos in some areas. In this Western patch of forest, lianas include *Abrus precatorius*, *Combretum pentagonum*, *Entada pathuetha*, *Pterolobium stellatum* and *Grewia forbesii*. Shrubs include *Carvalhoa campanulata*, *Fluggea virosa*, *Acalypha racemosa*, *Hoslundia opposita* and *Whitfieldia elongata*.

To the south of the Mnangaru River, on the Noto Plateau there is Coastal dry forest, with a well-developed canopy at 12 m and emergent trees extending to 20 m. Dominant canopy species include *Pteleopsis myrtifolia*, *Azelia quanzensis*, *Zanthoxylum deremense* and *Grewia conocarpa*. In the understory the dominant species include *Annona senegalensis*, *Tabernaemontana elegans*, *Strychnos* sp., *Xylothea tettensis*, *Carvalhoa campanulata*, *Erythrococca fischeri* and *Cyathula* sp. The forest differs from the Chitwa plateau to the south, in having few *Scorodophloeus fischeri* and few *Milicia excelsa*. Lianas include *Bonamia mossambicensis*, *Uvaria acuminata*, *Grewia forbesii*, *Dichapetalum braunii*, *Dictyophleba lucida* and *Monanthotaxis tricantha*. Whilst the ground cover includes herbs such as *Gladiolus decoratus*, *Chlorophytum* sp and *Elytralia minor*.

**Coastal *Brachystegia* forest:** To the West of the Noto Plateau there are extensive areas of Coastal *Brachystegia* forest. This formation is dominated by *Brachystegia spiciformis*, *Millettia stuhlmannii*, *Diplorrhynchus candylocarpon*, *Albizia vericolor* (Ntanga), *Terminalia sericeae* (Nchejea) *Pseudolachnostylis maproneifolia*, *Pterocarpus angolensis*, *Julbernardia globiflora*, *Acacia nilotica*, *Polysphaeria parviflora* and *Commiphora* sp.

There are patches of bamboo scattered throughout the woodland. Canopy height ranges from 10m – 15m, canopy cover is more than 60%, while ground cover is more than 80%. This area has been regularly burnt and could be considered as transitional to *Brachystegia* woodland given the dominance of grasses as ground cover in some areas. Emergent trees are *Brachystegia spiciformis*, *Millettia stuhlmannii* and *Pteleopsis myrtifolia*. These species can reach 20-25m tall. The largest patch of Coastal *Brachystegia* forest lies in the Makangala Forest Reserve and is thus outside of the project area.

**Coastal scrub forest:** To the East of the Chitola and Noto plateaux there are extensive areas of coastal scrub forest. This is intermediate in structure between forest (canopy height > 10 m) and thicket (canopy height < 10 m). Dominant species recorded in this area include *Monodora minor*, *Markhamia zanzibarica* and *Pteleopsis myrtifolia* with the canopy ranging from 10 – 15 m in height and 65 % canopy cover.

**Agroforestry** – dotted across the landscape are areas planted with cashew nut, mango, citrus and coconut trees.

### **Current land use**

Within each of the ten village land use plans, current and planned land use is described and mapped. The land use categories include areas for permanent agriculture; settlement; public services; grazing; village forest reserves for sustainable use; forest for unrestricted use; and areas for shifting agriculture interspersed with housing. In general there is a pattern of allocating the areas in the lowlands for agriculture and settlement with forest areas remaining on the plateau tops.

## **Project Design and Boundaries**

### **G1.4. Define the boundaries of the Project Area where project activities aim to generate net climate benefits and the Project Zone where project activities are implemented.**

The **current project area** (41,924 ha), includes all woody vegetation meeting the definition of forest in April 2012 within the village boundaries of the 10 initial participating villages with the exception of areas classified as non-forest in May 2001 or deforested between May 2001 and April 2012 (see Map 8). For more details on the definition of forest and procedures used to map forest and deforestation, see the VCS project document.

The **current project zone** (66,110 ha) encompasses all of the land under the control of the current project proponents including non-forest areas not included in the project area. However, the project may expand to include new villages within the project's reference region.

The **total potential project area** (336,629 ha) includes all woody vegetation meeting the definition of forest in April 2012 on village land within the project's reference region (Map 9) with the exception of areas classified as non-forest in May 2001 or deforested between May 2001 and April 2012. The **total potential project zone** including all land under control of the initial and potential project proponents would be (402,739 ha).

### **G1.5. Explain the process of stakeholder identification and analysis used to identify Communities, Community Groups and Other Stakeholders.**

Stakeholder identification has been carried out and reviewed at various stages of the REDD readiness process in order to ensure that all key stakeholders have been identified and consulted. The stakeholder consultation process broadly followed the steps recommended by Forest Trends in



relation to social impact assessment of land based carbon projects (Richards and Panfil 2010 a and b). At the project outset, a stakeholder analysis was conducted with the aim of identifying and understanding the stakeholders within and external to the communities (Forrester-Kibuga and Samweli 2010). This is available at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html). During the social impact assessment workshops at village and landscape level, this list of stakeholders was reviewed and validated by the participants (Mwampamba *et al.* 2011). Participants in the SIA process included representatives of the communities, community groups and other stakeholders identified by the initial consultancy. In addition the REDD readiness process was well publicised at local level through newsletters and local media thereby ensuring that all local stakeholders had the opportunity to engage with the project during the design phase.

### **G1.6. List all Communities, Community Groups and Other Stakeholders identified using the process explained in G 1.5.**

#### **Communities**

The following communities derive income, livelihood or cultural values and other contributions to well-being from the Project Area at the start of the project and/or under the with-project scenario.

**Table 2: List of Wards, Villages and Sub-villages deriving benefits from the Project Area.**

Ward	Villages	Sub-villages
Villages responsible for the management of the project area		
Milola	Milola Magharibi	Total: 6 Names : Dodoma B, Kikumbi, Noto, Kipunga, Magela Litandamkumbi
Rutamba	Kinyope	Total: 4 Names: Namkopo, Sokoni, Gulioni, Shuleni
	Ruhoma	Total: 3 Names : Mchati, Shuleni, Mkundi
Nangaru	Mkombamosi	Total: 7 Names: Lumo, Msikitini, Sokoni, Mwenge, Cheleweni, Likonde chini, Likandilo
	Muongano	Total: 7 Names : Mnazi Mmoja, Likonde, Kipunga, Uleka, Umoja, Naruwi, Ujamaa
Tandangongoro	Mkanga 1	Total: 4 Names: Mandanje, Mkanga Chini, Kilangalamatu, Mkanga Juu
Nga'pa / Tandangongoro	Nandambi	Total: 3 Names : Nandambi shuleni, Kilolombwani, Umoja
Matimba	Likwaya	Total: 2 Names : Lumumba, Mapinduzi
	Makumba	Total: 2 Mapinduzi na Mkwajuni
Kiwawa	Kiwawa	Total: 8 Names: Kiwawa B, Kiwawa A, Mchinjidi A, Mchinjidi B, Mmumbu A, Mmumbu B, Nawamba, Kitulo

#### **Community groups**

Based on the stakeholder analysis conducted at the start of the project; and the social impact assessment work, the following groups of residents from the communities listed above, who derive income, livelihood or cultural values and other contributions to well-being from the Project Area, were identified:

- Small-scale farmers
- Users of forest products including medicinal plants, fuel wood, building poles, timber, food plants including ming'oko and mushrooms.
- Charcoal producers
- Hunters
- Existing income generating groups
- Village governments and Village Natural Resources Committees (VNRCs)

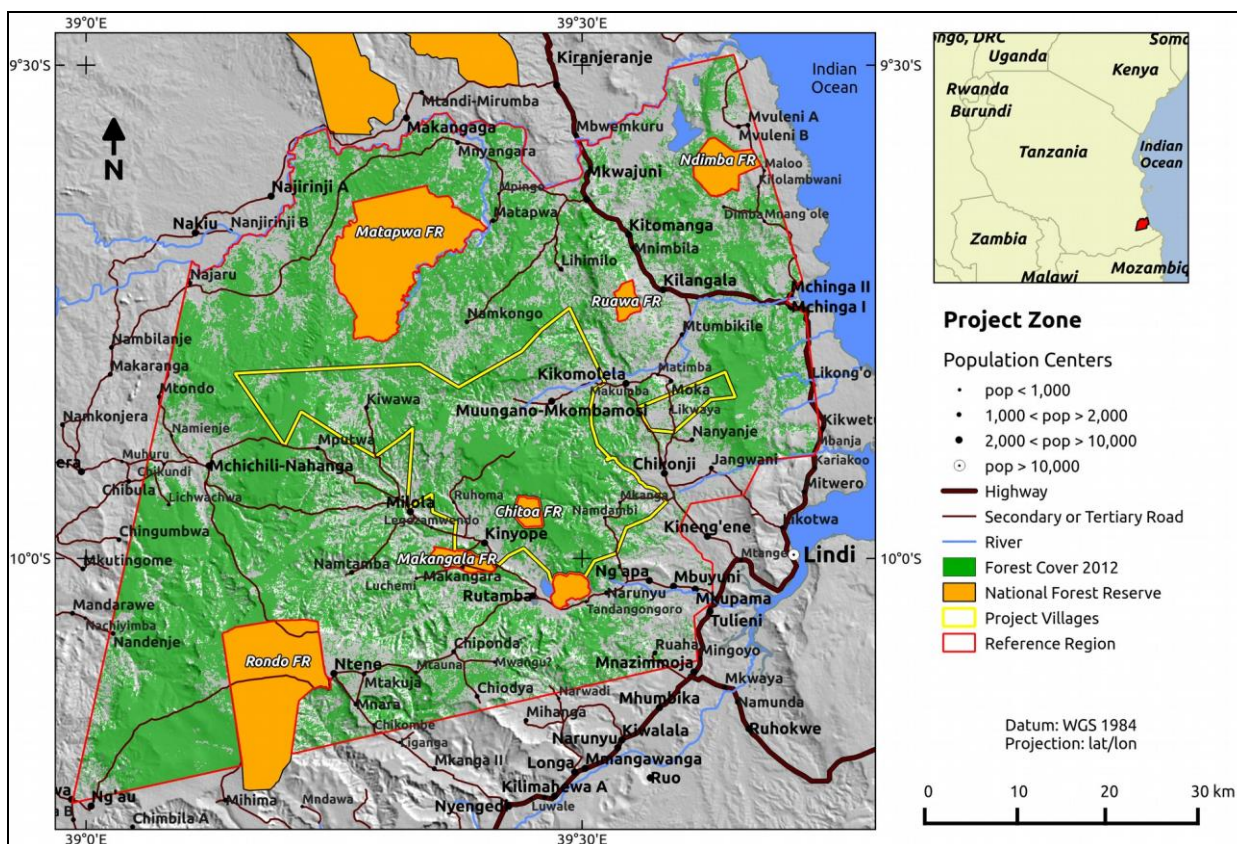
These groups are differentiated on the basis of the way in which they use the forest and / or their primary economic activity. As such, some individuals might fall into more than one category for example hunters, charcoal producers, IGA group members, VNRC members and users of forest products are also likely to be small-scale farmers as this is the most common livelihood activity within the communities. These categories were identified by the stakeholders. Differentiating groups on the basis of religion or tribe was not suggested during the social impact assessment and might run counter to cultural norms in Tanzania.

### ***Other stakeholders***

Based on the stakeholder analysis conducted at the start of the project; and the social impact assessment work, the following groups are populations that do not qualify as communities but that can potentially affect or be affected by the project activities.

- Small-scale farmers within the leakage belt
- Charcoal transporters
- Commercial users of forest products who are not residents in the current project zone
- ILULU Cooperative Society
- Lindi Municipal Council
- Lindi Rural District Council
- Local Member of Parliament
- Airtel (Zain) mobile phone company
- Non-governmental Organisations e.g. the Aga Khan Foundation
- Non-resident traders (offsite stakeholders)

**G1.7. Provide a map identifying the location of Communities and the boundaries of the Project Area(s), of the Project Zone, including any High Conservation Value areas (identified in CM1 and B1), and of additional areas that are predicted to be impacted by project activities identified in CL3, CM3 and B3.**



**Map 9: The potential project zone (reference region) and current project zone (project villages).**

Map 8 shows the current project area forests and the boundaries of the participating villages. Some national forest reserves border the project area, but are not included in the project area or the project zone. The current project zone includes all lands within the current participating project villages. Map 9 shows the wider reference region. Forest areas in Map 9 outside of the project area are the areas where the project may expand to include new villages (proponents) under the programmatic approach. The entire area within the reference region excluding national forest reserves is the potential project zone.

**G1.8. Briefly describe each project activity and the expected outputs, outcomes and impacts of the activities identifying the causal relationships that explain how the activities will achieve the project’s predicted climate, community and biodiversity benefits.**

The project’s activities were developed through a consultative process involving meetings in all project villages and at landscape level with a wide range of stakeholders, including representatives from all communities, community groups and other stakeholders, as part of the Social Impact Assessment. The activities reflect the priorities outlined by the stakeholders. The activities were developed using a theory of change approach (Richards and Panfil 2010 a and b). Details of this process are provided in Mwampamba *et al.* 2011 at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html). The theory of change analysis detailing the outputs, outcomes and impacts for each activity is provided in Annex 4. The activity description, expected impacts and relevance to the project’s objectives are summarised in Table 3.

**Table 3.** Project activities

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p><b>Activity 1. Improve governance at village level.</b></p> <p>Training and awareness raising on good governance was / will be provided by TFCG and MJUMITA between 2010 – 2014 to the villages managing the project area. With support from the project, Village Natural Resources, Land Use Management and REDD Committees were elected where they were absent or incomplete and trained on their roles and responsibilities.</p> <p>Reinforcement training on good governance principles and practices will be provided to Village Council, Village Natural Resources Committee and REDD Committee members by MJUMITA and Lindi District Council prior to each round of REDD payments. Training has been provided to local government staff on conflict resolution.</p> <p>Based on training and awareness raising supported by the project, MJUMITA members will also raise awareness amongst the communities regarding good governance; and will help communities to hold village leaders accountable.</p> <p>Local MJUMITA networks have been established as a forum for resolving governance issues between and within communities.</p> <p>TFCG and MJUMITA have also constructed village offices for the ten villages in order to provide a more conducive</p>	<p><b>CM Impact 3.</b> Villages will be better governed.</p> <p><b>Expected outcomes:</b></p> <p>More effective and equitable implementation of forest management and sustainable land management by-laws and plans thereby resulting in emission reductions; a more permanent basis for maintaining forest cover; and carbon sequestration through natural regeneration.</p> <p>Village council provide a more effective and equitable service to the communities as a result of improved knowledge on their roles and responsibilities and greater accountability.</p> <p>Public services and community-owned infrastructure are managed in a more equitable, effective and efficient way.</p> <p>Improved governance at village level will underpin strategies to adapt to climate change including through improved land and natural resources management and improved conflict resolution.</p> <p>This will help to ensure that water and forest products are accessible in an equitable way during times of climate change-related stress; and will help to minimise habitat loss associated with increased shifting cultivation during times of climate change-related stress, thereby conserving biodiversity values (<i>GL 1. Climate Change adaptation benefit</i>).</p>	<p>Ensures that local councils and civil society participate fully in providing the local conditions necessary to achieve REDD objectives.</p> <p>Provides necessary supporting conditions for equitable benefit sharing including in relation to more equitable gender-relations and for sustaining free, prior and informed consent.</p> <p>Provides a stronger foundation for the implementation of community based forest management; sustainable land management; and for REDD payments to incentivise practices that reduce emissions.</p> <p>Improved governance brings cross sectoral benefits at village level that will also contribute to more secure tenure; improved public services including in relation to health, education, land tenure and the local economy; more resilience to climate change; and better management of infrastructure intended for community benefit.</p>

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>environment for the implementation of governance functions.</p> <p>MJUMITA and the Lindi District Council will continue to provide backstopping to the MJUMITA networks and village leaders on governance issues.</p> <p><b>Timing:</b> Training provided by TFCG and MJUMITA 2010 – 2013; improved governance to be practiced throughout project lifespan.</p>	<p>Women will be represented on the village council and village committees (<i>GL 2. Exceptional community benefits</i>).</p>	
<p><b>Activity 2. Implement sustainable land management</b></p> <p>Each village will prepare a village land use management plan in a participatory way and modelling the integrated approach to land use planning and community based forest management planning that has been practiced by the project. See Luwuge <i>et al.</i> 2011a for guidelines on the project's approach.</p> <p>The planning process will be facilitated by the District Participatory Land Use Management team. The plans specify the geographical distribution of land uses for the community and the mechanisms to ensure implementation. The plans are reviewed and approved by the District Council. Through awareness raising amongst the community; training to village leaders; and installation of sign boards in key locations, the plans are widely communicated within the community. The village land use management committee will oversee the implementation of</p>	<p><b>CM Impact 1.</b> Community-owned forests will be managed in a participatory, effective and equitable way; and</p> <p><b>CM Impact 4.</b> Communities will have more secure land tenure; and</p> <p><b>CM Impact 6.</b> Soil erosion will be reduced.</p> <p><b>Expected outcomes:</b></p> <p>All villages have developed and are implementing village land use plans which guide the community on the agreed location for different land uses including forests and agricultural land.</p> <p>Communities will benefit because water and other ecological services are maintained as a basis for more sustainable livelihood activities.</p> <p>Land tenure is strengthened and conflicts over land are reduced.</p> <p>More effective, equitable and sustainable management of forest resources will reduce emissions of greenhouse gases</p>	<p>The boundary mapping process that is integrated into the village land use planning provides an accurate basis for defining the village boundaries.</p> <p>Provides the precondition for delineating areas for participatory forest management and for improving the security of land tenure at community and individual levels.</p> <p>Zonation of village land into different land uses makes clear the agreed locations for agriculture, public services, residential areas, sensitive ecological zones including water sources and forests.</p> <p>On the basis of the village land use plans, villages can begin to issue customary rights of occupancy.</p>



Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>the plans with oversight from the Village Council and accountable to the Village Assembly. Lindi District Council will provide backstopping where resources allow.</p> <p>Additional training will be provided to the village natural resources committees on fire prevention activities combined with widespread awareness raising on the causes of fire; the risks of fire; and ways of preventing and tackling fire.</p> <p>For the ten project area villages, each village has prepared a village land use plan and by-laws in a participatory way and in accordance with national guidelines.</p> <p><b>Timing:</b> VLUP training and development between 2010 and 2012; implementation throughout project lifespan.</p>	<p>and protect high conservation values.</p> <p>Through training and awareness raising on wildfire prevention, there will be less fire damage to forests.</p> <p>Village land use plans will help to ensure that water and forest products are accessible in an equitable way during times of climate change-related stress; and will help to minimise habitat loss associated with increased shifting cultivation during times of climate change-related stress, thereby conserving biodiversity values (<i>GL 1. Climate Change adaptation benefit</i>).</p>	
<p><b>Activity 3. Community based forest management.</b></p> <p>Following widespread awareness raising to all community groups, each village will establish village forest reserves. This involves agreeing the location of the village forest reserve; and preparation of a management plan and by-laws following a participatory approach facilitated by the District. The plans and by-laws are presented to the village assembly for approval; and from there they are presented to the District Council for review and approval.</p> <p>Once approved at District level</p>	<p><b>CM Impact 1.</b> Community-owned forests will be managed in a participatory, effective and equitable way; and</p> <p><b>CM Impact 2.</b> Forest products will continue to be available and accessible to all community members including the poorest households according to access rules agreed in a participatory way; and</p> <p><b>CM Impact 5.</b> Water sources will be better protected; and</p> <p><b>CM Impact 6.</b> Soil erosion will be reduced; and</p> <p><b>Biodiversity Impact 1.</b></p>	<p>Community based forest management is relevant to all of the climate, community and biodiversity objectives of the project. CBFM will help communities to conserve the ecosystem services that they depend on; and ensure a sustainable supply of forest products.</p>



Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>the communities will implement their Village Forest Reserve management plans and by-laws according to the rules that they have agreed amongst themselves and as stipulated in their plans and by-laws. These include some sustainable use. As part of REDD readiness, each village has established a forest reserve and has prepared and approved management plans and by-laws for the Village Forest Reserves. REDD revenues will be used to contribute to, or cover in their entirety, management costs. The Village Natural Resources Committees are responsible for overseeing the implementation of the plans with oversight from the Village Council and accountable to the Village Assembly.</p> <p>Lindi District Council will provide backstopping where resources allow.</p> <p>Awareness raising activities will be conducted on wild fires; and training will be provided on preventing wildfires.</p> <p>For the ten project area villages, each village has established a village forest reserves and is implementing its management plan.</p> <p><b>Timing:</b> CBFM training and development between 2010 and 2012; implementation throughout project lifespan.</p>	<p>Populations of threatened and endemic species persist within the project area; and</p> <p><b>Biodiversity Impact 2.</b> Extensive areas of Eastern African Coastal Forests continue to exist within the project area; and</p> <p><b>Biodiversity Impact 3.</b> There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers; and</p> <p><b>Biodiversity Impact 4.</b> Communities and other stakeholders are actively engaged in the management of Eastern African Coastal Forest within the project area.</p> <p><b>Expected outcomes:</b></p> <p>The effective management of the village forest reserves will significantly reduce deforestation in the reserves and therefore will also reduce emissions of greenhouse gases. The management objectives for the reserves include maintaining natural forest cover. By conserving the natural habitat, so the biodiversity and other high conservation values will also be protected. Communities will benefit by having access to sustainably managed forest products; by avoiding degradation of water sources and soil erosion that would otherwise result from deforestation; and by earning revenues from REDD.</p> <p>CBFM will also ensure access to forest foods including fruits, mushrooms and tubers during periods of drought; and will help</p>	

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
	<p>to minimise habitat loss and fragmentation associated with increased shifting cultivation during times of climate change-related stress, thereby conserving biodiversity values (<i>GL 1. Climate Change adaptation benefit</i>).</p> <p>CBFM will also conserve the globally threatened species and habitat found in the project zone (<i>GL. 3 Exceptional biodiversity benefits</i>).</p>	
<p><b>Activity 4. Channel REDD payments to communities.</b></p> <p>As part of the REDD readiness activities, MJUMITA and TFCG have modelled a payment mechanism based around making individual payments to all women, men and children registered as residents of a village. Residents are treated as shareholders in the REDD enterprise and are entitled to dividends in the form of REDD payments. Each village has developed by-laws to govern the REDD payments; have established REDD committees who have been trained on how to implement the payments; and have been through two rounds of payments. The REDD committees will take on responsibility for distributing payments from the sale of the voluntary emission reductions. This will involve maintaining a register of residents; liaising with MJUMITA regarding the emission reductions and earnings; and ensuring that the budget allocation process is in line with the village's by-laws. The model allows for communities to decide whether</p>	<p><b>CM Impact 7.</b> Individual incomes will be boosted and diversified by receiving REDD payments; and</p> <p><b>CM Impact 9.</b> REDD revenues will contribute to improving public services and infrastructure.</p> <p><b>Expected outcomes:</b></p> <p>The REDD payments will provide an incentive to communities to maintain forest cover; and will cover the direct costs of managing the village forest reserves. As such the payments are critical for ensuring the longer term climate, community and biodiversity benefits. The payments will be paid equally to women, men and children; and to all households regardless of wealth (<i>GL 2. Exceptional community benefits</i>).</p> <p>REDD payments will provide funds for community development projects including improved infrastructure and social services.</p> <p>REDD payments will provide a</p>	<p>The payments contribute to the project's climate and biodiversity objectives by providing an incentive for communities to manage their forests sustainably and by covering the costs of forest management. They contribute to the community objectives by providing an income to individuals and / or, depending on the decision of the communities, to pay for community development activities including public services. The payment system is designed to avoid elite capture by making every woman, man and child (collected by their mothers) eligible thereby ensuring that poorer households and women benefit.</p>

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>/ how much to allocate to individual payments and / or to allocate to community development projects. Village Councils must present detailed plans and budgets to the Village Assembly for any community development projects and the Village Assembly can then vote whether they agree to support the project. The MJUMITA Community Liaison officer will assist with the process and Lindi District Council will provide backstopping where resources allow.</p> <p><b>Timing:</b> throughout project lifespan.</p>	<p>direct income to individuals.</p>	
<p><b>Activity 5. Improve profitability, ecological sustainability and climate change resilience of agriculture.</b></p> <p>As part of the REDD readiness activities, the project developed an agricultural strategy (TFCG 2012). On the basis of this strategy, and working closely with the District, TFCG has been training women and men small-scale farmers on conservation agriculture and reducing crop losses from crop-raiding animals.</p> <p>The agricultural strategy promotes conservation agriculture techniques that avoid shifting cultivation; and generate more value from less land. The techniques now being practised also enhance soil moisture management, soil nutrient conservation and improved seed selection thereby also contributing to climate change adaptation. The project's</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.</p> <p><b>Expected Outcomes</b></p> <p>It is expected that by adopting conservation agriculture, farmers can improve the profitability of their agricultural practices.</p> <p>It is expected that by improving practices, farmers can move away from shifting cultivation and deforestation. .</p> <p>It is expected that REDD payments will enable farmers to invest in improved agriculture and thereby generate more profit; be more ecologically sustainable; and avoid deforestation outside of the village forest reserves.</p>	<p>In terms of relevance to climate and biodiversity objectives, as agriculture is the main deforestation driver in this area, it is critical that communities adopt improved agricultural practices that will allow farmers to improve their livelihoods without bringing forest areas into agriculture. In terms of the relevance to the community objectives, improved agricultural practices aim to increase the profitability of farming practices. By adopting agricultural practices that are more resilient to climate change, farmers will be less vulnerable to climate change.</p>

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>agricultural strategy is available at <a href="http://www.tfcg.org/MakingREDDwork.html">www.tfcg.org/MakingREDDwork.html</a></p> <p>More in-depth training is provided to community-based trainers. The community-based trainers are expected to provide technical backstopping for other farmers in their village. Farmer field schools also serve as demonstration plots for other farmers to observe the benefits of conservation agriculture. Open days where everyone is invited to visit the demonstration plots and meet with the Farmer Field School members have been used to promote the approach. Radio is used to raise awareness about conservation agriculture and training materials are provided in each village.</p> <p>It is expected that farmers trained in conservation agriculture will work with local government staff, ward extension officers and community based trainers to implement improved agricultural practices and to support other farmers in their respective villages to adopt improved agricultural practices. Lindi District Council will provide backstopping where resources allow. REDD payments will provide a source of cash for farmers to invest in agricultural inputs including improved seed varieties.</p> <p><b>Timing:</b> Most training provided between 2010 – 2014 in project villages; and in leakage belt villages in 2014 with District and Community Based Trainers</p>	<p>By introducing improved agricultural activities that are designed to increase farmers' resilience to climate change, it is anticipated that farmers will be able to withstand the shift in growing season; increase in crop pests and diseases; increase in weeds; and decrease in crop productivity that are anticipated as a result of climate change (<i>GL 1. Climate Change adaptation benefit</i>).</p>	

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>providing ongoing support post-2014. Additional funds are being raised in order for TFCG to continue to support farmers on conservation agriculture in the project area villages.</p>		
<p><b>Activity 6. Improve access to microfinance services for community members.</b></p> <p>Training is provided to women and men on establishing and operating village savings and loans associations. The VSLAs provide a mechanisms for community members to access loans d to save. The VSLAs are linked with the training on improved agriculture and with the training on enterprise development.</p> <p>The VSL Associations are intended to link with the REDD payments by providing a mechanism by which community members can save their REDD incomes until it can be invested.</p> <p>Lindi District Council will provide backstopping where resources allow.</p> <p><b>Timing:</b> Most training provided between 2010 – 2014 with District and Community Based Trainers providing ongoing support post-2014.</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.</p> <p><b>Expected outcomes</b></p> <p>This activity is closely linked with Activities 4 and 5. The village savings and loans associations are intended to help farmers and those with small enterprises to have access to capital to help with enterprise development and purchasing inputs relevant to adopting improved agricultural practices.</p> <p>Farmers will have access to microfinance facilities that will help them to invest in more climate-resilient agricultural practices; and to survive and recover from climate change-related stress (<i>GL 1. Climate Change adaptation benefit</i>).</p> <p>Loans can also be used to help farmers switch to other enterprises.</p>	<p>This activity aims to provide a mechanism whereby the REDD payments can be linked with improved livelihood activities.</p>
<p><b>Activity 7. Generate incomes from the sale of bee products.</b></p> <p>Beekeepers within the communities will produce honey</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and</p>	<p>This is relevant to the community objectives by contributing to improved incomes and by providing an</p>

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>and other bee products with some of their hives being placed within the village forest reserves. As part of the REDD readiness activities, over 200 beekeepers were trained in beekeeping and were provided with equipment. Beekeepers are expected to work closely with the Village Natural Resources Committees providing support in reserve management. Lindi District Council will provide backstopping where resources allow.</p> <p><b>Timing:</b> Most training provided between 2010 – 2014 with District providing support post-2014.</p>	<p>climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives; and</p> <p><b>Biodiversity Impact 3.</b> There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers; and</p> <p><b>Biodiversity Impact 4.</b> Communities and other stakeholders are actively engaged in the management of Eastern African Coastal Forest within the project area.</p> <p><b>Expected Outcomes</b></p> <p>Revenues to the beekeepers from the sale of honey and other bee products is expected to improve the livelihoods of the bee keepers.</p> <p>Benefits from beekeeping are expected to include additional support to the Village Natural Resources Committees from the beekeepers in relation to effective management of the village forest reserves. This will help to reduce deforestation and emissions of greenhouse gases.</p>	<p>alternative income to agriculture thereby improving climate change resilience and adaptation by providing households with a broader spread of economic activities to rely on.</p> <p>This is relevant to the climate and biodiversity objectives by incentivising effective reserve management.</p>
<p><b>Activity 8. Growing and harvesting trees on woodlots and through agroforestry.</b></p> <p>Farmers in the project villages will grow and harvest trees in woodlots and through agroforestry. This is based on the training provided to farmers during the REDD readiness phase. The local MJUMITA networks will promote tree planting and providing training where resources allow. Lindi District Council will provide</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives; and</p> <p><b>Biodiversity Impact 3.</b> There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers; and</p>	<p>This will contribute to the climate and biodiversity impacts by reducing pressure on the forest from tree cutting for fuel wood and construction.</p> <p>It will contribute to the community objectives by providing fruits and wood products for domestic consumption; by providing an income from the sale of timber; and by diversifying household incomes thereby contributing to</p>



Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
<p>backstopping where resources allow.</p> <p><b>Timing:</b> Most training provided between 2010 – 2014 with District providing ongoing support post-2014.</p>	<p><b>Expected Outcomes</b></p> <p>Farmers will have easy access to trees for fuelwood and building materials from their woodlots.</p> <p>There will be less pressure on the natural forests to supply fuel wood and building materials.</p> <p>Farmers can generate an income from the sale of their trees.</p>	<p>climate change adaptation.</p>
<p><b>Activity 9. Improve social services and infrastructure</b></p> <p>Communities will have the option of allocating some or all of their REDD revenues to pay for better social services and infrastructure. This is closely related to Activities 1 and 4.</p> <p><b>Timing:</b> throughout project lifespan.</p>	<p><b>CM Impact 9.</b> REDD revenues will contribute to improving public services and infrastructure.</p> <p><b>CM Impact 10.</b> Villages will have village offices.</p> <p><b>Biodiversity Impact 3.</b> There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers; and</p> <p><b>Biodiversity Impact 4.</b> Communities and other stakeholders are actively engaged in the management of Eastern African Coastal Forest within the project area.</p> <p>Expected impacts include better health care, education and infrastructure for community members. Other expected impacts include more positive attitudes and practices in relation to sustainable forest management by the majority of community members.</p> <p>The impact of climate change-related increase in diseases such as malaria and dysentery, will be reduced through access to improved health facilities; and</p>	<p>This will contribute to climate and biodiversity impacts by increasing the incentive to maintain forest cover as communities see the benefit of the REDD revenues in terms of better schools, clinics and roads.</p> <p>It will contribute to the community objectives by providing better public services including education, health care and governance.</p>

Activity description	Expected climate, community and biodiversity impacts and outcomes	Relevance to project's objectives
	<p>communities will have more secure access to water supplies, even during periods of drought, as a result of improved water infrastructure and management.</p> <p><i>(GL 1. Climate Change adaptation benefit).</i></p>	

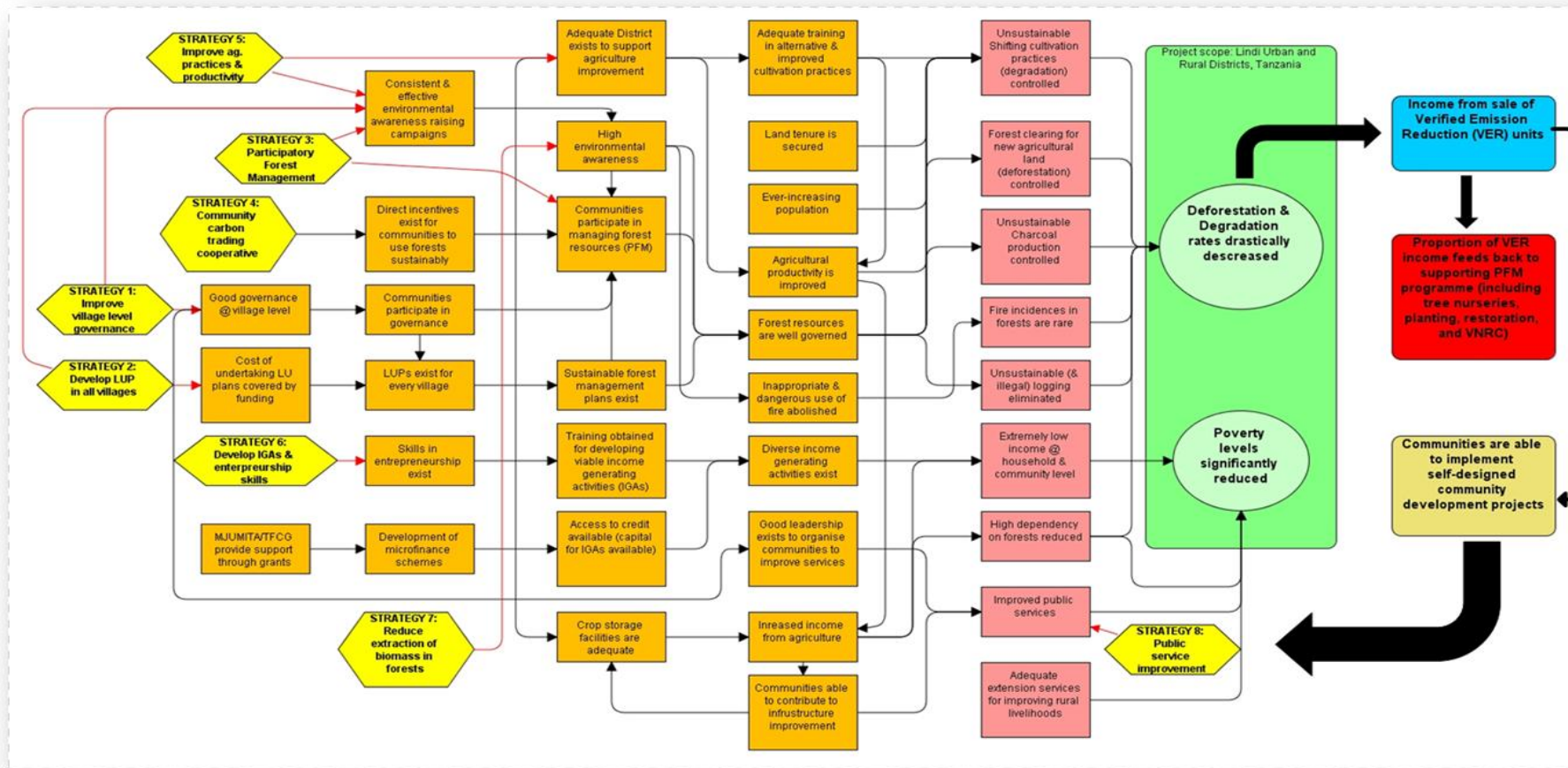


Figure 1: Generic model of entry points for eight community development strategies proposed by communities and stakeholders of the Lindi REDD

**G1.9. Define the project start date and lifetime and GHG accounting period and biodiversity and community benefits assessment period if relevant, and explain and justify any differences between them. Define an implementation schedule, indicating key dates and milestones in the project's development.**

**Project start date**

The project start date was 1<sup>st</sup> April 2010 when the project team initiated work in Lindi. Although, the project 'Making REDD work for communities and forest conservation in Tanzania' began on 1<sup>st</sup> August 2009, between August 2009 and March 2010, the project focused on site selection and inception activities which did not directly cause the project's expected climate, community or biodiversity benefits.

**Project lifetime**

The project life time begins on the project start date i.e. 1<sup>st</sup> April 2010 and will continue indefinitely as there are no time limits on the implementation of the project's core activities.

**GHG Accounting period**

*The GHG accounting period will be from April 21<sup>st</sup>, 2012 to April 20<sup>th</sup>, 2042. The GHG accounting period start date corresponds with the date of a cloud free Landsat 7 scene used to map land-cover. See VCS project document for details.*

**Biodiversity and community benefits assessment period**

The Biodiversity and Community benefits assessment period is the same as the project lifetime.

**Justification for differences between the GHG Accounting period and the biodiversity and community benefits assessment period.**

REDD readiness activities began on 1<sup>st</sup> April 2010, including awareness raising and FPIC activities in all villages; and village land use planning, community based forest management planning, REDD trial payments and agricultural training in some villages. However the new land-use and village forest reserve bylaws passed by participating villages did not begin to come into force until 2012. The first trial payment rewarding a community for having completed the REDD readiness activities was made in November, 2011. Therefore it was not expected that the project would have an effect on emissions prior to 2012. Based on this consideration, and on the availability of usable remote sensing images, the GHG Accounting period start date was set at 21<sup>st</sup> April 2012.

**Implementation schedule**

The key dates and milestones in the projects implementation schedule are described below.

**Table 4: Key dates and milestones in the project's development.**

Date	Milestones in the project's development and implementation
April – May 2010	Introductory meetings, FPIC activities, training and establishment of monitoring system
June – September 2010	Initial village and sub-village consultation meetings on REDD. Consent provided by communities for MJUMITA and TFCG to proceed with REDD readiness activities.
November 2011 – February 2013	Trial payments were made to participating communities for having completed REDD readiness activities including land-use and forest

Date	Milestones in the project's development and implementation
	management planning.
21 <sup>st</sup> April 2012	Start of the project crediting period
April 2013	End of 1 <sup>st</sup> Project Implementation period
July 2013	Management plans and by-laws for village forest reserves; Village Land use plans and by-laws; REDD by-laws approved and signed by Lindi District Council. The approval and signing process took place over two years from July 2011 to July 2013 with most plans being approved by the village assemblies in July – December 2011 and signed at District level in July 2013. Given that the District Council exceeded the recommended 60 days for the approval process, the communities began the implementation of the plans and by-laws in 2012. Details on this are provided in Section CM 2.1 of the project's first implementation report.
May – June 2013	MoUs between communities and MJUMITA signed giving consent to MJUMITA to proceed with the validation and verification process with VCS and CCB.
March 2014	2 <sup>nd</sup> Round of payments made to participating communities
August 2014	Validation and verification to be completed
December 2014	2 <sup>nd</sup> Round of payments made to participating communities
August 2015	2 <sup>nd</sup> verification completed
December 2015	3 <sup>rd</sup> Round of payments made to participating communities
August 2017	3 <sup>rd</sup> verification completed
December 2017	4 <sup>th</sup> Round of payments made to participating communities
August 2019	4 <sup>th</sup> verification completed
December 2019	5 <sup>th</sup> Round of payments made to participating communities
August 2021	5 <sup>th</sup> verification completed
December 2019	6 <sup>th</sup> Round of payments made to participating communities

## Risk Management and Long-term Viability

### G1.10. Identify likely natural and human-induced risks to the expected climate, community and biodiversity benefits during the project lifetime and outline measures needed and taken to mitigate these risks.

The likely natural and human-induced risks to the expected climate community and biodiversity benefits during the project lifespan are described below with an outline of the measures adopted by the project to mitigate these risks. Risks 1, 2, 4, 5, 6, 9 and 10 were identified during the social impact assessment (Mwampamba *et al.* 2011). Risks 3, 7 and 8 were identified by MJUMITA and TFCG staff during the project design process. The non-permanence risk report prepared as part of the VCS project design document describes risks to the project's climate benefits.

**Table 5: Risks to the expected project benefits and mitigation measures.**

Risk description	Probability and potential impact of risk	Mitigation measures
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Risk description	Probability and potential impact of risk	Mitigation measures
<p><b>Risk 1.</b> Conflicts over village boundaries cause delays to land use planning and the issuing of village land certificates; and revised boundaries are not accepted by all farmers with some farmers continuing to clear forest in an adjacent village's land.</p>	<p>Probability: medium / high. Potential impact: high.</p>	<p>Mitigation measures: seek consensus from all affected villages on the location of village boundaries through joint meetings; boundary visits; and participatory mapping. Raise awareness on the location of the new boundaries within the affected villages. Support the District Lands Office to apply for a village boundary amendment from the Ministry of Lands and ensure that all required documents and other evidence is submitted. Provide training to District staff on Conflict Management in the context of Climate Change.</p>
<p><b>Risk 2.</b> Increase in human-wildlife conflict associated with increase in forest cover and forest enhancement. Existence of wild animals in the area (and possible increase in wildlife due to forest enhancement) could threaten safety of communities and agricultural efforts (through crop destruction).</p>	<p>Medium. Potential impact: medium</p>	<p>Training to farmers on techniques to avoid crop losses due to wild animals. Shifting to more permanent agricultural techniques in fields that are further from the forests.</p>
<p><b>Risk 3.</b> Private investors purchase forests within the project area and clear them for agriculture</p>	<p>Probability: low / medium Potential impact of risk: high</p>	<p>Mitigation measures already taken include: awareness raising on land rights; strengthening the tenure of the village land through village land use planning; boundary resolution; and obtaining the village land certificates; and providing an incentive to communities to retain ownership of their forests through REDD payments. The local MJUMITA networks are also ready to advise communities on the risks of selling land to private investors. Through their membership of the national MJUMITA network, they have access to legal and political support.</p>
<p><b>Risk 4.</b> Internal conflict within communities over forest access rights.</p>	<p>Probability: medium Potential impact of risk: high</p>	<p>The REDD readiness activities were implemented with a commitment to free, prior and informed consent. Through the participatory planning and social impact assessment work, community members have directed the design of the REDD implementation phase. They were also given opportunities to opt out of the project at various stages. Those communities with groups of</p>

Risk description	Probability and potential impact of risk	Mitigation measures
		<p>individuals who were not happy to continue with REDD implementation are not included. All of the villages that are included in this PDD have chosen to continue with the project through their village assembly meetings. The Village Assembly meetings have passed by-laws on REDD and have signed a Memorandum of Understanding with MJUMITA outlining their commitment to the REDD process. In addition, a conflict resolution mechanism is in place, to ensure that conflicts that do arise can be addressed in a fair way. By engaging with a wide range of stakeholders during the project design phase, there is also a broad network of support for the initiative at local and national level including from local MPs, the District Council and the Ward Development Committees. The project also provided training to District staff on Conflict Management in the context of Climate Change.</p>
<p><b>Risk 5.</b> Forest fires cause deforestation within the project area.</p>	<p>Probability: medium Potential impact of risk: medium</p>	<p>Awareness raising on fire prevention and fire fighting. By-laws that prohibit the use of fire to clear forests; or the starting of fires within village forest reserves for any other reason. Training farmers on alternative agricultural methods to reduce dependence on 'slash and burn' agriculture.</p>
<p><b>Risk 6.</b> Reluctance to adopt alternative landuse practices to shifting agriculture, due to deeply ingrained and long landuse management traditions, as well as capacity and financial barriers to adoption of alternative techniques.</p>	<p>Probability: medium Potential impact of risk: medium</p>	<p>Farmer field schools will be used to demonstrate the direct benefits of conservation agriculture and other improved techniques. Farmers days will be organised in order to attract people to come and see the new approaches. By providing training to community based trainers it is intended that there will technical backstopping available within the communities for farmers. Access to microfinance for agricultural investment will be increased as a result of the project supporting the establishment of village savings and loans associations. The agricultural strategy has been carefully designed to focus on locally-appropriate strategies. REDD finance will provide an incentive to adopt practices that do not result in deforestation. TFCG will seek additional funds to provide continued agricultural support following the close of the Norwegian-funded project.</p>
<p><b>Risk 7.</b> Corruption in relation to the REDD payments undermines the effectiveness and equitability of REDD</p>	<p>Probability: medium Potential impact of risk: low / medium</p>	<p>The individual payment mechanism modelled by this REDD project is designed to maximise accountability around REDD payments. It is based on the premise that individuals are more likely to demand accountability where they have a direct stake in the outcome of transactions. As part of the REDD readiness activities, there has been widespread awareness raising in relation to the model and two</p>

Risk description	Probability and potential impact of risk	Mitigation measures
		<p>rounds of payments have been made in all villages so that a majority of people are familiar with the process and the roles and responsibilities of different stakeholders. The MJUMITA networks have also been trained to provide support to communities to prevent and where necessary address any governance shortfalls in relation to the REDD payments. The presence of civil society organisations is known to moderate the risk of elite capture in participatory forest management (Persha and Andersson 2014). The highest risks relate to the use of any funds allocated for community development projects. Where communities do not trust their leaders, they have the option of not entrusting any money to them.</p>
<p><b>Risk 8.</b> Corruption in relation to forest reserve management results in forest clearance</p>	<p>Probability: medium Potential impact of risk: medium</p>	<p>Over the last decade there has been growing awareness on the scale of corruption within the forest sector in Tanzania and its impact on national development. As such various efforts are now underway at local and national levels to mitigate these risks. Many of these initiatives such as the Mama Misitu (Mother Forest) Campaign and the Forest Justice Project have invested in building the capacity of communities to address governance shortfalls. As part of the REDD readiness activities, TFCG and MJUMITA have provided training to village leaders on good governance. They have also provided training and support to community based advocacy groups so that they can address governance shortfalls directly at village level. These local MJUMITA networks are now in place and will monitor and expose any corruption in relation to reserve management.</p>
<p><b>Risk 9.</b> Political support for REDD in Tanzania is withdrawn or legislation is changed to prevent communities accessing REDD revenues directly</p>	<p>Probability: low Impact of risk: high</p>	<p>With support from the Norwegian government, the UN REDD programme and the Forest Carbon Partnership Facility, there is widespread awareness about REDD and support for it within Tanzania. The National REDD strategy was published in 2013 documenting the government's commitment to continue with REDD. By raising awareness amongst communities and MPs about the potential benefits that REDD could offer rural communities, the issue also has political support.</p>
<p><b>Risk 10.</b> REDD revenues are insufficient to incentivise sustainable forest management</p>	<p>Probability: medium Impact of risk: high</p>	<p>By seeking CCB and VCS validation, the project aims to secure a price for REDD credits that will provide sufficient incentives to communities to reduce deforestation. In addition, during the REDD readiness activities, TFCG and MJUMITA emphasised the other benefits to communities of maintaining forest cover and will continue to look at ways to secure other revenues for communities that support and are compatible with REDD.</p>

**G1.11. Describe the measures needed and taken to maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime.**

Sustainability is affected by stakeholders having the incentive, the capacity and the external network of support to continue with an initiative. All of these have been enhanced as part of the project development process and will be further enhanced during the Project Lifetime.

In terms of incentive, the implementation of the activities aimed at achieving the climate, community and biodiversity benefits will be led by the local communities. The project design reflects the priorities identified by the communities and has been carried out with a commitment to free, prior and informed consent. The communities are the primary beneficiaries of the water and other ecosystem services provided by the current and potential project areas. This provides a long-term incentive for maintaining the forests and their concomitant climate, community and biodiversity benefits.

In terms of capacity, TFCG and MJUMITA, with finance from the Norwegian Government, have spent four years (2010 – 2013) preparing the communities to take on these responsibilities through training and by facilitating processes such as village land use planning, securing village land certificates, village boundary resolution and establishment of community based forest management. Their technical and legal capacity to maintain forest cover has increased and by embedding these processes into existing government procedures and structures, a framework is in place to encourage these skills to be handed down to the next generation.

Similarly by aligning the REDD-related activities such as land use planning and CBFM with existing processes, they are also embedded into existing government support structures. The processes provide a legal basis for conserving the forest and corresponding climate, community and biodiversity benefits beyond the project lifetime. The communities will also be receiving back-stopping from MJUMITA throughout the project lifetime. As the project lifetime comes to an end, MJUMITA will conduct an assessment of what is needed to sustain the project's multiple benefits and will assist the communities to seek the support that they need in order to sustain these. Finally, given national and international interest in the East African Coastal Forests, and given the high biodiversity values of the forest, we consider it likely that national and international conservation organisations will prioritise this area for support even after the Project Lifetime.

**G1.12. Demonstrate that financial mechanisms adopted, including actual and projected revenues from GHG emissions reductions or removals and other sources, provide an adequate actual and projected flow of funds for project implementation and to achieve the project's climate, community and biodiversity benefits.**

The project's business plan shows that the project must obtain a minimum carbon price of \$5.30 in order to achieve its objectives and be financially self-sufficient (maintain a positive cashflow) from February, 2015 onwards (see Annex 5 for projected cashflow for the first fixed baseline period). The project's annual costs will be dramatically scaled back after the end of the startup phase in August 2014 as most of the project activities going forward will be implemented by participating communities with limited support from MJUMITA. From August 2014, only the community forest enterprise officer and a driver will continue to be employed fulltime by MJUMITA for REDD activities. Their time and costs will be divided between the MJUMITA Community Forest Project Lindi and Kilosa sites (this PDD applies only to the Lindi site). At a price of \$5.35, the project will generate enough revenue to cover all of the ongoing costs associated with the project, including monitoring and verification and saving enough revenue during the fixed-baseline period to cover the cost of the baseline renewal and validation in 2022 should the project need to continue in the voluntary market at that time.

The minimum price is also sufficient for the project to pass on \$3.25 per ton of avoided emissions to communities, which is just enough to offset the opportunity cost of a typical farm in the project area. This is based on the following calculations. Based on the social impact assessment, the typical upland

farm (where the majority of avoided deforestation will occur) produces about \$183.50 worth of crops (primarily maize) per hectare per year. Cultivating 1 hectare of land requires about 38 man power days, the opportunity cost of which is \$53.20 (Mkamilo, 2004). Thus profit from 1 hectare of cultivation on a typical farm is \$130.30 per year of cultivation. Farmers in Lindi typically farm a plot for 1 to 2 years before abandoning it for an average of 10 years. Assuming a farmer cultivates for 2 years in a row and then fallows for 10 years before cultivating again, the 30 year (project life span) net present value using an annual discount rate of 10% of 1 hectare of land converted to farming is \$303.48. At \$3.25 per ton, after accounting for VCUs deposited into the risk buffer, the value of the average hectare of avoided deforestation is \$367.53, thus just slightly more than that of a typical farm. However, it should be noted that a much higher carbon price is required to offset the opportunity cost of sesame cultivation, which is the most profitable land-use in the area. The net present value of REDD in the project area during the fixed baseline period is compared to agriculture at the end of Annex 5.

The average price for VCUs transacted in the voluntary carbon market in 2012 was \$5.90, while the average price for REDD VCUs transacted in 2012 was \$7.80. Thus, the project should be able to obtain the required minimum price, especially considering the considerable additional benefits that should appeal to corporate social responsibility buyers. Additionally, the project anticipates that by the end of the first fixed-baseline, other sources of funding will have become available through the creation of an international REDD program and that the project will be incorporated into a nested accounting system within Tanzania, which is currently under development. This could greatly decrease the project's costs associated with monitoring and could mean that the project could also forgo verification under VCS, if it can receive funding apart from the voluntary carbon market.

The project paid communities in Lindi for emissions reductions they accomplished between 2012 and 2013 using a portion of funds from the Royal Norwegian Embassy. This money will be refunded to MJUMITA to be used as working capital for the project after the sale of the emissions reductions from this period. Thus, MJUMITA will always have working capital to cover basic ongoing project costs in advance of sales. This is reflected in the cashflow analysis in the first column showing a starting cash position of \$89,477.

The project is exploring several market options related to corporate social responsibility, including selling to a domestic offset reseller marketing to tourism related businesses, selling to companies involved in the newly formed Tanzanian gas and oil industry, or selling to an international corporation located in the US or Europe. The project has already secured an offer for \$4 a ton from a domestic reseller, but will continue to explore options to achieve a higher price.

## Programmatic approach

**G1.13. Specify the Project Area(s) and Communities that may be included under the programmatic approach, and identify any new Project Area(s) and Communities that have been included in the project since the last validation or verification against the CCB Standards.**

**Table 6: Potential project expansion villages to be included under the programmatic approach.**

Chilala	Mnimbila
Chiponda	Moka
Kikomolela	Mputwa
Kilangala	Mtakuja
Kitomanga	Mtumbikile
Legezamwendo	Nahanga



Lihimilo	Namkongo
Luchemi	Namtamba
Makangara	Nanyanje
Matapwa	Narunyu
Matimba	Ng'apa
Mchichili	Ntene
Michee	Rutamba ya sasa
Milola A	Rutamba ya Zamani
Milola B	Tandangongoro
Mkangaulani	Komolo

**G1.14. Specify the eligibility criteria and process for project expansion under the programmatic approach and demonstrate that these have been met for any new Project Areas and Communities that have been included in the project since the last validation or verification against the CCB Standards.**

Eligibility criteria for inclusion of new project areas are:

1. Free, prior and informed consent including outreach at sub-village level and a participatory social impact assessment must be implemented prior to new project areas being included.
2. Adoption and implementation of project activities as described in G1.8 of this project design document whereby respect for rights to lands, territories and resources is integrated;
3. Adoption of a similar community, biodiversity and climate monitoring plan (Doggart, 2014 b).
4. Areas must be subject to the same climate, community and biodiversity without-project scenarios as determined for the project area; and have similar characteristics with respect to additionality.
5. Village must fall within the project reference region specified in the VCS project description Methodological Annex.

**G1.15. Establish scalability limits, if applicable, and describe measures needed and taken to address any risks to climate, community and biodiversity benefits if the project expands beyond those limits.**

REDD readiness activities including the FPIC process, the social impact assessment, the village land use planning and establishment of the village forest reserves required additional finance that was provided by the Norwegian Ministry of Foreign Affairs. At present, MJUMITA has limited funds available to finance expansion into new villages. However both TFCG and MJUMITA are actively seeking funds to support these preparatory activities. As such scalability will depend on securing additional funds.

In terms of the scalability limits, the eligibility criteria limit the area for scaling up given the differences in the without-project scenarios for land beyond the current reference region.

**G2. Without-project Land Use Scenario and Additionality**

**G2.1 Describe the most likely land-use scenario within the Project Zone in the absence of the project, describing the range of potential land-use scenarios and the associated drivers of land use changes and justifying why the land-use scenario**

**selected is most likely. It is allowable for different locations within the Project Zone to have different without-project land use scenarios.**

Two methods are used to assess the most likely land-use scenario within the project Zone in the absence of the project i. A participatory scenario-building process with representatives from all project villages (see Mwampamba 2011 for details) based on the without-project scenario building method outlined in Richards and Panfil 2011; and ii. as part of the VCS PDD, the additionality of the project is assessed using the most recent version (3.0) of VT0001 Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities.

Through the participatory without-project scenario-building process with community representatives, all but one village stated that the forest area was going to decline over the next 5, 10 and 30 years driven by conversion of forest land to agricultural land through shifting agriculture by small-scale farmers, particularly for maize cultivation. Removal of the few remaining timber trees would also continue with new species being targeted as the most desirable species go commercially extinct from the area. Without the REDD project, communities predicted that natural resources management strategies would not change in the short nor long-term future (see Mwampamba *et al.* 2011).

Underlying these without-project scenarios, are the factors affecting the deforestation drivers. Small-scale agriculture is the primary deforestation driver. Deforestation as a result of small-scale agriculture is linked to:

- a growing population;
- the absence of any plan or legal basis for conserving the forests;
- unclear village boundaries and weak village governance;
- the lack of other livelihood options for communities particularly given low levels of literacy;
- the lack of extension services and other support to small-scale farmers to help them switch away from shifting agriculture;
- poverty and lack of capital preventing adoption of other livelihood activities;
- the price of maize which is likely to increase with the lifting of the export ban.

During the social impact assessment, we did not record any initiative that was likely to change these factors; and as such we found no evidence that the current trend of converting forest to agricultural land would alter until all forest was cleared.

Based on the results of the VT0001 Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities the VCS PDD for this project concludes that 'the continuation of the land-use trends of the 10 years crops prior to the project (i.e. continued conversion of communally owned village forest land to small holder agriculture, primarily for annual cash or subsistence) is the most plausible alternative land use scenario in the absence of this REDD project.

**G2.2. Document that project benefits including climate, community and biodiversity benefits would not have occurred in the absence of the project, explaining how existing laws, regulations and governance arrangements, or lack of laws and regulations and their enforcement, would likely affect land use and justifying that the benefits being claimed by the project are truly 'additional' and would not have occurred without the project. Identify any distinct climate, community and biodiversity benefits intended for use as offsets and specify how additionality is established for each of these benefits.**

Information to assess whether project activities would or would not have been implemented under the without-project scenario, is derived from: participatory scenario building with stakeholders; local

government and CSO plans; relevant laws and sector plans; and a barrier analysis using VT0001 Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities.

As part of the social impact assessment, communities were asked to speculate on the social (and natural resources-related) changes they expect to experience, in the short (5 years), medium (10 years) and long-term (30 years) in the absence of the REDD project. In order to also capture plans by national, regional and district programs, and NGO and private sector activities, one of the objectives of the landscape level SIA workshop, was to validate the community-generated without project scenarios in light of more information about other stakeholders' planned interventions in the project area. These plans were used to adjust the trajectories for social, economic, and environmental conditions developed at community level. During the landscape SIA workshop, the tables were verified and revised for each village by representative participants and some explanations were provided to justify projections made.

### **In the absence of the project communities would not be implementing community-based forest management and forest area would decline significantly**

During the participatory scenario-building process with community representatives, only one of the village (Likwaya) thought it likely that participatory forest management would be introduced in the absence of the project. The majority of communities predicted that they will not be engaged in participatory forest management, and forest land will not be set aside as village or government reserves. In the case of Likwaya, the District Council had promised support to the village to undertake land use planning including the establishment of a village land forest reserve.

In the case of Likwaya, the District Council had promised to support land use planning on the basis of a project supported by the international NGO, Concern who were particularly interested in issues around livestock management. Although the community had understood that PFM would be integrated in this process, this was incorrect. The Concern project supported the initial stages of the village land use planning process and initiated the construction of the village office. Unfortunately the project was phased out before completion. As such, by the time the MJUMITA project began to work with Likwaya, by-laws had not been approved by the village; the construction of the village office had not been completed; and there was no VNRC in place. The District had no budget to complete the VLUP process and the village office initiated with funds from Concern was converted into a teacher's house. As such, in the absence of the project, even in Likwaya, the without-project scenario would have been 'no CBFM'.

Prior to the project, none of the villages in the current project zone had established village forest reserves or conducted land-use planning. Thus, conversion of forest to small holder agriculture was legal, except in the case of conversion of forest land to agriculture within 30 meters of a stream and farming on extremely steep slopes (hazard lands), which are illegal land-uses under the 2002 Forest Act and 1999 Land Act respectively. However, there is not a single documented case of these acts being enforced in the participating project villages prior to the start of the project and numerous examples of farmers clearing in stream valleys and on hazard lands. In fact, the historical deforestation analysis (see Step 2 of Part 2 of the VCS PD Methodological Annex) suggests that stream valleys are the preferred location for small holder farmers deforesting in the vicinity of the project area.

The barrier analysis presented in the VCS PDD shows that there are numerous barriers to implementing the proposed project activities in the particular project site. Chief among these barriers are the limited value of the forests in the project area other than in terms of REDD and the high pressure for expanding agricultural land. While these barriers would make it extremely difficult to convince the participating communities to engage in the proposed activities in the absence of REDD, they also mean that there would not have been a business case to make to donors for the funding necessary to even start the project. The donor money used to establish this project was specifically

provided to launch a REDD project that would generate revenue for local communities through the sale of REDD credits.

**In the absence of the project, forest area would decline significantly with a concomitant decline in forest products**

Forest cover is expected to decrease in all communities in the next 5 years, and expected to continue decreasing into the future in most communities. Timber and non-timber forest resources (including medicinal plants, wild fruits and ming'oko) are also expected to decrease due to decreasing forest cover. Without the REDD project, natural resources management strategies are not expected to change in the short nor long-term future. Among these, control of timber harvesting will not become more effective, use of fire and subsequent uncontrolled forest fires will continue (or increase). Applying the baseline deforestation rates, over a 30 year period, 18,478 ha of forest and woodland would be cleared within the project area, equivalent to 44 % of the starting forest area.

**In the absence of the project most aspects of village governance will remain the same.**

The projections regarding improved governance varied between villages with over half expecting that things will remain the same or will deteriorate in terms of Village Councils meeting and reporting to their citizens with the remainder optimistic that there will be an improvement in these areas. Participants expected that District extension services will train village executive officers on reporting and record keeping particularly in generating, recording and reporting village income and expenditures. Without the REDD project, communities do not expect improvements in other aspects of village governance, certainly not in terms of developing landuse management plans or resolving boundary conflicts.

**In the absence of the project villages will not develop village land use plans and will not receive their village land certificates.**

All but one of the project villages (Likwaya) anticipated that they would not develop a village land use plan nor receive their village land certificate within a 20 year period (for Likwaya see comments above in the CBFM without-project scenario). As these are key steps in securing community and individual land tenure, the community perception was that there would be little progress towards achieving more secure land tenure in the absence of the project.

**In the absence of the project communities would not receive REDD payments.**

With no national-level mechanism in place to channel REDD payments to the communities and no other AFOLU projects in place within the project area or project zone, the communities would not have benefited from any direct payment for reducing emissions of greenhouse gases from deforestation and forest degradation from the village land forests. As such, most household incomes would rely exclusively on agriculture, particularly amongst the poorer households.

**In the absence of the project, there will be little change in agricultural practices**

According to SIA participants, shifting cultivation will continue to be the dominant landuse system employed in the area, and production of surplus is unlikely to occur. Communities reason that changes in the agricultural sector will not happen because production challenges will remain unchanged, mostly due to inadequate farming implements, limited access to agricultural inputs, frequent and devastating rat and ant seed damage, among other challenges. The SIA participants also predicted that access and rights to agricultural land would decline or stay the same. Research looking into the effectiveness of District Agricultural Development Plans, the main government support mechanism to small-scale farmers, finds that this support strategy is largely dysfunctional benefitting only a few communities and having no impact on poorer and more remote farmers (Baruani and Senzia 2013).

## **There would be little investment in improving public services and infrastructure in the communities in the absence of the project**

With the exception of villages that are already undertaking improvement projects (mostly construction of additional primary school classes and dispensaries), most communities do not expect improvement in education, health and infrastructure services in the next five years. Improvements are anticipated for the medium term (10 years); these improvements are not expected to persist into the long-term (30 years), however.

### **G3. Stakeholder Engagement**

#### **Access to information**

##### **G3.1. Describe how full project documentation has been made accessible to Communities and Other Stakeholders, how summary project documentation (including how to access full documentation) has been actively disseminated to Communities in relevant local or regional languages, and how widely publicized information meetings have been held with Communities and Other Stakeholders.**

TFCG and MJUMITA have and will continue to use a series of different communication channels to share full and summary project documentation. These are described below:

*Internet* – website the project design document has been submitted to the Climate, Community and Biodiversity Project Standards for posting on their website for public comment. It is also posted on the TFCG website. TFCG and MJUMITA will circulate an e-mail through the REDD pilot projects and the Tanzania Forest Working Group list serves to publicise the public comment period. Several of the supplementary documents are already available on the project's website including the project's policy on GMOs; the biodiversity survey report for the area; the social impact assessment; and the project's agricultural strategy.

*Meetings with local stakeholders* – the project model as outlined in this document has been presented to communities through various forums including the landscape level social impact assessment workshop; the landscape level participatory evaluation workshop held in November 2012; and the village assembly and village council meetings to present the REDD model in each village. During each of these events, there has been opportunity to discuss the proposed model for REDD. In addition a stakeholder meeting was held on 4<sup>th</sup> February 2014 in Lindi with representatives from all of the participating villages as well as local government staff and leaders at which the PDD was presented and there was an opportunity for questions and comments. All meetings were conducted in Swahili.

*Printed materials* – the project has distributed posters in all participating villages that document the project's REDD model. A summary in Swahili of the CCB PDD was presented to communities during the stakeholder meeting on 4<sup>th</sup> February 2014. Representatives from all villages as well as Ward Councillors and District Officials including the District Commissioner and District Executive Director were presented with a hard copy summary. The hard copy summary included a translation of Sections G1.1-9 plus summaries of sections G 2, 3, 5 and 8; CM 1 – 3; B 1 – 2; GL 1- 3. Similarly a summary of the 1<sup>st</sup> project implementation report was presented in hard copy and as a presentation followed by discussions on 04/02/2014. Please refer to the PDD Stakeholder Consultation Workshop report (Mbegu, 2014). Hard copies of the full PDD were presented to the District Executive Directors for Lindi and Lindi Municipal; and were available for stakeholders to access at the TFCG Project Office in Kinyope Village as well as at the TFCG Head Office in Dar. Registers for recording comments will be made available and comments will be provided to the Validators.



**G3.2. Explain how relevant and adequate information about potential costs, risks and benefits to Communities has been provided to them in a form they understand and in a timely manner prior to any decision they may be asked to make with respect to participation in the project.**

Guided by Richards and Panfil 2011, the project conducted a social impact assessment for the project (see Mwampamba et al. 2011). As part of this assessment potential costs, risks and benefits were identified during the stakeholder workshop held in Lindi in February 2011. Additional risks were identified by the project team. See section G 1.10. During the stakeholder workshop in Lindi on 4<sup>th</sup> February 2014, the table from G 1.10 was presented in Swahili in hard copy to all participants including to the village and government representatives. The risks were also outlined in a presentation at that meeting.

**G3.3. Describe the measures taken, and communications methods used, to explain to Communities and Other Stakeholders the process for validation and/or verification against the CCB Standards by an independent Auditor, providing them with timely information about the Auditor's site visit before the site visit occurs and facilitating direct and independent communication between them or their representatives and the Auditor.**

The role of CCB and VCS has been outlined to stakeholders at various stages in the project development including during the Social Impact Assessment workshop; and most recently, during the stakeholder meeting on 4<sup>th</sup> February 2014 the two standards were described; and the validation and verification processes were explained. The role of the Auditor was also described. Once the date of the auditor visit is known, it will be communicated to all communities. SCS has been selected as the Auditor.

**G3.4. Describe how Communities including all the Community Groups and Other Stakeholders have influenced project design and implementation through Effective Consultation, particularly with a view to optimizing Community and Other Stakeholder benefits, respecting local customs, values and institutions and maintaining high conservation values. Project proponents must document consultations and indicate if and how the project design and implementation has been revised based on such input. A plan must be developed and implemented to continue communication and consultation between the project proponents and Communities, including all the Community Groups, and Other Stakeholders about the project and its impacts to facilitate adaptive management throughout the life of the project.**

From the outset of the REDD readiness activities, MJUMITA and TFCG have tried to model best practice in relation to free, prior and informed consent.

The initial consultation with the communities at sub-village and village level is described in Forrester-Kibuga *et al.* 2011; records of the village level consultation on project design are recorded in Mwampamba *et al.* 2011 and Nguya 2011; and the stakeholder workshop to present the PDD is described in Mbegu 2014. MoUs have been signed between MJUMITA and the communities further documenting their consent to participate. Copies of the MoUs signed by each community have been provided to the Validators.

In terms of stakeholder involvement in project design through effective consultation, a multi-step process was implemented reflecting the project's commitment to free, prior and informed consent. These steps are outlined below with more information available in Luwuge *et al.* 2011, Luwuge *et al.* 2011a and in Mwampamba *et al.* 2011. The process aimed to ensure that as many people as possible were informed about REDD and the REDD readiness initiatives; that they had more than one

opportunity to confirm their consent for REDD as the process continued, or withdraw from the process; and that marginalised groups including poorer households, women and those living in more remote sub-villages were included. Local government staff participated at each stage and elected officials including the MP and ward councillors were involved at key points.

Changes to the project design included the withdrawal of six villages from the process: Kikomolela, Moka, Chikonji, Rutamba ya Sasa, Lihimilo and Namkongo Villages. In each of these villages there were groups who did not consent to the REDD readiness or REDD implementation activities proceeding. In keeping with our commitment to free, prior and informed consent as a pre-requisite for participating in REDD, these villages are not included in the project area for this PDD. The project's desired impacts and the strategies to achieve those impacts are a culmination of stakeholder comments.

Communication between the project was helped by identifying community communicators who were given responsibility for liaising between the project and their respective community. Each communicator was provided with a mobile phone and airtime each month during the REDD readiness phase.

**Table 7: Stakeholder consultation process.**

Activity
<p><b>Introductory meetings with Village Councils</b></p> <p>Introductory meeting to all Village Councils were held to introduce TFCG and MJUMITA, and explain about REDD, climate change and participatory forest management. Village councils were asked whether they would like to continue with REDD readiness activities.</p>
<p><b>Community level awareness raising and consultation at sub-village level</b></p> <p>Consultation and awareness raising meetings were held at sub-village level. All sub-villages were visited and people had the opportunity to learn about REDD, climate change and participatory forest management; discuss any concerns; and express their support or objection to REDD readiness activities proceeding. The outreach at sub-village level aimed to ensure that even those living in more remote parts of the village including poorer households and women, who often do not attend village assembly meetings, could be contacted. See Forrester-Kibuga et al. 2011.</p>
<p><b>Community level awareness raising, consultation and request for consent to proceed at village level</b></p> <p>Village assembly meetings were held in each village including drama and discussions to raise awareness on REDD and to document the consent of the village to proceed with the project. All adult residents of a village are members of the village assembly. Many children also participated. Members of the village natural resources committee were confirmed, ensuring that at least 1/3 of members were women. The village assemblies were requested to decide whether they wanted to proceed with the REDD readiness. All villages included in this PDD chose to accept the REDD readiness project and to proceed towards REDD implementation. See Forrester-Kibuga et al. 2011.</p>
<p><b>Community level, participatory project design and social impact assessment workshops with community representatives</b></p> <p>Three-day social impact assessment workshops were held in all villages involving an average of 29 people per village including representatives from all sub-villages, village elders, village leaders, at least one village natural resources committee member and different forest users including herbalists. On average 9 out of the 30 participants were women. The workshops initiated a theory of change approach to social impact assessment. Steps taken during these meetings included:</p> <ul style="list-style-type: none"> <li>• participatory mapping of high conservation values;</li> </ul>

- development of with and without REDD scenarios;
- identification of REDD project objectives and activities;
- validation of lists of internal and external stakeholders;
- community recommendations on a conflict resolution mechanism.

The results of the workshops are synthesised in Mwampamba *et al.* 2011.

#### **Participatory social impact assessment workshop at landscape level involving community representatives and other stakeholders**

The village level workshops were followed by a workshop at District level involving representatives from all villages plus other stakeholders. The objective of the workshop was to a) verify the information gathered at the village workshops and validate the post-workshop synthesis and analyses, b) identify key project activities needed to fulfil the long-term social objectives i.e., Phase 2 of the REDD project, c) agree on the conflict resolution mechanism and communication strategy; d) document plans by stakeholders external to the communities on relevant initiatives, including local government plans, to feed into the with and without project scenarios; and e) with workshop participants, identify the intended and unintended social consequences of project activities. The principal approach for conducting Stage 4 of the SIA was the Open Standards for the Practice of Conservation's theory of change (or causal model) approach. Open Standards (OS) are a set of standards that "provide the steps and guidance necessary for successful implementation of conservation projects" (CMP, 2007). The objectives and activities agreed upon by stakeholders during these planning workshops form the basis for the design of the REDD implementation process as outlined in Sections G 3.1 and G 3.2. The workshop report is available as supplementary material (Luwuge *et al.*, 2011) and the results are synthesised in Mwampamba *et al.* 2011.█

#### **Consultation meetings with community leaders on village land use planning, participatory forest management and REDD**

A process of integrated village land use planning, establishment of community based forest management and REDD readiness was initiated in all villages. This involved introductory meetings with the Village Land Use Management (VLUM) committees, the Village Natural Resources Committees (VNRC), the Village Councils and elders on potential REDD revenues, principles of REDD and climate change, natural resources policies, land use planning principles and procedures, community based forest management principles and procedures and REDD benefit sharing by-laws.

#### **Community consultation meetings on proposed REDD readiness activities**

Meetings were then held in each village with the Village Assembly on linkages between REDD, village land use planning and community based forest management; and signing of an MoU between the community and the project to document roles and responsibilities in relation to REDD readiness. This was another key step in ensuring free, prior and informed consent. All villages included in this PDD agreed to proceed and signed an MoU with the project consenting to proceed with REDD readiness activities. These are available as supplementary material.

#### **Community level, participatory project design and social impact assessment workshops with community representatives**

Three-day social impact assessment workshops were held in all villages involving an average of 29 people per village including representatives from all sub-villages, village elders, village leaders, at least one village natural resources committee member and different forest users including herbalists. On average 9 out of the 30 participants were women.

The results of the workshops are synthesised in Mwampamba *et al.* 2011.

#### **Community-led land use planning, village forest reserve establishment and REDD by-law development**

The village land use planning and CBFM establishment processes then proceeded. The approach taken aimed to ensure that all of the required steps were followed as per government guidelines. An integrated approach was adopted whereby the two processes, which are often implemented separately, were well integrated. In each village the process was led by the community representatives with technical support from local government staff and facilitated by TFCG and MJUMITA field teams (see Luwuge *et al* 2011a for a detailed description of this process).

Steps that were taken included:

- village boundary review,
- participatory rural appraisal,
- forest utilization assessment
- development of community action plan.
- Verification of village boundary beacons
- Reach consensus with neighbouring villages on location of village boundaries.
- Data collection to map the current land uses
- Forest walks and forest sample plot assessment
- Meeting to prepare drafts of the village land use plan and by-laws, village forest reserve plan and by-laws and the REDD benefit sharing by-laws.
- Draft REDD, VLUP, VFR plans and by-laws presented at sub-village level for consultation.
- VNRC, VLUM and Village Council REDD meeting to address issues raised at sub-village level and revise by-laws and plans accordingly.
- Village Council meeting to present draft village land use plan and by-laws; draft VFR management plan and by-laws; draft REDD benefit sharing mechanism by-laws; and service provider agreement between community and MJUMITA.
- Mapping of village forest reserve boundary, forest management units and land use classes for incorporation in final land use plan and VFR maps involving selected members of the VLUM and the VNRC.
- Village assembly meeting to present REDD benefit sharing by-laws; select REDD benefit sharing committee; present the draft VFR management plan, by-laws and map; present the draft Village Land Use plan and by-laws; and present and sign the MJUMITA - Village service provision agreement; describe the payment procedures for initial payment; and identify community development projects from initial payment.

Based on comments at the village assembly meetings, corrections were then made to the maps. In some cases this was quite a lengthy process. Similarly, in some cases the project facilitated a more extensive consultation and conflict resolution process regarding the village boundaries.

Once approved at the village level and once the maps were finalised, The documents were presented to the Ward Development Committee; the District Lawyer and the District CMT. Additional comments were then incorporated. These mainly related to the maps. From there they were submitted to the District Council for approval. Once approved they were submitted for signing by the District Commissioner and once signed were returned to the respective villages.

### **Community consultation and planning on REDD payment mechanism and piloting of the REDD payment mechanism**

Once the plans and by-laws had been approved at village level, training was provided to the REDD special committee on the REDD payment procedures. This included calculating the dividend to be paid to each resident. The total sum to be paid to each village was based on the calculations of potential emission reductions, proportional to the area of forest to be conserved and the historical deforestation rate and based on a conservative per ton price. This was then divided by the number of residents. The REDD committees were then responsible for ensuring that a complete list of the residents of the village was in place; and that proposals on community development projects were prepared. On the payment day, further information on REDD was provided and communities again

had an opportunity to provide or withdraw their consent to proceed towards REDD implementation. At the time of the first payment Kiwawa Village withdrew their consent at this stage. However following further consultation over a four month period and a conflict resolution process related to the village forest reserve boundary, the village consented to proceed and a REDD payment was made. In each village, people were required to make a contribution from their REDD payment to forest management costs and, in some cases, community development projects based on a vote by the Village Assembly. In each village, the REDD payment was followed by a participatory evaluation of the process involving village representatives and the results of that consultation were integrated in a revised REDD model. Changes made were to ensure that some funds be set aside to pay for forest management activities by the Village Natural Resources Committee and to pay for the work of the REDD committees in preparing for the payments. A more detailed description of the REDD payment model is available in GL 2.6.

#### **Stakeholder consultation and evaluation involving community representatives and other stakeholders**

Following the trial REDD payments, a stakeholder workshop was held to generate feedback on the REDD readiness activities and on the proposed REDD implementation model. This was attended by community representatives, local government officials, Ward Councillors and the Member of Parliament. Key issues raised during the meeting included the need for the local government to accelerate the process of approving the by-laws and plans developed by the communities; and the need for greater cooperation in resolving village boundary conflicts. Comments were also provided regarding the REDD model including the need to clarify the role of the District. The project also facilitated the Lindi District Council Economic and Environment Committee members to visit six of the project villages in November 2012 in order to ensure that local government leaders were informed and had the opportunity to provide input into the process.

#### **Strengthening community land tenure by securing village land certificates**

Requests for village land certificates were submitted to the Ministry of Lands and requests for boundary revisions were also submitted where resolutions had been made to change village boundaries following extensive consultation with the affected villages. The project has been making close follow-up on this.

#### **Community level awareness raising on implementation of village land use and forest management plans.**

Awareness raising events to remind people about the land use plan and the village forest reserve.

#### **Community consultation and participatory development of MoU between MJUMITA and the communities**

Meet with the Village Council and REDD special committee to develop an MoU between the village and MJUMITA outlining the roles and responsibilities of the two parties in relation to the REDD implementation phase including allowing MJUMITA to represent the communities in the CCB and VCS validation and verification processes; and in negotiations with potential buyers of the verified emission reductions.

#### **Community training on roles and responsibilities**

Training to VLUM and VNRC (plus V Chair and VEO) on implementation of CBFM and VLUP (3 days) including training on roles and responsibilities of different stakeholders; training on relevant policies and laws; familiarisation with VLUP and VFR plan; preparation of monitoring plan, budget and work plan for CBFM; preparation of monitoring plan, budget and work plan for village land use management; and field visit to selected land use boundaries. And distribute relevant training materials.



### **Community consultation and request for written consent to proceed with REDD implementation**

The memoranda of understanding were presented to the Village Assembly and where approved, the MoUs were signed in May 2013. These are available as supplementary material.

### **Stakeholder meeting in Lindi to present PDDs**

On 4th February 2014 a stakeholder meeting was held in Lindi involving 91 participants including Village leaders from 10 villages, ward and divisional leaders, Ward Councillors, district and Municipal officials, Executive Directors from the District and Municipal councils, the District Commissioner and Member of Parliament, journalists and project officers. During the meeting presentations were made on the CCB and VCS PDDs; hard copies of summary documents were circulated; and there was an opportunity for comments and discussion (see Mbegu, 2014).



**Photo 1: Social impact assessment workshop in Lindi Town, February 2011.**



**Photo 2: Stakeholder consultation workshop to present PDDs in February 2014.**

The processes described above focuses on the consultation at community and project area level. TFCG and MJUMITA have also been consulting with national level stakeholders including the National REDD task force, representatives of the National Carbon Monitoring Centre, the Land Use Planning Commission and the Tanzania Forest Service. A project advisory committee with representatives from the Vice-President's office, Ministry of Natural Resources and Tourism, Sokoine University of Agriculture, Prime-Minister's Office for Regional and Local Government, Lindi District Council, Lindi Regional Natural Resources Office and other civil society organisation including CARE, WWF and the Mpingo Conservation and Development Initiative have met on a biannual basis to review progress on REDD readiness activities. Their comments and advice have also been included in the project design.

A communication plan has been developed and is presented together with the project's community and biodiversity monitoring plan (Doggart 2013b). This was presented to community representatives from all project villages and local government during a workshop on 4<sup>th</sup> February 2014 (Mbegu, 2014) for comment.

**G3.5. Demonstrate that all consultations and participatory processes have been undertaken directly with Communities and Other Stakeholders or through their legitimate representatives, ensuring adequate levels of information sharing with the members of the groups.**

Consultations and participatory process have involved village assembly meetings open to all adult residents of a village; meetings with elected village councils and village natural resources committees; meetings at sub-village level; and meetings with specific groups including women and charcoal producers. The Village Assembly and the Village Council are considered to be the legitimate forums for community consultations based on Tanzanian tradition and the Local Government (District Authorities) Act, 1982 which states that:

*'141. A village assembly is the supreme authority on all matters of general policy-making in relation to the affairs of the village as such, and shall be responsible for the election of the village council and the removal from the council of any or all of the members of the council, and for the performance of any other functions conferred upon it by or under this Act or any other written law.*

*142.-(1) A village council is the organ in which is vested all executive power in respect of all the affairs and business of a village.*

*(2) In addition to any functions conferred upon it by or under this Act or any other written law, a village council shall*

*(a) do all such acts and things as are necessary or expedient for the economic and social development of the village;*

*(b) initiate and undertake any task, venture or enterprise designed to ensure the welfare and well being of the residents of the village;*

*(c) plan and co-ordinate the activities of and render assistance and advice to the residents of the village engaged in agricultural, horticultural, forestry or other activity or industry of any kind;*

*(d) encourage the residents of the village in undertaking and participating in communal enterprises;*

*(e) to participate, by way of partnership or any other way, in economic enterprises with other village councils.'*

Where consultation has been through community representatives, the project has involved the Village Chair and / or the Village Executive officer with a preference for the Village Chairperson as the elected representative. The project has also involved the Ward Councillors as the elected community representatives on the District Council; and the Member of Parliament. During the village land use planning and village forest reserve planning, the project worked with the elected village natural resources committees and village land use management committees. For the REDD payments and by-law development and implementation, the project has worked with the elected, village REDD committees.

The project has also used a suite of communication tools including radio, video shows, project newsletters, posters, meetings and leaflets in Swahili to ensure adequate levels of information sharing with different stakeholders. These have included posters describing the MJUMITA Carbon Enterprise model which have been distributed in all villages; a documentary in Swahili explaining about the principles of REDD and presenting different community perspectives on REDD; regular radio programmes on conservation agriculture; summaries of the CCB PDD, monitoring plan and 1<sup>st</sup> Project Implementation Report.

### **Participation in decision-making and implementation**

**G3.6. Describe the measures needed and taken to enable effective participation, as appropriate, of all Communities, including all the Community Groups, that want and**

**need to be involved in project design, implementation, monitoring and evaluation throughout the project lifetime, and describe how they have been implemented in a culturally appropriate and gender sensitive manner.**

It is important that measures are in place to enable effective participation of all communities, including all the Community groups beyond the project design phase. Annual village assembly meetings will be held in each village involving all adult residents to review progress towards achieving the projects climate, community and biodiversity benefits; and to decide on the distribution of REDD revenues. As village assembly meetings are open to all residents of a village, these meetings will be open to all community groups within the respective villages including women.

In interactions with MJUMITA, communities will be represented by their village chairperson and two other representatives chosen in village assembly meetings, of whom one will be a woman. These three representatives from each village will form the core of the project executive committee in charge of overseeing the implementation of the MOU between MJUMITA and the participating villages. The village members of the committee will review, change, and approve budgets proposed by MJUMITA to cover costs associated with MRV and marketing. The committee will also review the monitoring reports compiled by MJUMITA and the village level performance reports and portions of REDD revenue awarded to each village. In the event that a significant amount of leakage is detected outside of the project area, as per the MOU, the committee will identify the responsible village so that the leakage can be included in estimates of their performance. The village representatives on the executive committee will also be responsible for presenting this information to their village assemblies.

The executive committee will also include members with an advisory role, including representatives from the districts chosen by the district executive director, the executive director from TFCG, a representative from the Forestry and Nature Conservation department of Sokoine University of Agriculture, and a representative from the Vice President's Office dealing with national level REDD issues. To enable the committee to be able to make informed decisions, all of the executive committee members will receive training on REDD MRV, including basics of remote sensing and GIS that will be used by MJUMITA to monitor performance and report to VCS and CCB.

### **Anti-Discrimination**

**G3.7. Describe the measures needed and taken to ensure that the project proponent and all other entities involved in project design and implementation are not involved in or complicit in any form of discrimination or sexual harassment with respect to the project.**

The project identified discrimination based on gender as a potential risk and strategies were put in place to ensure the active involvement of women in project design and implementation. This included ensuring that at least 1/3 of Village Natural Resources Committee members were women; and that women were encouraged to participate in trainings on agriculture, microfinance and beekeeping. Women were involved in stakeholder consultation meetings including the village and landscape level social impact assessment and project design meetings. Management plans and by-laws were reviewed to ensure that women's interests were appropriately protected.

### **Feedback and Grievance Redress Procedure**

**G3.8. Demonstrate that a clear grievance redress procedure has been formalized to address disputes with Communities and Other Stakeholders that may arise during project planning, implementation and evaluation with respect but not limited to, Free, Prior and Informed Consent, rights to lands, territories and resources, benefit sharing, and participation.**

**The project shall include a process for receiving, hearing, responding to and attempting to resolve Grievances within a reasonable time period. The Feedback and Grievance Redress Procedure shall take into account traditional methods that Communities and Other Stakeholders use to resolve conflicts.**

**The Feedback and Grievance Redress Procedure shall have three stages with reasonable time limits for each of the following stages.**

**First, the Project Proponent shall attempt to amicably resolve all Grievances, and provide a written response to the Grievances in a manner that is culturally appropriate.**

**Second, any Grievances that are not resolved by amicable negotiations shall be referred to mediation by a neutral third party.**

**Third, any Grievances that are not resolved through mediation shall be referred either to a) arbitration, to the extent allowed by the laws of the relevant jurisdiction or b) competent courts in the relevant jurisdiction, without prejudice to a party's ability to submit the Grievance to a competent supranational adjudicatory body, if any.**

#### *Conflict resolution and Grievance redress procedure*

Through consultation with stakeholders at village and landscape level (see Nguya 2011 and Mwampamba *et al.* 2011) conflict resolution mechanisms and grievance redress procedures were identified. MJUMITA aimed to find mechanisms that are fast; easy to understand; transparent; accessible; and without risk of retribution. Given that REDD will be community-led, it was recommended that the conflict resolution procedures for REDD should follow the same procedures as are in place for other conflicts within the District. It was agreed that the normal procedures should be applied in case of any conflicts within communities or between communities. This will ensure that community members are familiar with the processes.

Within communities conflicts are addressed either by the Village Council or one of its committees. In the case of land disputes within communities, the Village Lands Tribunal is responsible; whilst issues related to natural resources management are the responsibility of the village natural resources committees. If the committees are unable to resolve the issue, or for other issues, then the conflict can be presented to the Village Council, Village Elders and / or the Village Assembly. If the Village Council is unable to resolve it, then issues can be taken to the Ward Development Committee.

For conflicts between communities, the District Council is responsible for intervening. Again the office responsible will vary depending on the nature of the conflict. Where government staff are unable to resolve a conflict, it may either be taken to the District Executive Director or to the District Commissioner to resolve.

Whilst these mechanisms apply to conflict resolution within and between stakeholders, it was recognized that clear feedback and grievance procedures are also needed to address grievances between the communities and MJUMITA.

The first stage of the grievance procedure is for communities or other stakeholders to raise an issue of concern with MJUMITA either by writing to the Site Leader; or the MJUMITA Executive Director; or by communicating with them verbally. At this stage an amicable resolution is sought and a response is provided in writing by the project. The process should not extend beyond two months.

For stage two of the grievance procedure, communities were asked to identify a neutral third party who is well-respected, trusted and freely available, to act as a mediator and to facilitate a resolution

process in situations where the first stage has failed to reach a solution. Proposals included the Ward Development Committee, the District Commissioner, the Court and the District Executive Director. The participants in the landscape level SIA workshop in 2011 agreed that the District Executive Director should be the independent third party with the final say in the resolution of any conflicts between a community and the project. However it was acknowledged that, where possible, conflicts could also be mediated by the Ward Development Committee, or the Court. The procedures are detailed in the MoU between MJUMITA and the communities (see Annex 2). This procedure was presented at the workshop on 04/02/2014.

If the second stage of the grievance procedure fails then the issue would be referred to the District Court.

## **Worker Relations**

**G3.9. Describe measures needed and taken to provide orientation and training for the project's workers and relevant people from the Communities with an objective of building locally useful skills and knowledge to increase local participation in project implementation. These capacity building efforts should target a wide range of people in the Communities, with special attention to women and vulnerable and/or marginalized people. Identify how training is passed on to new workers when there is staff turnover, so that local capacity will not be lost.**

Given the community-led nature of the project, training to community members on project implementation has been central to the project over the last four years. Training and orientation to MJUMITA staff is described separately in Section G4.2.

### *Orientation and training for the participating communities*

Before the project began none of the villages had, had any training on REDD, climate change, village land use planning (with the exception of Likwaya), community based forest management or carbon monitoring. There was a basic understanding of roles and responsibilities in terms of general village governance and village councils and village chairpersons were in place in all villages. However in relation to general governance issues there was also a need for more training on roles and responsibilities particularly on accountability, land and natural resources laws and policies, and record keeping. Other training needs identified in relation to the project's activities were on conservation agriculture, village savings and loans associations, beekeeping, preventing crop losses due to animals, and enterprise skills.

Having identified the training needs, the project team including staff from MJUMITA, TFCG and the District embarked on a programme of orientation, training and mentoring. These capacity building activities aimed to ensure that the communities had the knowledge, skills and capacity to implement the project activities.

The project has provided training to the Village Councils, Village Natural Resources Committees, Village Land Use Management Committees and REDD Special Committees on their roles and responsibilities in relation to the implementation of the village forest reserve management plans and by-laws, village land use plans and by-laws and the REDD by-laws and the ongoing monitoring of the carbon assessment plots (see Luwuge *et al.* 2011a for a description of the training provided at different stages of implementing the project's activities).

Training has involved at least 50 people per village including the VNRCs (12 people per village); Land Use Management committees (12 people); Village Councils (20 – 27 people); the REDD committees (10 people), the community based agricultural trainers (2 per village) and the community based

microfinance trainers (2 per village). Training has also been provided to at least two MJUMITA members per village.

With input from the Regional Community Forestry Training Centre, the project developed a Swahili training manual for use in village-level training events on Climate Change, REDD and participatory forest management (TFCG, 2011 and available at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html)) which provided a basis for these trainings and are available as the project expands into other villages within the project zone. Training has also been provided on governance both through specific training events on governance for village leaders and MJUMITA members; and by integrating governance issues in other training events including those on community based forest management, village land use planning, REDD benefit distribution and conservation agriculture.

When visited in 2013, all VNRCs in the Project Area villages had a work plan and budget and 70% of VNRCs mentioned that they presented reports to their Village Assembly every three months. This shows the progress that the project has made since 2010 when no VNRCs were in place and there was no awareness on the role of the VNRCs.

The team have continued to provide mentoring to the committees during the implementation of the plans, including specific training on implementation-related issues related to participatory forest management, sustainable land use management and the equitable distribution of REDD revenues.

In order to generate emission reductions, farmers from the participating communities will need to move away from shifting cultivation. The project provided training to women and men farmers on more climate-smart agriculture; identified and trained community-based, conservation agriculture trainers to provide technical backstopping to farmers in their villages; and has initiated support mechanisms through village saving and loans schemes and linkages with private sector initiatives.

The training events have targeted a wide range of people within the community. Membership of the various committees must involve representatives from all sub-villages and include at least 1/3 women. The project has also encouraged communities to include people from poorer households to be included in these committees (see GL2.4 and GL2.5 for details).

Through widespread awareness raising amongst the broader community, the project has endeavoured to generate awareness on the roles and responsibilities of different committees amongst the broader population. This is intended to contribute to the sustainability of the system as membership of the committees changes. The involvement of the District staff at each stage of the REDD readiness activities also ensures that the District staff are aware of the roles and responsibilities of different committees in the context of REDD and so will be able to provide backstopping and refresher training in future. A training manual was also developed for District-level training events on climate change, REDD and participatory forest management (available at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html)). In addition, MJUMITA will continue to play a role in backstopping the communities during REDD implementation.

**G3.10. Demonstrate that people from the Communities are given an equal opportunity to fill all work positions (including management) if the job requirements are met. Explain how workers are selected for positions and where relevant, describe the measures needed and taken to ensure Community members, including women and vulnerable and/or marginalized people, are given a fair chance to fill positions for which they can be trained.**

According to MJUMITA HR procedures all employment opportunities are advertised and anyone can apply. For jobs requiring someone with a university degree, jobs are advertised in the national newspapers and via e-mail list serves. For local positions, jobs are advertised through notices in the relevant village. Employees are selected on the basis of their qualifications, skills and experience.



MJUMITA does not discriminate on the basis of gender, religion, tribe or political affiliation. Many of the activities in this project are implemented by community members who are elected either to represent their sub-village or are elected at village level. Women are required to constitute at least one third of the committees.

**G3.11. Submit a list of all relevant laws and regulations covering worker's rights in the host country. Describe measures needed and taken to inform workers about their rights. Provide assurance that the project meets or exceeds all applicable laws and/or regulations covering worker rights and, where relevant, demonstrate how compliance is achieved.**

Relevant laws and regulations covering worker's rights in Tanzania include:

The Employment and Labour Relations Act, 2004

The Labour Institutions Act, 2004

The Employment and Labour Relations (Code of Good Practice) Rules, G.N. No. 42 of 2007.

MJUMITA meets all applicable laws and regulations for its employees. This is reflected in the MJUMITA Human Resources Manual.

In order to ensure that all MJUMITA employees are informed about their rights, all new employees are provided with a contract, job description and copy of the MJUMITA Human Resources manual upon joining the organisation.

**G3.12. Comprehensively assess situations and occupations that might arise through the implementation of the project and pose a substantial risk to worker safety. Describe measures needed and taken to inform workers of risks and to explain how to minimize such risks. Where worker safety cannot be guaranteed, project proponents must show how the risks are minimized using best work practices in line with the culture and customary practices of the communities**

Vehicle accidents are the most common cause of accidental death and injury amongst NGO workers in Tanzania. Safety measures that MJUMITA follows to reduce risks include a policy of not driving at night; of requiring that the driver and all passengers wear seatbelts; that those driving a motorbike, including driver and passenger, must wear helmets; and avoiding overloading of vehicles. To minimise risks, First Aid training was provided to all project staff in January 2014. The three day training programme was organised by the Red Cross and included risk assessment; basic first aid; basic life support; basic trauma life support; and dealing with other medical emergencies.

HIV / AIDs. Tanzania has been hard hit by HIV / AIDs and this poses a significant health risk. The 2011 / 12 statistics for Tanzania show an HIV+ prevalence rate amongst 15 – 49 year olds of 5.1 %. Prevalence is lower in rural than in urban areas. Lindi Region has a prevalence rate of 2.9 %. MJUMITA has an active awareness raising campaign amongst its staff and in the communities where it works, on the importance of prevention and testing. In the villages included in this PDD, HIV awareness messages are included on sign boards and on printed materials distributed by the project.

As this is a community-led project, most of the activities will be led by community members on behalf of their communities and not as employees of MJUMITA. There are risks associated with forest patrols which the project seeks to mitigate by ensuring that patrol teams and village natural resources committee members are properly equipped. Costs of equipment and protective clothing for patrol teams and village natural resources committee members will be covered from REDD revenues. Gum boots, rain coats, overalls and first aid kits have been provided by the project to all VNRCs.

## G4. Management Capacity

### G4.1. Describe the project's governance structures, and roles and responsibilities of all the entities involved in project design and implementation. For projects using a programmatic approach, identify any new entities included in the project since the last validation or verification against the CCB Standards.

At community level, the project is aligned with the Local Government (District Authorities) Act (1982). The governance structures and roles and responsibilities of the Village, Ward and District authorities are defined by this Act and are summarised below in terms of how they relate to the project.

The **Village Assembly** is the supreme authority on all matters of general policy-making in relation to the affairs of the village. A village assembly comprises all women and men ordinarily resident in the village and who has attained the apparent age of eighteen years. Meetings of the village assembly are supposed to be held at least every three months. In the context of the project, the village assembly have the power to accept or refuse the REDD project. The Village Assembly is also responsible for reviewing village by-laws including those pertaining to the village forest reserve, village land use plan and REDD revenue distribution. Although not required by law, the project has required the approval of the village assembly for the Village Forest Reserve, Village land use management and REDD by-laws. The village assembly elect and hold accountable the village council.

The **Village Council** is the organ in which is vested all executive power in respect of all the affairs and business of a village. This specifically includes power to 'plan and co-ordinate the activities of and render assistance and advice to the residents of the village engaged in .... forestry or other activity or industry of any kind'. Village councils are elected by the village assembly. Elections are held every three years. It is customary, although not stated in law, that the committee include at least one representative from each sub-village. Where a village council proposes to make by-laws they are required to convene a meeting of the village assembly to review the by-laws. The Village Council is then responsible for making amendments based on comments from the Village assembly; and to submit to the District Council. The Village Council are then responsible for enforcing the by-laws. In the context of the project, the Village Councils therefore play a key role in enforcing the village land use plan and by-laws; the village forest reserve management plan and by-laws; and the REDD by-laws. According to the MoUs with MJUMITA, the Village Councils are responsible for the implementation of the strategies intended to reduce emissions. The Village Councils also have the power to establish village committees and to delegate some of their power and responsibilities to those committees. In each of the project villages, the Village Councils have established three committees:

*Village Natural Resources Committees:* responsible for the management of all forests on village land including those inside the village forest reserves, implementing carbon and deforestation monitoring activities; and reporting to the village assembly on land use issues;

*Village Land Use Management Committees:* responsible for the implementation of the village land use plans and by-laws, and reporting to the village assembly on land use issues;

*Village REDD Committees:* responsible for maintaining a register of eligible recipients of REDD payments subject to public review; overseeing the REDD payment mechanism including facilitating a participatory decision making process on the use of the REDD payments; and reporting to the village assembly on issues related to the REDD payments;

Village Councils report to the Ward Development committees and to the District Council.

The Ward Development Committee is responsible for ensuring the implementation of the decisions and policies of the district council, and of development schemes. The Ward Development Committee reports to the District Council.

The District Council is responsible for the implementation and monitoring of development projects throughout the District; and therefore plays a key role in supporting the villages in the implementation of the project's activities.

Through the Memorandum of Understanding with MJUMITA, each Village Council has agreed for MJUMITA to market and sell Voluntary Carbon Units on their behalf. Copies of each of these signed MoUs are available for review by the Validators. An example of the MoU, translated into English, is provided in Annex 2.

Through these MoUs, MJUMITA is responsible for:

- Developing and submitting the project design and implementation reports for VCS and CCB;
- identifying and contracting VCS and CCB validators and verifiers;
- marketing and selling the Voluntary Carbon Units;
- transferring the net REDD revenues to the communities.

MJUMITA is accountable to the Village Councils. In order to strengthen this accountability, there is a *Project Executive Committee*. The Project Executive Committee comprises the Village Chair and one special representative elected from each of the project villages, plus representatives from the District councils chosen by the District Executive Director; the Executive Director from TFCG; a representative from the Forestry and Nature Conservation Department of Sokoine University of Agriculture; and a representative from the Vice President's office dealing with national level REDD issues.

The Project Executive Committee holds MJUMITA accountable for delivery of the services as outlined in the project MoU. See section G3.6 for more details.

**G4.2. Document key technical skills required to implement the project successfully, including community engagement, biodiversity assessment and carbon measurement and monitoring skills. Document the management team's expertise and prior experience implementing land management and carbon projects at the scale of this project. If relevant experience is lacking, the proponents must either demonstrate how other organizations are partnered with to support the project or have a recruitment strategy to fill the gaps.**

*Required technical skills and a description of the management team's expertise and prior experience*

The technical skills that are required to achieve the project's climate, community and biodiversity benefits are described below. Whilst these are arranged by benefit type, they are necessarily inter-related. Unless otherwise specified, the management experience described here relates to expertise and experience within MJUMITA.

***Skills required to achieve and monitor the project's climate benefits***

- *Oversight of the CCB and VCS verification process*

The Forest Enterprise Coordinator will be responsible for overseeing the verification of the project implementation reports for CCB and VCS. He has been closely involved in the validation and first verification process and has thus got the first-hand experience of achieving this step. The MJUMITA Technical Advisor, who has led this Validation and 1st Verification process, will provide technical

backstopping. Both the Technical Advisor and the Forest Enterprise coordinator participated in a 'Project Clinic' led by the Katoomba Group and Forest Trends held in Dar es Salaam in June 2010. The workshop addressed various technical issues in relation to the development of REDD projects including: markets, policy, standards etc; building project level activities into national REDD processes; project design (e.g. how to address the drivers of deforestation); methodological (e.g. baselines and leakage) and technical issues (e.g. assessing and monitoring carbon); and social impact.

- *Implementation of VCS methodologies to verify climate benefits*

The MJUMITA forest enterprise officer will be responsible for implementing VCS approved methodologies to verify the project's climate benefits. Through a partnership with TFCG, the TFCG GIS Officer will be contracted on a short-term basis each year to conduct the remote sensing analysis to determine changes in forest area. She has been closely involved in the project design process under the tutelage of the MJUMITA Technical Advisor and has thus had first hand experience of calculating the forest area change. Once the National Climate Monitoring Centre has been established, the project will determine whether some aspects of the methodology can be provided through the national monitoring scheme.

- *Collation and analysis of carbon monitoring data*

The Carbon Monitoring officer will be responsible for collating carbon plot data from the Village Natural Resources Committees. He has had three years experience in doing this; and the procedures are documented in the VCS Project Design Document. He has received training on carbon assessment from the National Forest Resources Monitoring and Assessment programme (NAFORMA); and four years of mentoring from the MJUMITA Technical Advisor.

- *Marketing of voluntary carbon units*

The Forest Enterprise Coordinator will be responsible for marketing the voluntary carbon units; for liaising with potential buyers and for organising the sale of the credits with technical backstopping from the MJUMITA Technical Advisor. The Forest Enterprise Coordinator has followed international negotiations on REDD and has participated in two UNFCCC Conference of Parties

### ***Skills required to achieve and monitor the project's community benefits***

- *Community engagement and communication*

The Forest Enterprise Coordinator has the skills necessary for the implementation of the communication plan for the REDD project. He has played a significant role in developing the communication plan and has had experience in communicating key issues in relation to REDD throughout the REDD readiness phase. As well as experience, the Forest Enterprise Coordinator has participated in various training programmes including: a four-day training course led by Forest Trends on social impact assessments held in Zanzibar in 2010; a one week study tour to Namibia to learn about the revenue sharing mechanism in a successful community-owned wildlife conservancy also in 2010; and a six weeks training programme led by RECOFTC on facilitating participatory forest management and REDD with communities with a particular focus on developing facilitation skills; using participatory approaches; and adult learning. He also participated in a 2 week training course in 2014 led by RECOFTC and covering: Landscape functions and people; and Conflict management and resolution.

- *Calculations of REDD payments*

The Forest Enterprise Coordinator, working close with the TFCG GIS Officer will calculate the amounts to be paid to each village with technical backstopping from the MJUMITA Technical

Adviser; will work with the communities to ensure that the register of eligible recipients of REDD revenues is kept up to date and is accurate; and will assist the village councils to develop cost-effective budgets in relation to community development projects.

- *Payment of the REDD revenues to communities*

The Forest Enterprise Coordinator has overseen the payment of REDD revenues in all ten villages in Lindi and is thus very familiar with the procedures to be followed.

***Skills required to achieve and monitor the project's biodiversity benefits***

- *Biodiversity monitoring*

MJUMITA will work closely with the Tanzania Forest Conservation Group in relation to the biodiversity monitoring. The TFCG Technical Advisor has 15 years of experience in biodiversity monitoring and assessment in Tanzanian forests. For the botanical work, the TFCG Botanist, trained by botanists from Missouri Botanical Gardens and Kew Gardens through the Tanzania Botanical Collectors Training Programme will monitor the endemic and threatened plant species.

Given the 30 year project lifetime, there will inevitably be staff turn over within MJUMITA. MJUMITA has a clear policy on recruitment aimed at ensuring that staff have the appropriate experience and expertise to achieve the work that is required. MJUMITA also have a standardised orientation programme and will provide training necessary.

In keeping with MJUMITA's Human Resources manual, upon confirmation of appointment a new MJUMITA employee is provided with a thorough orientation to enable her/him to become familiar with the structure, mission and values of MJUMITA, its programs, and the policies and procedures that govern MJUMITA.

Within the first week of commencing work, a new employee will be provided with:

- Training on MJUMITA financial rules and procedures;
- An official identity card signed by the Appointing Authority (employees shall be liable to pay the replacement costs of lost identity cards);
- Desk, chair phone, computer and other equipment needed for performance of work;
- A set of major organizational documents and publications, including the HR policy, Financial regulations, Program Strategy and Annual Work Plan/Budget;
- Internal email address, access to computer network;
- Basic stationery materials;
- The necessary forms to join the MJUMITA's pension scheme (NSSF or PPF);
- Information regarding health and other employee benefits.

Following this stage of the orientation staff are provided with training and orientation specific to their job including introductions to team members and project partners.

**G4.3. Document the financial health of the implementing organization(s). Provide assurance that the Project Proponent and any of the other entities involved in project design and implementation are not involved in or are not complicit in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion, and describe any measures needed and taken to be able to provide this assurance.**

*Financial health of the implementing organisation*

MJUMITA was registered as an independent NGO in 2007.

MJUMITA's income has grown steadily since 2007 reflecting its growing reputation as a professional and forward-looking NGO. By 2013, MJUMITA's income was US\$ 1,570,869.

MJUMITA is primarily financed by donors through grants to implement specific projects. These funds also contribute to the core costs of the organisation. MJUMITA is currently implementing a portfolio of 9 grants and has a projected annual income for 2014 of approximately US\$ 1,200,000. MJUMITA employs 30 staff members.

MJUMITA's financial statements are audited by an Independent External Auditor. MJUMITA's externally audited financial statements and management letter were made available to the Auditors for this PDD.

The costs of operating the Carbon Enterprise will be deducted from community payments at rates agreed in advance with the communities through the project executive committee. Through funding from the Royal Norwegian Embassy, anticipated direct costs for the first two years of operation (2015 – 2016) are already covered.

MJUMITA's financial management and internal financial controls are guided by the organisation's financial regulations. The regulations state the organisations zero-tolerance policy on corruption. Clear guidelines are in place for procurement.

## **G5. Legal Status and Property Rights**

### **Respect for rights to lands, territories and resources, and Free, Prior and Informed Consent**

**G5.1. Describe and map statutory and customary tenure/use/access/management rights to lands, territories and resources in the Project Zone including individual and collective rights and including overlapping or conflicting rights. If applicable, describe measures needed and taken by the project to help to secure statutory rights. Demonstrate that all Property Rights are recognized, respected, and supported.**

All land within the project zone is categorised as Village Land. According to the project's eligibility criteria, only land categorised as Village Land may be included in the project zone.

The Village Land Act 1999 describes the management and administration of village land; rights of occupancy; and dispute settlement requirements. As such, this is the most important Act in relation to statutory rights to lands, territories and resources in the Project zone.

The Village Land Act provides several ways for communities to demonstrate the boundaries of their village land. These include agreeing on the boundaries with adjacent villages (see G5.8 for details on this); or by having a village land certificate. As part of REDD readiness activities, MJUMITA and TFCG have been facilitating communities to prepare village land use plans and by-laws describing the



location of the village boundaries and of different land uses within the village boundaries, including the village forest reserves. The project has also been facilitating the communities to apply for their village land certificates. Village Land Certificates provide additional evidence of a village's boundaries; and are an additional way to demonstrate village land tenure. This process is ongoing.

Within village land, access to land for individuals' is by Customary Right of Occupancy or Deemed right of occupancy. This includes land under permanent agriculture. Land with a customary or deemed right of occupancy can be traded. In addition, farmers in Lindi have traditionally practiced shifting cultivation. Land under shifting cultivation is only considered to be under a deemed right of occupancy whilst it is being farmed. When not in use it reverts to communal village land.

*Under the Village Land Act 1999, (7) Any land which has been set aside by a village council or village assembly for community or public occupation and use or any land which is and has been, since the formation of the village, habitually used whether as a matter of practice or under customary law or regarded by village residents as available for use as community or public land before the enactment of this Act, shall be deemed by this Act to be communal village land approved as such by the village assembly and shall be registered by the village council under subsection (6).*

The project has supported communities to have stronger land tenure by taking steps towards securing the village land certificates; by constructing village offices to house the village land registry; and by providing secure filing cabinets to all villages in order to store the village land registry and copies of the customary permits. Once the village land certificates are issued by the Lands Commissioner and returned to the villages by the District, the project will also provide village land registry books.

With regard to that portion of the project zone that is included in Village Forest Reserves, the Forest Act 2002 states clearly that 'A village council, may by resolution-

*(a) declare an area of village land to be a village land forest reserve;*

*(d) establish a committee to manage a village land forest reserve or allocate the duties of managing a village land forest reserve to an existing committee of the village council.'*

In most villages with village forest reserves in Tanzania, Village Councils have allocated the duties of managing the village forest reserve to the Village Natural Resources Committee, hence in the management plans and by-laws it is the village natural resources committees who are primarily responsible for enforcing village by-laws pertaining to forest management.

**G5.2. Demonstrate with documented consultations and agreements that**

**a. the project will not encroach uninvited on private property, community property, or government property,**

**b. the Free, Prior, and Informed Consent has been obtained of those whose property rights are affected by the project through a transparent, agreed process.**

**Free, Prior and Informed Consent is defined as: - 'Free' means no coercion, intimidation, manipulation, threat and bribery; - 'Prior' means sufficiently in advance of any authorization or commencement of activities and respecting the time requirements of their decision-making processes; - 'Informed' means that information is provided that covers (at least) the following aspects**

**a. the nature, size, pace, reversibility and scope of any proposed project or activity;**

**b. the reason/s or purpose of the project and/or activity;**

**c. the duration of the above;**

**d. the locality of areas that will be affected;**

**e. a preliminary assessment of the likely economic, social, cultural and environmental impact, including potential risks and fair and equitable benefit sharing in a context that respects the precautionary principle;**

**f. personnel likely to be involved in the execution of the proposed project (including Indigenous Peoples, private sector staff, research institutions, government employees, and others); and**

**g. procedures that the project may entail; and - 'Consent' means that there is the option of withholding consent and that the parties have reasonably understood it. - Collective rights holders must be able to participate through their own freely chosen representatives and customary or other institutions following a transparent process for obtaining their Free, Prior and Informed Consent that they have defined.**

**c. appropriate restitution or compensation has been allocated to any parties whose lands have been or will be affected by the project.**

- a. Agreement that the project will not encroach uninvited on private property, community property, or government property,**

The project has approval from each of the Village Councils for the participating communities. Their consent to proceed with REDD is documented in Memoranda of Understanding between the community and MJUMITA. Copies of the signed Memoranda of Understanding for each village have been provided to the Auditors. A sample Memorandum of Understanding between MJUMITA and the communities is provided in Annex 2. The MoUs demonstrate that the project will not encroach uninvited on private property, community property, or government property.

- b. Free, Prior, and Informed Consent<sup>59</sup> from those whose property rights are affected by the project through a transparent, agreed process.**

From the outset of the REDD readiness activities, MJUMITA and TFCG have tried to model best practice in relation to free, prior and informed consent. Please refer to Sections G3.1-5 of this

document for a description of the communication and stakeholder engagement processes followed by the project.

The initial consultation with the communities at sub-village and village level is described in Forrester-Kibuga *et al.* 2011; MoUs were signed with the project stating consent to proceed with REDD readiness activities in 2010 and 2011; village level consultation on project design proceeded involving village leaders and other stakeholder groups, these are recorded in Mwampamba *et al.* 2011 and Nguya 2011; each village has signed an MoU with MJUMITA documenting their consent to proceed with REDD. Copies of the MoUs signed by each community have been provided to the Validators.

**Provision of information on the nature, size, pace, reversibility and scope of any proposed project or activity**

Since 2010, MJUMITA and TFCG have been raising awareness amongst the participating communities on climate change and REDD in order to ensure that participating communities are informed about what REDD is and about the MJUMITA REDD model. The activities included in this project were identified through a participatory planning process involving women and men from the project villages as well as other stakeholders such as District Officials and other civil society organisations. The proposed activities were validated during the Social Impact Assessment Stakeholder Workshop (Luwuge *et al.* 2011) and communicated once more during the February 2014 Stakeholder Workshop at which the CCB and VCS PDDs were presented (Mbegu 2014). See G3.1-5 for additional details.

**Provision of information on the reason/s or purpose of the project and/or activity;**

The purpose of REDD has been communicated through village meetings, radio programmes, printed materials and video shows. The activities aimed at reducing emission from deforestation and forest degradation were identified in a participatory way. These activities include village land use planning, establishing community based forest management and introducing conservation agriculture.

**The duration of the above;**

The project lifespan has been communicated through meetings, training events, media coverage and in the Swahili PDD summaries distributed to all communities.

**The locality of areas that will be affected:**

Detailed maps of forest cover and village forest reserve boundaries have been provided to each of the ten participating villages. As part of the REDD payment process, MJUMITA provides maps to each village that show the village's forest area i.e. its portion of the project area, and highlight any deforestation within that village's portion of the project area.

**A preliminary assessment of the likely economic, social, cultural and environmental impact, including potential risks and fair and equitable benefit sharing in a context that respects the precautionary principle;**

The social impact assessment looked in detail at the likely economic, social and cultural impacts of the project; including potential risks. Information on the impacts and risks was provided during the Stakeholder Workshop on the Social Impact Assessment (Luwuge *et al.* 2011); and at the Stakeholder workshop to present the VCS and CCB PDDs (Mbegu 2014); including hard copy summaries of the sections of the PDDs that pertain to the expected benefits and risks. More detailed information was provided on the benefits and risks of different activities as part of the activity implementation. For example at the outset of the village land use planning and village forest reserve establishment, the economic, social, cultural and environmental impacts are discussed with both the

Village Council and the Village Assembly. Furthermore during the FPIC process at the outset of the project, discussions were held at village and sub-village level at which the impacts and risks were discussed.

**Personnel likely to be involved in the execution of the proposed project (including Indigenous Peoples, private sector staff, research institutions, government employees, and others);**

The roles and responsibilities of MJUMITA, the Village Assembly, Village Council, Ward Development Council and District Council have been discussed. The roles of MJUMITA and the Village Councils are specified in the Memorandum of Understanding. Others such as the role of the Ward Development Committee and the District Council do not vary from their existing responsibilities as outlined in the Local Government (District Authorities) Act 1982.

**Procedures that the project may entail; and - 'Consent'**

The procedures for the implementation of the project are outlined in the village land use plans and by-laws; the REDD by-laws; and the Village Forest reserve plans and by-laws. All of these documents were prepared by and approved by the communities.

Regarding consent, each village has been offered specific opportunities to accept or reject the project at different stages. That the communities had this opportunity; and understood this, is demonstrated by the choices made by some of the villages who were initially invited to join the project e.g. Lihimilo, Namkongo and Kikomolela who chose not to proceed with the project at various stages.

- c. **appropriate restitution or compensation has been allocated to any parties whose lands have been or will be affected by the project.**

In terms of appropriate compensation, the project will channel net revenues from the sale of Verified Emission Reductions to the communities to recompense at least their opportunity and transaction costs of foregoing the benefits that they might have gained by converting their forest to other land cover types. The amount that will be paid will depend on the the amount of verified emission reductions that are generated and the price.

**G5.3 Demonstrate that project activities do not lead to involuntary removal or relocation of Property Rights Holders from their lands or territories, and does not force them to relocate activities important to their culture or livelihood. If any relocation of habitation or activities is undertaken within the terms of an agreement, the project proponents must demonstrate that the agreement was made with the Free, Prior, and Informed Consent of those concerned and includes provisions for just and fair compensation.**

The project has not required the involuntary relocation of people as a mechanism to generate emission reductions. In the process of developing the village land use plans, the Village Land Use planning teams identified a farm in Kiwawa village that was damaging the community's main water source and was illegally located directly on the water source thereby contravening the Environmental Management Act. The farmer was requested to shift his farm away from the water source. As this land was already cleared, it has no impact on the emission reductions generated by the project and is therefore not specific to REDD but instead reflects greater awareness on the management of high conservation values.

**G5.4 Identify any illegal activities that could affect the project's climate, community or biodiversity impacts (e.g. illegal logging) taking place in the Project Zone and describe measures needed and taken to reduce these activities so that project benefits are not derived from illegal activities.**

Activities that would contravene the village by-laws for the village forest reserves and would affect the project's climate, community or biodiversity impacts include logging without a permit, charcoal production without a permit, starting fires within the reserves and forest clearance for agriculture within the village forest reserves. Both illegal logging and illegal clearance of forest for agriculture within the village forest reserve have been detected within the project area.

The project is designed to address these activities through the management plans and by-laws that have been prepared by the communities for their village forest reserves. The District are also expected to support the communities in addressing illegal activities with the local MJUMITA networks providing a watchdog function to raise alarm when such incidents occur.

**G5.5 Identify any ongoing or unresolved conflicts or disputes over rights to lands, territories and resources and also any disputes that were resolved during the last twenty years where such records exist, or at least during the last ten years. If applicable, describe measures needed and taken to resolve conflicts or disputes. Demonstrate that no activity is undertaken by the project that could prejudice the outcome of an unresolved dispute relevant to the project over lands, territories and resources in the Project Zone.**

During the social impact assessment, stakeholders were asked to identify any ongoing or unresolved conflicts over rights to lands, territories and resources. Stakeholder identified a number of village boundary conflicts within the project area. Other boundary conflicts were identified during the village land use planning exercises. Village boundary disputes are common in Tanzania and are part and parcel of the national process of formalising village boundaries which were historically unclear in some areas, particularly in unsettled areas such as forests. Between 2007 – 09 the Ministry of Lands undertook a mapping exercise to determine village boundaries across the country. With more than 10,000 villages in Tanzania many of which were unclear on their boundary location, and with a limited budget, many boundaries were decided hurriedly and beacons were often placed in a different location than was recorded on the map. This has caused boundary disputes between many villages.

Procedures are in place to resolve such boundaries. These involve consultation between representatives from the concerned villages facilitated by the District Government. Once agreement is reached between the community representatives, the resolution is presented to the respective village assemblies for review and approval. From there the District is responsible for requesting a change to the national cadastral map of village boundaries from the Ministry of Lands. The project supported various boundary resolution processes following these procedures.

The following disputes were identified and resolved:

Kiwawa village had a border dispute with neighbouring Mputwa village with the latter claiming that a large area of Kiwawa village belonged to Mputwa. This conflict started in 2006. This conflict was resolved in January 2011 in the process of developing the LUP for Kiwawa Village.

Muongano Village had boundary conflicts with two neighbours, Ruhoma and Milola Magharibi villages (both project villages). Following the normal conflict resolution process mediated by District staff, the issue was resolved in December 2010.

*Likwaya, Moka, Matimba and Kikomolela* had a boundary conflict regarding the location of Beacon Number 854. In order to resolve this conflict, a meeting was held on 8<sup>th</sup> April 2013 involving 8

members from each village including Village leaders (Chairperson and Village Executive Officer), four elders and two members from Village Land use Management Committee (VLUM) making it 32 (including 1 woman) community members. Three District staff also participated including the District surveyor. After reviewing the steps that had been taken during participatory land use planning process in the respective villages and after each village had the opportunity to present their perspective, the participants looked at the satellite image for the areas and it was agreed that the beacon was in the correct place and each of the four villages agreed that its location should be respected.

*Milola Magharibi and Ruhoma, Muungano, Kiwawa and Milola 'B'* had a boundary conflict regarding two sub-villages. The conflicts arose because some families who consider themselves to be residents of Milola Magharibi are living within the borders of Muungano (Kipunga sub-village) and Ruhoma.. A related conflict was between Milola B and Milola Magharibi. Milola B was formerly part of Milola Magharibi and there was still some uncertainty regarding the boundary between the two villages following the Ministry survey of Village lands when the two villages were formed. These two conflicts were resolved in March 2013 following a re-survey. The resurvey involved members from the five villages i.e. Milola Magharibi, Milola B, Kiwawa, Muungano and Ruhoma. Meetings were held between Milola Magharibi and Milola B; and Milola magharibi and Kiwawa, Muungano and Ruhoma. A follow up meeting was also held between Milola Magharibi, Milola B and Kiwawa to agree on one of the proposed boundary amendments. The Divisional Secretary from both Milola and Nangaru and the WEO from Nangaru also participated. New boundary points were agreed between Milola Magharibi and each of the other four villages and beacons were installed.

The project facilitated village assembly meetings in 19 project zone villages: Kiwawa, Mputwa, Milola Magharibi, Milola B, Ruhoma, Kinyope, Rutamba, Mkanga 1, Nandambi, Chikonji kaskazini, Likwaya, Nanyanje, Moka, Komolo, Makumba, Muungano, Mkombamosi and Lihimilo. These VA meetings were meant: to explain the village boundary amendments made subsequent to the land use planning in all project villages and non project villages that share the disputed boundary beacons; and to obtain a copy of the meeting minutes of the VA indicating that all villages accepted the changes. The meetings were held between 27th August - 5th September 2013. Two village assembly meetings were done per day using a music system to attract the villagers to attend the meeting. The proposed boundary amendments have been submitted to the Ministry of Lands and Human Settlements for approval. A new issue raised during these meetings related to the location of Mtele sub-village in Nandambi Village. The project shall proceed with the normal boundary resolution process for this case and will report on progress in the 2<sup>nd</sup> Project Implementation Report.

## Legal status

**G5.6 Submit a list of all national and local laws and regulations in the host country that are relevant to the project activities. Provide assurance that the project is complying with these and, where relevant, demonstrate how compliance is achieved.**

Relevant national laws and regulations include:

**Environmental Management Act, 2004:** provides for the Minister for Environment to be responsible for taking action on climate change. This provides the legal basis for the Vice President's Office to lead on the development of the National REDD strategy.

**Land Act 1999:** The Land Act specifies that the management of village land is covered in the Village Land Act.

**Local Government (District Authorities) Act (1982):** this provides for the structure of local government in Tanzania and outlines the roles and responsibilities for the District, Ward and Village Government. The project has worked in close cooperation with all levels of local government



including the Village Assemblies, Village Councils, Ward Development Councils and the District Council. The Village land use plans and by-laws; REDD by-laws and Village Forest Reserve plans and by-laws developed through the project, have all passed through these layers of government.

**NGO Act 2002:** This Act provides the basis for MJUMITA to exist as a legally recognised entity.

**Village Land Act 1999:** The village land act provides the definition of village land whereby village land includes registered village land; land demarcated and agreed to as village land by relevant village councils; and land (other than reserved land) that villages have been occupying and using as village land for 12 or more years (including pastoral uses) under customary law. The Village Land Act also bestows the responsibility for managing village land to the Village Council.

**Forest Act 2002:** The Forest Act provides for the establishment of Village Forest Reserves and empowers villages to retain revenues from Village Forest Reserves.

**Village Land Use Planning Act, 2007:** Provides the legal basis for the village land use planning process.

In terms of local laws, each village has developed management plans and by-laws to guide: the implementation of the village land use plans; the management of the village forest reserves; and the management and distribution of REDD revenues. These by-laws were developed by the communities with the support of the project and as such constitute a key component of the project's implementation plan. As such the project is in full compliance with these local laws.

**G5.7. Document that the project has approval from the appropriate authorities, including the established formal and/or traditional authorities customarily required by the Communities.**

As described in G5.2 MoUs have been signed between MJUMITA and the communities further documenting their consent to participate. Copies of the MoUs signed by each community have been provided to the Validators. These MoUs are witnessed by the District Government following a review by the District Lawyer and are signed by the District Executive Director.

**G5.8. Demonstrate that the Project Proponent(s) has the unconditional, undisputed and unencumbered ability to claim that the project will or did generate or cause the project's climate, community and biodiversity benefits**

The project proponents are the ten villages responsible for the project area. This reflects the CCB definition of project proponent as '*the individual or organization that has overall control and responsibility for the project, or an individual or organization that together with others, each of which is also a project proponent, has overall control or responsibility for the project.*' (CCBA, 2013).

The ten participating villages have the right of use of the forests within the project area arising by virtue of their statutory right in the land, vegetation and management process that generates GHG emission reductions and/or removals.

Their statutory right in the land, vegetation and management is provided for by the Village Land Act 1999 which states that:

*'7. (1) Village land shall consist of...(d) land the boundaries of which have been agreed upon between the village council claiming jurisdiction over that land and (i) where the land surrounding contiguous to that village is village land, the village councils of the contiguous village.'*

Through the land use planning process supported by the project in all ten villages, the village boundaries for all villages have been agreed with all adjacent villages thereby verifying that all land within these village boundaries is indeed Village Land.

This right of use is vested in the communities through the Village Land Act 1999 and is further supported through the Local Government (District Authorities) of Act 1982 and the Forest Act of 2002.

The Village Land Act 1999 states:

*'8. (1) The village council shall, subject to the provisions of this Act, be responsible for the management of all Village Land.*

*(2) The Village council shall exercise the functions of management in accordance with the principles applicable to a trustee managing property on behalf of a beneficiary as if the council were a trustee of, and the villagers and other persons resident in the village were beneficiaries under a trust of the village land.'*

Additional details on the role of the Village Council and Village Assembly are provided in Section G 3.5.

Furthermore, on the issue of permits and licences, the Forest Act 2002 gives considerable autonomy to villages to decide on the management of their village forest reserve. The Act, Part VI, 49. 6) states that: *'A village council shall, by resolution, which shall require confirmation by the village assembly, adopt the provisions of this Part with such adaptations and modifications as may be prescribed, in respect of the granting of permission to any person to undertake, for other than domestic purposes, any of the activities to which this Part refers in a village land forest reserve or a village forest but no such resolution shall operate to replace any arrangements providing for domestic use permits for villagers.'* In this context Part refers to a number of activities including felling and extracting timber; and exporting such other forest produce as may be prescribed. We understand this to include emission reductions from reduced deforestation and forest degradation.

The ten participating villages have signed MoUs with MJUMITA, witnessed by the District Government, which empower MJUMITA to provide the village and other proponent villages with the following services to facilitate access to the voluntary carbon market:

- a) Remote monitoring of forest cover and carbon stocks
- b) Coordinating ground monitoring of carbon stocks by participating villages
- c) Identifying and contracting a VCS and CCBA approved project validator
- d) Identifying and contracting VCS and CCBA approved project verifiers as needed
- e) Preparing and submitting the project design document for validation
- f) Preparing and submitting project monitoring reports for verification
- g) Marketing and selling verified emissions reductions to buyers in the voluntary carbon market
- h) Receiving payment from buyers in the voluntary carbon market on behalf of the village and other proponent villages
- i) Retiring sold emissions reductions according to the VCS and CCBA requirements
- j) Forwarding revenue from the sale of verified emissions reductions to the village subject to the stipulations specified in this agreement.
- k) To avail information about carbon credit emissions and fulfil any other requirements by VCS and CCBA registries.

- l) Provide capacity building to communities on any matter emerging related to REDD+, good governance, and carbon trading for improvement of their performance.
- m) Facilitate village government to have operational plans in the format required by the project and any other need that may arise.
- n) To facilitate participatory social and ecological assessment and monitoring and submit the results to any different stakeholders as the need may be.
- o) To facilitate the Community Carbon Enterprise on any other technical requirement needed to meet conditions for REDD+.

Signed copies of each villages MoU have been provided to the Auditors.

**G5.9. Identify the tradable climate, community and biodiversity benefits of the project and specify how double counting is avoided, particularly for offsets sold on the voluntary market and generated in a country participating in a compliance mechanism.**

The tradable benefits are the Verified Emission Reductions as issued by the Verified Carbon Standard. These VERs are being reviewed for validation by CCBA against each of the CCB Standards criteria.

Tanzania is not participating in a compliance mechanism as such there is no risk of double counting the emission reductions generated from the project area with emission reductions being sold in a compliance market.

## CLIMATE SECTION

For CL 1 – 4, please refer to the project's VCS PDD.

### GL1. Climate Change Adaptation Benefits

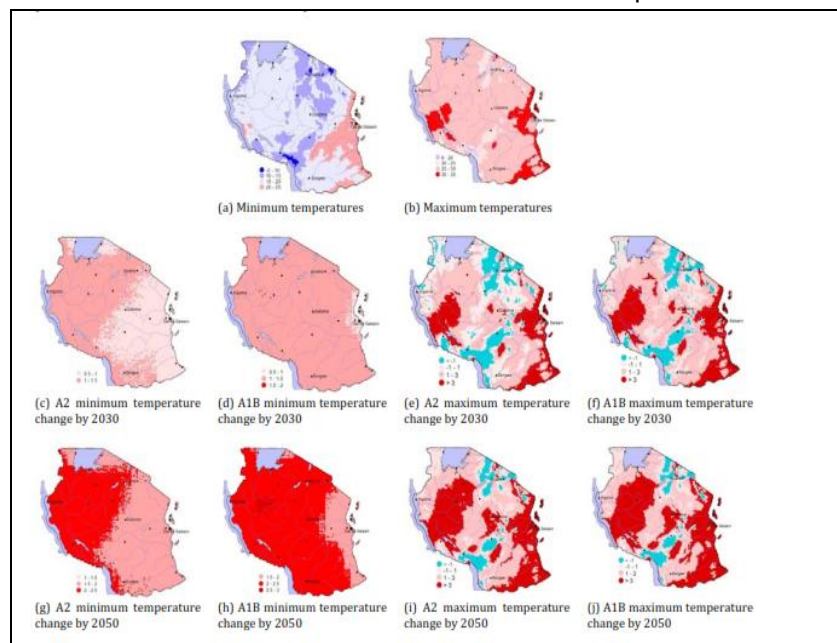
**GL1.1 Identify likely regional or sub-national climate change and climate variability scenarios and impacts, using available studies, and identify potential changes in the local land use scenario due to these climate change scenarios in the absence of the project.**

#### *Likely climate change and climate variability scenarios and impacts*

##### *Temperature*

The National Climate Change Strategy (URT, 2012) states that 'Time series analysis of both mean annual Tmax and Tmin has revealed significantly increasing temperature trends in all meteorological stations across the country.'

Although climate change models vary, Tumbo *et al.* (2011) found that, at sub-national level, there is overall consensus of increasing temperatures across Eastern Tanzania, particularly during the cooler months from July – August. Using the ECHam5 General Circulation Model, Tumbo *et al.* found that under both of the emission scenarios that were analysed, minimum temperatures in Eastern Tanzania increased between 0.5° – 1.0° c whilst maximum temperatures increased by 3.0° c.



**Figure 2: Maximum and minimum temperatures (° c) for the baseline year (2000) and changes by 2030 and 2050 relative to the baseline year. From Tumbo *et al.* 2010.**

Of the climate models presented in [www.climatewizard.org](http://www.climatewizard.org) the lowest temperature increase by 2050 predicted for Eastern Tanzania is 0.69 degrees as predicted by the ncar\_pcm1.1 model under the B2 low emission scenario where as the cnrm\_cm3.1 predicts an increase of 2.49 degrees by 2050 under the A1B scenario. Under the medium emission scenario most models predict a temperature increase of around 1.6 degrees for the project zone.

##### *Rainfall*

At a national level, the National Climate Change strategy (URT, 2012) describes ‘A slightly weak decreasing trend can be discerned from the mean annual rainfall time-series over most of the meteorological stations (Figure 7). The observed rainfall trends are not statistically significant, underlining the nature of uncertainty associated with rainfall patterns. However, intra-seasonal and inter-annual variability manifested through late onset and early cessation, increase in dry spells and shift in rainfall patterns are becoming more common.’

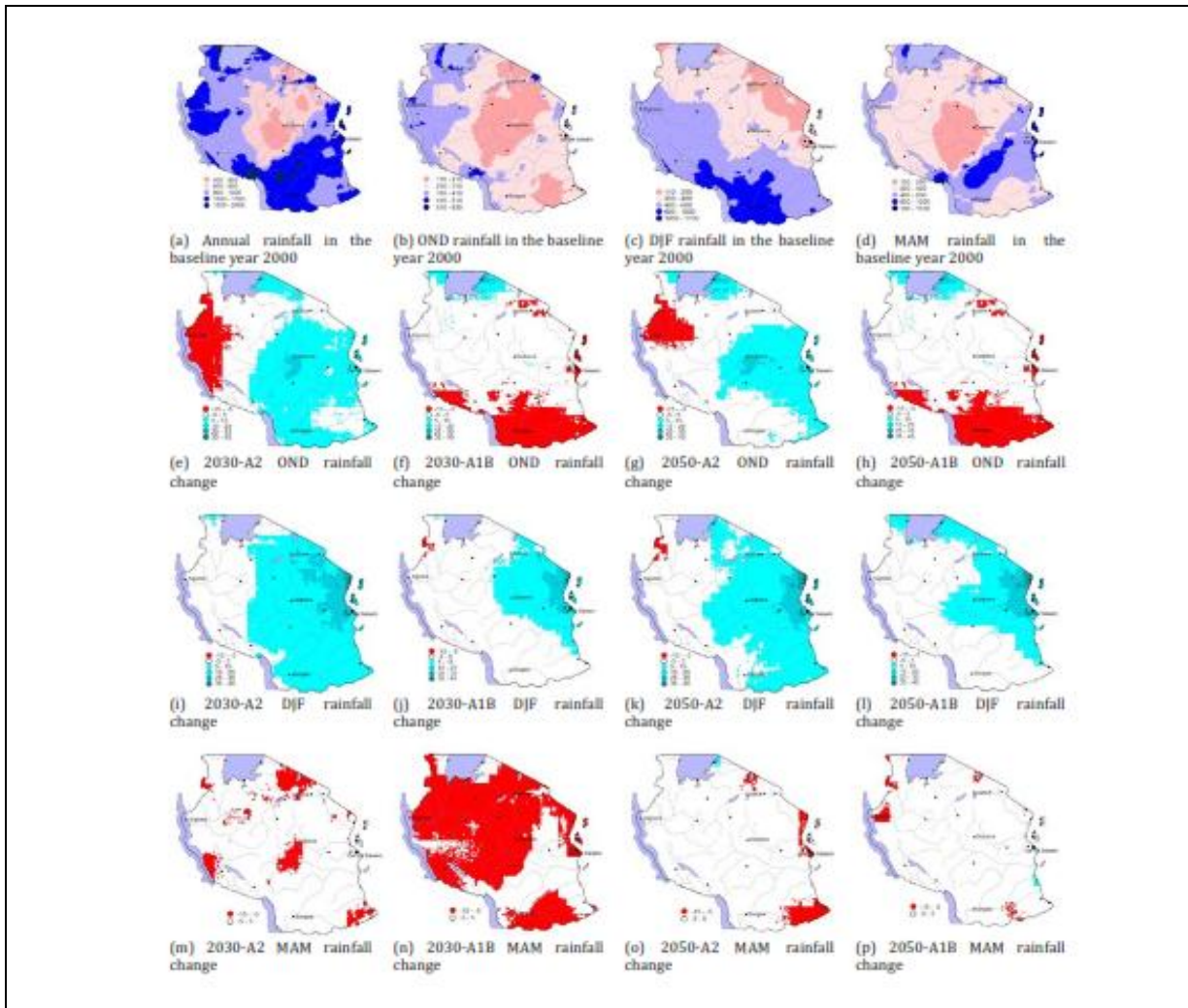
In contrast, for the project zone, almost all models presented in [www.climatewizard.org](http://www.climatewizard.org) under low, medium and high emission scenarios predict an increase in the average annual rainfall for south-eastern Tanzania with a mid-value for all models under all scenarios at 10.5 %. Predictions range from a 25 % increase under a high emission scenario by the cnrm\_cm3.1 model to -0.4 % as predicted by the ipsl\_cm4.1 model under a medium emission scenario.

Whilst there is general consensus of an increase in annual rainfall for the project zone, the models vary in their predictions on the monthly distribution of rainfall. Tumbo *et al.* describe a predicted increase in rainfall during December – January – February. For this time period the predictions in the models in [www.climatewizard.org](http://www.climatewizard.org) vary from a 41 % increase (inmcm3\_0.1 under an A1B scenario) to a 14 % decrease (ipsl\_cm4.1 under A1B scenario) with a mid-value predicted change of 12%. For the period March – April – May Tumbo *et al.* 2011 predict less rainfall whilst the mid-value prediction of the models in [www.climatewizard.org](http://www.climatewizard.org) show an increase of 9.5 % . The models are not consistent in their predictions for October – November – December. In Tumbo *et al* 2011, one model shows a decline and the other showing an increase. Similarly the models in [www.climatewizard.org](http://www.climatewizard.org) show considerable variability with mid-values showing a decline in rainfall during July – October with an increase in November – December.

#### *Climate variability*

Both Tumbo *et al.* 2010, Watkiss *et al.* 2011 and the National Climate Change Strategy emphasise that in general Tanzania’s climate is likely to become less predictable with more extreme events including high winds, drought and flooding.

The National Climate Change Strategy (URT, 2012) states that ‘Climate change projection indicates that the frequency and severity of extreme climatic events will increase. In the last 40 years Tanzania has experienced severe and recurring droughts with devastating effects to agricultural, water and energy sectors.’



**Figure 3: Baseline year rainfall and rainfall changes to 2030 and 2050 under the two emission scenarios (A1B and A2). From Tumbo *et al.* 2010.**

### *Climate change impact*

Watkiss *et al.* 2011 indicate that climate change could result in costs equivalent to 2 – 3 % of GDP in Tanzania by 2030. Tanzania is considered to be particularly vulnerable to climate change because of the high proportion of people dependent on agriculture. This finding is relevant to the project given the overall dependence on agriculture of the local economy in Lindi.

### **Potential changes in the local land use scenario due to these climate change scenarios**

In terms of the local land use scenarios, the shifts in precipitation patterns will require a shift in agricultural practices. The decline of the March-April-May rains will shorten the growing period; require a change in the planting times; and will affect crop and crop variety selection. The extended dry season is also likely to make forests more vulnerable to forest fires.

Tumbo *et al.* 2010 state that the crop that is likely to be hardest hit by climate change is maize due to sensitivities in the with predicted declines in maize yields in Lindi of -11% to -36 % by 2030; and -23 % to -43 % by 2050 compared to the baseline year 2000. They note that '*Temperature strongly influences the rates of metabolic processes in living organisms, and therefore affects almost all aspects of growth and development of an organism. The projected increase in temperatures due to climate change is likely to affect crop production in Tanzania.*' For Eastern Tanzania they predict a shortening in the growing season, primarily due to the increase in maximum temperatures relative to the increase in minimum temperatures. Thus whilst farmers are likely to continue to cultivate maize



as their primary crop in Lindi, according to Tumbo *et al.*'s predictions, they risk facing declining yields.

Mbilinyi *et al.* 2013 found that farmers tend to diversify the crops they grow as well as their economic activities in response to climate change and other global factors. In terms of the impact of climate change on land use change in the absence of the project, a number of CC-related factors risk increasing deforestation and forest degradation. Diversification of livelihood activities as a CC coping strategy could include more widespread timber harvesting and in some areas, charcoal production thereby increasing deforestation and forest degradation. Given limited knowledge of soil fertility management and weed control amongst small-scale farmers, and in the face of declining yields as a result of CC, shifting cultivation is one coping strategy practiced by small-scale farmers according to Mbilinyi *et al.* 2013. Increased adoption of shifting cultivation would also contribute to increased deforestation. Other factors that might compound this trend include the predicted increases in the price of maize as a result of the 2013 lifting of the maize export ban, thereby incentivizing increased maize cultivation, the crop most directly correlated with deforestation. Thus whilst facing declining yields, farmers are likely to rely as heavily on maize due to a combination of limited technical knowledge acting as a barrier to switching to other crops and a price increase which could 'compensate' for the reduced yield. Thus the without-project scenario in the project zone predicts continued, widespread maize cultivation with its associated deforestation.

Other land use changes as a result of CC may have limited impact on deforestation and forest degradation. For example diversification into horticulture is likely to be carried out in areas already cleared for agriculture; and adoption of non-agricultural livelihood activities such as petty trade and motorbike taxis might also contribute to reduced pressure on forests.

**GL1.2. Demonstrate that current or anticipated climate changes are having or are likely to have an impact on the well-being of Communities and/or the conservation status of biodiversity in the Project Zone and surrounding regions.**

***The impact of current and anticipated climate change on the well-being of Communities in the project zone and surrounding regions***

Mbilinyi *et al.* 2013 note that, in Tanzania, 'the impact of variations in temperature and rainfall is food shortages, disruption of agriculture yields and productivity and reduced income for farmers.' They found that 56% of farmers in Mtwara Region (the region adjacent to Lindi Region) had already observed changes in harvesting time and outputs for maize in response to climate change with one farmer noting that "*before from 1 acre you could get 25 bags of rice, 10 bags of maize, 15 bags of groundnuts but now you only get 10 bags of rice, 3 bags of maize and 4 bags of groundnuts*".

During the development of the project's agricultural strategy, 63.1% of the farmers interviewed reported a recent decrease in their total harvests; with 13.5% stating that the decrease in harvests is attributable to less reliable rainfall / more rainfall variability (TFCG 2012a). Whilst limited in its scope, these observations by local farmers are aligned with the findings summarised in the National Climate Change Strategy of increased temperatures and increased variability in rainfall which in turn, link with Tumbo *et al.*'s analysis of the impacts of such changes on maize yields.

The degree to which such decreases in yields will be balanced by an increase in the price of maize is uncertain. As such current and anticipated climate change brings a significant risk of an increase in poverty amongst the agriculture-dependent communities in the project zone and surrounding regions. In the absence of the project and given the weak agricultural extension services it is anticipated that farmers will not be able to adapt their agricultural practices fast enough to respond to the changes in climate thereby resulting in the reduced incomes and food shortages described by Mbilinyi *et al.* 2013.

The National Climate Change strategy notes that, at a national level ‘*There is a general perception by the majority of farmers that incidents of crop pests have increased over the past few decades.*’ Similarly they report that farmers have observed an increase in crop diseases.’ These problems were also mentioned by farmers within the project zone during the development of the project’s agricultural strategy (TFCG, 2012). Whilst the nature and cause of such trends are complex and subject to considerable uncertainty; and, their links with climate change unclear; there is a risk that farmers may face increasing temperatures whilst also facing increased stress from crop pests.

In terms of the impact of climate change on human health Downing *et al.* 2010 found that climate change is likely to amplify existing health problems. They concluded that in Tanzania, climate change will have a particularly negative impact on efforts to combat diarrhoeal diseases, malnutrition and malaria. Given that diarrhoeal diseases and malaria are prevalent in the Lindi area and given the poor health services available to most communities within the project zone and surrounding region, it is anticipated that climate change will have a detrimental impact on health with a particular risk of increased child mortality.

In terms of the impact of climate change on water supplies in Tanzania, Noel (2011) found that possible impacts include increased evaporation from dams and reservoirs thereby affecting hydropower production; increased siltation due to flooding; earlier drying of ephemeral streams; and reduced stream flows under certain scenarios. Given the reliance on ephemeral and permanent streams for water, it is anticipated that communities in the project zone and surrounding regions will face severe water shortages particularly during the longer and drier ‘dry season’ between June – October.

These negative impacts are likely to inter-act with each other in such a way as to magnify each other. For example lower incomes and food shortage will limit farmers labour and ability to invest in agricultural inputs thereby risking a downward spiral. With increased poverty there is increased vulnerability to disease, again risking a downward spiral

With increased poverty and seasonal water shortages, conflicts may increase thereby undermining improvements in governance.

### ***The impact of current and anticipated climate change on the conservation status of biodiversity in the project zone and surrounding areas***

Devisscher (2010) notes that in Tanzania ‘*Climate change is expected to put ecosystems at severe risk affecting biodiversity, ecological functions, and the services and resources ecosystems provide. As temperature rises, stress on ecosystems is expected to escalate quickly, compounded by other pressures such as infestation of invasive species, over harvesting, land-use change, and water scarcity, among others. These pressures will be driven directly or indirectly by forces such as widespread poverty, and human population and consumption growth, which will increase the demand for food, water, energy and land within the next decades. Future changes in rainfall and temperature are likely to contribute to changes in plant and animal species composition, range and diversity, as well as to shifts of carrying capacity and productivity of the agro- ecological zones in the country.*’

As Devisscher (2010) notes, climate change is likely to increase human pressure on Coastal forests leading to over harvesting and land use change. As such, within the project zone the without-project scenario of continued deforestation is likely to be exacerbated by climate change as people respond by increasing their reliance on shifting cultivation (as noted by Mbilinyi *et al.* 2013) and engage in logging to substitute reduced agricultural incomes. As such increased habitat loss due to increased human pressure is likely to be the primary impact of climate change on the unique biodiversity found in the project zone.

**GL1.3. Describe measures needed and taken to assist Communities and/or biodiversity to adapt to the probable impacts of climate change based on the causal model that explains how the project activities will achieve the project’s predicted adaptation benefits.**

On the basis of the climate change models referred to in GL1.1, it is anticipated that changes in local climate within the project zone will include a longer and hotter dry season from July - October; and increased rainfall from November – February. Other changes will include increased variability in rainfall; and an overall increase in annual mean temperatures. As such project activities need to assist communities and biodiversity to adapt to these probable changes.

The measures needed to assist communities and biodiversity to adapt to the probable impacts of climate change are integral to the project design. Table 8 describes how the project activities will assist communities to adapt to the probable impacts of climate as outlined in GL1.2; and will mitigate the negative impacts of climate change on biodiversity values. Table 8 also demonstrates the causal link between the positive impacts that will be generated by the project and climate change adaptation benefits.

**Box 1. Forests and climate change adaptation**

In an international study, that included Tanzania, looking at issues related to forests and climate change, Robledo *et al.* 2008 found that ‘Forests play a key role during extreme events because they provide food during droughts, they reduce the effects of cyclones in coastal areas, and they reduce the risk of landslides during storms in mountain regions furthermore, forests provide food and shelter when climate-related risks have reduced agricultural and livestock yields and overall production or when extreme events have destroyed houses and infrastructure’ (Robledo, 2008).

**Table 8: Causal model to explain how project activities will achieve the project’s predicted adaptation benefits.**

<b>Project activity</b>	<b>Predicted adaptation outcomes</b>	<b>Impact</b>
<b>Activity 1.</b> Improving governance at village level.	Improved governance at village level will underpin strategies to manage village forest reserves; to improve land and forest management; and to avoid and resolve conflicts. This will help to ensure that water and forest products are accessible in an equitable way during times of climate change-related stress; and will help to minimise habitat loss associated with increased shifting cultivation during times of climate change-related stress, thereby conserving biodiversity values.	<b>CM Impact 3.</b> Villages are better governed. <b>Biodiversity Impact 2.</b> Extensive areas of Eastern African Coastal Forests continue to exist within the project area.
<b>Activity 2.</b> Implement sustainable land management.	Village land use plans will provide the basis for the improved land and natural resources governance mentioned under Activity 1 thereby contributing to improved management of forest products; and to protection of water sources.	<b>CM Impact 2.</b> Forest products will continue to be available and accessible to all community members including the poorest households according to rules agreed in a participatory way. <b>CM Impact 5.</b> Water sources will be better protected.
<b>Activity 3.</b> Community based forest	By strengthening forest management and through the project’s strong focus on improving community-level governance it is anticipated that communities, with the	<b>CM Impact 1.</b> Community owned forests will be managed in a

Project activity	Predicted adaptation outcomes	Impact
management.	<p>support of the District, will have the capacity to prevent increased deforestation and forest degradation through community based forest management in the combination with other strategies at the heart of the project. This will ensure continued access to forest foods including fruits, mushrooms and tubers even during periods of drought (see Box 1 on the importance of forest foods during times of food scarcity); and will help to minimise habitat loss and fragmentation associated with increased shifting cultivation during times of climate change-related stress, thereby conserving biodiversity values.</p>	<p>participatory, effective and equitable way.</p> <p><b>CM Impact 2.</b> Forest products will continue to be available and accessible to all community members including the poorest households according to rules agreed in a participatory way.</p> <p><b>Biodiversity Impact 1.</b> Populations of threatened and endemic species persist within the project area; and</p> <p><b>Biodiversity Impact 2.</b> Extensive areas of Eastern African Coastal Forests continue to exist within the project area;</p> <p><b>Biodiversity Impact 2.</b> Extensive areas of Eastern African Coastal Forests continue to exist within the project area.</p> <p><b>Biodiversity Impact 3.</b> There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers.</p>
<p><b>Activity 5.</b> Improve profitability and ecological sustainability of agriculture.</p>	<p>Training provided to the communities on improved agricultural activities specifically targets agricultural practices that will make farmers more resilient to climate change. The aim of the project’s agriculture strategy is <i>‘To support women and men farmers especially those from the poorest households to adopt agricultural practices that improve their livelihoods; do not cause deforestation or forest degradation; and make them more resilient to climate change.’</i> (TCFG 2012). The project is promoting soil moisture management techniques and crop variety selection with a view to enabling farmers to maintain and improve yields even in the face of a prolonged dry season as is predicted for the region by climate change models.</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.</p>

Project activity	Predicted adaptation outcomes	Impact
	<p>By introducing improved agricultural activities that are designed to increase farmers' resilience to climate change, it is anticipated that farmers will be able to withstand the shift in growing season; and decrease in yields that are anticipated as a result of climate change. For example, through a participatory process backed-up by expert advice, the introduction of more drought resistant crop varieties was identified as an appropriate intervention; and one which has been implemented by the project.</p>	
<p><b>Activity 6. Improve access to microfinance services for community members.</b></p>	<p>Farmers will have access to microfinance facilities that will help them to invest in more climate-resilient agricultural practices; and to survive and recover from climate change-related stress.</p>	<p><b>CM Impact 8.</b> Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.</p> <p><b>CM Impact 7.</b> Individual incomes will be boosted and diversified by receiving REDD payments.</p>
<p><b>Activity 9. Improve social services and infrastructure</b></p>	<p>Community development funds from REDD payments can be used to invest in improved social services including health facilities; and water delivery infrastructure.</p> <p>The impact of climate change-related increase in diseases such as malaria and dysentery, is reduced through access to improved health facilities.</p> <p>Communities have more secure access to water supplies, even during periods of drought, as a result of improved water infrastructure and management.</p>	<p><b>CM Impact 9.</b> REDD revenues will contribute to improving public services and infrastructure.</p>

**GL1.4. Include indicators for adaptation benefits for Communities and/or biodiversity in the monitoring plan. Demonstrate that the project activities assist Communities and/or biodiversity to adapt to the probable impacts of climate change. Assessment of impacts of project activities on Communities must include an evaluation of the impacts by the affected Communities.**

As outlined in the causal model in GL1.3, climate change adaptation benefits are integral to the project design. Given that the project's activities are intended to assist communities and biodiversity

to adapt to the probable impacts of climate change; and given that the anticipated climate change adaptation benefits are part and parcel of the project's overall impacts, as outlined in **Error! Reference source not found.** and Table 8, indicators for adaptation benefits for communities and biodiversity are aligned with those for the community and biodiversity impacts of the project as a whole. These are described in the project's community and biodiversity monitoring plan (Doggart, 2014) together with plans for community evaluation of the project's impacts by the affected communities.

### CM1. Without-Project Community Scenario

**CM1.1 Describe the Communities at the start of the project and significant community changes in the past, including well-being information, and any community characteristics. Describe the social, economic and cultural diversity within the Communities and the differences and interactions between the Community Groups.**

#### Community description

##### Data sources for Community Description

The information provided here comes from several sources including i. A stakeholder analysis developed by the project (Forrester-Kibuga and Samweli 2010). This involved focus group discussions, participatory mapping and transect walks with groups of village leaders; village elders and women involving 180 people from five villages; ii. Household surveys conducted in 15 households per village in four villages; iii. Social impact assessment involving meetings with a representative cross-section of society from each of the project villages for three days in each village. These involved 375 people (118 women, 257 men) followed by a landscape-level workshop involving participants from each village as well as other stakeholders. External reports are also cited. The detailed information on the communities presents data for the ten project villages. As new project villages from within the project zone are included in the project, more specific data on the additional villages will be presented at the time of verification.

#### Socio-economic profile

##### *National profile*

The Project Zone is located in the south-east of the United Republic of Tanzania. Tanzania is an ethnically diverse East African country with 122 tribes and languages. Historically there has been a long history of trade between Africa, India and the Middle East along the Swahili Coast, including what is now Tanzania. From the 11<sup>th</sup> Century AD, several important trading centres developed along the Tanzanian coast including Mtwara, Lindi, Kilwa, Bagamoyo and Zanzibar. During colonial times, Tanzania was initially under the jurisdiction of the German East African Company. After the first World War, the area was designated as a British mandate by the League of Nations. Independence from Britain came in 1961 followed by a political union with the islands of Zanzibar in 1964. Under Tanzania's first President, Julius Nyerere, Tanzania followed a Pan-African socialist pathway that included 'Ujamaa'. Ujamaa involve people living in rural areas being brought together into recognisable villages where services could be provided. This has had a profound impact on rural development. Following economic restructuring in the 1980s the country's GDP has grown steadily although rates of poverty have remained high.

According to the World Bank<sup>1</sup> economic growth in Tanzania accelerated from 3.5% on average in the 1990s to seven per cent on average in the 2000s. Growth in gross domestic product (GDP) has been

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between five and seven per cent in recent years. Economic growth has largely been driven by the mining sector, telecommunications, tourism and construction. Inflation has been relatively high at 12.7 % in 2011. Recent discoveries of off-shore oil and gas have further boosted growth.

The total population of Tanzania is 44,928,923 according to the 2012 census with an average annual population growth rate of 2.7%. The land area of Tanzania is 885,800 km<sup>2</sup> and the average population density is 51 people / km<sup>2</sup>.

75 % of the population are dependent on agriculture which accounts for 27.7 % of the GDP (World Bank 2013, Tanzania at a Glance Fact Sheet) however, relative to other sectors, growth in the agriculture sector has been sluggish at 3.4 % per annum.

**Administrative set up:** The levels of local government within Tanzania are as follows Region > District > Division > Ward > Village > Sub-village > Cell > Household. The project is located in Lindi Rural District and Lindi Municipality within Lindi Region. The project is working across seven wards in ten villages with 46 sub-villages as follows.

**Table 9: List of participating villages and sub-villages.**

Ward	Villages	Sub-villages
Milola	Milola Magharibi	Total: 6 Names : Dodoma B, Kikumbi, Noto, Kipunga, Magela Litandamkumbi
Rutamba	Kinyope	Total: 4 Names: Namkopo, Sokoni, Gulioni, Shuleni
	Ruhoma	Total: 3 Names : Mchati, Shuleni, Mkundi
Nangaru	Mkombamosi	Total: 7 Names: Lumo, Msikitini, Sokoni, Mwenge, Cheleweni, Likonde chini, Likandilo
	Muongano	Total: 7 Names : Mnazi Mmoja, Likonde, Kipunga, Uleka, Umoja, Naruwi, Ujamaa
Tandangongoro	Mkanga 1	Total: 4 Names: Mandanje, Mkanga Chini, Kilangalamatu, Mkanga Juu
Nga'pa / Tandangongoro	Nandambi	Total: 3 Names : Nandambi shuleni, Kilolombwani, Umoja
Matimba	Likwaya	Total: 2 Names : Lumumba, Mapinduzi
	Makumba	Total: 2 Mapinduzi na Mkwajuni
Kiwawa	Kiwawa	Total: 8 Names: Kiwawa B, Kiwawa A, Mchinjidi A, Mchinjidi B, Mmumbu A, Mmumbu B, Nawamba, Kitulo

**Population:**

The total population of the participating villages is 16,051. This is provided per village below. These figures are based on the number of people registered for the REDD payments in each village. Most

communities did not have reliable data on their population at the time of doing the social impact assessment.

**Table 10: Village populations**

Village	Men	Women	Children and Dependents	Total
Kinyope	963	1348	1596	3,907
Kiwawa	379	441	918	1738
Likwaya	131	167	263	561
Makumba	172	217	281	670
Milola Magharibi	507	541	1,351	2399
Mkanga	196	231	353	780
Mkombamosi	118	639	1508	2,265
Muongano	507	541	1,351	2,399
Nandambi	200	236	295	731
Ruhoma	133	213	255	601
<b>Total</b>	<b>3,306</b>	<b>4,574</b>	<b>8,171</b>	<b>16,051</b>

According to the 2012 National Census (NBS, 2013), the average household size for Lindi Rural District was 3.7. This is significantly lower than the national average of 4.8. Overall Lindi Region has the second lowest average household size of any region in Tanzania at 3.8. Lindi Region has the lowest population density relative to other regions in Tanzania, at 13 people / km<sup>2</sup>. The population density for Lindi Rural District was 13.6 / km<sup>2</sup>. At 89, the sex ratio for Lindi Rural is also lower than the national average of 95 and may reflect an out-migration of men to urban areas in search of employment. The population growth rate for Lindi is one of the lowest in the country at 0.9 % per annum. According to 2002 and 2012 census data, the population growth rate within the reference region villages averaged 0.59% per annum compared to 0.9% for all of Lindi Region.

**Cultural profile:** Tribal groups: Integration of different settlements into official villages during Ujamaa has resulted in a heterogeneous social and cultural landscape. Community members recognise the presence of people from at least 8 tribal groups within their villages. In most villages in the Project Area the Mwera are the dominant tribal group representing close to 90% of the population. In Likwaya Village, however, the Makonde are the dominant group (90%). Traditionally the Wamwera lived in family groups dispersed across the landscape practising shifting cultivation; collecting a variety of forest products; and hunting. The linguistically closely related Wadondwe (sometimes called Wadonde) also live in several of the project villages. Both tribes are of Bantu origin. Until Ujamaa, these ethnic groups had not been centrally governed, and people traditionally lived within their own clans (ukoo). Other tribes mentioned as being present in one or more village include the Ngindo, Hehe, Makonde, Yao, Makua and Ngoni. Intermarriage and the sharing of a single religion (90% Muslim) have fuzzed cultural divides. Consequently, the issue of social marginalisation in Lindi Urban and Rural Districts is more along the lines of gender imbalances; physical ability and landlessness than along cultural or ethnic identities.

Traditionally the Mwera, Makonde, Yao and Makao are matrilineal societies that have developed 'patrilineal tendencies' across several phases of influence, first by Islam, then the Ngoni invasion in the late 19th century, Christianity in the 20th century, and Ujamaa resettlement in the 1970s which favoured patrilineal forms of inheritance and governance (Sakamoto, 2008).

**History:** Although it is unclear when they first settled in the region, it is generally accepted that people of Bantu origin began settling in Tanzania around 2000 years ago. The coastal area of Lindi

Region, has historical roots that extend back to the 11th century when Lindi Town was an important trading area for Arab merchants trading along the East African coast. Under British Administrative rule of Tanzania, Lindi Town was the headquarters for the Southern States, and a relatively large population of Indian businessmen arrived with their families and settled in Lindi Town. The economic importance of Lindi Town began to diminish in 1952 when the Southern States HQ were moved to Mtwara.

Villages were formally established between 1951 (Milola) and 1973 (Nandambi). Lindi Region was officially formed as one of Tanzania's 21 regions in 1971, one decade after Independence.

Communities in the project area described the origin of their villages according to three historical milestones: 1) Traditional settlements that existed prior to colonial rule; 2) settlements that were formed during German and British occupancy (1884 – 1961), and; 3) settlements that were consolidated to form official villages as a national policy to centralise services in rural areas (i.e. the Villagisation Act or Ujamaa in 1971 - 1975 with the exception of Nangaru Village which was split into Mkombamosi and Muungano Villages. Anecdotes describing how villages were formed indicate that until the mid-1970s communities were extremely transient and moved fluidly within the area in search of agricultural land and water. Pre-1974, most households were scattered, many of them within the forest. In the 1960s the Ilulu cooperative society was established to promote cashew nuts, sesame and pigeon peas. Village visioning reports (supplementary material) describe briefly how each project village was founded. None of the villages qualify as truly indigenous/traditional/long-term villages. Two of the project villages, Nandambi and Ruhoma were formed during Ujamaa.

**Language:** Although the Mwera are the dominant tribe, in most villages more than four (and sometimes up to eight) languages are spoken, including Swahili. Swahili is the most widely spoken and understood language. In all villages, it was stated that everyone understands Swahili. As such this has been the language used by the project for communication work.

**Religion:** Islam is the dominant religion in the project area, having roots extending to 11th century Arab traders who travelled to the East African coast. Villages have at least one (and sometimes two) mosques.. The dominant ethnic group (waMwera) tend to be Muslims; the Makonde tend to be Christians. In all villages it was stated that the majority of the population are Muslims. Followers of both Sunni and Shia Islam are found within the project villages. It was also stated that there are a minority of Christians present in all villages. Some animistic beliefs are also held.

**Public services:** In general, public services in the Project Area were absent or in poor condition at the start of the project. Annex 3 provides a description of the baseline conditions in relation to the public services available in the project area in 2011. These are summarised below:

#### *School facilities*

This section describes the absence/presence of education facilities and less so the quality of those facilities or the quality of the educational services provided within them. The education sector in Lindi District suffers a large shortage of teachers. In 2007 the district was short of 237 teachers. Consequently, student to teacher ratios are high, with some schools having two (2) teachers responsible for meeting the educational needs of 197 students. Walking distance to schools, on average, is 1.5 km.

Nursery schools: Tanzania's education system requires 5 – 6 year old children to attend nursery school in preparation for primary school. According to Lindi Rural District statistics, 90% of the total need for nursery schools in the District is met. However eight out of the 10 villages, do not have a nursery school (Kiwawa, Makumba, Likwaya, Milola Magharibi, Nandambi, Mkanga 1, Kinyope and Ruhoma). In four of the eight villages without nursery schools parents send their children to nursery

schools in nearby villages (Milola). In the remaining four villages children in this age group do not attend nursery school at all (Kiwawa, Likwaya, Nandambi and Ruhoma).

Primary schools: Two of 10 villages do not have a village-specific primary school (Milola, Muungano) and thus send their children to schools of nearby villages. In both cases the school facilities are within 0.5 km of the village centre. School conditions (e.g. the facilities, teacher to student ratios, and availability of teaching materials) are poor across all schools. Nandambi Village primary school, for example, has four teachers to teach 152 students across seven levels.

Secondary schools: There is no secondary school within the current project zone. Secondary school services (government) are available in nearby villages, distances range from 0.5 km (for students from Likwaya, Muungano and Mkombamosi villages attending Nangaru secondary school in Komolo Village within Matimba ward).

### *Health facilities*

All health services in Lindi District are provided by the government rather than the private sector. Three types of health services are available in the District. One regional hospital is based in Lindi Urban District which provides in- and out-patient services, addresses most treatments including minor and major surgery to all residents in Lindi Region.

Health centres provide in- and out-patient basic services (minor surgery) at ward level. There are a total of five health centres in Lindi Rural District none of which are located within the project area. The closest health centre to the project area is located in Rutamba ya Zamani Village.

Dispensaries are located at village level with the objective of providing first aid treatment, some mother and child care (labour rooms and clinics) and HIV-AIDS testing and counselling. For the most part, dispensaries do not have in-patient services and do not conduct surgery. Only two of the 10 villages in the project area have a dispensary (Kiwawa, Mkombamosi): and another two are under construction in Kinyope and Mkanga 1. Residents from other villages use the closest available dispensary. For example, Milola Magharibi residents go to Milola Mashariki dispensary. In some villages such as Mkanga 1, people must walk for 11 km to reach their nearest dispensary. According to the District Health Officer (DHO) of Lindi Rural District, the external structure of village dispensaries and the services provided by these facilities are generally of good quality. However in the case of Kiwawa, the building is in poor condition with large cracks in the walls.

Some of the main challenges facing health facilities in the study area include understaffing, lack of transport (there are no ambulances), inadequate medicine supply (which limits services to issuance of prescriptions), inadequate sanitation (toilets for patients), and unavailability of clean and safe water. The hospital to population size ratio recommended by the Tanzania Government is 1 hospital per 100,000 people and one doctor per 25,000 patients. The reality in Lindi Rural District is that the one hospital serves more than double the population size recommended, and one doctor serves up to 107,400 patients, more than four times the recommended ratio.

### *Transport and Communication*

Roads: Communities in the project area are located 52 to 83 km from Lindi Town and the Regional headquarters. The project area is accessible along unpaved roads feeding off the paved road from Kilwa to Mtwara. The road to Kinyope and Milola in the south of the project area is in good condition throughout the year. Smaller unpaved roads to Kiwawa and Ruhoma are accessible during the dry season but can become impassable during heavy rains. In the north of the project area, villages are also accessed along unpaved roads which can become impassable to some vehicles during heavy rains. Between Lindi and Dar es Salaam, there is a paved highway for all but one 50 km stretch which has been under construction for several years. Although a deadline for completion was set for 2013, even by March 2014, there remains at least 20 km which has not been completed.

Public transport to the project area from Lindi Town is available in the form of mini-buses (max. 20 passengers) available daily. The fare ranges from TSH 3000 to 3500. These go to most villages with the exception of Ruhoma, Kiwawa, Nandambi and Mkanga 1. Buses are available daily from Lindi Town to Dar es Salaam. Bus fares to Dar es Salaam range from TSH 16,000 to 25,000. Buses to Mtwara are also available daily; the fare is TSH 3000 from Lindi Town. As with many parts of Tanzania, there has been growing availability of motorbike taxis that fill gaps in the transportation services. Motorbike taxis (*bodabodas*) are used mostly from drop-off points along the main road to village centres. Motorbike taxi fares vary from TSH 5000 (Kinyope Village) to TSH 7000 (Kiwawa Village) and TZS 10,000 (Nangaru Village). These fares are high relative to fares elsewhere in the country. Villagers generally walk or cycle between villages. Most people walk, however, because few people can afford to own a bicycle. Other vehicles that are in the Project Area belong to government, NGOs and traders.

Telephone communication in the project area is available through 2G cellular network communication. The most widely available mobile phone service is that of Airtel (formerly Zain and Celtel). Tigo and Vodacom mobile phone companies are only available in Nangaru Village. Ownership of cellular phones is relatively common especially among young people (16 – 25 years old). Phone charging services are provided by privately operated generators and solar power systems. The current price for charging a phone is TSH 300.

National radio stations are the most reliable means of staying connected with local, national and international news. Tanzania Broadcasting Company is the most popular radio station communities tune into in Lindi.

#### *Water services*

Since the formation of Ujamaa villages in the early and mid-1970s, several water projects have been implemented in the project area. Consequently some boreholes and/or improved water points do exist. Improved water points are traditional wells that have been made safer by placing covers over the well top to avoid contamination. In Mkombamosi Village, Finnish Government Aid developed two boreholes (in 1988). More recently (in 2009), the Assemblies of God Church funded the construction of an additional borehole.

Villages without an improved water point rely 100% on stream water, open traditional wells or improved water points in nearby villages. Traditional open wells and stream water are the two main sources of water for household use in the project area. Walking distances to the nearest source of reliable water in the Project area range from 30 minutes to 4 hours, i.e., are up to 12 km. Acquiring water for the household is generally the responsibility of women and girls.

Keeping improved water points in working order has been a challenge for communities: broken water services have stayed in disrepair. Acquiring the funds to pay for borehole spare parts is the biggest impediment to keeping boreholes working long after they have been developed. In Muungano Village, for example, boreholes (constructed with funding from Finish Government Aid in 1988 have remained in disrepair since January 2010; communities have subsequently resorted back to using stream water. Stream water is not suitable for drinking, however; and waterborne diseases are one of the most frequent diseases reported in Lindi Rural District.

Failure to maintain functional water facilities and services is largely because fees are not usually charged for water acquired from improved water points. When fees are charged (TZS20 for 20L of water) such as in Milola and Kinyope villages, water user associations are able to maintain functioning facilities and services. In Ruhoma a borehole was donated to the village in April 2011 and no water fees apply. When the water pump recently broke down no institutional mechanism or funds existed to address repairs.

## *Public spaces*

Village government offices: All villages in Tanzania are required to have a local council that governs and administers national policies and programmes at village level. A village government office is an essential facility for the Village government to provide daily services to the community, for hosting council meetings and for storing documents. At the start of the project, only Ruhoma and Milola Magharibi villages had village government offices. These consist of two small rooms, with mud walls and a leaking roof, that are inadequate for hosting full council meetings. An office is presently under construction in Muungano Village. All other villages lack office spaces; instead, they use political party offices, court buildings, food storage buildings, ward offices, and dispensary corridors.

Community buildings: None of the villages own a public or community building. Assembly meetings held by the village council (four are required annually) are conducted under large shade trees within each village.

Market places: Most villages have one area in the central sub-village that is recognised as the 'marketplace', although it is not always an official area formally designated as a marketplace by the village government. Marketplaces in the project zone consist of an open area absent of roofing and oftentimes having no public sanitation services. Milola Magharibi Village does not have its own marketplace but uses that of Milola Mashariki Village.

Food storage facilities: Storage of dry foods in communal storage facilities is a common practice in many parts of Tanzania that provides some level of food security by avoiding post-harvest damage of grains. Most facilities in the study area were built 30 – 40 years ago (during Ujamaa) and have not been adequately maintained. Thus, although several of the villages own a storage facility, the buildings are dilapidated, in dire need of repair or reconstruction, and generally unsuitable for safely storing food.

## *Electricity & energy*

Electricity from the grid is limited to Lindi Town and its immediate surroundings. None of the communities in the project area have access to electricity. Lighting is provided by kerosene lamps and candles. Privately operated diesel generators are available in some villages, usually to charge mobile phone batteries or to operate local "cinemas" (i.e. viewing television programmes, news and/or movies). Radios generally run on with battery power locally available from kiosks and shops.

Economic activities: The main economic activities in Lindi Rural District are agriculture, some beekeeping, fishing, charcoal production and small scale entrepreneurship. In Lindi Municipality economic activities include agriculture, livestock keeping, fishing, charcoal production, entrepreneurship and some industry (although most industrial activities occurred in the past and factories have been closed down).

## *Agriculture*

Shifting cultivation (also known as slash-and-burn or swidden-fallow cultivation) is the main type of agricultural system practiced in the project area. On average, each household clears 1 – 5 acres (0.81 – 2.02 ha) of primary or secondary forest annually to prepare new fields for cultivation. The process involves removing all biomass in the designated area with the exception of one or two shade trees, and subsequently burning the biomass. Tree biomass of larger trees is sometimes converted to charcoal which is sold to Lindi businessmen although only a few people in most villages have charcoal making skills. An agricultural field in the shifting cultivation system is used for one to two seasons (equivalent to 1 to 2 years) before it is abandoned and a new area is cleared. Fields are abandoned because weeds become increasingly difficult to control, soil fertility decreases (this is gauged by decreased crop yields), and rat and insect infestations become intolerable. The length of the fallow period ranges from 3 – 15 years, with most communities saying that they return after 10 –

15 years to re-cultivate an area. Wealthier farmers employ labourers and so can farm 7 – 15 acres per year.

Permanent agricultural fields do exist. These are confined to areas closer to village centres, and in fertile valleys or on non-sloping land. Most permanent fields are reserved for cultivation of permanent or long-term crops such as cashew, coconut, orange trees, or for cultivating rice. In Mkombamosi in the wetlands areas, sugar cane, coconuts, tomatoes, spinach, onions and cabbage are grown. According to the Lindi District Agriculture Officer approximately 19,000 ha of land in Lindi District is under permanent agriculture. The majority of that land (16,000 ha) is occupied by cashew nut plantations; the rest (3,000 ha) is occupied by coconut plantations.

A wide diversity of crops are cultivated in the project zone. Generally, maize, millet, rice, sorghum, cowpeas, pigeon peas, bananas and cassava are the principal food crops cultivated. The main cash crops are cashew, sesame, oranges and coconut. Across the project zone, there is substantial variation between villages in terms of crops cultivated. Within villages, sub-villages can also cultivate very different crop types. Many families farm shambas both in the uplands and in the lowlands, typically with permanent crops, perhaps mixed with cowpeas in the lowland shamba, and food crops and sesame in the upland shamba. Most people plant several crops on the same shamba, e.g. a line of sesame, a line of sorghum and cowpeas in between. Or a shamba will be split into sections with different crops in each section. The food produced lasts all year and seasonal food shortages are rarely experienced. More detailed information on the agricultural practices of the area is provided in Kibuga and Samweli (2010) and in the project's agricultural strategy (TFCG 2012).

Rat and insect infestations are common and widespread. Other animals affecting agriculture productivity include bush pigs, baboons, elephants, and blue monkeys who destroy crops at different maturation stages. Furthermore, lions and leopards threaten the safety of farmers in their fields or on their way to and from the fields.

Farming is conducted with low-tech and manual farming implements and is limited to the hand hoe. Lack of access to agricultural inputs to control rat and insect infestations or to fertilise depleted soils are additional challenges.

Kilimo Kwanza, a nationwide programme to improve agriculture has not yet had much impact in the project area. For example, the farms are not ready for mechanised agriculture. Whilst tractors and power tillers are available at District offices, they have not been put to use by communities because their farms are not sufficiently prepared to enable mechanised tilling (roots have to be removed to allow power tillers and tractors to function properly); and their fields are not accessible to tractors due to a lack of roads and steep slopes.

### *Beekeeping*

Beekeeping is uncommon and conducted by only few people in the project zone and is generally perceived as unprofitable. Beekeeping is undertaken most prominently in Milola Magharibi village (although it occurs at smaller scales in other villages as well). In Milola Magharibi, some community members maintain traditional hives in the nearby Miombo woodlands. There are about 15 traditional hives belonging to three people in Milola Magharibi. Beekeepers maintain about 5 hives per person. The hives produce 40 to 50 litres of honey annually. Interviews with beekeepers revealed that one hive produces about 10L of honey that can be harvested 4 to 5 times per year. Other villages have a total of 2 – 3 hives. Honey is sold locally for medicinal purposes and for direct consumption. It is not transported to sell to Lindi Town residents. Beekeepers tend to be WaMwera and occupy the middle class; they are not particularly marginalised or vulnerable.

### *Small-scale business activities*



Small business in the project area includes kiosks for non-perishable goods that are not produced locally (oil, salt, sugar, wheat flour, batteries, etc); vegetable stands for tomatoes, greens, onions and cabbage; tailors, carpenters, bicycle repair stands, hair dressers, phone charging services, local cinemas, motorbike taxis, bicycle taxis, maize milling, guest houses, traditional breweries and local pubs, and coffee/tea stands. Some women are food vendors, putting up small stalls on the street sides in the evenings to sell economic food (e.g. rice and beans). Some people are employed as labourers to work on the farms of wealthier villagers.

#### *Timber*

Timber harvesting for sale outside the project zone occurs in Mkombamosi, Muungano and Nandambi villages and is undertaken by businessmen from Lindi and Kilwa towns and residents of neighbouring villages. The clandestine nature of the timber business means that it is unlikely that communities will state openly that they participate in timber harvesting. Preferred timber species are the hardwood species mninga (*Pterocarpus angolensis*), mvule (*Milicia excelsa*) and mchenga (*Julbernardia globiflora*).

#### *Charcoal production*

Charcoal production is conducted by a few people in most villages. It is predominantly a male activity. Women are also involved either individually or in partnership with a man. For example in a survey conducted by the project of 188 charcoal mounds in Likwaya, it was found that 71% of the mounds were made by men, 13% by women and 16% of those mounds were made in collaboration between a man and a woman. In most villages there are a few individuals who are year-round charcoal producers. Others produce charcoal only to address a particular financial emergency. The charcoal is sold mostly within the community, but also exported outside the area by small-scale middlemen. Charcoal is often produced either as a by-product of forest clearing for agriculture, or as the primary activity. The chief charcoal producing village is Likwaya where it is the primary economic opportunity for many households

No AFOLU projects were established in the project zone prior to this project.

**CM1.2. Evaluate whether the Project Zone includes any of the following High Conservation Values (HCVs) related to community well-being and describe the qualifying attributes for any identified HCVs:**

- a. Areas that provide critical ecosystem services;**
- b. Areas that are fundamental for the livelihoods of Communities; and**
- c. Areas that are critical for the traditional cultural identity of Communities.**

**Identify the areas that need to be managed to maintain or enhance the identified HCVs.**

#### **CM 1.2 a      *High Conservation Values - Ecosystem services***

##### *Hydrological Services*

The plateaux trigger orographic rainfall. This percolates through the sandstone emerging as springs at the base of the plateaux. This water then flows into the permanent and ephemeral streams and rivers within the landscape including the Mngaru and Likandilo Rivers to the North of the plateau; the Mkomole River valley that divides the Chitoo from the Noto plateaux; and the Milola valley to the west of the project area. These rivers supply water for agricultural use. The Lutamba and Tandangongoro

lakes that form at the base of the Chitoo plateau are used for fishing and as a water source for domestic use. For domestic use, most people collect water from open springs and streams.

The plateaux are an important catchment area for the streams that flow eastwards providing water for people living in the valleys.

#### *Erosion control*

The forests growing up the sides of the escarpments play an important role in preventing soil erosion including landslides on these extremely steep slopes. In this way the forests help to protect the settlements at the base of the escarpments from damage due to landslides.

#### *Sequestration of CO<sub>2</sub>*

As is described in more detail in G 1.4, the project area represents an important carbon stock. The forests also play an important role in sequestering CO<sub>2</sub>.

### **CM 1.2 b      *High Conservation Values - Community forest products***

Based on interviews with women and men living within the project area, as part of the REDD Readiness activities, the TFCG and MJUMITA teams recorded several community forest products including wild tubers, fruits, mushrooms, medicinal plants and bush meat. A summary is provided below with more information available in Forrester-Kibuga and Samweli (2010) and Mwampamba *et al.* (2011) which can be found at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html).

Within the project area, wild food and fruits are an important source of complementary vitamins and minerals otherwise difficult to obtain from everyday staples. Wild food and fruits are often collected by women and children. The most common wild food collected from forests are the Ming'oko and Mipama tubers. Ming'oko are an important source of income for women; they are sold locally or taken to Lindi Town. They are consumed like cassava. The Ming'oko season is between June – November i.e during the dry season. According to some participants, ming'oko is gathered in thickets and degraded primary or secondary forests (not dense primary forests).

The diversity of edible mushrooms varies substantially between villages. Likwaya villagers claim that there are no edible mushrooms in their village areas. All other villages identified 5 to 8 different types of edible mushrooms.

Wild fruits are collected across a wide array of forest types by men, women and children. Approximately nine different fruits are most commonly collected; collection occurs in all villages. According to some interviewees, in the last 20 years wild fruit availability has been steadily decreasing. Given that most wild fruits are gathered in dense primary forests, participants foresee continued decrease in wild fruit.

Medicinal plants are collected and used in all villages in the project area. Two villages (Ruhoma, and Milola Magharibi) reported scarcity while the other villages reported abundance. Availability of medicinal plants over the last 20 years echoes this disparity across villages: about half of the villages perceive unchanged availability while others report decreasing availability.

Wild honey is available in all villages with forests, with the exception of Ruhoma Village. Overall, supply is low, and limited to household use or sold very locally. The honey is used as food and medicine. About half the of the villages practice beekeeping in local forests. Prior to the project, production was low with only one or two people practice beekeeping with less than 10 hives being kept in any one forest. As part of the REDD readiness activities, TFCG and MJUMITA have been providing training and equipment for beekeeping. As such the number of hives now kept in the forest is higher and the number of people benefiting from beekeeping has increased.

Though illegal without a permit, hunting for bush meat is conducted in all villages. The main animals hunted are duiker, bushbuck, warthog, blue monkey, buffalo, and elephant. Religious beliefs affect the animals targeted by different people for example Muslims are prohibited from eating bush pig or primates.

### **CM 1.2 c High Conservation Values - Cultural values**

The collection of forest products is often associated with cultural values. For several of the women whom the team interviewed, they highlighted that it was traditional for women to retain the income from the sale of ming'oko to buy things for themselves such as a new khanga.

#### **Areas that need to be managed to maintain or enhance the identified HCVs.**

Forests on the escarpments and in close proximity to rivers need to be conserved in order to maintain the hydrological functions of the forest.

In order to conserve access to forest foods including fruits, mushrooms and tubers, it is important to conserve both woodland and coastal forests.

### **CM1.3. Describe the expected changes in the well-being conditions and other characteristics of Communities under the without-project land use scenario, including the impact of likely changes on all ecosystem services in the Project Zone identified as important to Communities.**

The 'without project' scenario in which there is widespread deforestation and forest degradation would negatively affect all ecosystem services currently provided by the forests. The following scenarios were developed in a participatory way as part of the social impact assessment (Mwampamba *et al.* 2011).

*Forest foods and medicinal plants:* with declining forest area and a commensurate decline in plant populations, communities would find it increasingly difficult to find the mushrooms, fruits, medicinal plants, fodder and other forest foods that they currently use. Already, according to some interviewees, in the last 20 years wild fruit availability has been steadily decreasing. Given that most wild fruits are gathered in dense primary forests, participants foresee continued decrease in wild fruit. This decline in forest foods is likely to hit the poorest households hardest as they tend to be the most dependent on forest products. During the participatory 'without project' scenario building all but one community indicated that they expected a decline in forest fruits, mushrooms and medicinal plants in the absence of the project (see Mwampamba *et al.* 2011). As noted in Section GL1, such forest foods are particularly important during times of drought, therefore their decline is particularly significant in the context of increased vulnerability to climate change.

Medicinal plants are collected and used in all villages in the project area. Two villages (Ruhoma, and Milola Magharibi) reported scarcity while the other villages reported abundance. Availability of medicinal plants over the last 20 years echoes this disparity across villages: about half of the villages perceive unchanged availability while others report decreasing availability. This disparity will reflect the medicinal plants under consideration with those medicinal plants that favour forest habitats declining whilst those that flourish in more disturbed conditions increasing.

*Timber and fuelwood supplies reduced:* communities also highlighted that in the absence of the project fuelwood and timber supplies would be reduced resulting in (mainly) women having to invest more time and effort in collecting fuel wood for domestic consumption.

*Increased soil erosion:* with the loss of the protective forest cover on the steep slopes on the plateau sides, it is likely that there would be an increase in soil erosion including land slides and gully erosion resulting in loss of agricultural land.

*Reduced water supplies:* it is unclear what the impact would be on water supplies and more research is needed to understand the micro-climates of the plateaux and the hydrology. There is a risk that higher ground temperatures would result in more evaporation and therefore less water being available to percolate through the plateaux to feed the springs and lakes at the plateau bases. There is also a risk that a longer, hotter dry season will lead to greater water stress during August and September. More research is needed to understand the hydrology of this area.

## **CM2. Net Positive Community Impacts**

**CM 2.1 Use appropriate methodologies to assess the impacts, including predicted and actual, direct and indirect benefits, costs and risks, on each of the identified Community Groups (identified in G1.5) resulting from project activities under the with-project scenario. The assessment of impacts must include changes in well-being due to project activities and an evaluation of the impacts by the affected Community Groups. This assessment must be based on clearly defined and defensible assumptions about changes in well-being of the Community Groups under the with-project scenario, including potential impacts of changes in all ecosystem services identified as important for the Communities (including water and soil resources), over the project lifetime.**

As outlined in Section G 3.1 the project has three objectives pertaining to the project's community impact.

### ***Positive community impacts***

The predicted and actual, direct and indirect positive impact on the communities of the project is detailed below according to these three objectives:

***CM Objective 1. To maintain forest ecosystem services and a sustainable supply of forest products through an equitable and effective system of participatory forest management.***

**CM Impact 1. Community-owned forests will be managed in a participatory, effective and equitable way.**

Compared with the 'without project scenario' in which communities did not anticipate the establishment of community based forest management in the villages, the village forests will be managed according to management plans and by-laws developed in a participatory way as a result of project interventions. The plans will reflect the needs of different groups within the communities including women and poorer households. The Village Natural Resources Committees shall be responsible for the management of the reserves and will be accountable to the Village Council and Village Assembly.

**CM Impact 2. Forest products will continue to be available and accessible to all community members including the poorest households according to access rules agreed in a participatory way.**

Compared with the 'without project scenarios' in which communities anticipated an overall decline in the availability of forest products and the projected deforestation based on the historical baseline indicated a 44 % loss of forest over a 30 year period, it is anticipated that sustainable management of the village forest reserves will safeguard the availability of non-timber forest products including wild foods and medicinal plants. The forests will also continue to provide a suitable place to locate bee hives and will provide forage for bees so that bee keepers can produce honey.

**CM Impact 3. Villages will be better governed.**

Compared to the without project scenario, in which communities anticipated that most aspects of village governance will remain the same, it is anticipated that REDD will motivate elected village leaders to uphold village by-laws; and will motivate citizens of a particular village to hold their leaders more accountable, particularly in relation to the management of community development projects. By requiring that village leaders must present the plans and budgets for community development projects and that the community as a whole can choose whether or not to invest in the community development project, it is expected that the leaders will be more accountable for the delivery of the projects. Through the trial payments already made in the villages, there is already evidence of this. It is expected that as a result, the village council and the village natural resources committee will meet more regularly. Integrated into measures to improve governance will be the principle of improved representation for women and poorer households. Underlying improved governance in the participating villages is widespread awareness raising that will reach adults through meetings and the distribution of awareness raising materials and youth through improved environmental education in primary schools.

#### **CM Impact 4. Communities will have more secure land tenure**

The without project scenario developed by the communities indicated that they did not anticipate developing a village land use plan. As part of REDD, each of the villages has developed a village land use plan and by-laws; will receive its village land certificate; and will have a village land registry.

#### **CM Impact 5. Water sources will be better protected**

Many communities rely on springs for their water supply. By protecting forests around the springs, it is anticipated that communities will have a more reliable and plentiful supply of water than would occur according under a 'without project' scenario where deforestation close to springs might threaten the water suppliers.

#### **CM Impact 6. Soil erosion will be reduced**

Forests play an important role in preventing soil erosion. With the loss of the protective forest cover on the steep slopes on the plateau side, as predicted in the without project scenario, it is likely that there would be an increase in soil erosion including land slides and gulley erosion resulting in loss of agricultural land. By maintaining forest cover on steep slopes, particularly along the sides of the plateau, it is anticipated that soil erosion will be reduced compared to a without project scenario in which forests are removed from the plateau edges. In addition, the adoption of conservation agriculture practices which integrate improved soil management techniques, it is anticipated that soil erosion will also be reduced in agricultural areas.

***CM Objective 2. To generate individual cash incomes from REDD for investing in improved agricultural practices and other enterprises and for livelihood diversification with a particular focus on poorer households and women.***

#### **CM Impact 7. Individual incomes will be boosted and diversified by receiving REDD payments**

The project model aims to channel the net REDD payments (after verification, monitoring, marketing and revenue distribution costs are deducted) to communities. Each woman, man and child who fulfills the eligibility criteria agreed by the communities, is treated as a share-holder and is paid a dividend from the revenue generated from the sale of the voluntary carbon units. In this way all individuals can tailor the way that the revenues are invested to meet their particular needs. The payments will benefit all constituent socio-economic and cultural groups within the communities as every individual will be paid. Such cash payments were not in place before the project. The amount that communities will earn will be proportional to their emission reductions. Based on conservative estimates, this is likely to range from TZS 8 million to TZS 50 million per village. Each community will decide as to what

proportion of their individual payments they retain for personal use and what proportion they contribute to community development activities. The payment mechanism has been trialed successfully in all villages. Individual payments were used by community members for a wide range of expenses including investing in businesses; paying school fees; purchasing agricultural inputs; paying for improved houses; and covering immediate needs such as food and medicines. MJUMITA and TFCG have provided training on the establishment and operations of village savings and loans associations thereby setting up a system by which community members can save and plan how to invest their REDD incomes.

**CM Impact 8. Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition measures.**

The project aims to provide farmers with the technical skills to adopt improved agricultural activities that are more profitable, more ecologically sustainable and more resilient to climate change. This will include training on on-farm activities as well as post-harvesting value addition. In addition, the project will support access to micro-finance through the establishment of village savings and loans associations in order to provide farmers with a more stable financial basis. The project will also provide training on other economic enterprises including silviculture and bee keeping.

***CM Objective 3. To improve the quality and availability of public services and infrastructure.***

**CM Impact 9. REDD revenues will contribute to improving public services and infrastructure**

It is anticipated that the communities will chose to invest some of their REDD revenues in improving community services and infrastructure. This might include payments for the construction of buildings intended for public service delivery e.g. a dispensary, class room, water delivery point or market place; or to contribute to the costs of running public services better (e.g. contributing to the running costs of a dispensary). By generating funds from REDD to pay for these services, the communities will be better off than they expected to be as described in the 'without project' scenarios.

**CM Impact 10. Villages will have village offices**

In many villages, the without project scenarios indicated that they did not expect to construct a modern village office. As a result of the project all of the participating villages will have village offices with space to store their records; hold meetings; store equipment securely; and fulfill other functions of village governance.

As described in CM 1.1 the project anticipates that the project will have a positive impact on the high conservation values identified in G 1.8.4 – 6.

***Potential and actual costs and risks to community benefits resulting from project activities under the with-project scenario.***

As noted in Section G 1.10, during the social impact assessment for the project, stakeholders identified a number of potential risks; assessed their probability and potential impact; and identified some mitigation measures. The risks that could negatively affect community benefits and that may be linked directly or indirectly with project activities (rather than resulting from external factors) are listed in Table 11.

**Table 11: Potential risks to community benefits from project activities.**

Risk description	Probability and potential impact of risk	Mitigation measures
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Risk description	Probability and potential impact of risk	Mitigation measures
Risk 1. Conflicts over village boundaries cause delays to land use planning and the issuing of village land certificates; and revised boundaries are not accepted by all farmers with some farmers continuing to clear forest in an adjacent village's land.	Probability: medium / high. Potential impact: high.	Mitigation measures: seek consensus from all affected villages on the location of village boundaries through joint meetings; boundary visits; and participatory mapping. Raise awareness on the location of the new boundaries within the affected villages. Support the District Lands Office to apply for a village boundary amendment from the Ministry of Lands and ensure that all required documents and other evidence is submitted.
Risk 2. Increase in human-wildlife conflict associated with increase in forest cover and forest enhancement. Existence of wild animals in the area (and possible increase in wildlife due to forest enhancement) could threaten safety of communities and agricultural efforts (through crop destruction).	Medium. Potential impact: medium	Training to farmers on techniques to avoid crop losses due to wild animals. Shifting to more permanent agricultural techniques in fields that are further from the forests.
Risk 4. Internal conflict within communities over forest access rights.	Probability: medium Potential impact of risk: high	The REDD readiness activities were implemented with a commitment to free, prior and informed consent. Through the participatory planning and social impact assessment work, community members have directed the design of the REDD implementation phase. They were also given opportunities to opt out of the project at various stages. Those communities with groups of individuals who were not happy to continue with REDD implementation are not included. All of the villages that are included in this PDD have chosen to continue with the project through their village assembly meetings. The Village Assembly meetings have passed by-laws on REDD and have agreed to sign a Memorandum of Understanding with MJUMITA outlining their commitment to the REDD process. In addition, a conflict resolution mechanism is in place, to ensure that conflicts that do arise can be addressed in a fair way. By engaging with a wide range of



Risk description	Probability and potential impact of risk	Mitigation measures
		stakeholders during the project design phase, there is also a broad network of support for the initiative at local and national level including from local MPs, the District Council and the Ward Development Committees.
Risk 7. Corruption in relation to the REDD payments undermines the effectiveness and equitability of REDD	Probability: medium Potential impact of risk: low / medium	The individual payment mechanism modelled by this REDD project is designed to maximise accountability around REDD payments. It is based on the premise that individuals are more likely to demand accountability where they have a direct stake in the outcome of transactions. As part of the REDD readiness activities, there has been widespread awareness raising in relation to the model and two rounds of payments have been made in all villages so that a majority of people are familiar with the process and the roles and responsibilities of different stakeholders. The MJUMITA networks have also been trained to provide support to communities to prevent and where necessary address any governance shortfalls in relation to the REDD payments. The presence of civil society organisations is known to moderate the risk of elite capture in participatory forest management (Persha and Andersson 2014). The highest risks relate to the use of any funds allocated for community development projects. Where communities do not trust their leaders, they have the option of not entrusting any money to them.
Risk 8. Corruption in relation to forest reserve management results in forest clearance	Probability: medium Potential impact of risk: medium	Over the last decade there has been growing awareness on the scale of corruption within the forest sector in Tanzania and its impact on national development. As such various efforts are now underway at local and national levels to mitigate these risks. Many of these initiatives such as the Mama Misitu (Mother Forest) Campaign and the Forest Justice Project have invested in building the capacity of communities to address governance shortfalls. As part of the REDD readiness activities, TFCG and MJUMITA have provided training to village leaders on good governance. They have also provided training and support to community based advocacy groups so that they can address governance shortfalls directly at village level. These local MJUMITA networks are now in place and are expected to play an important role in preventing and resolving corruption in relation to reserve management.
Risk 10. REDD revenues are insufficient to incentivise	Probability: medium Impact of risk: high	By seeking CCB and VCS validation, the project aims to secure a price for REDD credits that will provide sufficient incentives to communities to reduce deforestation. In addition, during the REDD readiness

Risk description	Probability and potential impact of risk	Mitigation measures
sustainable forest management		activities, TFCG and MJUMITA emphasised the other benefits to communities of maintaining forest cover and will continue to look at ways to secure other revenues for communities that support and are compatible with REDD.

In terms of costs to communities, the main cost is the opportunity cost of allocating village land for forest management rather than agriculture. The project aims to mitigate this cost by providing training to communities on improved agricultural practices; and by channelling REDD finance to the communities. Other direct costs include the costs of implementing the village land use plans and community based forest management. Communities are strongly encouraged to set aside REDD funds to cover these costs.

Whilst the introduction of participatory forest management and REDD bring governance-related risks and potential conflict, they have also brought governance-related benefits including increased knowledge amongst ordinary residents and village leaders on roles and responsibilities in relation to forest management; increased accountability of village leaders; stronger land tenure; and village offices to provide a more conducive environment for village governance. Overall, the project is expected to have significant net positive impact on the communities with the costs and risks being mitigated through the strategies outlined above.

**CM 2.2 Describe measures needed and taken to mitigate any negative well-being impacts on Community Groups and for maintenance or enhancement of the high conservation value attributes (identified in CM1.2) consistent with the precautionary principle.**

The mitigation measures for each risk and cost are presented in Section CM 2.1 with further analysis of the positive and potential negative impact of the project on each community group presented in CM 2.3.

No negative impact on the high conservation values is anticipated as a result of the project activities. Positive impacts relative to the without-project scenario are highlighted in Section CM 2.1 in relation to CM Impacts 5 and 6 and in Section B2.1 – 4 in relation to the impact on biodiversity values.

**CM 2.3 Demonstrate that the net well-being impacts of the project are positive for all identified Groups compared with their anticipated well-being conditions under the without- project land use scenario (described in CM1).**

The net well-being of the project is anticipated to be positive for all community groups. Some of the project's community benefits will have a positive impact on all community groups. These include:

- Community Impact 3: Villages will be better governed.
- Community Impact 4: Communities will have more secure land tenure.
- Community Impact 5: Water sources will be better protected.
- Community Impact 7: Individual incomes will be boosted and diversified by receiving REDD payments.
- Community Impact 9: REDD revenues will contribute to improving public services and infrastructure.
- Community Impact 10: Villages will have village offices.

Similarly some of the risks could have a negative impact on all community groups. These include:

- Risk 7. Corruption in relation to the REDD payments undermines the effectiveness and equitability of REDD.
- Risk 8. Corruption in relation to forest reserve management results in forest clearance.
- Risk 10. REDD revenues are insufficient to incentivise sustainable forest management.

These risks could reduce the benefits anticipated to be achieved through community impacts 7 and 9 however the communities would still be better off as a result of project compared with the without project scenario i.e. these risks are primarily to the project's model rather than posing a direct threat to the well-being of any of the community groups.

Some of the project's community benefits and risks are primarily relevant to specific community groups. These are considered below with a particular focus on assessing the degree to which the scale of the risks has been changed by the project relative to the without-project land use scenario i.e. how much of the risk can be attributed to the project:

#### *Small-scale farmers*

In addition to the positive impacts intended to benefit all community members, the community impacts that are intended specifically to benefit small-scale farmers include:

Community Impact 6: Soil erosion will be reduced.

Community Impact 8: Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.

The risks that might affect small-scale farmers include:

Risk 1. Conflicts over village boundaries cause delays to land use planning and the issuing of village land certificates; and revised boundaries are not accepted by all farmers with some farmers continuing to clear forest in an adjacent village's land.

Risk 2. Increase in human-wildlife conflict associated with increase in forest cover and forest enhancement. Existence of wild animals in the area (and possible increase in wildlife due to forest enhancement) could threaten safety of communities and agricultural efforts (through crop destruction).

Some small-scale farmers, particularly those living close to the forest edge are also likely to bear a disproportionate amount of the opportunity cost of foregoing forest clearance for new agricultural land.

The project is designed to enable farmers to adopt improved agricultural techniques that help to increase yields by adopting improved seeds; conserve soil fertility; maintain soil moisture; prevent soil erosion and reduce crop losses to wild animals. By establishing village saving and loans associations and providing training on enterprise skills, the project is also trying to empower farmers to add value and become more profitable. For some farmers, there is also the added benefit of diversifying into beekeeping.

Regarding the first risk, whilst this is a risk to the project, it is a risk that farmers would have faced even in the absence of the project and stems from the problematic way in which the village boundaries were mapped by the Ministry of Lands prior to the project. As such the project has helped the majority of small-scale farmers to be better off with respect to having agreed-upon village boundaries by supporting the boundary resolution process for several contested boundaries.

Regarding the human-wildlife conflict, even in advance of the project this was cited as one of the major problems that farmers were facing. Whilst some of the animal species considered problematic by farmers are associated with forests and woodlands including the vervet monkeys, blue monkeys,

baboons and bush pigs, others such as cane rats are non-forest species and as such will be unaffected by the project. Even regarding the crop-raiding species that do live in woodland or forest, most are coming from the forest immediately adjacent to the agricultural land which, in most villages, lies outside of the village forest reserve. For the forest and woodland outside of the village forest reserve, there is no increase on hunting restrictions. As such, the impact of the project on populations of crop-raiding animals is likely to be minimal when compared with the 'without-project' scenario for any farmer with a field adjacent to a forest area. Nonetheless, recognising that addressing this issue is critical to freeing up farmers' labour for more productive use, the project has provided training on simple measures that can be taken to reduce such crop losses; and is also encouraging farmers to adopt more permanent agriculture away from the forest frontier. Overall the project has not exacerbated this risk relative to the without-project land use scenario; has taken steps to help farmers to mitigate this risk; and provides a suite of other benefits to enhance farmers' well-being. As such the impact of the project on small-scale farmers is anticipated to be positive relative to the without-project land use scenario.

One of the costs associated with establishment of village forest reserves, that will be borne by some small-scale farmers is the opportunity cost of clearing the forest. As noted in Section 1.12, assuming a farmer cultivates for 2 years in a row and then fallows for 10 years before cultivating again, the 30 year (project life span) net present value using an annual discount rate of 10% of 1 hectare of land converted to farming is \$303.48. Whilst this should be covered by the revenue from the sale of REDD VCU, the REDD revenues will be distributed amongst all community members, whereas the opportunity cost is borne by those who would have cleared the forest. For this reason, the project has focused training on conservation agriculture on those living closest to the forest so that the opportunity cost of clearing forest for a new field is balanced by her / his ability to produce more from their existing fields plus the REDD payments and other positive impacts associated with the project thereby leaving them at least as well off as they would have been in the without-project scenario.

*Users of forest products including medicinal plants, fuel wood, building poles, timber, food plants including ming'oko and mushrooms and hunters.*

In addition to the positive impacts intended to benefit all community members, the community impacts that are intended to benefit forest-product users include:

Community Impact 1: Community-owned forests will be managed in a participatory, effective and equitable way.

Community Impact 2: Forest products will continue to be available and accessible to all community members including the poorest households according to access rules agreed in a participatory way.

The risks that might affect forest-product users include:

Risk 4. Internal conflict within communities over forest access rights.

The project is designed to clarify user rights and access rules; and to ensure a sustainable supply of forest products. Whilst there is a risk that some users may not understand or accept the new rules which could lead to conflict, the project has sought to mitigate this risk through the participatory way in which the Village Forest Reserve management plans were developed; the awareness raising on the CBFM process; and encouraging communities to allow sustainable use within the village forest reserves. This risk should also be considered in the context of declining supplies of forest products in the without-project land use scenario. For example, charcoal producers in Likwaya have contributed to an annual deforestation rate of 4.7 % for the village. With such a high deforestation rate and with many households largely dependent on charcoal, it is clear that the basis for their livelihoods is rapidly being eroded with the risk that in the absence of the project providing support to adopt alternative economic opportunities, conflict over resources will occur in 10 – 15 years. More generally, the restrictions apply only to the forest within the village forest reserve. As such whilst the risk may occur initially, after the first two years when people understand the new village forest reserve rules, it is unlikely to have a significant negative impact on users; and the negative impact will be balanced by

the positive impact of having a more sustainable supply of forest products as a result of the improved forest management. In the context of the other benefits provided by the project, the net impact is anticipated to be positive relative to the without-project land use scenario.

#### *Charcoal producers*

In addition to the positive impacts intended to benefit all community members, the community impacts that are intended to benefit charcoal producers:

Community Impact 8: Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.

With the exception of Likwaya, the few charcoal producers who were identified within the project area can be described as opportunistic and are producing charcoal as a by-product of farm clearance. As such, their primary economic activity is as small-scale farmers and so fit more naturally into the small-scale farmer category analysed above. In Likwaya, the project has sought to involve charcoal producers in conservation agriculture training.

#### *Existing income generating groups*

In addition to the positive impacts intended to benefit all community members, the community impacts that are intended to benefit existing income-generating groups:

Community Impact 8: Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.

No risks specific to this group were identified. Members of these groups will benefit from the availability of additional technical support from the community based trainers whom the project has trained within the villages. The project will have a net-positive impact on this community group.

#### *Village Councils and Village Natural Resources Committees (VNRCs)*

The community impacts that are intended to benefit the Village Council and VNRC members include: Community Impact 1: Community-owned forests will be managed in a participatory, effective and equitable way.

The risks that may affect the Village Council and VNRC members include:

Risk 1. Conflicts over village boundaries cause delays to land use planning and the issuing of village land certificates; and revised boundaries are not accepted by all farmers with some farmers continuing to clear forest in an adjacent village's land.

Risk 7. Corruption in relation to the REDD payments undermines the effectiveness and equity of REDD

Risk 8. Corruption in relation to forest reserve management results in forest clearance

Risk 10. REDD revenues are insufficient to incentivise sustainable forest management  
Increased transaction costs.

As village leaders, the project is designed to support the Village Council and its committees to fulfil their roles and responsibilities in a more efficient, effective and equitable way. This risks increasing their work load; requires them to be more vigilant in fighting corruption; increases the transaction costs of implementing new by-laws; and will require them to demonstrate their performance more clearly during elections. The project has mitigated these risks through training to the Village Council, Village Natural Resources Committees and Village Land Use Management Committees in their roles and responsibilities; governance practices; and record keeping. In addition the project has raised awareness amongst other community members on what can be expected from their leaders. This is anticipated to provide more widespread support for the village leaders to implement their jobs properly. As part of the REDD payments, communities are encouraged to set aside funds for the functioning of the village committees. The project has also supported the construction of village

offices so that village leaders can fulfil their jobs more effectively. In the context of the other benefits provided by the project, the net impact is anticipated to be positive relative to the without-project land use scenario.

#### **CM2.4. Demonstrate that no High Conservation Values (identified in CM1.4) are negatively affected by the project.**

It is not anticipated that the project will have a negative impact on any of the project area's High Conservation Values.

### **CM3. Other Stakeholder Impacts**

#### **CM3.1. Identify any potential positive and negative impacts that the project activities are likely to cause on the well-being of Other Stakeholders.**

Potential and actual positive impacts that the project activities are likely to cause on the well-being of other stakeholders include:

- increased capacity of local government in relation to conflict resolution, participatory forest management, village land use planning, conservation agriculture and environmental education as a result of training and capacity building to local government staff provided by the project;
- increased awareness on issues ranging from conservation agriculture, land tenure and improving village governance as a result of awareness raising activities including media coverage, that the project has supported;

As part of the Social Impact assessment, communities were asked to identify external stakeholders who might be affected by the project. Some communities stated that there were no external stakeholders who would be affected by the project whilst others stated that sometimes, farmers and forest product collectors from adjacent villages use their forests and so might be affected by more stringent regulations on access to forest products. In most cases the adjacent villages are within the project area, thus whilst the farmers are external to a particular village they should not be considered as offsite stakeholders since they are resident within the project area. As such, the REDD revenues are expected to compensate for the reduced access to forest products and forest land. However potential negative impacts were identified for a few farmers from some villages that are external to the project area. The project will offer training on conservation agriculture in these villages in 2014.

#### **CM3.2. Describe the measures needed and taken to mitigate the negative well-being impacts on Other Stakeholders.**

By providing training to offsite farmers who might be affected by restrictions on forest access, the project aims to mitigate the potential negative impacts.

#### **CM3.3. Demonstrate that the project activities do not result in net negative impacts on the well-being of Other Stakeholders.**

By providing training on conservation agriculture, it is anticipated that the net impact of the project is positive.

### **CM4. Community Impact Monitoring**

#### **CM4.1 Develop and implement a monitoring plan that identifies community variables to be monitored, Communities, Community Groups and Other Stakeholders to be monitored, the types of measurements, the sampling methods, and the frequency of**

**monitoring and reporting. Monitoring variables must be directly linked to the project's objectives for Communities and Community Groups and to predicted outputs, outcomes and impacts identified in the project's causal model related to the well-being of Communities (described in G1.8). Monitoring must assess differentiated impacts, including and actual benefits, costs and risks, for each of the Community Groups and must include an evaluation by the affected Community Groups.**

The project's monitoring plan is provided as supplementary material (Doggart 2014b).

**CM 4.2. Develop and implement a monitoring plan to assess the effectiveness of measures taken to maintain or enhance all identified High Conservation Values related to community well-being.**

The project's monitoring plan is provided as supplementary material (Doggart 2014b). The project's Biodiversity and Community Impact Monitoring plan details the indicators, methods, means of verification and frequency for monitoring the effectiveness of measures to maintain or enhance High Conservation Values (Doggart 2014b).

**CM 4.3. Disseminate the monitoring plan, and any results of monitoring undertaken in accordance with the monitoring plan, ensuring that they are made publicly available on the internet and summaries are communicated to the Communities and Other Stakeholders through appropriate means.**

The monitoring plan and the project's first implementation reports are available on the TFCG website and on the CCB Project website.

Swahili summaries of the monitoring and communication plan and the 1<sup>st</sup> Project Implementation Report were distributed to community representatives during the stakeholder workshop held in Lindi in February 2014 (Mbegu 2014); and presentations were made by project staff to community leaders and other stakeholders during that meeting. Journalists were also present.

## **GL2. Exceptional Community Benefits**

**GL 2.1. a. Demonstrate that Smallholders/Community Members or Communities either own or have management rights, statutory or customary, individually or collectively, to land in the Project Area. The Smallholders/Community Members or Communities have rights to claim that their activities will or did generate or cause the project's climate, community and biodiversity benefits.**

**OR**

**b. Demonstrate that the Project Zone is in a low human development country OR in an administrative area of a medium or high human development country in which at least 50% of the households within the Communities are below the national poverty line**

Communities have statutory management rights to all land in the Project Area. All of the forest land in the project area and reference region is classified as Village Land and is under communal tenure. The boundaries for each village have been approved and are documented in the Village land use plans and by-laws that have been approved by the District.

The climate, community and biodiversity benefits are directly attributable to the actions of the communities and the communities therefore have the right to claim that their activities are generating the project's multiple benefits. The project's activities are all community-led as outlined in G1.8.



The communications agent for all project proponents is MJUMITA, a national network of community-based organisations involved in participatory forest management, that is governed by community members. The project is designed with a view to maximising benefits to local communities; and demonstrating a pro-poor model of REDD.

According to the 2013 UNDP Human Development Report, Tanzania is considered to be a Low Human Development Country and is ranked 152<sup>nd</sup> out of 185 countries in terms of its Human Development Index which is 0.476. See <http://hdr.undp.org/en/reports/global/hdr2013/download/>

**GL 2.2. Demonstrate that the project generates short-term and long-term net positive well-being benefits for Smallholders/ Community Members. Include indicators of well-being impacts on Smallholder/Community Members in the monitoring plan. The assessment of impacts must include changes in well-being due to project activities and an evaluation of the impacts by the affected Smallholders/Community Members.**

In terms of short-term benefits, all community members within the participating villages including those within the lowest wealth-ranking category will receive REDD payments based on the model of REDD payments proposed for the project. Payments will be made annually. This short term benefit is aligned with CM Impact 7: Individual incomes will be boosted and diversified by receiving REDD payments; and is monitored and reported on as part of monitoring CM Impact 7.

In addition, some community members will be directly involved in the training and capacity building events on improved agriculture, micro-finance, beekeeping and agroforestry. This short and long term benefit is aligned with CM Impact 8: Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition measures; and is monitored and reported on as part of monitoring CM Impact 8.

In terms of long-term benefits, all community members within the participating villages will then have access to the improved infrastructure and services provided as a result of the community development initiatives paid for with a portion of the REDD revenues. These include improved health services through the construction of clinics and health centres; improved schools through the construction of class-rooms; and improved community governance linked with the construction of village offices and governance training to village leaders. This long term benefit is aligned with CM Impact 9: REDD revenues will contribute to improving public services and infrastructure; and is monitored and reported on as part of monitoring CM Impact 9.

Taking the conceptual framework for categorising REDD+ outcomes proposed by Lawlor *et al.* 2013, the project addresses each of the three pathways to enhanced well-being: creating material opportunities for wealth creation and well-being; enhancing populations' security, including tenure security; and facilitating (or preventing) the empowerment of individuals and communities to participate in decisions affecting local land-use and development. In addition the project aims to ensure that the ecosystem services that underpin community livelihoods are sustainably managed. The ways in which the project is addressing each of these is outlined below:

Training to community members on micro-finance, enterprise skills and improved agriculture aims to enhance community members opportunities to create wealth from a wide range of sources. By training community based trainers it is intended that there will be technical support available within the communities beyond the project establishment phase. This links with CM Impact 8. The REDD payment model (CM Impact 7) is also intended open entrepreneurial options (see GL2.6 for details).

By improving land tenure for communities through the village land use planning; by securing the village land certificates; and by initiating the village land registries, the project aims to improve security for communities (CM Impact 4). Security will also be enhanced through the project's focus on

improving local governance whereby local leaders will have a better understanding of their roles and responsibilities (CM Impact 3). The project also intends to enhance security through its support for activities aimed at enhancing resilience to climate change as outlined in GL1.

The project is empowering communities to decide on local land-use and development through the village land use planning process and the community based forest management (CM Impact 4). Furthermore the project's REDD revenues benefit sharing mechanisms empowers communities to decide on how their REDD revenues are used and distributed (CM Impact 7 and 9).

By conserving the high conservation values of the project area, the project is also generating long term net positive well-being benefits by ensuring improved availability of ecosystem services and forest products relative to the 'without-project scenario'.

Both the short-term and long-term positive impact of the project's interventions exceeds the potential negative impacts as described in GL 2.3 and CM 2.1.

The project's community and biodiversity monitoring plan (Doggart, 2014) includes indicators of well-being impacts on Smallholder/Community Members as part of the community impact monitoring. In addition, household surveys conducted in 2011 and 2013 also provide a basis for assessing community impact.

The impacts of the project's strategies were identified through a participatory process that included the community members (see Mwampamba *et al.* 2011).

**GL2.3 Identify, through a participatory process, risks for the Smallholders/Community Members to participate in the project, including those related to tradeoffs with food security, land loss, loss of yields and short-term and long-term climate change adaptation. Explain how the project is designed to avoid such tradeoffs and the measures taken to manage the identified risks. Include indicators of risks for Smallholders/Community Members in the monitoring plan.**

#### ***Risks to small-scale farmers and other community members***

As noted in Section CM 2.1, potential risks were identified by community members and other stakeholders during the social impact assessment (Mwampamba *et al.* 2011). These can be broadly classified into governance-related risks; and risks to livelihoods. Governance-related risks that might affect small-scale farmers and other community members include conflicts over boundaries and natural resources access; leadership struggles; and corruption.

Risks to livelihoods include risks of increased human-wildlife conflict; and risks associated with switching from shifting cultivation to more permanent conservation agriculture.

The project is designed to mitigate these risks, as outlined in Section GL2.2; and to monitor their impact in order to demonstrate a net-positive impact on all community groups including poorer and more vulnerable households.

**GL 2.4. Identify Community Groups that are marginalized and/or vulnerable. Demonstrate that the project generates net positive impacts on the well-being of all identified marginalized and/or vulnerable Community Groups. Demonstrate that any barriers or risks that might prevent benefits going to marginalized and/or vulnerable Smallholder/Community Members have been identified and addressed. Demonstrate that measures are taken to identify any marginalized and/or vulnerable Smallholders/Community Members, whose well-being may be negatively affected by**

**the project, and that measures are taken to avoid, or when unavoidable to mitigate, any such impacts.**

The risk that REDD revenues and other project benefits are captured by community-level elites was identified at the project outset. This is a common risk associated with the decentralisation of natural resources management (Persha and Andersson 2014). As a result the REDD model was built with the intention that all adults and children who are residents of the village, would receive an equal portion of the REDD revenues thereby removing the potential barrier of elite capture (see GL2.6 for details). Furthermore MJUMITA networks have been established locally with a view to playing the role of 'watchdog'. The presence of such organisations is demonstrated to reduce the risk of elite capture in participatory forest management (Persha and Andersson, 2014).

The project was also designed to engage women and men living in more remote sub-villages in the decision-making process by holding meetings at sub-village level, particularly during the FPIC process; and by having representatives from every sub-village in the village REDD committee and the Village Natural Resources Committee. This aims to ensure that even those living outside the village centre, and particularly those living adjacent to the project area are involved in decision making.

Given the project's commitment to demonstrating a pro-poor approach, the team have been monitoring whether women and men from the lowest wealth ranking category participate in different forums (see Luwuge, 2013). On average in the villages, by 2013:

- 78 % of Village Council members were in the lowest wealth ranking category
- 68 % of the Village Natural Resources Committee members were in the lowest wealth ranking category
- 100 % of the Village Land Use Management Committee are in either the middle or the lowest wealth ranking category
- 91% of the beekeeping group members are in the lowest wealth ranking category.

Women were identified as being marginalised and more vulnerable than men within the project zone. See Section GL2.5 for details.

**GL 2.5. Demonstrate that the project generates net positive impacts on the well-being of women and that women participate in or influence decision-making and include indicators of impacts on women in the monitoring plan**

Women have been involved at all stages of the project design process including during the village-level social impact assessments; and at the landscape level (Mwampamba *et al.* 2011).

The project is designed with a view to empowering women by:

1. Ensuring that the membership of all VNRCs includes at least 1/3 women thereby allowing women to participate in decision-making over forest and natural resources management.
2. Encouraging and monitoring women's participation in village councils;
3. The direct payment model whereby women receive their individual payments plus those of their dependents.
4. Ensuring that women participate in livelihood training activities including on agriculture and micro-finance.

Indicators under CM Impact 7 and CM Impact 8 in the project's Biodiversity and Community Impact Monitoring plan are designed to monitor the impact of the project on women.

By 2013, on average in the 10 project villages in Lindi:

- 25% of the VC members are women;
- 37% of the VNRC members are women;
- 41% of the VLUP committee members are women;
- 62% members of the bee keeping groups are women;
- 70% of the members in the VSL groups are women;
- 37% of the farmers involved in farming follow up activities are women.

The mid-term evaluation report for the project stated that, 'Overall, TFCG and MJUMITA have been effectively targeting women, and have been tracking impact on women throughout the project. The revenue distribution mechanism is designed so that women receive the majority of community payments as mothers collect payments on the behalf of their children.' (Deloitte 2012).

**GL 2.6. Describe the design and implementation of a benefit sharing mechanism, demonstrating that Smallholders/Community Members have fully and effectively participated in defining the decision-making process and the distribution mechanism for benefit sharing; and demonstrating transparency, including on project funding and costs as well as on benefit distribution.**

The project's benefit sharing model is based on the principle that when the benefits from community-based natural resource management include revenue, treating community-based natural resource management as a community business and community members as shareholders in the business offers many advantages over systems that only allow revenue to be spent on communal benefits. Treating village revenue from natural resources as dividends allows communities the greatest flexibility and decision-making power over the use of their earnings; contributes to rural economic development; can be used to create incentives for individual behaviour change; improves the delivery of communal benefits; encourages wider participation in decision making; and lowers transaction .

Revenue from REDD could be substantial. Trial REDD payments to villages based on conservative estimated potential annual earnings from expected reductions in deforestation within the project area have ranged from \$2000 to \$30,000 depending on the village.

These potential revenues far exceed the revenues that villages are accustomed to managing. Therefore, the MJUMITA secretariat has worked with participating REDD communities to develop new systems for managing revenue from REDD and sustainable forest management according to good governance principles. Decisions about the final form of the benefit sharing arrangements are up to each village assembly. MJUMITA have provided guidelines for villages to consider. Most importantly, the benefit sharing guidelines recommend that the final decision regarding the use of village earnings from REDD+ or sustainable forest use fees should be made by the village assembly annually and that options for the use of revenue should include paying dividends to community members.

The basic steps of the process are as follows:

The village assembly (meeting of all villagers over the age of 18) passes bylaws specifying who is eligible to receive dividends from village forest revenue. All villages agreed that all adults residing in the village for more than 3 years and their dependent children under the age of 18 (who may not reside in the village) are eligible for dividends. The bylaws also establish a revenue sharing committee consisting of village council members from every sub-village and members of the VNRC.

Sub-village leaders compile lists of eligible residents and post them for comments in a public place within each sub-village. Lists are adjusted as discrepancies are found.

The revenue sharing committee secretary compiles the completed lists into one registry book. The registry is read aloud in the next village assembly meeting, adjusted if needed, and approved by the village assembly.

The revenue sharing committee meets to develop budgets for village development and conservation activities based on previous village assembly meeting discussions. The committee also calculates the dividends by dividing all forest revenue from that year by the number of eligible residents. Finally, the committee calculates the cost of each development and conservation activity in terms of its cost per dividend.

The village assembly meets and the revenue sharing committee presents the village forest revenue for the year, its sources, and the basis for any REDD revenue. The committee presents the dividends and proposed cuts for dividends for each development and conservation activity. The village assembly votes on each proposed activity and unpopular activities are adjusted or removed. The revenue sharing committee presents the final dividends and the dividend payment day is announced.

On the dividend payment day, payments are organized by sub-village. Individuals come up one by one to collect their dividend in front of their fellow community members. The revenue sharing committee observes the process and ensures that each person signs the registry book opposite from their name and the amount of the dividend.

This model aims to increase the sense of community wide ownership over the forest, the revenue generated from the forest, and any development projects that are funded by the revenue. Since any revenue directed to development projects represents a decrease in the funds available for dividends, we expect that community members will take more interest in deciding on which projects to fund and will be more likely to hold village leaders responsible for implementing the selected projects. Furthermore, since the village assembly has the power to change its mind annually, village leaders should have an increased desire to deliver on development projects since the village assembly could decide to spend all its earnings on dividends the following year if unhappy with the village government's performance. The model also aims to ensure that everyone within the village has the right to benefit from the project thereby reducing the risk that poorer and more vulnerable groups within the village are excluded.

During trial REDD payments, we found that many communities were unwilling to contribute to village development projects such as building classrooms or health clinics unless the MJUMITA Secretariat would oversee the use of the funds, suggesting that community members were already seeking to withhold funding from the village governments in order to avoid the risk that funds would be mis-managed or even stolen. Thus, MJUMITA has also worked with villages to develop bylaws concerning the use of funds that have been approved for village development projects requiring village governments to stick to approved budgets and account properly for their expenditures. With the successful implementation of some village projects, villagers are showing more confidence in the system and were ready to trust their Village Governments to implement community development projects at the time of the 2<sup>nd</sup> REDD payments in 2014.

Dividend payments also provide a rare opportunity for government and civil society to reach nearly all village members at one time. Tanzanian villages range in size from a little over 200 to 1000 adults. TFCG and MJUMITA's experience suggests that participation rates in village assembly meetings are generally low, with often less than 20% of adults attending. Furthermore, those most likely to attend will be from the areas nearest to the village centre, which is often far from the forest. Thus, people living near or in the forest may be the least likely to attend village assembly meetings. Realizing this, the project started REDD awareness raising activities at the sub-village level. However, this process is time consuming, expensive and still fails to reach a significant number of community members. In contrast, on dividend payment days, more than 90% of adults show up to collect their dividends on that day. The project has taken advantage of these days to conduct additional REDD awareness

raising activities, provide agricultural training and bring agricultural supply store representatives from town to offer their goods at competitive prices.

If substantial enough, the benefits of dividends from natural resource rents do not end with increased accountability and participation. The dividends themselves could also make a substantial contribution to rural development by allowing individuals to decide how to spend their income. All villages have adopted individual dividends rather than household dividends, which is probably more democratic given the power dimensions of gender in many households. The project also promoted the idea that children should be eligible for dividends and that these dividends should go to mothers or the primary care giver for the children. Though seemingly controversial, especially in conservative rural communities, this suggestion was adopted by almost all the participating communities because they clearly recognized that mothers were the primary care givers of children.

To our knowledge, previous CBNRM schemes involving dividends for community members, most notably CAMPFIRE in Zimbabwe, only involved adults. The inspiration for dividends for children channelled to mothers came from the Basic Income Guarantee pilot project in Namibia, that involved an unconditional guaranteed income scheme for a rural community. Women tend to be more likely than men to spend their income on goods and services for their children. In Namibia, the Basic Income Guarantee project found dramatically reduced rates of child malnutrition, increased school attendance and increased use of health services after introducing payments to mothers (Frankman 2010). Cash payment systems to poor mothers in Brazil and Mexico have also found similar benefits (Handa and Davis 2006). Another advantage of targeting more money to women is that they are less likely to suffer from alcoholism, which is a major public health problem in rural Tanzania, and are therefore more likely than men to put their earnings to productive uses.

Aside from benefits to children, small cash payments can contribute to economic development by:

Removing barriers to entrepreneurship – Often, poor households cannot afford to risk their labour on activities that do not result in immediate income. For a poor household even very small cash dividends represent several days of casual labour which they have saved. Cash payments can enable people to purchase supplies and equipment required for new enterprises; help households meet some of their daily consumption needs before the new enterprise starts to generate income; or give them income to fall back on if the new enterprise fails to generate the expected return.

Not being a one size fits all approach to rural development – Rural communities are heterogeneous with regards to capital, land, natural resources, education, and entrepreneurial skill. Therefore, it can be difficult to design a livelihood program that will be appropriate for all community members. Each individual is in the best position to know the kinds of opportunities she or he can capitalize on and individual payments give people the greatest number of choices for how to adapt their livelihoods to a world with REDD+.

Based on a survey of community members after REDD trial payments, we have already found considerable evidence to support the idea that even very small cash dividends can contribute to improving livelihoods. Forty-four percent of respondents reported that someone in their household used their dividends for entrepreneurial activities related to increasing their agricultural productivity, livestock keeping, or starting small businesses. Additionally, though not counted as an entrepreneurial activity, it is likely that for some households, purchasing food could have been considered an entrepreneurial activity if it freed up their labour to work on their own farm rather than as a casual labour on other peoples farms.

The project has recommended a couple of key controls on the dividend system. Eligibility based on residency length helps communities avoid being swamped by people moving to their village to collect payments. Also, most, but not all villages agreed to put a cap on the number of children that a mother can claim as dependents, thereby avoiding incentivizing larger families.

One concern frequently voiced by outside observers of the project's dividend system is that if carbon prices are low, the per capita dividend might be too low to make any kind of significant impact on rural life and community members will see the dividends as irrelevant. We would argue that if this is the case, then carbon prices are simply too low and REDD will not work regardless of the benefit sharing mechanism. However, under the dividend system, villagers can always decide to spend their dividends on social services that might make more of a difference. Furthermore, the project has found that even dividends as low as \$10 per person (\$50 per average household) generated a great deal of interest and unprecedented turnout at village meetings to discuss how to use them. During the first round of trial payments, almost all communities voted to spend some money on social services and forest management. However, in all villages except one, a majority of funds were spent on dividends, even when the remaining per capita dividends were \$5 per person. Thus, the dividend option is very popular even when the dividend itself would appear to be insignificant from an outsiders point of view.

Another common concern is that paying everyone dividends must be associated with high transaction costs. However, our experience suggests the opposite to be the case. For the reasons detailed earlier, the dividend system should improve accountability and thus reduce the need for external monitoring of village development funds. At the same time, the dividends payments themselves cost very little to implement. Resident lists are compiled and checked at the sub-village level where everyone knows each other and there is little risk of missing people. Furthermore, dividend payments are made in public in front of the entire village assembly, making it difficult to manipulate who gets paid. For the work of compiling the resident lists and overseeing the payments, village assemblies have generally agreed to pay REDD benefit sharing committee members the equivalent of \$1.3 each, bringing the total cost of the system at the village level to about \$30. A police escort for the money and providing for district officials to participate in the process might cost \$200 per village, but these additional costs would be incurred even without a dividend system. Thus, the system has low transactions costs, is self-governing, and should reduce external monitoring costs compared with alternatives. The system is also designed to minimise barriers to the many community members who are illiterate.

With the rapid emergence of electronic money transfer options in Tanzania, such as M-PESA, the project will continue to assess other options for the safe delivery of the individual payments however our analysis at present indicates that the advantages of the current system outweigh electronic money transfer systems given high rates of illiteracy; limited mobile phone network coverage; limited mobile phone ownership; and inaccessibility of cash disbursement facilities linked to M-PESA for many people.

**GL 2.7. Explain how relevant and adequate information about predicted and actual benefits, costs and risks has been communicated to Smallholders/Community Members and provide evidence that the information is understood.**

Throughout the design, establishment and implementation of the project community members have been at the heart of the process. As outlined in G3 the project has implemented a continuous, community-oriented communication plan that has included information about predicted and actual benefits, costs and risks. A survey of knowledge, attitudes and practices of community members in the project zone, showed that 67% of community respondents could provide a general description of REDD by 2013 whilst 86 % of respondents stated that they had been involved in REDD project activities.



**GL 2.8. Describe the project's governance and implementation structures, and any relevant self- governance or other structures used for aggregation of Smallholders/Community members, and demonstrate that they enable full and effective participation of Smallholders/Community Members in project decision-making and implementation.**

All adult community members are members of the Village Assembly for their respective village. Key decisions relating to the project are made through the village assembly. This includes decisions on the approval of the village land use and village forest reserve management and by-laws; the REDD by-laws; and the REDD revenue distribution plan. The Village Assembly elect the Village Council, the Village Land Use Management committee, the REDD committee and the Village Natural Resources Committee according to clearly defined criteria. The Village Council and the committees are responsible for reporting back to the Village Assembly on the implementation of their duties. This structure is in line with the Local Government (District Authorities) Act, 1982, with the exception of the REDD committee which has specific roles relating to the REDD revenues. In addition, MJUMITA have established local MJUMITA networks as aggregations of community members from more than one community. These networks aim to fulfil a watchdog and support function. The MJUMITA carbon enterprise has an MoU with each and every community within the current project zone obliging MJUMITA to provide services to those communities in relation to accessing REDD. MJUMITA's service provision will be overseen by the executive committee described in G3.6. The executive committee will have access to all relevant project monitoring and financial data, including the MJUMITA annual audit.

**GL 2.9. Demonstrate how the project is developing the capacity of Smallholders/Community Members, and relevant local organizations or institutions, to participate effectively and actively in project design, implementation and management.**

*Capacity building to smallholders / community members on project design.*

Representatives from all communities and from local government were involved in the project design process as outlined in Mwampamba *et al.* 2011. In addition, two Tanzania Forest Service staff participated in a four-day training course led by Forest Trends on social impact assessments held in Zanzibar in 2010; and one staff member from Lindi District Council participated fully in all of the social impact assessment and project design steps.

*Capacity building to smallholders / community members on project implementation.*

Training has been provided to smallholders / community members in relation to the implementation of all project activities. This includes training on improved governance; village land use planning and management; community based forest management; improved agriculture; beekeeping; tree planting; micro-finance; carbon monitoring; and in overseeing the equitable distribution of REDD benefits.

*Capacity building to smallholders / community members on management.*

Village Councils, VNRCs and REDD committees are responsible for managing the implementation of project activities in their respective village in accordance with their specific roles and responsibilities. To achieve this training has been provided in relation to their specific roles and responsibilities as well as on general good governance; record keeping and monitoring.

Details on the various training events organised by the project are provided in the project's annual and biannual implementation reports which were provided to the Auditors.

## BIODIVERSITY SECTION

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### B1. Biodiversity Without-project Scenario

#### B1.1. Describe biodiversity within the Project Zone at the start of the project and threats to that biodiversity, using appropriate methodologies.

##### B 1.1.1 Description of the current biodiversity

The coastal forests of Lindi are consistently identified as being a biodiversity conservation priority in global analyses of biologically important areas. They are part of the Coastal Forests of Eastern Africa biodiversity hotspot according to Conservation International's hotspot analysis (Mittermeier *et al.* 2004); they are within the Southern Zanzibar-Inhambane Coastal Forest Mosaic ecoregion according to the WWF Conservation Assessment of Terrestrial Ecoregions of Africa and Madagascar (Burgess *et al.* 2004). The contiguous forest reserves of Chitooa and Litipo form part of the Lindi Forests Important Bird Area Tz 051 (Baker and Baker, 2001; Baker and Baker, 2002).

The East African coastal forests are characterised as 'a chain of relict forest and thicket patches set within savannah woodlands, wetlands and increasing areas of farmland' (Mittermeier *et al.* 2004). Most coastal forests are small and fragmented. Most of the Tanzanian coastal forests are in the 15 – 50 km<sup>2</sup> size class. The high levels of botanical and mammalian endemism are the main reason for the area to have been given such a high priority in global analyses. Mittermeier *et al.* recognise 1750 endemic plant species from the area; and 11 endemic mammal species.

Both Burgess *et al.* (2004) and Mittermeier *et al.* (2004) recognise that within the larger ecoregion / hotspot, the Lindi forests are of particular importance as centres of endemism. Much of the attention has focused in on Rondo Forest, a reserve 26 km to the south-west of the project area as this has the most single-site endemics of any of the coastal forests. This area has also received considerably more attention from scientists and fewer surveys have been made on the Noto and Chitooa plateaux with various authors highlighting the importance of conducting surveys in Noto, Chitooa and Likonde in order to document their importance (Prins and Clarke 2007; Burgess *et al.* 2004; Baker and Baker 2002).

As part of REDD readiness activities, biodiversity surveys were carried out within the project area between 2008 and 2013 by the Tanzania Forest Conservation Group. The surveys focused on plants, mammals and birds. The survey report (Doggart *et al.* 2013) detailing the species recorded from the project area is available at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html) and is provided to the validators for review. The report includes the results of the TFCG surveys and a literature review.

##### *Diversity of species*

The TFCG survey team recorded 279 plant, 26 mammal and 36 bird species from the project area. An additional nine plant species records from the project area are documented in other publications. These records do not include any amphibian, reptile, bat or fish species as no surveys were

conducted for these taxa. As such the total number of vertebrate species in these forests is greater than the 62 species that have been documented so far.

##### *Ecosystems*



The project area consists of a mosaic of vegetation types typical of the Eastern African Coastal Forests. These are described in detail in G1.2.

### ***B 1.1.2 Description of current threats to the biodiversity***

#### *Habitat clearance*

Most of the East African coastal forests have already been cleared for agriculture. Mittermeier *et al* estimate that 10 % is remaining whilst Prins and Clarke (2007) estimate that only 5 % of the forest remains relative to the Holocene extent. Almost all of this deforestation has occurred over the last 300 years. The pattern of deforestation has not only reduced the total area of forest but has left the remaining forest highly fragmented and prone to edge-effects including greater vulnerability to fire and the replacement of forest-adapted species with more generalist species. Given the tiny fragments and the difficulties of dispersal between fragments, the viability of many populations is questionable. The Noto – Chitwa - Likonde plateaux are exceptional in representing a relatively large and previously unprotected area of coastal forest. As is described in more detail in the project's VCS PDD, deforestation for agricultural land continues to be the single most important threat to the forests.

#### *Habitat degradation due to logging*

Decades of logging have removed many of the large trees from the area according to the results of interviews with community representatives and the project's vegetation plots. Species that have been targeted include *Milicia excelsa* and *Pterocarpus angolensis*. Pressure to harvest timber continues to be a threat to the forest and is likely to increase as sources of timber closer to Dar es Salaam are exhausted (Burgess *et al.* 2013).

#### *Charcoal production*

With Dar es Salaam consuming 500,000 tons of charcoal annually (Peter and Sander 2009) and with almost none of this being produced in a sustainable way, producers are sourcing charcoal from further and further away. Although for the Lindi forests, this is only a low level threat at the moment, over a REDD project timescale, this threat is likely increase as the forests and woodlands closer to Dar es Salaam are exhausted. Evidence of the wave of charcoal production extending further and further south has already been documented (Burgess *et al.* 2013).

#### *Fire*

Fires set by hunters and for clearance of fields can spread into the forests changing the ecological dynamics of the area affected. Fires regularly burn through the woodlands around the plateaux. It is not known to what extent the plateau-top vegetation is fire-adapted however increases in fire frequency and intensity are likely to have a negative impact on the plant and animal biodiversity of the area.

#### *Hunting*

Some households hunt wild animals including duikers, bushbuck and buffalo. Elephant and lion populations are also affected by hunting in the area.





Honey badger. Camera Trap 9. Noto Site 2.



Giant pouched rat. Camera Trap 9. Noto Site 2.



Male suni. Camera Trap 9. Noto Site 2.



Central African large spotted genet. Camera trap 17. Noto Site 2.



Bush pig. Camera trap 17. Noto Site 2



Bushy tailed mongoose. Camera trap 17. Noto Site 2



Chequered sengi. Camera trap 17. Noto Site 2



Harvey's duiker. Camera Trap 13. Noto Site 1.

**Image 2.** Mammals recorded from the project area using camera traps.

**B1.2. Evaluate whether the Project Zone includes any of the following High Conservation Values (HCVs) related to biodiversity and describe the qualifying attributes for any identified HCVs:**

**a. Globally, regionally or nationally significant concentrations of biodiversity values; protected areas**

**ii. threatened species**

**iii. endemic species**

**iv. areas that support significant concentrations of a species during any time in their lifecycle.**

**b. Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;**

**c. Threatened or rare ecosystems.**

**Identify the areas that need to be managed to maintain or enhance the identified HCVs.**

**B 1.2 a. Globally, regionally or nationally significant concentrations of biodiversity values**

**B 1.2.i Protected areas**

As part of the REDD-related activities, the participating communities have proposed to establish ten village forest reserves. As additional villages within the project zone join the project, so this number will increase. The reserves provide a management framework for the forest. For each reserve, the respective community has prepared a management plan and by-laws. These documents have been prepared in a participatory way involving consultation with the community as a whole at various steps. The plans and by-laws describe the location of the reserve and its attributes; the activities that are allowed within the reserve with or without permits; and the activities that are prohibited within the reserves. The consequences of breaking the by-laws are also described. The plans and by-laws for each of the participating villages have been provided to the Project Validators with details on the area of each village forest reserve reported in the project's 1<sup>st</sup> Implementation Report.

**B 1.2.ii Threatened taxa**

In terms of globally threatened taxa, there are 19 taxa listed on the IUCN red list as threatened that have been recorded in the project area and six listed as Near-Threatened. These are summarised in Table 12 and the taxa are listed in Table 13. Of these records nine of the plant species are published records for species that were not recorded during the baseline survey (see Table 13). For the red-listing of the plant species, this includes six assessments that have been made by the East African Plant Red-Listing Authority but that have not yet been included on the IUCN Red List online database. It is unclear why IUCN have delayed to include these as some of the assessments, which involved over 20 of the leading East African botanists, were done in 2010.

**Table 12: Number of threatened taxa recorded from village land in Lindi.**

<b>Taxon</b>	<b>Critically Endangered</b>	<b>Endangered</b>	<b>Vulnerable</b>	<b>Near threatened</b>
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Taxon	Critically Endangered	Endangered	Vulnerable	Near threatened
Plants	2	5	9	1
Mammals	1		2	2
Birds				3
<b>Total</b>	<b>3</b>	<b>5</b>	<b>11</b>	<b>6</b>

**Table 13: List of threatened taxa recorded from village land in Lindi.**

Common name	Scientific name	Status (IUCN 2011)
<b>Plants</b>		
	<i>*Homalium elegantulum</i> Sleumer	Critically Endangered
	<i>*Artabotrys modestus</i> Diels subsp. <i>modestus</i> :	Critically Endangered
	<i>Leptactina papyrophloea</i> Verdc.	Endangered
	<i>*Xylia schliebenii</i> Harms:	Endangered
	<i>*Gomphia lutambensis</i> (Sleumer) Verdc	Endangered
	<i>Dichapetalum braunii</i> Engl. & K. Krause	Endangered
	<i>Pteleopsis apetala</i> Vollesen.	Endangered
	<i>Monanthotaxis trichantha</i> (Diels) Verdc.	Vulnerable
	<i>Mimusops acutifolia</i> Mildbr.	Vulnerable
	<i>*Mkilua fragrans</i> Verdc.	Vulnerable
	<i>Peponium leucanthum</i> (Gilg) Cogn.	Vulnerable
	<i>*Millettia eriocarpa</i> Dunn:	Vulnerable
	<i>*Millettia impressa</i> Harms subsp. <i>goetzeana</i> (Harms) J.B. Gillett:	Vulnerable
	<i>*Premna hans-joachimii</i> Verdc.	Vulnerable
	<i>*Bullockia impressinerva</i> (Bridson) Razafim., Lantz & B. Bremer:	Vulnerable
	<i>Bauhinia loeseneriana</i> Harms.	Vulnerable
	<i>Lettowianthus stellatus</i>	Near threatened
<b>Birds</b>		
Southern banded snake eagle	<i>Circaetus fasciolatus</i>	Near threatened
East coast akalat	<i>Sheppardia gunningi</i>	Near threatened
Plain backed sunbird	<i>Anthrepetes reichenowii</i>	Near threatened
<b>Mammals</b>		
Rondo galago	<i>Galagoides rondoensis</i>	Critically endangered
Lion	<i>Panthera leo</i>	Vulnerable
African elephant	<i>Loxodonta africana</i>	Vulnerable
Leopard	<i>Panthera pardus</i>	Near threatened
Chequered sengi	<i>Ryhnhocyon cirnei</i>	Near threatened

\* The presence of these species is based on published records however these species were not recorded during the baseline survey.

### B 1.2.iii Endemism

In terms of endemic taxa, there are a total of 25 restricted range taxa that are found within the REDD project area of which 16 were recorded during the baseline survey and nine records are based on the literature (Table 14 and Table 15).

**Table 14: Summary of the number of restricted range taxa.**

Taxon	Lindi (E)	Coastal Forest Endemic	Coastal forest near-endemic
Plants	8	10	1
Mammals	0	2*	1
Birds	0	1	2
<b>Total</b>	<b>8</b>	<b>13</b>	<b>4</b>

\*includes one sub-species. All other records in this table refer to species.

**Table 15: List of restricted range taxa recorded from Village land in Lindi**

Common Name	Scientific name	Range notes
<b>Endemic to the Lindi Region Coastal Forests</b>		
<b>Plants</b>		
	** <i>Cinnobotrys pulchella</i> (Brenan) Jac.-Fel.	Known from Rondo and Likonde Plateaux only.
	* <i>Artabotrys modestus</i> Diels subsp. <i>modestus</i> :	Clarke (1995) reports that this shrub / liana was collected from Noto in the 1930s by Schlieben. It is also known from Rondo Forest Reserve.
	** <i>Mimusops acutifolia</i> Mildbr.:	Clarke (1995) states that this shrub or small tree is only known from the Noto and Rondo forests.
	* <i>Premna hans-joachimii</i> Verdc.	Clarke (1995) states that this shrub or tree is only known from the Noto and Rondo forests.
	* <i>Homalium elegantulum</i> Sleumer	Only known from Noto.
	* <i>Xylia schliebenii</i> Harms:	Known from Noto, Simara-Kitunda and Ngarama North forests
	* <i>Gomphia lutambensis</i> (Sleumer) Verdc	Verdcourt (2005) reported this shrub from the Noto Plateau and Rondo Forest Reserve. Only known from these two sites.
	* <i>Bullockia impressinerva</i> (Bridson) Razafim., Lantz & B. Bremer:	'A coastal forest species. Known from three sites in south-east Tanzania. It has been collected from an unprotected tract of forest on the Noto Plateau and from the nearby Rondo Plateau
<b>Endemic to the East African Coastal Forests</b>		
<b>Plants</b>		
	** <i>Streptosiphon hirsutus</i> Mildr.	Recorded during current surveys. T8 endemic. Rare 2 locs only according to Burgess and Clarke (2000).
	** <i>Pteleopsis apetala</i> Vollesen	Recorded during current surveys. T6, 8. Rare 3 locs. only according to Burgess and Clarke (2000).



Common Name	Scientific name	Range notes
	** <i>Peponium leucanthum</i> (Gilg.) Cogn.	Recorded during current surveys. T8 endemic. Rare, 2 locs. only according to Burgess and Clarke (2000).
	** <i>Dichapetalum braunii</i> Engl. & K. Krause	Recorded during current surveys. T8 endemic. Rare less than 5 locs. according to Burgess and Clarke (2000)
	** <i>Heinsia bussei</i> Verdc.	Recorded during current surveys. T8 endemic. Rare less than 5 locs. according to Burgess and Clarke (2000)
	** <i>Leptactina papyrophloea</i> Verdc.	Rondo, Likonde and Northern Mozambique.
	* <i>Mkilua fragrans</i> Verdc.	A Kenyan and Tanzanian coastal species, also found on all the Tanzanian islands.
	** <i>Bauhinia loeseneriana</i> Harms:	Endemic to coastal forest in Tanzania, this species is known only from four sites.
	* <i>Millettia eriocarpa</i> Dunn:	Endemic to south-east Tanzania, a species of dry coastal forest.
	* <i>Millettia impressa</i> Harms subsp. <i>goetzeana</i> (Harms) J.B. Gillett:	Noto and Litipo Forests.
<b>Mammals</b>		
Rondo galago	<i>Galagoides rondoensis</i>	Recorded from nine forests in the Tanzanian coastal forests.
Chequered sengi	<i>Rhynchocyon petersi</i>	The subspecies <i>R. c. macrurus</i> is endemic to the coastal forests of SE Tanzania in the coastal forests from the Ruvuma river north to the Mbemkuru R. near Kilwa.
<b>Birds</b>		
Little Yellow flycatcher	<i>Erythrocerus holochlorus</i>	Widespread north of the Rufiji (Mlingwa <i>et al</i> 2000)
<b>Near endemic to the East African Coastal Forests being found in adjacent mountains</b>		
<b>Plants</b>		
	<i>Monanthonotaxis trichantha</i> (Diels) Verdc.	Coastal forests and lowland Nguru and Usambara Mountains.
<b>Mammals</b>		
Small-eared greater galago	<i>Otolemur garnettii</i>	Found in the coastal forests from S. Somalia south to the Ruvuma river and the Eastern Arc Mountains, Mt. Kilimanjaro, Mt. Meru and the Kukuyu highlands of Kenya.
<b>Birds</b>		
Southern banded snake eagle	<i>Circaetus fasciolatus</i>	

Common Name	Scientific name	Range notes
Plain backed sunbird	<i>Anthrepetes reichenowii</i>	
East Coast akalat	<i>Sheppardia gunningi</i>	Along the East African coast from Kenya to Mozambique with an outlying population in northern Malawi. The sub-species <i>S. g. sokokensis</i> that is found in southern Tanzania is restricted to a few coastal forest in Tanzania and Kenya.
Forest batis	<i>Batis mixta</i> ssp. reichenowi	Eastern Arc Mountains and coastal forest. The sub-species Reichenow's batis is endemic to the southern Tanzanian coastal forests.

\* Plant records based on the literature only.

\*\* Plant species recorded during the baseline survey.

### **B 1.2.iv Migratory species**

In terms of migratory species, two migratory bird species are known from forests adjacent to the project area: the Spotted ground thrush and the African pitta. The Spotted ground thrush *Zoothera guttata* (Endangered) has been recorded from the contiguous Litipo Forest Reserve during its migration. It is known to breed in the nearby Rondo Forest Reserve but surveys have not been conducted at the right time of year in order to determine whether it also breeding on the Chitoo or Noto plateaux. Similarly, although no records are available of the African pitta within the village land forests, its presence in adjacent forests suggests that it is likely to use these forests also.

Elephants migrate through the forest, probably on migrations between Selous Game Reserve and the coast.

### **B 1.2 b High Conservation Values - Landscape values**

The forests of the Noto-Chitoo-Likonde plateaux are an exceptional example of the Coastal Forests of Eastern Africa. Most remaining coastal forests in Tanzania are less than 50 km<sup>2</sup>. These plateau forests extend over 350 km<sup>2</sup>. The forests within the area are also part of a larger landscape that extends south west across the woodlands of the Mkangala Forest Reserve, woodlands on village land and towards the Rondo Plateau. In a study financed by UNDP the importance of maintaining ecological connectivity between these areas was highlighted (Perkin *et al.* 2008). Habitat corridors between these areas are still in place as evidenced by the substantial elephant migration across the landscape however the connectivity is threatened by habitat clearance, particularly on village land. By conserving these plateau forests, an important part of that corridor will be protected.

### **B 1.2 c High Conservation Values - Threatened or rare ecosystems**

#### **The Coastal Forests of Eastern Africa, a threatened ecosystem**

The study area is part of the Coastal Forests of Eastern Africa. In a recent analysis by Godoy *et al.* (2011), they highlighted that rates of deforestation are high (between 0.6 – 1.4 % yr<sup>-1</sup>) with the highest rates occurring outside of forest reserves. Prins and Clarke (2006) estimate that only 5 % of the original extent of East African Coastal Forests is still remaining whilst Mittermeier *et al.* (2004) estimate that 10 % is remaining. IUCN have recently launched criteria for Ecosystem Red Listing (Keith *et al.* 2013). Whilst the East African Coastal Forests have not yet been assessed, the historical loss of 90 - 95 % of the original area combined with current rates of deforestation would place the area within the Endangered (> 70 % loss of geographic area since 1750 and / or > 50 % loss over the last 50 years) or Critically Endangered (> 90 % loss of geographic area since 1750) category on the basis of geographic distribution.

### **B 1.3. Describe how the without-project land use scenario would affect biodiversity conditions in the Project Zone.**

As noted by Richards and Panfil 2011, 'projections of changes to biodiversity are likely to be strongly correlated to expected changes in natural vegetation cover. For a REDD project, species that are forest-dependent can be expected to decline, if deforestation continues.'

The 'without project' scenario whereby forest land is converted to agriculture (see Section G2.1) would lead to reductions in the populations of forest dependent species including the threatened and restricted range species that make the Lindi coastal forests so globally important. These forest dependent species would gradually go locally extinct and in the case of the two plant species endemic to the Noto Plateau, they would be at significant risk of going extinct in the wild. The population of the Critically Endangered Rondo galago on the Noto Plateau would collapse, particularly with the loss of suitable nesting sites as larger trees were removed. More widespread, woodland and fire-tolerant species would dominate.

The ecological processes that would result in this loss of the unique biodiversity values of the Lindi coastal forests are as follows.

*Deforestation and forest degradation* would reduce the area of habitat / potential habitat for forest dependent species. By transforming the forest into agricultural land and / or regenerating scrub, plant and animal species requiring forest habitat would be excluded. Based on a species / area correlation, the reduction in forest area would result in a loss of diversity. The impact would vary from species to species depending on species' tolerance to forest edge conditions.

*Forest fragmentation* would result in forest patches becoming too small to support viable populations of some plant and animal species. This isolation would be particularly damaging for those species unable to cross non-forest barriers such as the Rondo galago and would lead to a rapid or gradual population decline and eventually to local extinction.

*Edge effects* as a result of fragmentation would result in an increase as the proportion of forest edge to forest interior increased. Edge effects including greater vulnerability to fire, wind damage and invasive and pioneer species (alien and indigenous) would further reduce the area of habitat suitable for the threatened and restricted range species dependent on forests.

As forest area declined, and in the absence of any restrictions on hunting, pressure on remaining populations of larger mammals would increase. Populations of elephant, lion, leopard and antelope would be hardest hit. With less forest to migrate through, human wildlife conflicts involving elephants would probably increase temporarily before declining as a result of the collapse of the elephant migration.

## **B2. Net Positive Biodiversity Impacts**

### **B 2.1 Use appropriate methodologies to estimate changes in biodiversity, including assessment of predicted and actual, positive and negative, direct and indirect impacts, resulting from project activities under the with-project scenario in the Project Zone and over the project lifetime. This estimate must be based on clearly defined and defensible assumptions.**

The with project scenario was developed using a theory of change approach (Richards and Panfil 2010 a and b). Details of this process are provided in Mwampamba *et al.* 2011 at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html). As outlined in Section G3.1 the project has two objectives pertaining to the project's biodiversity impact.

The estimated impact of the project on biodiversity is detailed below according to these two objectives:

**B Objective 1.** To conserve threatened and endemic species.

**B Objective 2.** To conserve an extensive area of Eastern African Coastal Forest.

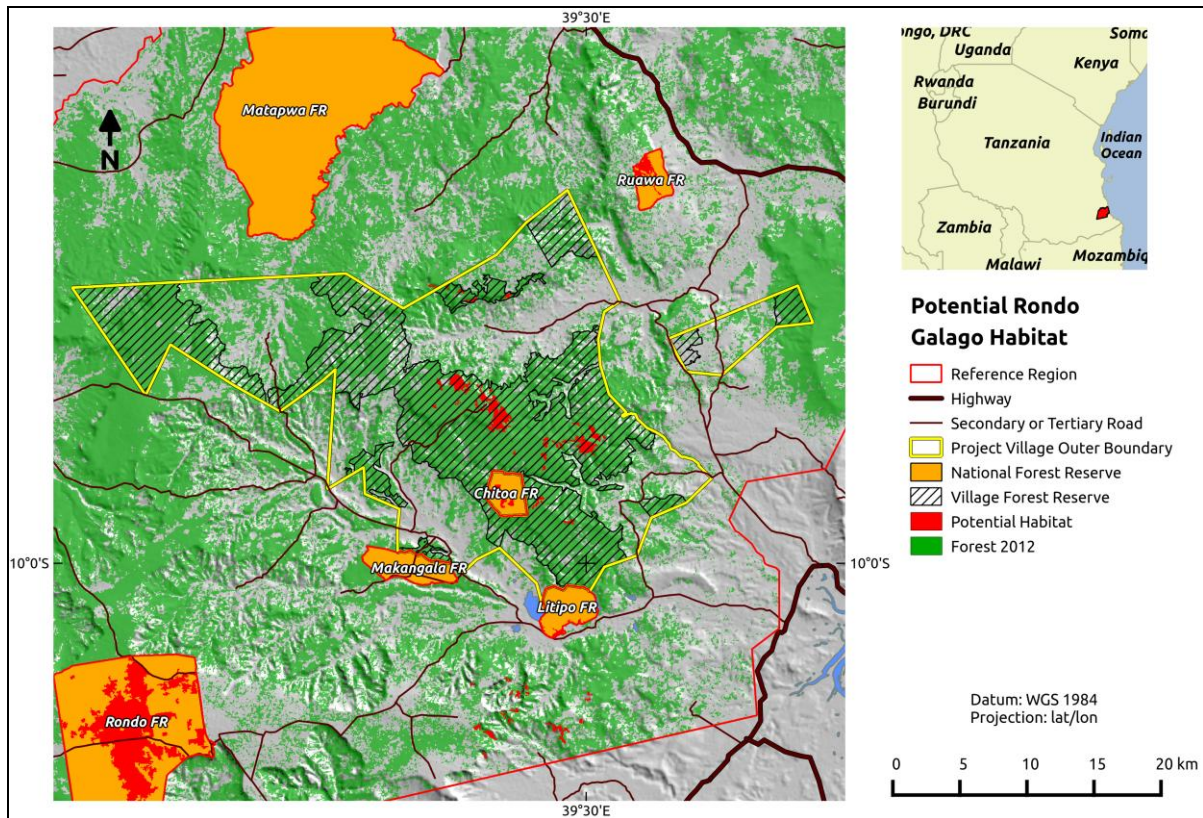
***B Objective 1. To conserve threatened and endemic species.***

**B Impact 1. Populations of threatened and endemic species persist within the project area.**

As outlined in Section B 1.2.ii one Critically Endangered, three Endangered and 6 Vulnerable species were recorded during the baseline surveys. In addition 25 Coastal Forest Endemic animal and plant species have been recorded within the project area of which 16 were recorded during the baseline survey. With the deforestation and forest degradation described for the without project scenario, it is anticipated that populations of all species would have significantly declined with some species, including the Rondo galago, being at high risk of local extinction, either through habitat loss or as a result of direct removal (in the case of the tree species).

By directly maintaining forest cover through participatory forest management and improved land use management, the project anticipates that populations of the ten threatened and 16 restricted range species recorded at the project baseline will persist within the project area throughout the project lifetime. All project activities contribute positively towards this impact. Activities including community based forest management, village land use planning and REDD payments have an actual and direct effect on this impact. The outcome of improving governance and improving agricultural practices have an actual but indirect influence on achieving this impact. The theories of change linking these strategies with reduced deforestation and forest degradation are presented in Annex 4.

Given our still-incomplete knowledge of the range of the Rondo Galago within the project area, the project attempted to map the potential range for comparison with the location of the village forest reserves. Based on the known habitat preferences of the Rondo galago, the project developed a map of the potential habitat for the Rondo galago within the project area (Map 10). This was developed by selecting the areas where the Rondo galago has been found within the project area and from the Rondo Forest Reserve, and then sampling everything else, using a Landsat image from August 2011, in order to train a randomforest model of the habitat. This selects for areas of vegetation that retain leaf-cover throughout the dry season. This shows that 100 % of the potential habitat within the current project area is included in the village forest reserves.



**Map 10:** Potential Rondo galago habitat.

***B Objective 2. To conserve an extensive area of Eastern African Coastal Forest.***

**B Impact 2. Extensive areas of Eastern African Coastal Forests continue to exist within the project area.**

Compared with the without project scenario which anticipated an accelerating rate of deforestation within the project area, the project will reduce the rate of deforestation and will provide long term protection for extensive areas of Eastern African Coastal Forests within village forest reserves. All project activities contribute positively towards this impact. Activities including community based forest management, REDD payments and village land use planning have an actual and direct effect on this impact. The outcome of improving governance, improving agricultural practices, have an actual but indirect influence on achieving this impact.

**B Impact 3. There is less pressure on the Eastern African Coastal Forest from deforestation and degradation drivers.**

The drivers of deforestation and forest degradation will be addressed through project interventions and compared with the ‘without project’ scenario. All project activities contribute positively towards this impact. The impact of improved agricultural practices will have an actual and direct influence on achieving this impact.

**B Impact 4. Communities and other stakeholders are actively engaged in the management of Eastern African Coastal Forest within the project area.**

The without project scenario did not anticipate the establishment of community based forest management. As a result of the project, the communities will be managing their forests according to forest management plans designed in a participatory way. Management activities will include regular patrols and enforcement of village forest reserve by-laws; village forest reserve boundary

demarcation; and issuance of permits for the collection of forest products according to sustainable harvesting principles. The Village Natural Resources Committees will keep records in accordance with their management plans and by-laws; will meet regularly and will report to the Village Council and Village Assemblies. All project activities contribute positively towards this impact. Activities including establishing community based forest management and improving village governance have an actual and direct effect on this impact. The outcome of improving village land use planning; making REDD payments and improving agricultural practices have an actual but indirect influence on achieving this impact. The theories of change linking these strategies with reduced deforestation and forest degradation are presented in Annex 4.

**B 2.2. Demonstrate that the project's net impacts on biodiversity in the Project Zone are positive, compared with the biodiversity conditions under the without-project land use scenario (described in B1).**

In section B 1.3 we have established that the 'without project' scenario would lead to reductions in the populations of forest dependent species including the threatened and restricted range species; as well as reduction in the area remaining of the threatened ecosystem 'the Coastal Forests of Eastern Africa'. In contrast the anticipated positive impacts of the project are elaborated in B 2.1. No negative impacts on biodiversity are anticipated as a result of the project's interventions. As such, the net impacts on biodiversity in the project zone are positive, compared with the biodiversity conditions under the without-project land use scenario.

**B 2.3. Describe measures needed and taken to mitigate negative impacts on biodiversity and any measures needed and taken for maintenance or enhancement of the High Conservation Value attributes (identified in B1.2) consistent with the precautionary principle.**

No potential negative impacts on biodiversity were identified; and as such no mitigation measures have been identified.

**B 2.4. Demonstrate that no High Conservation Values (identified in B1.2) are negatively affected by the project.**

As described in B 2.1 the project anticipates that the project will have a positive impact on the high conservation values identified in B 1.2. It is not anticipated that the project will have a negative impact on any of the project area's High Conservation Values.

**B 2.5. Identify all species used by the project and show that no known invasive species are introduced into any area affected by the project and that the population of any invasive species does not increase as a result of the project.**

Species promoted by the project include: maize, beans, rice, cassava, sorghum, pigeon peas, cow peas and citrus trees. None of these species are invasive. As such it is not anticipated that the population of any invasive species will increase as a result of the project.

**B 2.6. Describe possible adverse effects of non-native species used by the project on the region's environment, including impacts on native species and disease introduction or facilitation. Justify any use of non-native species over native species.**

The only non-native species promoted by the project are crops already present within the project zone. These species are selected based on the agricultural and cultural practices and norms within the project area. For example maize, beans, rice, cassava, sorghum, pigeon peas, cow peas are all crops promoted by the project on the basis of community preferences. As such the project does not foresee any adverse effects from non-native species introduced by the project beyond those already



described in the without-project scenario; and linked to the conversion of forest land into agricultural land.

**B 2.7. Guarantee that no GMOs are used to generate GHG emissions reductions or removals.**

The project guarantees that no GMOs will be used to generate GHG emissions reductions or removals. The project's GMO policy is available at [www.tfcg.org/MakingREDDwork.html](http://www.tfcg.org/MakingREDDwork.html)

**B 2.8. Describe the possible adverse effects of, and justify the use of, fertilizers, chemical pesticides, biological control agents and other inputs used for the project.**

Training to farmers on the safe use of agricultural inputs including fertilisers and chemical pesticides and fungicides has been provided in the context of the conservation agriculture training. Possible adverse effects of pesticides and fungicides include toxicity to humans and non-target fauna if improperly handled and applied; as well disturbance to ecosystem functioning. Possible adverse effects of fertilisers include contamination of water sources. Conservation agriculture aims to minimise the need for chemical inputs.

**B 2.9. Describe the process for identifying, classifying and managing all waste products resulting from project activities.**

The project does not anticipate generating significant waste materials.

### **B3. Offsite Biodiversity Impacts**

**B 3.1. Identify potential negative impacts on biodiversity that the project activities are likely to cause outside the Project Zone.**

No potential negative impacts on biodiversity outside the project zone are anticipated.

**B 3.2. Describe the measures needed and taken to mitigate these negative impacts on biodiversity outside the Project Zone.**

As noted under B 2.1, no negative offsite biodiversity impacts are anticipated and thus no specific mitigation measures have been developed. The project is committed to monitor for any potential negative impacts on biodiversity outside the project zone that may emerge over the project lifespan and to apply adaptive management should these emerge.

**B 3.3. Evaluate unmitigated negative impacts on biodiversity outside the Project Zone and compare them with the project's biodiversity benefits within the Project Zone. Justify and demonstrate that the net effect of the project on biodiversity is positive.**

No unmitigated negative offsite biodiversity impacts have been identified as such the net impact of the project on offsite biodiversity is expected to be positive. Awareness raising on the biological importance of the East African Coastal Forests has been integrated into the project's communication work, will have a positive impact on biodiversity outside the project zone. Similarly capacity building for local government staff on participatory forest management and conflict resolution is anticipated to have a positive outcome for biodiversity outside of the project zone.

### **B4. Biodiversity Impact Monitoring**

**B 4.1. Develop and implement a monitoring plan that identifies biodiversity variables<sup>119</sup> to be monitored, the areas to be monitored, the sampling methods, and the frequency of monitoring and reporting.<sup>120</sup> Monitoring variables must be directly**



**linked to the project's biodiversity objectives and to predicted activities, outcomes and impacts identified in the project's causal model related to biodiversity (described in G1.8).**

The projects monitoring plan is described in detail in Doggart (2014) and is provided as supplementary material.

**B 4.2. Develop and implement a monitoring plan to assess the effectiveness of measures taken to maintain or enhance all identified High Conservation Values related to globally, regionally or nationally significant Biodiversity (identified in B1.2) present in the Project Zone.**

The projects monitoring plan is described in detail in Doggart (2014) and is provided as supplementary material.

**B 4.3. Disseminate the monitoring plan and the results of monitoring, ensuring that they are made publicly available on the internet and summaries are communicated to the Communities and Other Stakeholders through appropriate means.**

The monitoring plan is available on the CCBA website and on at [www.tfcg.or/MakingREDDwork.html](http://www.tfcg.or/MakingREDDwork.html)

Monitoring results are documented in the 1<sup>st</sup> Project Implementation Report and are publicly available on the CCBA website and on at [www.tfcg.or/MakingREDDwork.html](http://www.tfcg.or/MakingREDDwork.html)

Summaries of the PDD translated into Swahili were communicated to communities and other stakeholders during the PDD-sharing workshop held in Lindi in February 2014 through presentations to representatives of all villages and through hard copy summaries (Mbegu, 2014).

### **GL3. Exceptional Biodiversity Benefits**

**GL 3.1. Demonstrate that the Project Zone includes a site of high biodiversity conservation priority by meeting either the vulnerability or irreplaceability criteria defined below, identifying the 'Trigger' species that cause(s) the site to meet any of the following qualifying conditions and providing evidence that the qualifying conditions are met:**

#### **1.1 Vulnerability**

**Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site: a. Critically Endangered (CR) and Endangered (EN) species - presence of at least a single individual; or b. Vulnerable species (VU) - presence of at least 30 individuals or 10 pairs.**

#### **OR 1.2 Irreplaceability**

**A minimum proportion of a species' global population present at the site at any stage of the species' lifecycle according to the following thresholds: a. Restricted-range species - species with a global range less than 50,000 km<sup>2</sup> and 5% of global population at the site; or b. Species with large but clumped distributions - 5% of the global population at the site; or c. Globally significant congregations - 1% of the global population seasonally at the site; or d. Globally significant source populations - 1% of the global population at the site.**

#### **1.1 Vulnerability**

As noted in Section B 1.2 of this Document, there are two Critically Endangered plant, one Critically Endangered mammal and 5 Endangered plant species within the project area based on IUCN Red List criteria. Some of these records are historical records, whilst others were recorded as part of the biodiversity baseline survey. For the one Critically Endangered, three Endangered and four Vulnerable species recorded during the baseline survey, the project aims to maintain populations within the project area. As the other species were not recorded during the baseline survey we do not know whether these species are still present within the area and therefore can not commit to ensuring the continued existence.

**Table 16: List of globally threatened species recorded at the site.**

Scientific name	Status (IUCN 2011)	Comments	Village Forest Reserves
<b>Mammals</b>			
<i>Galagoides rondoensis</i>	Critically Endangered	One of the Top 25 most endangered primates. Known only from 8 forest patches in Tanzania. Recorded during the baseline survey.	Ruhoma and Muungano
<b>Plants</b>			
<i>Leptactina papyrophloea</i> Verdc.	Endangered	Recorded in Likonde during the baseline survey. The IUCN Red List describes its range as 'Now thought to be confined to undisturbed areas of the Rondo Forest Reserve (140 km <sup>2</sup> ).' A more recent collection records <i>L. papyrophloea</i> from northern Mozambique.	Kiwawa
<i>Dichapetalum braunii</i> Engl. & K. Krause	Endangered	Recorded during the baseline survey.	Ruhoma and Muungano
<i>Pteleopsis apetala</i> Vollesen.	Endangered	Recorded during the baseline survey.	Ruhoma and Mkangamoja
<i>Monanthonaxis trichantha</i> (Diels) Verdc.	Vulnerable	Recorded during the baseline survey and in Clarke 2001. Range extends to lowland Nguru and Usambara Mountains.	Ruhoma and Mkangamoja
<i>Mimosops acutifolia</i> Mildbr.	Vulnerable	Recorded during the baseline survey. Clarke (1995) states that this shrub or small tree is only known from the Noto and Rondo forests. It was first collected by Schlieben in 1935 from Noto. The IUCN Red List refers to its having been collected around Lake Lutamba and cites its presence in Litipo Forest Reserve. Another collection was made by Bridson <i>et al.</i> in 1991 in Rondo. The Red List also refers to its possible occurrence in the East Usambaras (see Hemsley, 1968). The EAPRLA has not yet assessed this species; it appears on the IUCN Red List as Vulnerable: VU B1+2b ( <a href="#">ver. 2.3</a> ).	Mkombamosi Likonde
<i>Peponium leucanthum</i> (Gilg)	Vulnerable	Recorded during the baseline survey.	Mkanga 1

Scientific name	Status (IUCN 2011)	Comments	Village Forest Reserves
Cogn.			
<i>Bauhinia loeseneriana</i> Harms.	Vulnerable	Recorded during the baseline survey. The IUCN red list describes its range as 'Endemic to coastal forest in Tanzania, this species is known only from four sites.'	Mkanga 1

**GL 3.2 Describe recent population trends of each of the Trigger species in the Project Zone at the start of the project and describe the most likely changes under the without-project land use scenario.**

Of the eight threatened species recorded from the project area during the baseline survey, the project will focus on four trigger species: *G. rondoensis* (CR), *Leptactina papyrophloea* (E), *Pteleopsis apetala* (E) and *Mimosops acutifolia* for population trend assessment (GL3.2), conservation measures (GL3.3) and monitoring (GL3.4) in keeping with CCB rules. By monitoring these four species, we will be monitoring all of the village forest reserves with documented populations of threatened species thereby including habitat monitoring that encompasses all of the threatened species.

Populations of all trigger species are assumed to be in decline due to habitat loss based on documented deforestation rates for the villages where the threatened species were recorded.

**Table 17: Deforestation rates in forests with threatened plant and animal species.**

Village	Average annual deforestation rate per village between 2001 and 2012	Trigger species present
Kiwawa	-1.27%	<i>Leptactina papyrophloea</i> Verdc.
Mkanga 1	-2.77%	<i>Pteleopsis apetala</i> , (plus <i>Monanthotaxis trichantha</i> , <i>Peponium leucanthum</i> , <i>Bauhinia loeseneriana</i> )
Mkombamosi	-2.2%	<i>Mimosops acutifolia</i>
Muungano	-2.15%	<i>G. rondoensis</i> , (plus <i>Dichapetalum braunii</i> )
Ruhoma	-1.03%	<i>G. rondoensis</i> , <i>Pteleopsis apetala</i> , (plus <i>Dichapetalum braunii</i> , <i>Monanthotaxis trichantha</i> )

As outlined in Section G. 2, the without-project scenario predicts continued deforestation and forest degradation within the project area based on the causal model identified. The resulting habitat loss is assumed to be associated with population decline for all of the trigger species.

**GL 3.3. Describe measures needed and taken to maintain or enhance the population status of each Trigger species in the Project Zone, and to reduce the threats to them based on the causal model that identifies threats to Trigger species and activities to address them.**

As habitat loss represents the key threat to all trigger species, the causal model for the population status of these species identifies conversion of forest land to agricultural land as the main direct threat.

Based on the theories of change outlined in Annex 4, the project activities that will bring the most immediate impact on reducing habitat loss include: participatory forest management, village land use planning, REDD payments and improved agricultural practices.

**GL 3.4. Include indicators of the population trend of each Trigger species and/or the threats to them in the monitoring plan and demonstrate the effectiveness of measures needed and taken to maintain or enhance the population status of Trigger species.**

Indicators of the population trend and of the threats to them are included in the monitoring plan and are designed to demonstrate the effectiveness of measures intended to maintain the population status of the threatened species.

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## Annex 2. MoU template between MJUMITA and the communities

This is an English translation of the MoU. The original is in Swahili.

MEMORANDUM OF UNDERSTANDING BETWEEN THE VILLAGE COUNCIL OF ..... AND MTANDAO WA JAMII WA USIMAMIZI WA MISITU TANZANIA (MJUMITA) ON COMMUNICATION, MARKETING AND SELLING OF CARBON CREDITS RESULTING FROM IMPLEMENTING REDUCED EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD) FROM THE VILLAGE LAND

- Article one* Name of the Memorandum of Understanding
- It shall be called "The Memorandum of Understanding for Providing Services of Communication, Marketing and Selling of Carbon Credits Resulting from Implementing Reduced Emissions from Deforestation and Forest Degradation (REDD) in the Village Land of.....village"*
- Article two* Parties involved
- The memorandum of understanding is between:-*
- The VILLAGE COUNCIL of .....village; who are owners of carbon credits from the village land on behalf of all the village members of.....village, where as the Village Council of.....Village with registration number ..... is the elected body representing the interests of the residents of .....Village, in ..... Ward, Lindi .....; on one side*
- and*
- Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania abbreviated as "MJUMITA"; who is the facilitator and service provider on technical issues on the implementation of strategies to Reduce Emissions from Deforestation and forest Degradation and enhancement of carbon stock abbreviated as "REDD+", where as MJUMITA is a Non-Governmental Organization, National Network of Community Based Organizations living adjacent to natural forest and participating in Participatory Forest Management, registered under Non-Governmental Organization Act of 2002 with Registration Number 00NGO/1119 of S. L. P. 21522, Dar es Salaam; on the other side.*
- Article three* Witness
- The District Executive Director will be a third part witness throughout the implementation of this Memorandum of Understanding according to article 118 of the Local Government (District Authorities) Act of 1982 (about the roles of the District authorities.*
- Article four* Background
- The foundation of this Memorandum of Understanding abbreviated as "MoU" is the previous MoU signed based on the Free Prior Informed Consent (FPIC) on.....the day of.....Month of.....the year of.....between Tanzania Forest Conservation Group abbreviated as TFCG; MJUMITA on one side; and the government of .....village; about the implementation of REDD project called "Making REDD Work for Communities and Forest Conservation In Tanzania".*
- WHEREAS; The goal of the project was to reduce greenhouse gas emissions from deforestation and forest degradation in Tanzania in ways that provide direct and equitable incentives to rural communities to conserve and manage forests sustainably;*
- AND WHEREAS; the purpose of the MoU is to ensure that FPIC is established with the village during the implementation of the project Making REDD Work for Communities*

*and Forest Conservation In Tanzania;*

*AND WHEREAS; the project supported communities to manage and benefit from their forests sustainably; to reduce rate of deforestation and forest degradation and corresponding emissions of greenhouse gases; and adopt better land use and agricultural practices and hence improve their livelihoods;*

*AND WHEREAS; the project has been successfully implemented after both parties fulfilling their obligations;*

*AND WHEREAS; The village is willing to carry on implementing the strategies to reduce deforestation and forest degradation and engage in the selling of carbon credits in a voluntary market;*

*AND WHEREAS; the carbon credits resulting from reduced deforestation and forest degradation are owned by the village as other non-timber forest products from the village land forest according to the laws of Tanzania;*

*AND WHEREAS; The village council of .....village is the owner and managers of all properties and resources of the village including carbon credits on behalf of all the citizens of ....village as stipulated in the Local Government Act (District Authorities) of 1982, Village Land Act of 1999 and the Forest Act of 2002;*

*AND WHERE AS; The District Council coordinates all development and government activities in the District according to the Local Government Act of 1982.*

#### *Article five*

#### *Objectives of the MoU*

*UNDERSTANDING THAT; Reduced Emissions from Deforestation and Forest Degradation and enhancement of forest carbon stock abbreviated as REDD+ is being implemented in pilot bases in Tanzania during REDD+ readiness phase; also, the implementation of national REDD+ strategies and action plans are underway; no reliable source of funding to motivate the communities that fulfills the conditions of emission reductions from REDD;*

*RECALLING THAT; .....village is implementing REDD and fulfilled the conditions for trading emission reductions under the voluntary carbon market;*

*RECOGNIZING THAT; The current sole option available for payment for emissions reduced from REDD+ is through the voluntary carbon market;*

*AND RECOGNIZING THAT; MJUMITA is a Non-Governmental Organization, an umbrella of Community Based Organizations living adjacent to natural forest, and participating in Participatory Forest Management (PFM) in Tanzania Mainland; have facilitated communities to implement REDD+ and has been providing technical services including acting as a communication agent for the communities to the Voluntary Carbon Standards (VCS) and Climate Community Biodiversity Alliance (CCBA) during the pilot implementation of REDD+;*

*AND RECOGNIZING THAT; The cost for validation, certification and registration of REDD+ project are high for a single project proponent and the same is less if shared among the project proponent in the same project site;*

*AND RECOGNIZING THAT; The terms and conditions for participating in the international voluntary carbon markets requires the written consent of the project proponent and the organization serving as a communication agent between them and the VCS and CCBA;*

*THEREFORE; the agreement is made hereafter serving as written consent between the*

*Village Council of.....who are holding the rights of the project proponent and MJUMITA who are serving as communication agent and technical service provider for the project proponent to fulfill the obligations stipulated in article six below;*

*Article six*

The agreement

*WE AGREE THAT; The ownership of verified carbon emissions reductions from the village land shall belong to the .....village and the village council shall hold the rights on behalf of all the citizens of the village as stipulated in section 32 of the Forest Act No. 14 of 2002 on Community Based Forest Management (CBFM); and .....village commits to continue implementing the strategies to address drivers of deforestation in the village land for the purpose of reducing carbon emissions and selling the emission reductions from the village land to any funding mechanism available;*

*WE AGREE THAT; MJUMITA will serve as a communication agent between the .....village and (VCS CCBA, REDD project validators and verifiers, marketing agents, and or carbon credit buyers) the marketing agent or any other source of funding. Furthermore, MJUMITA will also provide technical advice upon request and need realized by any part of this agreement. The communication between the two parties shall be shared in a period not exceeding thirty days after the date of the correspondence. The copies of any written correspondence shall be sent to the Executive Director of the local government;*

*WE AGREE THAT; Subject to being able to cover its costs from an annual agreed budget approved by the village and other proponent villages in the same reference region, MJUMITA will provide the village and other proponent villages with the following services to facilitate access to the voluntary carbon market:*

Remote monitoring of forest cover and carbon stocks

Coordinating ground monitoring of carbon stocks by participating villages

Identifying and contracting a VCS and CCBA approved project validator

Identifying and contracting VCS and CCBA approved project verifiers as needed

Preparing and submitting the project design document for validation

Preparing and submitting project monitoring reports for verification

Marketing and selling verified emissions reductions to buyers in the voluntary carbon market

Receiving payment from buyers in the voluntary carbon market on behalf of the village and other proponent villages

Retiring sold emissions reductions according to the VCS and CCBA requirements

Forwarding revenue from the sale of verified emissions reductions to the village subject to the stipulations specified in this agreement.

To avail information about carbon credit emissions and fulfill any other requirements by VCS and CCBA registries.

Provide capacity building to communities on any matter emerging related to REDD+, good governance, and carbon trading for improvement of their performance.

Facilitate village government to have operational plans in the format required by the project and any other need that may arise.

To facilitate participatory social and ecological assessment and monitoring and submit the results to any different stakeholders as the need may be.

To facilitate the Community Carbon Enterprise on any other technical requirement needed to meet conditions for REDD+.

*WE AGREE THAT; The revenue distribution mechanism used during the pilot phase of implementing REDD+ in the village shall continue to be used as a tool of ensuring fairness, participative, and transparency during the decision making event on the use of REDD revenues.*

*WE AGREE THAT: The service provider shall provide a proposal of apportioning performance based REDD revenue across participating villages of which the criteria shall be as follows among others:-*

Share of carbon credits generated from a village land

Relative performance of reducing deforestation in the village land

Size of the village forest area

Leakage within and outside the village boundary

*WE AGREE THAT: The proposal on revenue sharing among participating villages shall be discussed and agreed by the village councils of the participating villages on the amount to be paid for each village after considering the following:-*

Deducting all the cost incurred and agreed before in the course of aggregating, determining and marketing the carbon credits from the project

Carbon credits subtracted from a participating village caused leakage in the particular year based on the GIS evidence and credits awarded to village whose carbon credits were reduced by that particular leakage.

*WE AGREE THAT; The Village Council shall be in charge of ensuring village compliance on REDD+ terms and conditions as stipulated in this agreement, national and international frameworks. Subject to the condition that sufficient REDD funding shall be available through national or international funding mechanism, the village commits to implement REDD for the period of twenty years (20) as from September, 2014;*

*WE AGREE THAT; The cost for project certification and registration shall be shared with other villages implementing REDD in the landscape. The cost shall be paid based on the real cost spent and the cost elements for the service provider shall be agreed upon in a participatory and transparent manner between the participating villages and the service provider. The payment shall be done during the village REDD annual meeting after selling the carbon credits. The amount of cost sharing among participating villages shall be proportional to the amount of carbon credits earned by each participating village.*

*WE AGREE THAT; Revenue from the sale of verified emissions reductions shall be paid to the village once per year. The amount paid shall be equivalent to the value of the amount of emissions reductions verified by a third party verifier, that the village accomplished compared to its baseline, which is specified in appendix 1, less any credits required by VCS to be deposited into a risk buffer, less any leakage for which the village has been assigned responsibility by other project proponents, and less any costs approved to be paid to MJUMITA in the same year by the village for services provided under this agreement.*

Article seven

Dispute resolution

*Disputes arising from the implementation of this memorandum of understanding between MJUMITA and the Village Council will involve a third party who shall serve as a mediator. The mediator shall be the Ward Development Committee (WDC), the District Executive Director or the court as the situation may be. The procedure shall involve the following steps:-*

*First Step:*

Complaints are received by a mediator either by phone, text messages, and meeting or by letter from a person in charge of any part. The third part shall formally acknowledge the receipt of the complaint and within reasonable time inform the respondent and set timescale for resolving the complaint.

*Step two*

The complaints shall be sent to the respondent in writing and within reasonable time scale (not exceeding twenty eight days) the defendant shall provide response of the complaints to the mediator.

*Step three*

The mediator after being satisfied with the response provided from the respondent shall send the same to the complainant. In case the response provided is not sufficient to the satisfaction of the mediator or complainant, the mediator shall call a meeting of the two parties for mediation.

*Step four*

In case the resolution of the complaint not sought, the mediator shall forward the complaints to the office of the District Executive Director within a period not exceeding thirty days (30) since the date of mediation. The proceedings of the matter shall be attached in the report to be forwarded to the District Executive Director. The District Executive Director shall conduct a thorough review of the matter and call the meeting for mediation of the two parties.

*Step five*

In case the mediation is not sought by the District Executive Director, the matter shall be taken to the court.

*Article eight*

Limitations of the MoU

*The implementation of this MoU is subject to the following assumptions:-*

Availability of REDD financing from the market or national fund

Availability of policy and legal framework supporting REDD implementation at national and international level

Participating villages successfully generates carbon credits through avoiding deforestation and forest degradation in the village land.

Ability has technical and financial capacity to provide the services specified in this MoU

*Article nine*

Termination

*In case of termination by either part of this agreement three-month notice in writing shall be needed. In case the village council terminates the agreement, the notice for the termination shall be attached with the minutes of the village assembly deliberated for*

the matter.

Article ten Amendment of the Memorandum of Understanding

*The amendment of this Memorandum of understanding shall be made any time after consultation of the two parties.*

Article eleven Commencement of the agreement

*The implementation of this memorandum of understanding shall commence after being signed by the two parties. After signing the implementation shall commence from .....*

Article twelve Signing the Memorandum of Understanding

*MJUMITA*

Signed the day of.....Dated.....Month of .....Year.....

Signed by.....Title.....

.....

Signature and Official Seal

For: Mtandao wa Jamii wa Usimamizi wa Misitua Tanzania (MJUMITA)

.....*VILLAGE COUNCIL*

Signed the day of.....Dated.....Month of .....Year.....

Signed by.....Title.....

.....

Signature and Official Seal

Signs of other Village Council Members and Village Government seal

Na.	Jina	Wadhifa	Sahihi


.....*DISTRICT COUNCIL*

Signed the day of.....Dated.....Month of .....Year.....

Signed by.....Title.....

.....

Signature and Official Seal



### Annex 3 Public services and infrastructure original

Public Service	Kinyope	Kiwawa	Likwaya	Makumba	Milola	Mkanga 1	Mkombamosi	Muongano	Nandambi	Ruhoma
<i>Nursery school</i>	No school.	No school. Children do not attend nursery school.	No school; attend the Chikonji Kusini School	No school.	No school; attend the one in Milola A village 0.5 km away.	No school.	Nursery school services obtained under tree within primary school grounds;	No school; Mambo Elimu government program (established in 2007) available in Uleka Sub-village (operates like MEMKWA); Program receives support from Govt of United States. 40 students (M-16, F-24)	No school;	No school;
<i>Primary school</i>	One primary school with 8 classrooms; 6 teachers; 388 pupils brick walls and metal roof.	One primary school in (subvillage); 330 students. 6 class rooms; 4 teachers; brick walls and metal roof.	Primary school under construction; students attend Moka Primary School in Matimba village 3 km away.	Under construction. 2 classes completed so far.	No school; students go to Milola B 0.5 km away.	One school. 4 class rooms; 3 teachers and 172 pupils	One school; located between Mwenge and Sokoni sub-villages. 7 class rooms 7 teachers. 560 pupils. Brick walls. Metal roof	No school; students attend Mkombamosi Primary School which is 0.5 km away.	One school; five class rooms; four teachers and 170 pupils.	One school in Mchati sub-village. 5 class rooms, 3 teachers. 197 pupils. Brick walls, metal roof.
<i>Secondary school</i>	No school. Attend 2ndary school 11 km away.	No school; attend Milola School in Milola B Village 18 km away.	No school; attend Nangaru School in Komolo Village. 6 km away.	Under construction.	No school; attend Milola B School (0.5 km away)	No school. Attend school 11 km away.	No school; attend Nangaru School in Komolo Village (5 km away)	No school; attend Nangaru School in Komolo Village (Matimba ward) 6 km away.	No school; attend Chikonji and Nga'pa secondary schools (6 & 12 kms away, respectively)	No school; attend Milola and Rutamba Schools in respective villages 20 km away.
<i>Dispensary</i>	One dispensary under construction.	One dispensary with two qualified staff. Building in poor condition.	No dispensary. Services available in Moka 3 km away.	No dispensary. Services available	No dispensary; go to Milola A 0.5 km away.	No dispensary. Services available. Nearest dispensary 11 km away.	One dispensary in Lumo sub-village with 3 qualified staff. Building in good condition.	No dispensary; health services available in Mkombamosi Dispensary 0.5 km away.	No dispensary; closest healthcare service 14 km away.	No dispensary; go to Milola or Rutamba Villages 12 km away.
<i>Health clinic</i>	One clinic under corruption.	No health clinic;	No health clinic;	No health clinic;	No health clinic;	No health clinic;	No health clinic.	No health clinic;	No health clinic;	No health clinic;
<i>Roads</i>	Non-paved roads.	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls	Non-paved roads;	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls	Non-paved roads; impassable during heavy rainfalls

Public Service	Kinyope	Kiwawa	Likwaya	Makumba	Milola	Mkanga 1	Mkombamosi	Muongano	Nandambi	Ruhoma
Water services		No improved water points, Water sourced from stream in Kitulo sub-village	No improved water points;  Other water supplies available in Mapinduzi and Lumumba sub-villages		No improved water point in; water obtained from Milola A Village (distance, type of water?);  3 stream sources in Village in Kipunga, Noto and Kikumbi sub-villages		3 improved water points (2 boreholes in Msikitini and Cheleweni sub villages - both SWN80 type boreholes). Boreholes were funded by Embassy of Finland in 1988; 1 borehole also funded by Assemblies of God in 2009. All 3 water points are in use; 20 open wells in Lumo sub village, Cheleweni Mwenge and Msikitini subvillages . Water also sourced from Mtonya and Mloweka rivers	2 improved water points (in Mnazi Mmoja and Ujamaa sub-villages (SWN 80 type of bore holes); Boreholes are not functioning, due to lack of spares (village cannot afford);  15 water sources from stream	No improved water points; Use open wells (3 in Ruaha, Mtandi and Kiwayawaya). Some households collect water from the streams.	1 improved water points in Shuleni sub-village [condition?];  Stream water available in Mkundi sub- village
Meeting space/community space	No community building or meeting space available for community meetings;	No community building or meeting space available. Village assembly meetings done at the market; Internal meetings done at Ward office	No community building or meeting space available. Meetings conducted under mango tree in Mapinduzi sub-village	No community building or meeting space available for community meetings;	No community building or meeting space available. Meeting are conducted in Milola B sub-village under Mkungu tree	No community building or meeting space available for community meetings;	No community building or meeting space available. Conducted under mango tree in Lumo sub-village	No community building or meeting space available. Meetings occur under a tree (Kongo/Msonobali) in Ujamaa sub-village	No community building or meeting space available. Usually conducted under mango tree at village centre.	No community building or meeting space available for community meetings; Usually conducted under a mango tree
Market place/building		1 market place; [condition]	1 market in Mapinduzi sub-village [condition]		No market in village; New market constructed in Milola Mashariki but it is not yet in use		1 market place in Sokoni sub-village	No formally designated market place; community tends to use Mkombamosi village market in neighbouring village	No market place	1 local market in SUBVILLAGE; [condition]
Village office	No village office	Current they are using Ward office	No village office, use the food storage facility room within village	No village office	1 small village office in Dodoma B sub village; has 2 small rooms	No village office	No village office; Use the village court building at Mkombamosi Village	Under construction in Mnazi Mmoja sub-village (use the Litogoro House*)  * what is this?	No village office; Use the CCM office	Village office building exists (subvillage); has 2 small rooms; too small to host larger meetings

<i>Public Service</i>	<b>Kinyope</b>	<b>Kiwawa</b>	<b>Likwaya</b>	<b>Makumba</b>	<b>Milola</b>	<b>Mkanga 1</b>	<b>Mkombamosi</b>	<b>Muongano</b>	<b>Nandambi</b>	<b>Ruhoma</b>
<i>Crop/Food Storage facility</i>		1 facility in Kiwawa A;	1 facility that is not in good order		No facility; Use the one in Milola ward		1 facility located in Lumo sub village	1 facility; dilapidated (was built below standard); risk of building falling;	No facility;	1 facility in Mkundi sub village; highly dilapidated
<i>Communication</i>	Mobile phone coverage available in all sub-villages.	Mobile phone coverage available in one sub-village only.	Mobile phone coverage available in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in more than one sub-village but not in all sub-villages.	Mobile phone coverage available in one sub-village only.
<i>Transport</i>	At least one bus service daily; motorbike and bicycle taxis available.	At least one bus service daily; motorbike and bicycle taxis available.	At least one bus service daily; bicycle taxis available.	At least one bus service daily; motorbike and bicycle taxis available.	At least one bus service daily; motorbike and bicycle taxis available.	No bus service; motorbike and bicycle taxis available.	At least one bus service daily; motorbike and bicycle taxis available.	At least one bus service daily; motorbike and bicycle taxis available.	No bus service; motorbike and bicycle taxis available.	No bus service; bicycle taxis available.

## Annex 4. Theories of change for project interventions.

**These theories of change were developed during the social impact assessment. In some cases, based on the experience of the project subsequent to the SIA, they have been improved to reflect the lessons learned by they project in the intervening period.**

### Activity 1: Improve governance at village level

Success of REDD in the Project Area is highly dependent on the ability of communities to govern themselves and their natural resources. Improving village governance is an explicit strategy that the REDD project is committed to undertake early in the Project cycle because it is the foundation on which two key strategies rest: development of village land use plans and establishment of participatory forest management. In the village and landscape level workshops, however, improved governance was not discussed as an explicit strategy. Rather, activities constituting improved governance (e.g., training in record keeping) were key components of other strategies.

Prior to the start of the project, governance at village level was rudimentary at best in most villages in the Project Area. Village councils are required to have between 15 and 25 members. These consist of a chairperson elected by the village assembly, all chairpersons of the sub-villages within its area and other members elected by the village assembly. Women must account for 25 % of the council members. Most village councils (VCs) in the Project Area were incomplete; none fulfilled the 25% women quota. Councils were required to meet monthly; most VCs rarely met, and when they did, meeting minutes were not kept and reporting to the village assembly was not done. None of the villages have a village government office. Consequently, there was no official space to store VC related material (including records). Council meetings (if conducted) were held in borrowed space, either from CCM party offices, a school, or a storage facility (Annex 3).

After taking on positions of leadership council members do not receive training on their function and responsibilities; thus, they are unaware of the mandates they are required to fulfill during their term, nor the protocols for fulfilling them. Interviews conducted during the independent stakeholder analysis revealed that council members were uncertain of processes and decisions they had inherited from previous leaders, including decisions about natural resource use within their jurisdiction (TFCG 2011). For example, most councilors could not confidently say whether their village had undergone a land use planning process, and if so, what the process had entailed, or how far along in the process they were. Councils are also not included in District planning, even when plans affect the Councils' areas of influence. For example, no-one could clearly explain why District authorities had prohibited timber harvesting in forests around the Project Area.

A large part of this strategy is - on the one hand – to train existing and future council members on their duties and responsibilities, and to provide them with the skills necessary to fulfill their functions. On the other hand, it is to empower local communities on the importance of good governance, on their civil rights and duties, how they can participate in local decision making, and the platforms that exist for airing their concerns and initiating change. Awareness raising campaigns on governance issues will be the main approach for this. The village level natural resources committee (VNRC) will receive extra training as part of the PFM and extractive use of forest biomass strategies. A results chain was not developed for this strategy. Instead, Table 18 summarises the justification for a strategy on improvement of village governance and how the strategy links to other planned intervention points.

**Table 18: Impact assessment of strategy to improve village governance.**

<b>Activity / Sub-activity</b>	<b>Intended positive outputs, outcomes or impacts</b>	<b>Potential negative impacts</b>	<b>Magnitude of negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
<b>Activity 1. Improving governance at village level.</b>					
<b>Awareness raising on the meaning and importance of good governance to communities and their leaders (Phase 1)</b>	Awareness is conducted in all project villages.  Communities and leaders aware of rights and responsibilities and willing to exercise those to improve community and individual welfare (i.e. democratization, empowerment)	Increased awareness among communities may lead to bout of scrutiny of existing VCs; Some members may resign; replacement may be difficult if people are unwilling to take on leadership positions because of increased scrutiny	Low to high; depends on effectiveness of campaign and how communities react to increased awareness of their rights	VC members and communities in general	Gauge and record community reaction; paying particular attention to expressions of annoyance and/or resentment with the campaign or Project. Adjust style or approach of campaign so that it is sensitive to local nuances.
<b>Incomplete councils completed through democratic elections (Phase 1)</b>	Every village has a village council that fulfills basic requirements (25 members, gender representation, etc)	Resentment towards women if it is unusual for women to occupy leadership positions (Muslim society)	Low: women in existing councils do not seem to be negatively affected;	VC members and communities in general	Gender awareness raising; gauge women leader's experience; ensure moral support is provided for women to handle new roles well
<b>Training on governance, record keeping, reporting, policies, laws and gender to existing and future leaders (Phase 1)</b>	Vcs know their responsibilities and mandates, and can execute basic functions well;  Community has the sense that they have good leaders who have the community's wellbeing in mind.	VC members perceive the responsibilities as burdensome and decide to resign; Illiterate VC members are marginalised because they cannot participate fully in training; Leadership positions limited to those who can read and write (i.e. elite capture)	Potential for high positive impact.	<u>Directly:</u> VC members;  Illiterate leaders  <u>Indirectly:</u> All community members	Training is conducted in a way that accommodates illiteracy; VCs strategically ensure that they fulfill a minimum quota of literate members; Strategically train future leaders too so that the learning curve is less steep when they take on leadership

<b>Activity / Sub-activity</b>	<b>Intended positive outputs, outcomes or impacts</b>	<b>Potential negative impacts</b>	<b>Magnitude of negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
					positions
<b>Council members implement training: (gradual – Phase 1 &amp; 2)</b>	Meetings more regularly held, transparency improved, meetings better attended by village assembly, leaders start soliciting services and support from District; communities begin developing community projects	Increased bureaucracy for all community members as procedures become implemented according to fixed rules;  VC members are viewed as barriers to pursuing activities that were not previously controlled; Potential to corrupt VC in their new positions of power; Community projects require households to contribute time &/or labour;	Medium to high: potential to increase opportunities for corruption if cost of following rules (time, money, efficiency) is perceived as high.	<u>Directly:</u> community members; outsiders dealing with VC (e.g. businesspersons, District officers, etc), VC members	Strong emphasis on transparency and minimal bureaucracy needed; Emphasis on community participation in all decision making so that communities help establish rules and regulations that guide theirs and other's behaviour. A reward-punishment system needed to keep VC's uninterested in corruption offers; Ensure that community participates in choosing development projects to maximise willingness to contribute
<b>Trained leaders evaluated regularly to ensure duties are well executed (Phase 2)</b>	Performance and standards are kept high; transparency is increases; communities are ensured that only the best leaders are in Council	Risk that unqualified leaders are not fired due to fear of addressing unpleasant situations;	Low: Because by this point, most leaders unresponsive to training have resigned	<u>Directly:</u> VC and upcoming leaders  <u>Indirectly:</u> community members	Leadership training should specifically ensure that skills in how to handle unpleasant situations such as firing, penalizing, and making public unpopular decisions are provided
<b>Additional training conducted based on</b>	Capacity of VC to undertake council responsibilities			<u>Directly:</u> VC and upcoming leaders	

<b>Activity / Sub-activity</b>	<b>Intended positive outputs, outcomes or impacts</b>	<b>Potential negative impacts</b>	<b>Magnitude of negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
<b>identified needs (Phase 2)</b>	strengthened			Indirectly: community members	

The ToC statement for this strategy was developed from a conceptual model developed by project staff during SIA training (Figure 4). It includes all the activities that were mentioned in workshops. A results chain for this Strategy was not developed.

***Theory of change for Strategy to improve village governance***

IF awareness raising on the meaning and importance of good governance is conducted for communities and their leaders; and

IF Incomplete councils completed through democratic elections; and

IF VC and upcoming leaders are trained in governance (e.g. record keeping, reporting, policies, laws, etc.); and

IF Council members implement training; and

IF Trained leaders are evaluated regularly to ensure duties are well executed; and

IF Additional training is conducted based on identified needs; and

IF communities are aware of their rights and responsibilities;

IF communities agree to adhere to rules and regulations they participated in developing; and

IF rules and regulations are not perceived as barriers by those requiring to adhere to them; and

IF corruption does not become rampant (because mitigation measures implemented); and

IF VC is perceived as transparent and fair; and

IF communities participate in governance decision making, including natural resource management;

IF VC enforce the village by-laws;

THEN village governance will be improved and high rates deforestation and degradation in Lindi District village forests will be significantly reduced.



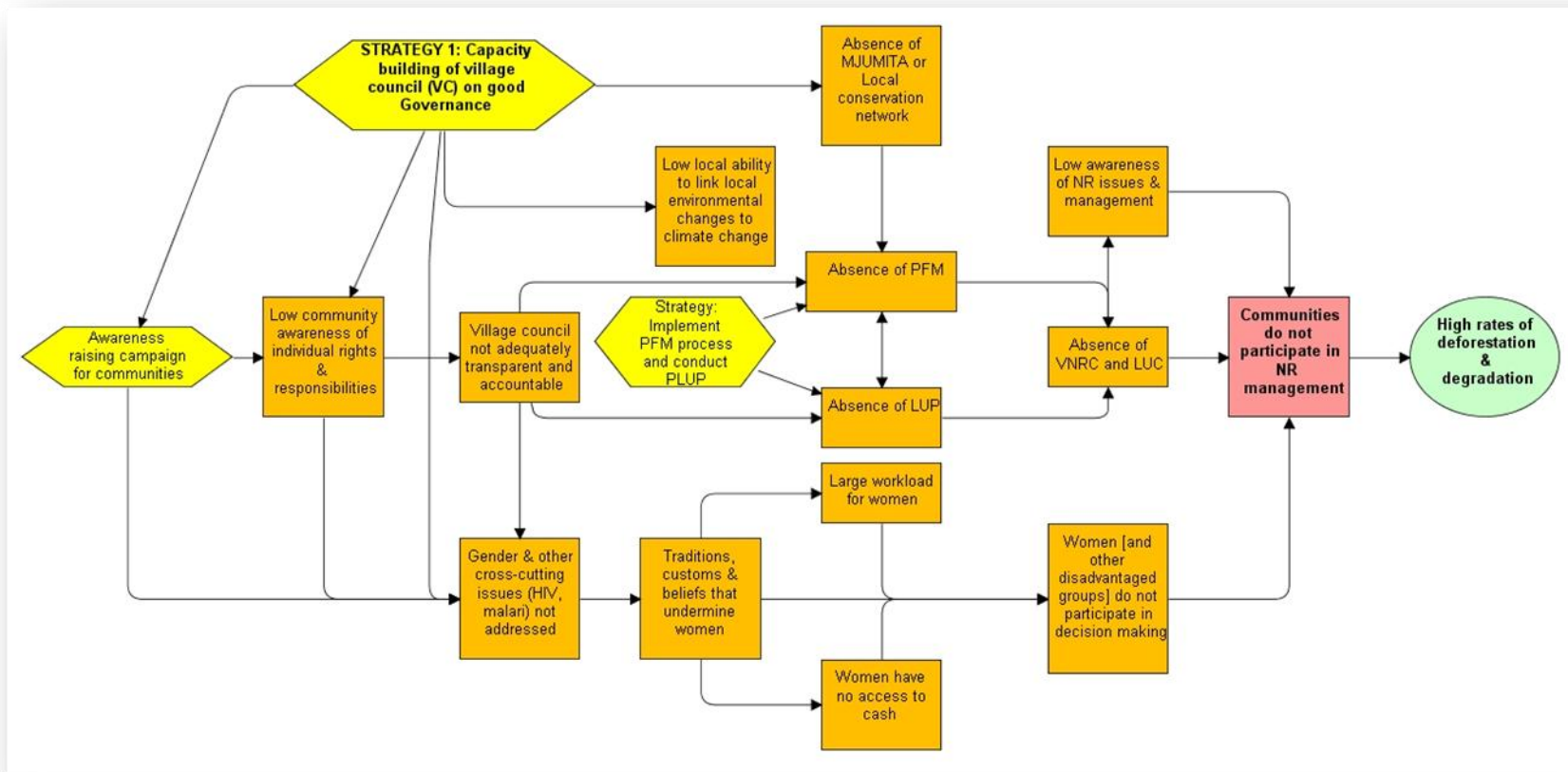


Figure 4. Conceptual model for depicting factors contributing to poor village governance (and ultimately the absence of community participation in natural resource management).

## **Activity 2. Implement sustainable land management**

A village land use plan (VLUP) should provide the basis for communities to manage village land sustainably. A village land use plan directs communities on how to manage their land optimally for the long-term given variability in land use activities and land use interests within the village. Developing a LUP involves setting aside land for forests, agriculture, grazing, residential areas and public services, and requires delineation of the village area into distinct zones for specific land use categories. When LUPs are developed using participatory approaches (as is required by Tanzania's National Land Use Planning Commission) they can improve village livelihood systems while retaining forest cover levels (NAFRI et al, 2005). Village land use planning can also help to improve land tenure by ensuring that village boundaries are clear; and by contributing to village's securing Village Land Certificates. Once a village land use plan has been prepared, the next step is to establish a village land registry. This is something that the project will support. From there villages can begin to issue customary rights of occupancy to individuals.

Developing a VLUP is an important precondition for introducing CBFM (Strategy 3) that the project will undertake. By delineating activities to specific areas within the village landscape communities expect to have better control on shifting cultivation, particularly of the 'pioneer' type (when primary forests or undisturbed forests are felled to clear land for cultivation).

A LUP alone is not sufficient to decrease shifting cultivation practices. A large part of post Phase 1 activities will focus on ensuring that the LUP is implemented according to land use by-laws. This will require that some REDD carbon payments is reinvested into implementation activities (e.g. patrolling, administration, monitoring).

### ***Theory of change statement for strategy to develop LUP in each village***

IF awareness is raised on the importance of having LUPs, and  
IF awareness is raised on the importance of permanent agriculture, and  
IF Communities decide that they want to have a LUP and practice permanent agriculture, and  
IF the District supports (i.e. provide LUP experts) for communities in developing their LUPs, and  
IF parallel to development of LUPs District provides training in improved ag. practices, and other  
environmental management methods (e.g. fire control), and  
IF Communities implement all improved training received, and  
IF Communities respect the LUP and implement it according to agreements, and  
IF the Sustainable Forest Management Strategy is successfully implemented,  
THEN communities will have more secure land tenure and forest governance and governance as a  
whole will dramatically improve in the project area.

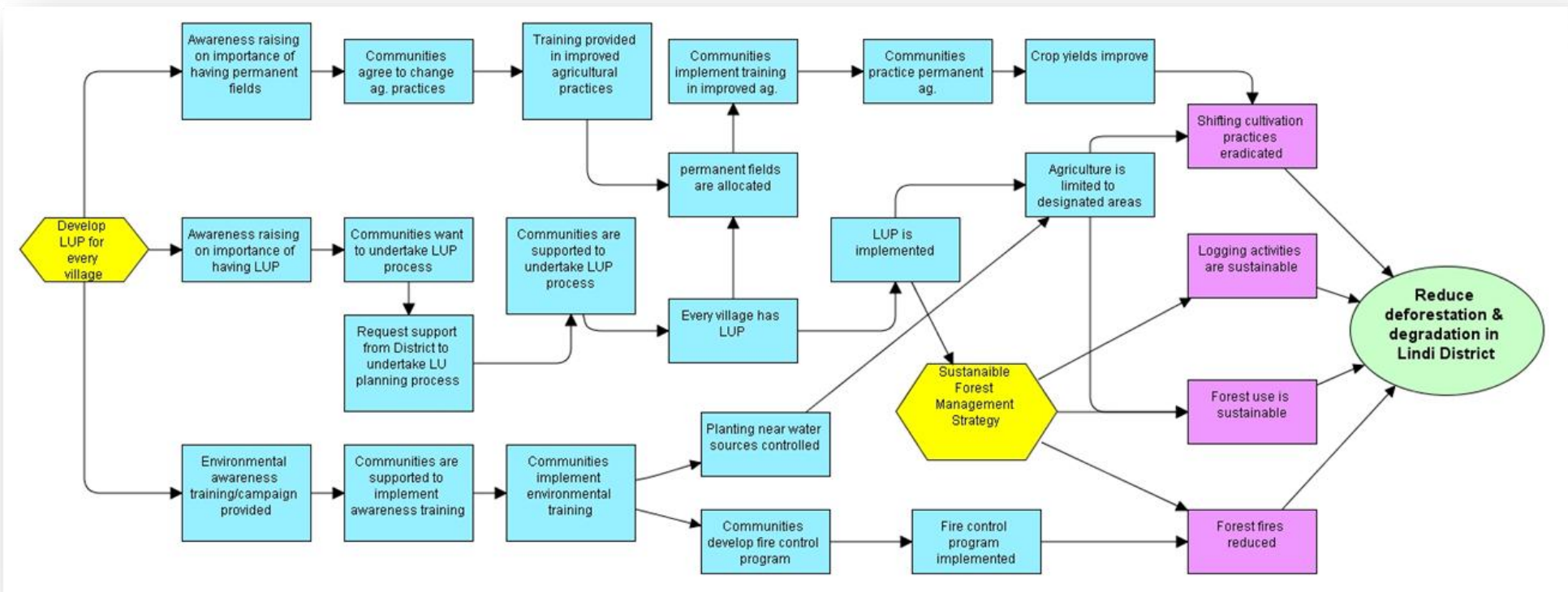


Figure 5. Results chain for Activity 2 to implement sustainable land management.

**Table 19: Impact assessment of activity to implement sustainable land management.**

<i>Activity</i>	<i>Intended positive Impact</i>	<i>Negative impact and/or risks</i>	<i>Stakeholders affected</i>	<i>Mitigation action Needed</i>
<b>Activity 2: Implement sustainable land management.</b>				
<b>Conduct awareness raising on importance of LUP</b>	Communities convinced that establishing a LUP for their villages is a worthwhile undertaking;  Communities willing to participate in the LUP process; LUP reflects communities input and is owned by the communities	None obvious	Communities; VC members	None
<b>Resolving boundary conflicts</b>	Long-term conflicts settled	Risk that conflicts aren't resolved and slow down other processes (Strategy 3);  Risk of exacerbating existing conflicts; risk of identifying new conflicts;  Time consuming and stressful for those involved in the resolution process;	Council members directly involved in conflict resolution; community members whose land is directly involved;	Establish Grievance protocol so that boundary conflicts are adequately addressed (Phase 1);
<b>Participatory LU planning process undertaken*</b>	Plans exist to guide communities on appropriate land use; VC has authority to govern landuse; Having a LUP is the impetus for other land and natural resource management initiatives, e.g., development of a natural resource committee...	Process is time consuming for community members who are directly involved; boundary conflicts surface and slow down process; within-community conflicts emerge on how LU should be allocated; Marginalised groups' interests not reflected in the LUP; Risk that the process exhausts community funds	<u>Directly:</u> Community members involved in the planning;  <u>Indirectly:</u> All community members	Compensation for members actively involved in process; Participatory aspect of the LU planning emphasised; Process for addressing and resolving between and within community conflicts pre-determined;
<b>Villages acquire village land certificates</b>	Mores secure land tenure	None identified	N/A	N/A

<b>Allocation of areas for permanent agriculture</b>	Shifting cultivation reduced	Risk that in some villages, there will not be enough land for everyone. Risk that land-less farmers will acquire land in other villages (leakage potential); Annoyance, especially from non-Project communities	Farmers; nearby communities that would absorb any spill-over	Meetings should be held with neighbouring villages to discuss impacts and viable solutions;
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*\* In itself, the LU planning process has numerous sub-activities that must be successfully undertaken. Refer to Guidelines for Participatory VLUP, Tanzania and project guidelines for integrated CBFM and village land use planning for full process.*

### Activity 3: Community based forest management

The Project firmly considers that CBFM is the best approach that the REDD project should take to guarantee long-term sustainable management of forests. A basic premise for the Project is that the additional incentives (income) for communities from sales of carbon credits could cover the costs of management and provide additional income for community development projects. Establishing and implementing CBFM in the project area is thus an important outcome of the project.

The primary purpose of CBFM is to enable local communities to determine how forests in the LUPs will be governed and managed for long-term sustainability. CBFM also gives communities greater legal control over their forests and entitles them to retain all royalties from forest products and services from a village forest reserve. Phase 1 activities consist of building local capacity to undertake PFM and subsequently manage the numerous activities associated with implementing CBFM and REDD+ forest-related activities. Most activities will be conducted by VNRCs. Forest users, however, are the indirect targets of the project because it is their influence on forests that PFM is concerned with.

**Table 20: Impact assessment of Strategy to establish sustainable forest management through PFM.**

<b>Activity / sub-activity</b>	<b>Positive / desired Impact</b>	<b>Negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
<b>Activity 3: Community based forest management</b>				
<b>Implement the LUP Strategy</b>	The legal framework exists for communities to start the PFM process; areas for establishing PFM have been identified	See Table 11	VC members, local communities; communities outside project boundary	See Table 11
<b>District is informed of the desire for communities to establish CBFM in the Project area</b>	Protocol is established between District & communities; District is aware of communities' intentions and can provide appropriate support; Type of	None identified	District office staff;	

<b>Activity / sub-activity</b>	<b>Positive / desired Impact</b>	<b>Negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
	support needed from District is established early; District involved in earliest stages of the process to ensure that the process follows required rules.			
<b>Conduct awareness raising linking illegal and unsustainable extractive use of forest resources to poverty and high carbon emissions in Project area</b>	Communities are aware of how their own behaviour contributes to the key objectives of the Project and consciously decide to be willing participants in the PFM process; early local policing begins;	Illegal activities become more clandestine; potential conflicts arise as it becomes easier for communities to identify the 'bad guys'; short-term acceleration in deforestation & degradation activities in anticipation of increased difficulty in accessing forest resources in the near future	- communities	- Monitor forest use;  - Encourage system of anonymous reporting of on infractions to forest management (whistle-blowing);  - Solicit District assistance to develop a system for handling early land-grabbing
<b>Establish natural resource committees in all village councils (VNRCs)</b>	A core group is established in every village that has the authority to see the CBFM process through and can commit fully to implementing the management plans.	none	VC, VNRC members, forest users	
<b>Districts experts assist communities undertake the CBFM process</b>	CBFM process is done according to protocol; communities are more closely linked with information and resources that are available at District for the CBFM process;  - Communities experience directly the extension services available from the District;	- emergence of boundary conflicts (new or pre-existing);  - conflicts slow down procedure for establishing CBFM;  - See Table 11	District staff, VNRC members; communities (through assembly meetings to discuss CBFM)	- See Table 11

<b>Activity / sub-activity</b>	<b>Positive / desired Impact</b>	<b>Negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
<b>Train VNRC members in forest and environmental management</b>	Management skills are locally available;		VNRC members, VC, communities	
<b>Trained VNRC members conduct awareness raising campaigns for reducing shifting cultivation practices – Link to Strategy for increasing agricultural output</b>	Creates jobs locally if VNRC members are compensated for this; More community members convinced that shifting cultivation is not the best approach for eradicating poverty and maintaining forests.	Risk of associating all shifting cultivation practice as negative; Risk of creating tension in communities between those that do and those who do not practice shifting cultivation; new forest land cleared to develop farms for permanent cultivation	Farmers practicing shifting cultivation (virtually all farmers); VNRC members	Study needed to establish the actual effects on forests and income of shifting cultivation practices;  Need to establish precisely which aspects of shifting cultivation are not conducive to REDD objectives
<b>Trained VNRC members conduct awareness raising campaigns for appropriate fire application and control</b>	Communities convinced to reduce fire application in forests; communities take necessary precautions when applying fires to farms; fewer fires escape into forests;	Risk of VNRC members being perceived as pro-project/anti-community (i.e. antagonistic behaviour towards them, vindictive setting of fires)	VNRC members	Gauge local perceptions of VNRC members and Project; conduct meetings to resolve issues that could potentially harm community – project relations
<b>VNRC and Communities identify &amp; implement rules and regulations around fire use and control</b>	Less frequent incidences of uncontrolled fires that affect forests	May create tension between those who use fire and those who do not;  Benefit of nutrient release associated with burning biomass on farms removed;  Benefit of fire as a weed control strategy removed	Hunters, charcoal makers, timber harvesters, farmers	Training in improved ag. methods that do not require fire use and result in higher yields (Linked with Ag. Improvement Programme)
<b>VNRCs conduct patrols regularly and implement bylaws when they come across defectors</b>	Employs local communities, particularly youth; ensures forests are managed as intended; provides year-round evaluation of status of forests; establishes the confidence in	VNRC risk confrontation if poachers are aggressive or dangerous; patrol/ VNRC members are put in a position of power, which they can misuse (introduces potential for corruption)	VNRC members,	Ensure that patrol guards are well equipped and adequately trained to deal with confrontation (include in training); ensure that guards are given the authority to arrest defectors; strong

<b>Activity / sub-activity</b>	<b>Positive / desired Impact</b>	<b>Negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
	communities that the forest is being managed;			emphasis to follow through with consequences for not following rules so that ; compensate patrol guards so that they are not tempted to take bribes.
<b>CBFM is officially established</b>	Communities are in charge of managing forest resources in their area; forests are managed sustainably; C income is generated from sustainable management of emissions; Forest cover increases, state of degraded forests improves	<p>CBFM usually constitutes limiting access to forest resources: There is potential to further marginalise the landless and weak, and those highly dependent on forest resources for their livelihoods.</p> <ul style="list-style-type: none"> <li>- High likelihood that wild animal populations will increase</li> <li>- increased human-wildlife encounters (lions, leopards, elephants)</li> <li>- increase crop destruction by wild animals (warthogs, baboons, elephants, monkeys);</li> <li>-the value of forest products (firewood, timber, poles) could become unaffordable even for subsistence need(risk of leakage)</li> </ul>	<b>Vulnerable groups</b> were identified as: Farmers practicing shifting cultivation; charcoal producers; pole cutters; Ming'oko gatherers, hunters, and those highly dependent on forest resources	<ul style="list-style-type: none"> <li>- Genuine effort is made to ensure that those most likely to be marginalised by PFM are included in the participatory process of establishing PFM.</li> <li>- Communities receive training in wildlife management and control of problem animals;</li> <li>- Implement subsidies to locals if harvesting forest resources for subsistence use</li> </ul>

***Theory of Change for strategy to implement participatory forest management***

IF awareness raising is conducted in communities on the effects of unsustainable use of forests resources and the benefits of CBFM, and

IF District provides experts at village level in forest management, and

IF communities receive training on how to manage forests sustainably, and

IF communities develop a Forest Management Plan that promotes sustainability, and

IF communities develop bylaws that support the Plan, and

IF patrol teams are supported with the right equipment to conduct patrols, and

IF there is successful reduced dependence on forest resources, and



IF communities generate saleable VERs, and  
IF communities sell the VERs,  
THEN Community-owned forests will be managed in a participatory, effective and equitable way.

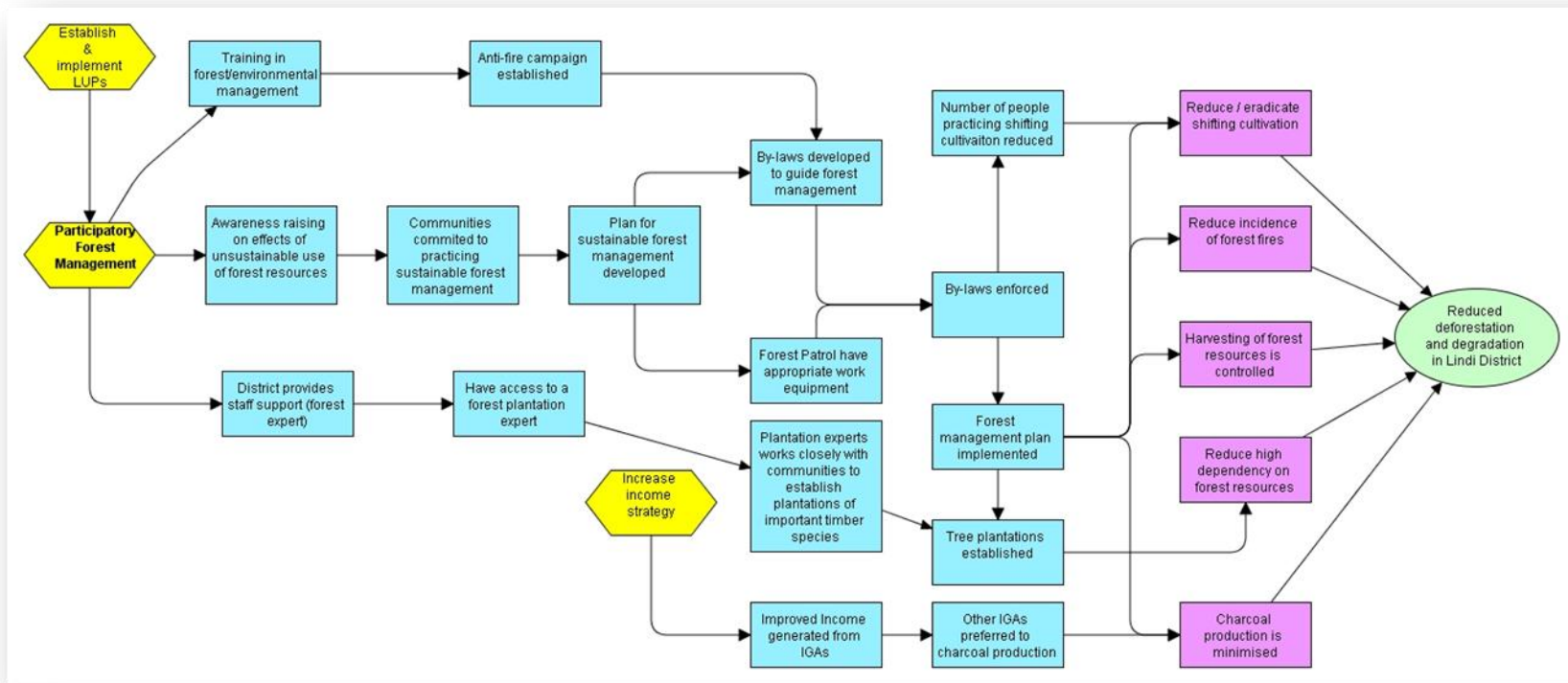


Figure 6. Results chain for Activity 3 on community based forest management.

#### Strategy 4: Channel REDD payments to communities.

A principle objective of Phase 1 of the REDD project was to establish a self-financing community-based carbon trading association or enterprise that functions within MJUMITA and channels REDD payments to communities. Communities in the project area undertaking PFM would become members of the enterprise. The enterprise will aggregate voluntary emission reductions from its members and market them according to internationally recognised standards. Revenue from the sale of the emissions will be paid to the communities. Every eligible resident will be entitled to their dividend. Through their village assemblies communities will decide in advance of the payment on how the dividends should be divided between individual payments and contributions to the costs of the VNRC and REDD special committee and community development projects.

**Table 21: Impact assessment of Strategy to establish a community carbon trading enterprise (CCTE)**

<i>Activity / sub-activity</i>	<i>Positive / desired Impact</i>	<i>Negative impact</i>	<i>Stakeholders affected</i>	<i>Mitigation action Needed</i>
<b>Activity 4. Channel REDD payments to communities.</b>				
<b>Awareness raising on the objectives of CCTC, MJUMITA and REDD as a whole</b>	Communities/VNRCs / Community REDD committees are aware of the opportunities available to sell C credits; eagerness to establish CCTC and join MJUMITA	none	VNRC members, local communities, VC members	
<b>Training on establishing and managing enterprises and networks</b>	VNRC and Community REDD committee members have capacity to effectively establish & manage CCTC and participate in MJUMITA	Potential for elite capture	VNRC and Community REDD committee members, local communities, the poor/illiterate	Project will specifically ensure that vulnerable groups are represented in the training
<b>Communities establish CCTC and join MJUMITA</b>	CCTC cooperative established; Communities put themselves in a position to be able to aggregate VERs with other members of the Network, once VERs are generated	none	VNRCs, VCs and Community REDD committee	
<b>Communities generate the VERs through sustainable forest management</b>	Income is re-directed towards sustainable forest practices, and community development; water and springs increase due to improve forests	Increase in human-wildlife confrontations due to improved forest habitat	Directly: VNRCs - they spearhead most PFM activities;  -ve impact felt most by forest users and farmers negatively impacted by problem animals	Farmers (communities at large) are trained to control wild/problem animals (see PFM impacts)

<b>Activity / sub-activity</b>	<b>Positive / desired Impact</b>	<b>Negative impact</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
			that destroy crops	

***Theory of change statement for strategy to establish community carbon trading enterprise***

IF communities are made aware of the objectives and advantage of participating in REDD as a whole;

and

IF communities are convinced of the advantages of participating in REDD; and

IF strategies to reduce emissions are successful; and

IF Voluntary Emission Reductions and validated and verified according to international standards; and

IF a buyer pays an adequate price for the emission reductions;

THEN communities will be able to sell their VERs

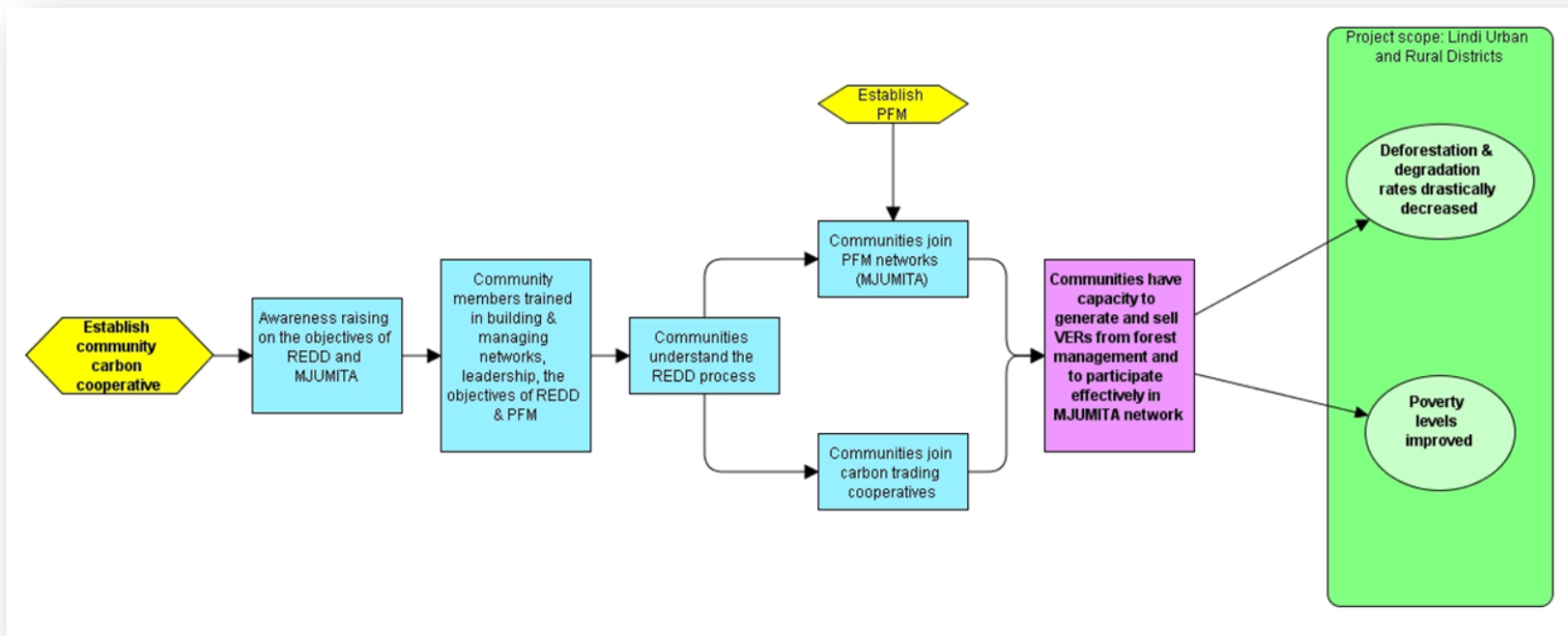


Figure 7: Results chain for strategy to establish community carbon trading enterprise and PFM networks

## Strategy 5: Improve Agricultural Practices & Productivity

The strategy to improve agricultural practices and output is motivated by the fact that almost everyone in the project area is a farmer, is heavily dependent on their agricultural outputs to produce food and generate any form of income, and practices shifting cultivation as the main form of farming. This strategy is designed to target four main issues related to agriculture: high dependency on shifting cultivation as the prominent agricultural practice; absence of agricultural inputs; high prevalence of pests and wild animals that destroy crops at all stages of the farming cycle: as seeds, mature plants, or harvested crop); in adequate information about climate change resilient agriculture; and inadequate markets for post-harvest products.

The improved agricultural practices and output strategy can be considered as a package of three sub-strategies each targeting one of the main issues. Sub-strategy one constitutes gradually decreasing the amount of land that is under shifting cultivation (i.e. a move towards intensified permanent agricultural fields). Sub-strategy 2 consists of improving agricultural inputs (i.e. the on-farm methods and tools applied). Sub-strategy 3 requires managing on- and off-farm pests and problem animals that destroy seeds before they can germinate, or crops before they can be harvested, or destroy harvests before they can be consumed.

The project has developed a separate agricultural strategy that provides a detailed analysis of the current agricultural techniques; problems faced by farmers and potential solutions.

**Table 22: Impact assessment of Strategy to improve agricultural practices and productivity**

<i>Activity / sub-activity</i>	<i>Intended positive Impact</i>	<i>Potential negative impacts</i>	<i>Stakeholders affected</i>	<i>Mitigation action Needed</i>
<b>Activity 5. Improve profitability, ecological sustainability and climate change resilience of agriculture.</b>				
<b>Develop and implement LUP for every village</b>	LUP will identify where new agricultural land is zoned (for permanent ag.) and which areas are restricted for shifting cultivation	See Table 11	See Table 11	See Table 11
<b>Link strategy to activities related to reducing shifting cultivation activities under PFM</b>	- streamlines information and resources across strategies	See Table 12	See Table 12	See Table 12
<b>VC solicits services from the District (including availability of a village or ward level extension</b>	- Communities participate in identifying services that they need (bottom-up approach);		Farmers	

<b>Activity / sub-activity</b>	<b>Intended positive Impact</b>	<b>Potential negative impacts</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
ag. expert)	- VC gains interaction experience with District staff (builds confidence & networks)			
<b>Ag experts provides training in improved agriculture</b>	Communities are equipped with the skill needed to practice viable alternatives to shifting cultivation		Farmers	Link with Aga Khan Foundation efforts
<b>Training provided in how to minimise and control animal-human conflicts</b>	Farmers are able to prevent crop losses and reduce time spent defending their crops.		Farmers, District wildlife office;	
<b>Equipment and tools needed to mitigate problem animals and pests on farms made available</b>	Communities able to address side effects of increased wildlife in project area		Farmers	Keep close track & public records of human-wildlife incidences;  Encourage reporting of incidences
<b>Permanent fields made available (through LUP process)</b>	Areas to undertake improved ag. are available	Risk that there is not enough land;  - puts land permanently out of forest cover  - Risk that non-project farmers establish farms in project area	Farmers	Ensure that intensified ag. (requiring less land for equal or more output) is part of the plan.
<b>Tree nurseries are established and trees are planted</b>	- Local job opportunities;  - Opportunity to establish CBOs that own and run nurseries;  - Reduces 100% dependency on natural forests for	Risk of oversupply of seedlings if they are perceived as easy to establish and keep supplied	- non-farming youth;  - women's groups;  - schools	Provide estimate of how many seedlings are needed annually so communities can assess whether to participate

<b>Activity / sub-activity</b>	<b>Intended positive Impact</b>	<b>Potential negative impacts</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
	all woody biomass requirements; (see strategy to reduce high dependency on forest resources); tree planting a potential IGA			

***Theory of Change for Improvement in agricultural practices and productivity***

**IF** communities receive training in viable and low cost alternatives to shifting cultivation, and  
**IF** District and Project provide training on improved agricultural inputs, and  
**IF** communities receive training in managing problem animals, and  
**IF** an agriculture officer or community based trainer is available in each village, and  
**IF** agriculture officer assists farmers in timely and effective manner, and  
**IF** LUP are developed, and  
**IF** communities implement agriculture improvement training received,  
**IF** communities practice improved agriculture in permanent fields,  
**IF** fewer farmers practice shifting cultivation,  
**IF** no additional forests are converted to shifting cultivation fields,  
**IF** harvests improve,  
**IF** markets for agricultural products improve, and  
**IF** income from agriculture increases

**THEN**, degradation and deforestation caused by shifting cultivation will decrease; poverty will in Lindi Urban and Rural Districts will be alleviated and farmers will be more resilient to climate change.



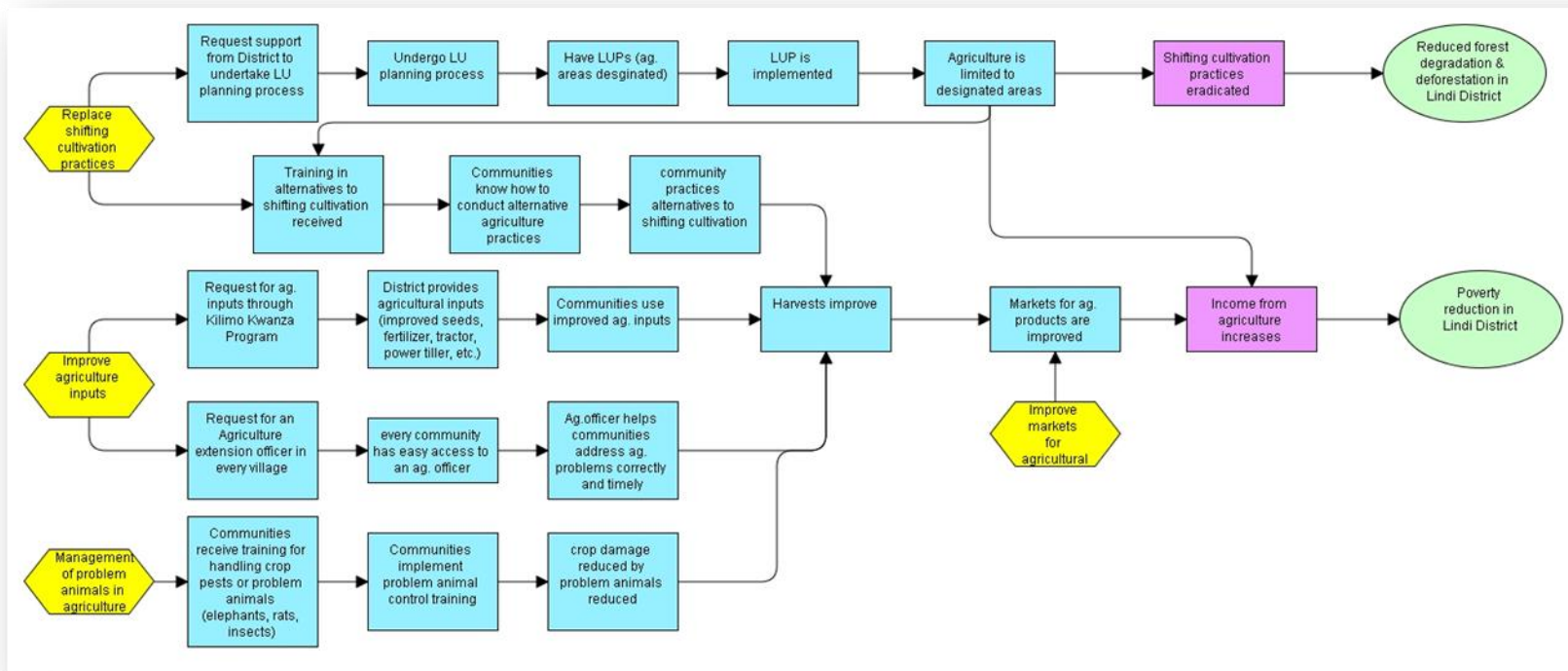


Figure 8: Results chain for Strategy to Improve Agricultural Practices and Productivity

## Strategy 6: Develop Income Generating Activities

Lack of locally available income generating activities (IGAs) was often cited as a contributing factor for local involvement in shifting cultivation, charcoal production, timber harvesting, and other extraction of forest biomass. It was also cited as the main reason for high levels of poverty in the project area.

Interviews with charcoal producers and pole cutters/vendors conducted during stakeholder analysis indicate that most biomass extraction activities (including shifting cultivation) are labour-intensive and difficult, and that availability of less difficult IGAs that provide equal or more income would encourage youth – in particular – to leave forest-related jobs.

Capital to start-up IGAs is difficult to obtain, however, and a major reason for low availability of IGAs. Access to credit for start-up is virtually non-existent. Establishing village savings and loans associations (VSLAs) was proposed as a viable means for making locally accessible loans. TFCG has experience implementing VSLAs in other areas in Tanzania; in-house expertise exists. Given the relative isolation of communities from more entrepreneurial parts of Tanzania, communities need help exploring the IG potential in their areas. Some lessons can be learned from past IGAs that were established by other initiatives but which have subsequently failed.

Awareness raising must be accompanied by training in how to start up IGAs, how to manage IGAs profitably, and how to identify and avoid potential problems (such as oversaturation of the market, or new opportunities to expand). Most IGAs will be conducted in groups so that start-up capital is more readily generated. Training in how to form such groups, how to ensure there is equity in inputs and outputs, and how to solve within-group conflicts is important.

**Table 23: Impact assessment of strategy to develop income generating activities (IGA)**

<b>Activity</b>	<b>Positive/desired impact</b>	<b>Potential negative impacts</b>	<b>Stakeholders affected</b>	<b>Mitigation action Needed</b>
<b>Activity 6. Improve access to microfinance services for community members.</b>				
<b>Activity 7. Generate incomes from the sale of bee products.</b>				
<b>Awareness raising on IGAs</b>	Communities are aware of the range of possibilities to locally generate income			Link to Aga Khan Foundation which is implementing entrepreneur skills in the area
<b>Participatory assessment of viable and sustainable IGAs in the area</b>	Communities involved in identifying the most viable IGAs			
<b>Training on basic entrepreneurship skills provided to interested parties</b>	Community members are empowered to investigate and pursue potential IGAs	Risk of elite capture		Training must be sensitive to illiterate interested parties, gender, and age disparities
<b>Support provided to establish village savings and</b>	VSLAs that can provide credit to IG groups are			

<b>loans associations (VSLA)</b>	available			
<b>Support provided to establish IG groups including beekeeping</b>	That high start-up IGAs (e.g. establishing a local milling centre) are viable			
<b>Training in VSLA management for members</b>	VSLAs operate effectively and transparently			
<b>VSLAs widely established and used for acquiring credit</b>	<ul style="list-style-type: none"> <li>- VSLAs become accessible source of credits for IGAs;</li> <li>- Income at household level significantly increased</li> </ul>	<ul style="list-style-type: none"> <li>Risk of over-saturation of VICOBAs;</li> <li>- Potential for within-household conflicts (men using new income to drink &amp; self-entertainment, increase violence)</li> </ul>	Community members participating in IGAs; trickle-down effect of new sources of income to non-participants.	Include in training, skills to evaluate business potential of IGAs and VICOBAs and to avoid high risk – low returns ventures
<b>Short &amp; long-term monitoring of outcomes and impacts of Strategy</b>	Determine the effect of IGAs and VSLAs on improving household income and alleviating poverty			

***Theory of Change for Strategy to establish income generating activities***

IF communities receive training in how to establish and run IGAs including bee keeping and tree crops, and

IF individuals/groups receive training in entrepreneurship, and

IF village savings and loans associations (VSLA) are established, and

IF enough individuals take loans to start off their IGAs, and

IF enough community members are engaged in diverse IGAs, and

IF individuals/groups receive additional support in the form of advise and training, and

IF IGAs are successful (i.e. generate adequate income),

THEN poverty in Lindi District at household level will be reduced; farmers can adopt more profitable agricultural practices; women and men will be less vulnerable to climate change; and there will be less pressure on the forests.

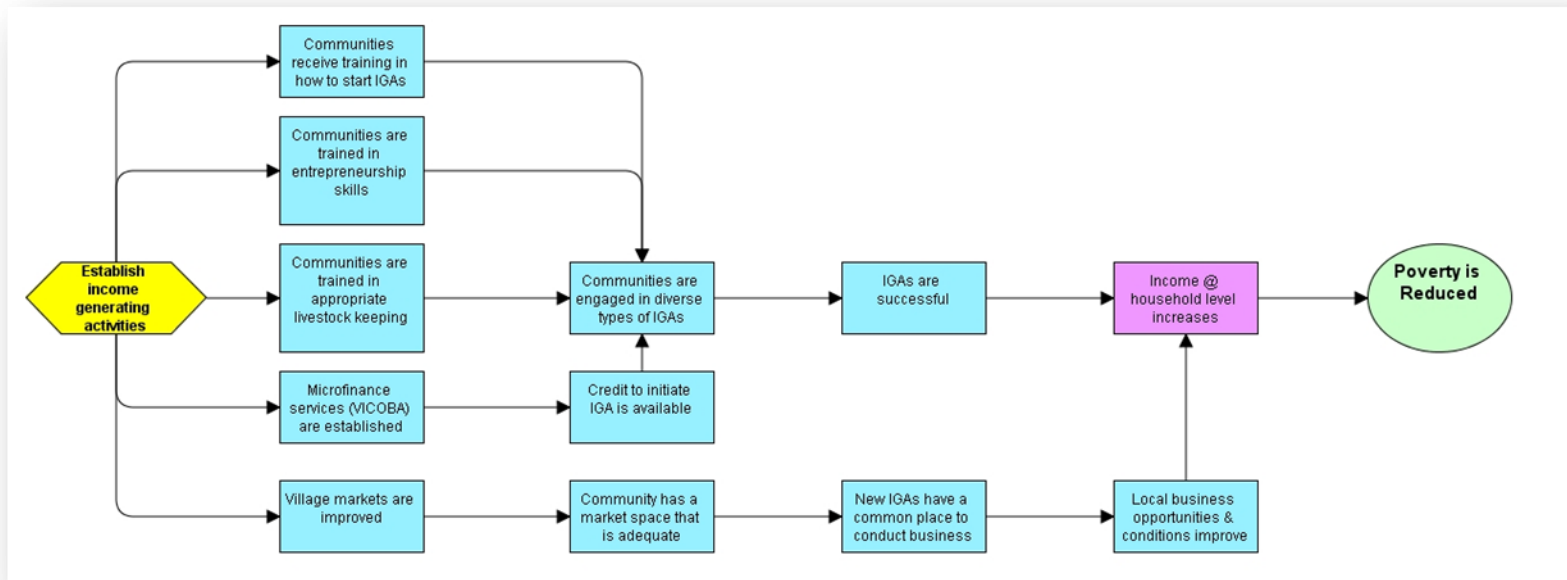


Figure 9: Results chain for Strategy to establish income generating activities

## Strategy 8: Improve social services and infrastructure

The pre-conditions for this strategy are improved household incomes, improved village-level governance, and existence of a functioning community carbon trading enterprise through which communities can sell their VER and generate sufficient income to undertake their own development projects. Implementing Strategy 8 is thus a Phase 2 objective.

Participants expressed interest in ensuring that the following services and associated infrastructure were developed with REDD-generated funds:

- a) Village government offices that are adequate for holding monthly Council meetings, and which provide a safe storage place for village records;
- b) Villages had improved storage facilities for their crops;
- c) Roads connecting villages to Lindi Town are upgraded to gravel status;
- d) Improved access to dispensaries and/or health clinics, preferably in the form of one clinic or dispensary per village;
- e) Schools have a complete set of classrooms and sufficient teachers;
- f) A secondary school exists close by; and that
- g) Water services are improved

Achieving all of these objectives requires community members to continue participating in decision making in local governments, for village governments to work closely with District government for technical and (in some cases) financial support, and for communities to provide voluntary labour for construction activities.

**Table 24: Impacts of strategy to improve social services and infrastructure.**

<i>Activity</i>	<i>Positive/desired impact</i>	<i>Potential negative impact</i>	<i>Stakeholders affected</i>	<i>Action needed</i>
<b>Activity 9. Improve social services and infrastructure.</b>				
<b>Construct adequate offices for village governments</b>	Decrease dependency on good will of political party offices	None obvious	VC	
<b>Improve storage facilities</b>	Increase post-harvest crop storage; increase income from agriculture;	None obvious	Farmers	
<b>Upgrade roads to gravel</b>	Improve connectivity between villages and Lindi Town; improve markets for local products; decrease costs of transportation;	Social change with increased accessibility to markets; migration	Farmers, communities as a whole; business people	Monitor types of changes taking place, identify undesirable changes and discuss appropriate mitigation measures
<b>Building dispensaries</b>	Increase local availability of	None obvious	Communities; women and	

<b>and/or health clinics</b>	accessible health services; improve health; decrease proportion of income spent traveling to distant health centres; introduce pharmacies as viable IGA		children (through improved mother & child care); health providers	
<b>Improve primary education services (better teacher:student ratios, teaching material)</b>	Improve access to education locally; increase local literacy and education levels;	None obvious	Primary and secondary students; teachers	
<b>Construct more secondary schools</b>	Increase local availability of secondary schools; increase number of students who attend secondary school;	None obvious	Primary and secondary students; teachers	
<b>Improve water services</b>	Increase water access; increase consistency of water supply; improve water quality	None obvious	Women & girls in charge of collecting water	

***Theory of change for Strategy to improve social services and infrastructure***

IF communities achieve REDD+ activities (i.e., reduce deforestation and forest degradation activities),  
and

IF a Community Carbon Trading Cooperative exists and is functional, and

IF communities trade their VER units through the CCT Cooperative, and

IF payments for VER units are sufficient, and

IF local governance is strengthened, and

IF people participate in prioritizing the social services and infrastructure to be improved, and

IF communities volunteer their labour, and

IF the District Development Office assists with grants and/or extensions services,

**THEN**

Communities will be able to use a large proportion of the payments from sale of VER units to improve local social services and infrastructure.

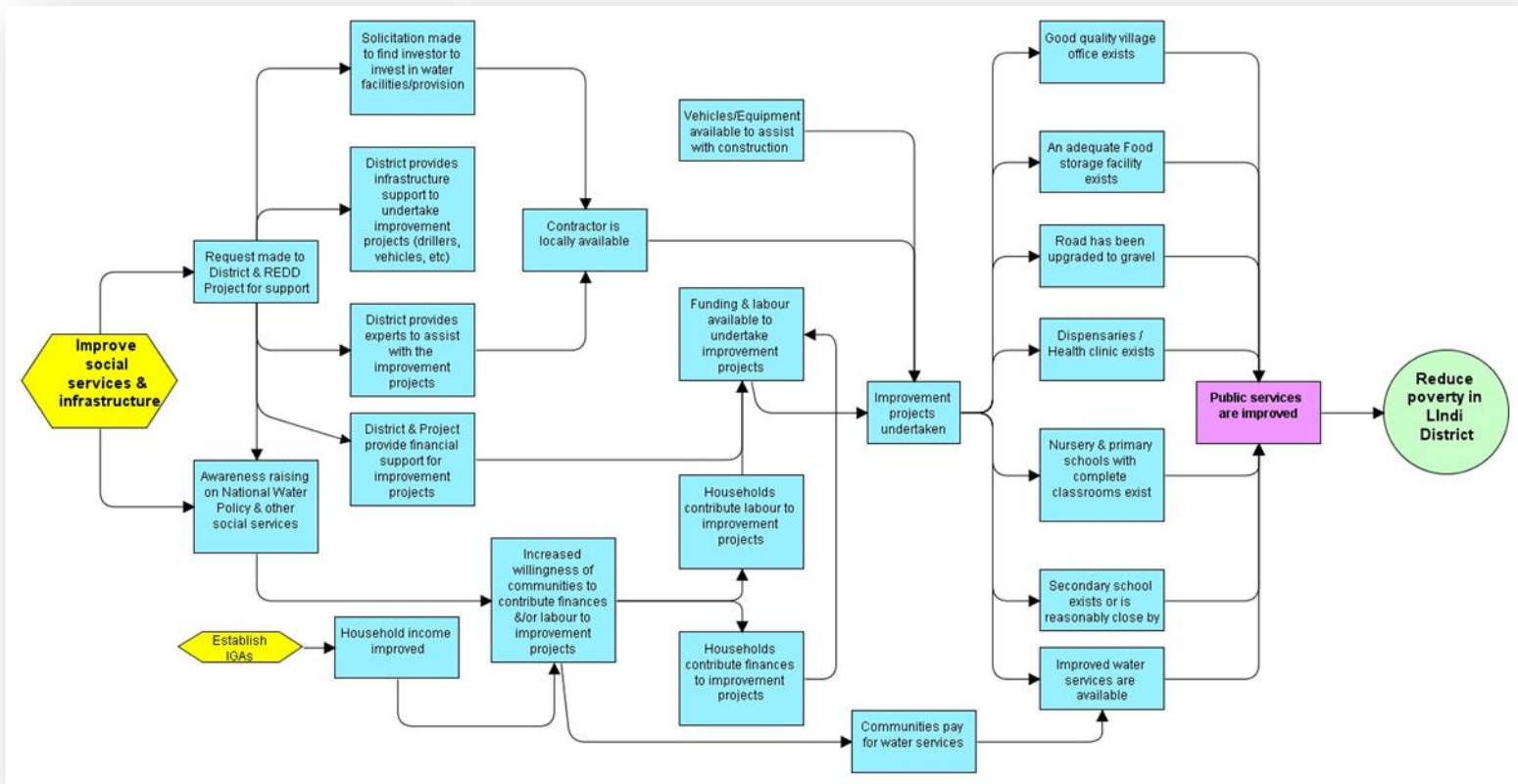


Figure 10: Results chain for Strategy to improve social services and infrastructure

## Annex 5 Project cashflow and projected revenues and costs

Cash Flow Assumptions			
Description	Value	Explanation	For more information:
Sale Price of credits (\$/tCO <sub>2</sub> e)	\$5.35	Estimated price per credit at time of sale	Average voluntary carbon market prices in 2012 were \$5.90 per tCO <sub>2</sub> eq and average for REDD projects in 2012 was \$7.80 per tCO <sub>2</sub> eq.
Brokerage fee (%)	7.50%	Commercialization fee	Left unchanged from original social carbon accountability tool. Not sure if it will apply.
Registration (\$/tCO <sub>2</sub> e)	\$0.05	Fee charged by registry	APX VCS Registry Fee (taken from original Social Carbon REDD feasibility tool since the fees are not listed on the APX website)
Issuance fee (\$/tCO <sub>2</sub> e)	\$0.10	From VCS Program Fee Schedule v3.4	VCS charges fee per VCU issued. CCBA does not charge any fees.
Methodology use fee (\$/tCO <sub>2</sub> e)	\$0.02	From VCS Program Fee Schedule v3.4	Fee charged by VCS on behalf of methodology developers. Not sure if will apply to VM0015.
Sales Tax (if applicable) (%)	0.00%		N/A assuming VCUs sold as export product
Price paid to communities	\$3.25		Will increase if project obtains more than \$5.30
District Cess	5.00%		Only charged from what is paid to communities
Tax on net income (if applicable) (%)	0.00%		N/A as MJUMITA is a not-for-profit organization



<b>Expected Revenues</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
	year 0	year 1	year 2	year 3	year 4	year 5	year 6	year 7	year 8	year 9	year 10
<b><u>Gross income</u></b>											
Credits generated	27,184	28,560	32,263	36,426	38,610	41,016	42,551	43,151	41,805	40,956	?
<b>Gross Revenue from sale of credits</b>		145,433		325,398	194,877	206,565	219,434	227,645	230,860	223,656	219,117
<b>Sales Tax</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Revenue after Sales Tax</b>	-	145,433	-	325,398	194,877	206,565	219,434	227,645	230,860	223,656	219,117
<b>Carbon Project Cycle Costs</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
	year 0	year 1	year 2	year 3	year 4	year 5	year 6	year 7	year 8	year 9	year 10
<b><u>Investment REDD - Project Cycle</u></b>											
Validation (Audit PDD)	-	-	-	-	-	-	-	-	-	(10,000)	-
Carbon stock monitoring and Modeling Adjustment	-	-	-	-	-	-	-	-	-	(50,000)	-
Verification (Audit monitoring reports for CCB and VCS)	-	-	-	(14,000)	(14,000)	(14,000)	(14,000)	(14,000)	(14,000)	(14,000)	(14,000)
Registration fees	-	(1,359)	-	(3,041)	(1,821)	(1,931)	(2,051)	(2,128)	(2,158)	(2,090)	(2,048)
Issuance fees	-	(2,718)	-	(6,082)	(3,643)	(3,861)	(4,102)	(4,255)	(4,315)	(4,180)	(4,096)
Methodology use fees	-	(544)	-	(1,216)	(729)	(772)	(820)	(851)	(863)	(836)	(819)
Brokerage fees	-	(10,907)	-	(24,405)	(14,616)	(15,492)	(16,458)	(17,073)	(17,314)	(16,774)	(16,434)
<b>Total Project Cycle Costs</b>	-	(15,529)	-	(48,745)	(34,808)	(36,056)	(37,430)	(38,307)	(38,650)	(97,881)	(37,396)

Project Implementation (conservation activities) Cost	2013 year 0	2014 year 1	2015 year 2	2016 year 3	2017 year 4	2018 year 5	2019 year 6	2020 year 7	2021 year 8	2022 year 9	2023 year 10
<b><u>Implementation costs</u></b> <b><u>(annual):</u></b> <b><u>MJUMITA Staff and</u></b> <b><u>Overhead</u></b>			(21,154)	(24,050)	(24,050)	(24,050)	(24,050)	(24,050)	(24,050)	(24,050)	(24,050)
<b><u>Monitoring</u></b>											
Environmental monitoring (botanical and zoological surveys (once every 5 years), annual remote sensing for VCS verification, village performance monitoring, and targeted VNRC patrols)	-	-	(5,250)	(5,250)	(5,250)	(8,750)	(5,250)	(5,250)	(5,250)	(5,250)	(8,750)
Social monitoring (for CCB standard)	-	-	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
<b><u>Carbon Enterprise Activities</u></b>											
Annual Project Executive Committee Meeting in Lindi	-	-	-	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
Annual Communications Costs				(1,150)	(1,150)	(1,150)	(1,150)	(1,150)	(1,150)	(1,150)	(1,150)
Annual monitoring visit / payment facilitation for all villages	-	-	-	(3,900)	(3,900)	(3,900)	(3,900)	(3,900)	(3,900)	(3,900)	(3,900)
Conflict Resolution	-	-	(3,000)	(3,000)	(3,000)	(3,000)	(3,000)	(3,000)	(3,000)	(3,000)	(3,000)
Marketing Costs (split with Kilosa)	-	-	-	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
Performance payments to communities	-	(83,930)	(88,178)	(99,611)	(112,464)	(119,209)	(126,636)	(131,375)	(133,230)	(129,073)	(126,453)
District Cess	-	(4,417)	(4,641)	(5,243)	(5,919)	(6,274)	(6,665)	(6,914)	(7,012)	(6,793)	(6,655)
<b>Total Annual Implementation Costs</b>	-	(88,347)	(124,722)	(149,703)	(163,234)	(173,833)	(178,151)	(183,139)	(185,092)	(180,716)	(181,459)
<b>Total Investment - Project Implementation</b>	-	(88,347)	(124,722)	(149,703)	(163,234)	(173,833)	(178,151)	(183,139)	(185,092)	(180,716)	(181,459)

<b><i>Financial Analysis</i></b>											
Revenue after Sales Tax	-	145,433	-	325,398	194,877	206,565	219,434	227,645	230,860	223,656	219,117
Total Project Cycle Costs	-	(15,529)	-	(48,745)	(34,808)	(36,056)	(37,430)	(38,307)	(38,650)	(97,881)	(37,396)
Total implementation costs	-	(88,347)	(124,722)	(149,703)	(163,234)	(173,833)	(178,151)	(183,139)	(185,092)	(180,716)	(181,459)
Operational Result (EBITDA) including implementation costs	-	41,557	(83,165)	43,785	40,621	37,296	41,149	47,348	54,466	(475)	(213)
Net income before tax	-	41,557	(124,722)	126,950	(3,164)	(3,325)	3,853	6,199	7,118	(54,941)	262
Income tax	-	-	-	-	-	-	-	-	-	-	-
Net income after tax	-	41,557	(124,722)	126,950	(3,164)	(3,325)	3,853	6,199	7,118	(54,941)	262
Cash Position	89,477	131,034	6,312	133,262	130,098	126,773	130,626	136,825	143,943	89,002	89,264
Estimated Annual Area of Avoided Deforestation		238	249	278	309	327	344	354	354	340	331
Community Earnings from REDD		83,930	88,178	99,611	112,464	119,209	126,636	131,375	133,230	129,073	126,453
NPV 10% discount rate		<b>679,391</b>									
Community Earnings from AG		72,052	75,522	84,098	93,705	99,213	104,293	107,135	107,135	102,910	100,194
NPV 10% discount rate		<b>562,806</b>									