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UNITED REPUBLIC OF TANZANIA

FINAL SUBMISSION

**Forest Carbon Partnership Facility (FCPF)
Tanzania Readiness Preparation Proposal (R-PP)
12th October 2010**

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*Readiness Preparation Proposal (R-PP)***

**REPUBLIC OF TANZANIA
Date submitted: 12th October 2010**

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ACROMYMS

AU	Ardhi University
ASDS	Agriculture Sector Development Strategy
CBFM	Community Based Forest Management
CBOS	Community Based Organizations
CBS	Central Bureau of Statistics
CCBA	The Climate, Community and Biodiversity Alliance
CF	Community Forest
CoP	Conference of Parties
CPP	Consultation and Participation Plan
D&D	Decentralization by Devolution
DFBD	Director of Forest and Beekeeping Division
DFOs	District Forest Offices
DNROs	District Natural Resources Officers
DoE	Director of Environment
EIA	Environnemental Impact Assessment
EMA	Environnemental Management Act
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization of United Nations
FBD	Forestry and Beekeeping Division
FCPF	Forest Carbon Partnership Facility
FRA	Forest Resource Assessment
FRs	Forest Reserves
GDP	Gross Domestic Product
GHGs	Green House Gases
GIS	Geographical Information System
GLCN	Global Land Cover Network
GO	Governmental Organization
GPS	Geographical Positioning System
HR	Human Resource
HRI	High Resolution Imagery
ICDPs	Integrated Conservation and Development Projects
IRA	Institute of Resource Assessment, Universality of Dar es Salaam
IPCC	Inter-governmental Panel on Climate Change
Sida	Swedish International Development Agency
JFM	Joint Forest Management
JGI	Jane Goodall Institute
K:TGAL	Kyoto: Think Global, Act Local
LGRP	Local Government Reform Programme
LGA	Local Government Authority
LRMP	Land Resource Mapping Project
M&E	Monitoring and Evaluation
MAFS	Ministry of Agriculture and Food Security
MALE	Ministry of Agriculture, Livestock and Environment Zanzibar
MDGs	Millennium Development Goals
MEM	Ministry of Energy and Minerals
MFEA	Ministry of Finance and Economic Affaires
MFIC	Ministry of Foreign Affairs and International Cooperation
MFLD	Ministry of Fisheries and Livestock Development
MITC	Ministry of Industry, Trade and Cooperatives
MJCA	Ministry of Justice and Constitutional Affairs
MLHC	Ministry of Lands Housing and Settlements
MNRT	Ministry of Natural Resources and Tourism
MRV	Monitoring Reporting and Verification
NAFIMS	National Forest Information Management System
NAFORMA	National Forest Resource Monitoring and Assessment

NAPA	National Adaptation Program for Action
NCAS-T	National Carbon Accounting System - Tanzania
NCCSC	National Climate Change Steering Committee
NCCTC	The National Climate Change Technical Committee
NCMC	National Carbon Monitoring Centre
NEMC	National Environmental Management Council
NGOs	Non-governmental Organizations
NORAD	Norwegian Agency for Development Cooperation
NRM	Natural Resource Management
NRTF	National REDD Task Force
NSGRP	National Strategy for Growth and Reduction of Poverty
NTFPs	Non-Timber Forest Products
NWFPs	Non-Wood Forest Products
PA	Protected Areas
PES	Payment for Environmental Services
PFM	Participatory Forest Management
PMO	Prime Minister's Office
PMO-RALG	Prime Minister's Office, Regional Administration and Local Government
PSPs	Permanent Sample Plots
PSRP	Public Sector Reform Programme
RNE	Royal Norwegian Embassy
RNRA	Regional Natural Resources Advisers
REDD	Reducing Emissions from Deforestation and Forest Degradation
R-PP	Readiness Preparation Proposal
RS	Remote Sensing
RTF	REDD Task Force
SESA	Strategic Environmental and Social Assessment
SFM	Sustainable Forest Management
SUA	Sokoine University of Agriculture
SULEDO	Sunya, Lengatei and Dongo
TMA	Tanzania Meteorological Agency
ToF	Tree Outside Forests
ToR	Terms of Reference
ToT	Training of Trainers
UDSM	University of Dar es Salaam
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD
USD	United States Dollar
VDC	Village Development Committee
VEC	Village Environmental Committees
VLFRs	Village Land Forest Reserves
VNRS	Village Natural Resources Committees
VPO	Vice President's Office
WMA	Wildlife Management Areas
WB	The World Bank
WWF	World Wildlife Fund
TANAPA	Tanzania National Parks
TEAM	Tropical Ecology Assessment and Monitoring

General Information

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EXECUTIVE SUMMARY

The Tanzania Situation

Tanzania is endowed with diverse and rich forest resources ranging from woodlands, coastal forests, mangrove swamps, tropical rain forest and grassland savannas, all of which are rich in biodiversity and providing environmental services to both human and wildlife. The forest resources contribute by a large proportion towards subsistence of almost the entire rural population in the rural areas and in poverty alleviation for both rural and part of the population in the urban areas.

The country has about 35.3 million hectares of forests and woodlands. Out of this total area, about 18.3 million hectares are reserved forests of which 1.6 million hectares are set aside for water catchment, biodiversity and soil conservation and 2 million hectares are wildlife protected areas. Over 80,000 hectares of the reserved forests is under 16-plantation forestry and 4.1 million hectares are under Participatory Forest Management (PFM). Over 17 million hectares of forests are general land with no properly defined management regime, severe deforestation and forest degradation is occurring under this category.

The challenge to manage forest resources as a national heritage in an integrated and sustainable basis to optimize their environmental, economic, social and cultural values have been in a constant threat by human activities such as encroachment into reserved forests, shifting cultivation, wildfires, illegal logging, mining, wood-fuel extraction and of a more recently is the introduction of large-scale farming of bio-fuel production. These human activities contribute significantly in deforestation and forest degradation activities which lead to greenhouse-gases (GHG) emissions.

Tanzania has benefited from many years of implementing PFM programmes which have helped to integrate communities into forest management and thus address some of the policy and critical forest governance issues concerning with deforestation and forest degradation. This experience provides a value basis for rapid REDD readiness

The designing and implementation of REDD scheme rely on updated forest resources information in which Government of Finland, Food and Agriculture Organization (FAO) and Government of Tanzania have embarked in a 3-years project, a National Forest Resources Monitoring and Assessment (NAFORMA) to produce necessary data to contribute to the designing of a National REDD scheme Monitoring Reporting and Verifications (MRV). This Readiness–Preparation Proposal under World Bank Forest Carbon Partnership Facility (FCPF), is a roadmap towards achieving REDD Readiness. It identifies activities to be undertaken, taking stock of existing activities, identify gaps and resources needed and provides draft Terms of Reference (ToR) for the identified further activities.

Objective and scope of the R-PP

The objective of the R-PP is to provide a framework for taking stock of the national situation from the point of view of deforestation and forest degradation, and addressing this situation by analytical work to be undertaken in a range of areas and funded from a variety of sources. The scope of work to be undertaken and funded fall in core components of 'REDD readiness' plan including among others, the following:

- i. An assessment of the situation with respect to deforestation, forest degradation, and relevant governance issues;
- ii. REDD strategy options (a set of actions to reduce deforestation and/or forest degradation, that addresses the drivers of deforestation and degradation identified in the assessment above) and the REDD institutional and legal implementation framework necessary to realize these options;
- iii. Options for reference scenario (also referred to as a scenario of forest cover change and emissions) for greenhouse gas (GHG) emissions from deforestation and/or forest degradation;
- iv. A possible monitoring system to Measure, Report and Verify (MRV) the effect of the REDD

- strategy on GHG emissions and other benefits, and to monitor the drivers of deforestation and forest degradation, as well as other variables relevant to the implementation of REDD; and
- v. Establishment of a suitable financial and benefit sharing mechanism.

Readiness management arrangements.

Component 1 presents the readiness arrangements undertaken by the government of Tanzania and preparatory consultative processes undertaken. For effective implementation of readiness process, key institutional and coordination structures have been put in place. These include the National Climate Change Steering Committee (NCCSC) and a task force to coordinate REDD readiness activities. The task force is also supported by a secretariat which facilitates all REDD operations. The NCCSC and National Climate Change Technical Committee (NCCTC) oversee and guide the implementation of climate change activities in the country.

The cross-sectoral nature of REDD provides challenges of ineffective coordination. Poor decision making and poor governance could be serious bottlenecks to implementation. These inefficiencies can be minimized through effective capacity building and awareness. The readiness plan intends to train and build capacities of all institutional structures involved in the process and to support the functioning of these structures. The following activities are envisaged:

Activity 1a: Strengthen capacities of national steering and technical committees

Activity 1b: Strengthen capacities of REDD task force and Secretariat

Activity 1c: Training and awareness raising of [sector related ministry officials especially the Ministry of Natural Resources and Tourism \(MNRT\), Agriculture, Energy, Lands , LGA and other key stakeholders.](#) [The MNRT will be specially facilitated to coordinate other sectors for smooth implementation of REDD activities.](#)

A number of activities have been implemented or are in the process of implementation including a national stakeholder awareness workshops in all ecological zones, commissioning of 5 in-depth studies and 9 REDD+ demonstration projects to test various REDD processes as well as generate data and lessons for the development of a National REDD strategy.

On the policy front, the forest policy is being reviewed to include climate change issues. The R-PP will strengthen institutional structures at national and district levels through capacity building and resources to enable effective implementation of the REDD strategy

REDD Strategy Options

The component 2 defines the framework and strategic options for REDD implementation. Tanzania has developed a National REDD framework which will guide the development and implantation of the REDD strategy. Key issues to be addressed include ownership and [land tenure](#) security arrangements, control and participation in the carbon trade and the role of national and local governments, monitoring and evaluation of processes at national and sub-national levels, involvement of stakeholders at all levels, effective functioning of all institutional arrangements envisaged in the implementation framework at national and sub-national levels, benefit sharing mechanisms, anti-corruption laws and measures, national best practices for fiscal transparency, roles and responsibilities within a decentralized forest management system. Pilot projects and in-depth studies as well as the UN-REDD programme are designed to provide inputs into all the issues raised.

Particular attention will be paid to the Strategic Environmental and Social Impact Assessment (SESA). SESA is a tool that seeks to integrate social and environmental considerations into the policy-making process, leading to sustainable policies and programs. The development of SESA will be informed by an analysis of the current environment policies, World Bank Safeguards and any foreseen social and environmental impacts as a result of REDD implementation. National capacities and tools for conducting SESA are very limited at the moment. This capacity will have to be built at national and local levels. The National Environmental

Management Council which is responsible for enforcement of environmental policies and regulations will coordinate SESA activities at national and sub-national levels.

Reference Scenarios

The overall objective of Component 3 is to develop reference scenarios that forecast emissions and removals of CO₂ into the future in the absence of REDD+ incentives. The reference scenarios, while based on historical information, will also reflect national circumstances and relevant policies as well as meeting international standards and requirements. The reference scenarios will be developed in a way that lends consistency with the monitoring system.

The baseline scenario will be determined at national and [sub-national levels using nested approaches](#). [Historical information and data on land use](#) changes [will be determined](#) from satellite imageries and typical carbon stock data (biophysical measurements) for different types of forests to calculate the changes in carbon levels. The on-going MRV processes through the NAFORMA, UN-REDD, the NCAS-T and pilot level measurements by local communities will contribute valuable data to inform the baseline scenario development. Experiences from the Valuing the Arc project in establishing carbon stocks will also be used to establish baselines at sub-national levels. .

Monitoring, Reporting and Verification

Components 4-6 present the Monitoring, Reporting and Verification system for REDD which will provide required set of systems to understand carbon and biomass related data during the REDD implementation period such as carbon stock changes, forest cover changes [and provide a basis](#) for payment distribution, evidence of emission reduction and [priority](#) areas of REDD+ interventions and actions.

Tanzania is in the process of establishing a participatory and functional MRV system to monitor deforestation and degradation and respond to the needs for data collection, synthesis and analysis of data and information and provision of information on all aspects of REDD. The MRV system will also monitor rural livelihoods, conservation of biodiversity, key governance factors related to REDD implementation and assess the impacts of the REDD strategy in the forest sector. The proposed National Carbon Monitoring Centre (NCCMC) will oversee the operations of the MRV system.

Tentative budgets for implementation of the R-PP and sources of funds

The costs of the readiness plan is estimated at USD 10.101 million. Funds will be sourced from NORAD, FINLAND, UN-REDD, and the Clinton Climate Initiative (CCI).

Introduction and Objectives

Tanzania is endowed with diverse and rich forest resources ranging from woodlands, coastal forests, mangrove swamps, tropical rain forest and grassland savannas, all of which rich in biodiversity and providing environmental services to both human and wildlife. The forest resources contribute by a large proportion towards subsistence of almost the entire rural population in the rural areas and in poverty alleviation for both rural and part of the population in the urban areas. Tanzania's protected area (PA) network covers 28% of the total land area, Nature Reserves, National Parks, Forest Reserves including mangroves, Game Reserves, Open Areas, and Marine Parks and Reserves. Other sites in the network are declared Biosphere Reserves and World Heritage Sites.

The country has about 35.3 million hectares (FAO, 2006) of forests and woodlands. Out of this total area, about 18.3 million hectares are reserved forests of which 1.6 million hectares are set aside for water catchment, biodiversity and soil conservation and 2 million hectares are wildlife protected areas. Over 80,000 hectares of the reserved forests is under 16-plantation forestry and 4.1 million hectares are under Participatory Forest Management (PFM). Over 17 million hectares of forests are general land with no properly defined management regime, severe deforestation and forest degradation is occurring under this category.

The challenge to manage forest resources as a national heritage in an integrated and sustainable basis to optimize their environmental, economic, social and cultural values have been in a constant threat by human activities such as encroachment into reserved forests, shifting cultivation, wildfires, illegal logging, mining, wood-fuel extraction and of a more recently is the introduction of large-scale agriculture of bio-fuel production. These human activities contribute significantly to deforestation and forest degradation activities which lead to greenhouse-gases (GHG) emissions.

The Tanzania Government has embarked on a national process of preparation for an international climate change regime that would reward countries for Reducing Emissions from Deforestation and Forest Degradation (REDD). The support is obtained from Norway-Tanzania Forest Climate Change Partnership Agreement to prepare and implement National REDD Strategy with secretariat services and facilitation from The University of Dar-Es-Salaam, Institute of Resources Assessment (IRA). Further support in capacity building to undertake National REDD Production Chain is provided by the UN-REDD program.

The designing and implementation of REDD scheme rely on updated forest resources information in which Government of Finland, Food and Agriculture Organization (FAO) and Government of Tanzania have embarked in a 3-years project, a National Forest Resources Monitoring and Assessment (NAFORMA) project to produce necessary data to contribute to the designing of a National REDD Monitoring Reporting and Verifications (MRV) scheme. This Readiness-Preparation Proposal under World Bank Forest Carbon Partnership Facility (FCPF), is a roadmap towards achieving REDD Readiness. It identifies activities to be undertaken, taking stock of existing activities, identify gaps and resources needed and provides draft Terms of Reference (ToR) for the identified further activities.

Tanzania initiated the REDD Readiness process since 2008. A scoping study was conducted to assess the current situation of readiness, identify gaps and define a roadmap for a REDD strategy development. A Forest Carbon Partnership Facility Project Idea Note (R-PIN) was also prepared and submitted to the World Bank. This led to the development of National REDD Framework which was completed in August 2009. The framework defines the policy, legal, institutional, financial and collaborative arrangements required to successfully implement a REDD strategy in Tanzania. Based on the framework, a number of demonstration projects and in-depth analytical studies have been initiated to gather lessons and facts that will feed into National REDD Strategy design and implementation.

Objective and scope of the R-PP

The objective of the R-PP is to provide a framework for taking stock of the national situation from the point of view of deforestation and forest degradation, and addressing this situation by analytical work to be undertaken in a range of areas and funded from a variety of sources. The scope of work to be undertaken and funded fall in core components of 'REDD readiness' plan including among others, namely:

- An assessment of the situation with respect to deforestation, forest degradation, and relevant governance issues;
- REDD strategy options (a set of actions to reduce deforestation and/or forest degradation, that addresses the drivers of deforestation and degradation identified in the assessment above) and the REDD institutional and legal implementation framework necessary to realize these options;
- Option for a reference scenario (also referred to as a scenario of forest cover change and emissions) for greenhouse gas (GHG) emissions from deforestation and/or forest degradation;
- A possible monitoring system to measure, report and verify (MRV) the effect of the REDD strategy on GHG emissions and other benefits, and to monitor the drivers of deforestation and forest degradation, as well as other variables relevant to the implementation of REDD, and
- Establishment of a suitable financial and benefit sharing mechanism.

Component 1: Organize and Consult

1a. National Readiness Management Arrangements

Institutional Structure and Coordination

National Level

In accordance with the Environmental Management Act, 2004 Section 15 and 75, all environmental management issues *inter alia* climate change are coordinated by the Vice President's Office (VPO). In line with this Act, the functions of the Division of Environment approved by the President on 5th February 2007, mandates the Division to coordinate all climate change issues including adaptation and mitigation. Reducing Emissions from Deforestation and forest Degradation (REDD) is one of the mitigation options to address climate change.

The government has subsequently put in place a National Climate Change Steering Committee (NCCSC) and National Climate Change Technical Committee (NCCTC) to oversee and guide the implementation of climate change activities in the country. The NCCSC is comprised of **Permanent Secretaries(PS)** from 13 Ministries (Prime Minister's Office (PMO), Ministry of Energy and Minerals (MEM), Ministry of Finance and Economic Affairs (MFEA), Ministry of Industry, Trade and Cooperatives (MITC), Ministry of Natural Resources and Tourism (MNRT), Ministry of Justice and Constitutional Affairs (MJC), Ministry of Lands Housing and Settlements (MLHC), Ministry of Agriculture and Food Security (MAFS), Ministry of Fisheries and Livestock Development (MFLD), Ministry of Foreign Affairs and International Cooperation (MFIC), MFSP, Ministry of Agriculture, Livestock and Environment Zanzibar (MALE) and society organizations and the private sector. **The NCCSC reports to the Vice President's Office.** In order to avoid overlaps and duplication of efforts, the same institutional arrangement will also serve for REDD activities (Figure 1.1). The NCCSC which handles all climate change related issues in Tanzania will serve as a top decision making body for the national REDD scheme, and technical issues will be handled by the **National Climate Change Technical Committee (NCCTC).**

The National Climate Change Technical Committee (NCCTC)

The NCCTC is made up of Directors of the various Ministries in the National Steering Committee. Its function is to oversee all technical issues related to the implementation of climate change including REDD+. The technical committee reports to the steering committee.

The existing composition of members of the above committees may be broadened **to include NGOs, CSOs and private sector** as the need arises. However, Forestry and Beekeeping Division will have important role in implementing, supervising and operationalizing the REDD initiative. This is based on the already existing initiative in the forestry sector such as Participatory Forest Management (PFM) that includes Joint Forest Management (JFM) and Community Based Forest Management (CBFM). Likewise, **local Governments, NGOs and private entities** will ensure smooth implementation of REDD related activities in their areas of jurisdiction.

National Carbon Monitoring Centre (NCCMC)

The centre when operational will provide technical services on measuring, reporting and verification of REDD activities across the country. It will be a depository of all data and information concerning REDD including the NCAS. The center will report to the NCCTC. The centre will be manned by competent national professionals. Modalities for establishment of the centre are currently on-going.

The REDD fund.

The REDD fund will be established to consolidate and distribute funds to different stakeholders based on efforts in implementing REDD strategy. It will operate at the national level under the NCCTC. The modalities of establishing the fund are being finalized through an in depth study (See Annex 2b.4). Issues of transparency and accountability will be covered by this study. Also, the performance of past forest revenue management systems, benefit sharing and incentive schemes will be assessed to provide lessons for REDD.

The REDD Task Force.

A REDD Task Force (RTF) has been appointed by the Government to oversee implementation of technical and operational issues in relation to REDD readiness. **The REDD Task Force is an interim arrangement and will be replaced by permanent structures such as the National Climate Change Technical Committee.** The Task Force consists of 8 technical officers drawn from the DoE and FBD, Zanzibar and Local Government with the provision to co-opt members other organizations as needed. It is chaired by a member from the DoE and reports to the NCCTC. The RTF is charged with identifying critical challenges and opportunities as well as addressing all issues at national and sub-national levels leading to the development of a suitable REDD strategy for the country. **Specifically, the RTF is responsible for the following:**

- Develop the National REDD strategy based on the National REDD Framework for preparation of a National REDD strategy;
- Develop reference level scenarios and MRV systems for accounting deforestation and forest degradation separately, both at local and national levels;
- Adopt a system in which not only the carbon saved by reduced deforestation and degradation, but also the additional carbon sequestered by sustainable management of existing forest, will be subject to crediting; and
- Propose and facilitate the transparent system of institutional arrangement for implementing REDD, which allows funds received at the national, state or project level to be (in part) dispersed fairly to those stakeholders, such as the communities practicing CBFM and **private farmers** who have been active in conserving forests and the carbon within.

Due to the temporal nature of the Task Force, its membership has been limited. However, for effective implementation of the REDD readiness as it involves cross sectoral issues, membership of the Task Force will need to be increased to include other sectors such as agriculture, Non Governmental Organizations, Forest Dependent People's Organisations and the private sector. The permanent structure following the Task Force will ensure that all key stakeholders are included.

The REDD Secretariat

Activities of the Task Force are facilitated by a secretariat based at the Institute of Resource Assessment (IRA). The Institute of Resource Assessment has been identified by MNRT-FBD/VPO-DoE/RNE to facilitate the consultation processes leading to the development of a national REDD strategy, and to facilitate the initial stages of quick start activities of REDD implementation to mid-2010. After that time, a more permanent structure for the follow up of REDD related activities should be in place. The facilitator assists the Task Force in preparing the country for the REDD process as well as promoting a diversified set of activities aimed at testing mechanisms to improve the incentives for sustainable land management including reduced deforestation and to assist in developing capacities at all levels for the national processes for making Tanzania ready for the international markets for environmental services, in particular the carbon markets. TF is also involved in the coordination of all REDD related interventions such as the FCPF National Carbon Accounting System (NCAS) through support by the Clinton Foundation Climate Change Initiative (CCI) and UN-REDD, development of a REDD fund mechanism, and the testing of MARV methods and technologies.

The task Force and its facilitation are required specifically to deliver the following outputs:

- Facilitator capacity of the National REDD Task Force for the REDD facilitation process established;
- Assist REDD demonstration projects to develop methodologies for Monitoring Reporting and Verification (MRV) developed and lessons learnt;
- Knowledge base on climate change and REDD in Tanzania developed and disseminated;
- Coordination mechanisms to facilitate development of a National REDD Strategy established and functional;
- Conceptual Framework for National REDD Strategy and Action Plan prepared and discussed;
- National and local level consultation and awareness creation on REDD processes established and implemented;
- Consolidate lessons learned from Study tours in-country and internationally to study experiences from programmes and initiatives to reduce deforestation planned and implemented;
- Consolidate lessons learned from Study tours in-country and internationally to study experiences from programmes and initiatives to reduce deforestation planned and implemented;
- Transparent and independent mechanism for a possible REDD Fund for Tanzania developed and operational;
- Draft National REDD Strategy and Draft Action Plan prepared and discussed at all levels;
- Special in-depth studies needed for the development and implementation of the REDD strategy planned and implemented; and
- National REDD Strategy and Action Plan prepared and submitted

Detailed terms of reference for the Task Force and the Secretariat are presented as **Annex 1a2**. Under each output, several activities have been initiated. These are briefly presented in the section below. Table 1a presents a list of existing activities and initiatives. Specific activities and follow ups will be discussed under specific sections.

Regional and District level Coordination.

The Local Government Reform process in Tanzania has established the local REDD coordination at the Regional and District level will adhere to the existing institutional structure. The Regional Administrative Secretariat serves as the link between the Ministries and the District Councils. REDD related activities will be coordinated at the Regional level through the Regional Secretariat. At the District and Municipal levels, Environmental Committees (as established by EMA, 2004) will serve as coordinators for REDD activities in their respective areas (Figure 1.1).

Increasing capacities of institutions to manage and coordinate REDD activities.

For effective and transparent implementation of REDD, a coherent and credible institutional framework with well informed and capable personnel to manage and coordinate REDD activities at national and sub-national levels is necessary. In view of the fact that REDD is a cross-sectoral initiative involving stakeholders at Ministerial and local government levels, civil society and private sector institutions. The cross-sectoral nature of REDD provides challenges of ineffective coordination, poor decision making and poor governance could be serious bottlenecks to implementation. These inefficiencies can be minimized through effective capacity building and awareness. The Ministry of Natural Resources and Tourism (MNRT) is directly responsible for technical oversight of REDD implementation. This will involve engagement of all relevant ministries and other stakeholders involved in REDD implementation.. The capacity and capability of MNRT will be strengthened through the UNREDD programme (See annex 2C). The readiness plan intends to train and build capacities of all institutional structures involved in the process and to support the functioning of these structures. The capacity building activities will be preceded by a training needs assessment.

The following key activities are envisaged:

- Training needs assessment at all levels.

- Strengthen capacities of national steering and technical committees
- Strengthen capacities of REDD task force and Secretariat
- Strengthening the position, mandate and capacity of the Ministry of Natural Resources and Tourism to coordinate all sectors for effective implementation of REDD.
- Increase the capacity of MNRT and related institutions to tackle natural resources challenges such as illegal timber trade and royalty collections.
- Training and awareness of LGA and other key stakeholders on the importance of REDD.

Conflict Resolution

Resolution of conflicts will be addressed at the lowest and local levels. Tanzania has established a rigorous Local Government system and structures down to the village and Kitongoji (sub-village) levels. These structures include the District Councils, Ward Secretariats, Village and *Kitongoji* councils. Each level is charged with and responsible for observance of peace, safety and the rule of law including conflict resolution. In addition to the governance structures, the country has a well established legal system at the national and local levels. Should conflicts fail to be resolved at the lower levels, cases will be scaled to higher levels in accordance with the existing Government legal systems.

Existing initiatives and activities for REDD Readiness.

REDD readiness activities were initiated in 2008. Table 1.2 presents a list of current initiatives and activities under the REDD readiness programme. As early as August 2008, a scoping study was conducted to identify existing knowledge and awareness on REDD as well as to identify issues to be considered in developing a REDD strategy. This initial study led to the development of a roadmap and framework towards the development of the REDD strategy. Key activities include the appointment of the Task Force and its facilitation secretariat at IRA, zonal and district level stakeholder consultations and awareness creation, inauguration of the UNREDD project, completion of R-PIN for FCPF, establishment of 7 pilot projects, commissioning of various in-depth studies and initiation of the national forest assessment and NAFORMA projects.

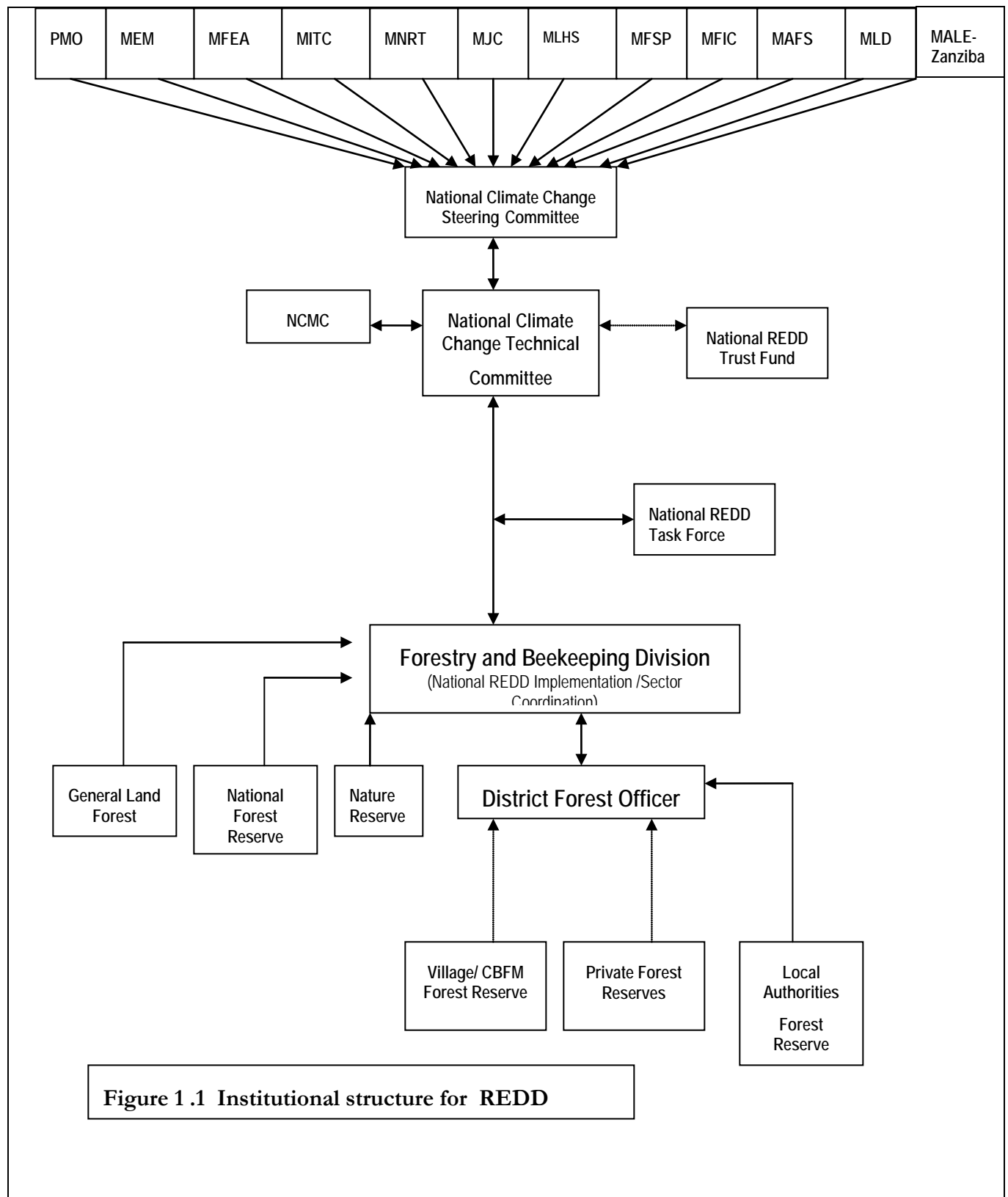
Detailed information and documentation of REDD Readiness

Detailed information on REDD Readiness activities can be found under the following websites National REDD website : www.reddtz.org, National Forest Programme Website: www.nfp.org

Table 1.a On-going REDD preparedness activities and initiatives.

Main Activity	Sub Activity	Progress so far
Establishment of NACCSC to coordinate climate change Issues		NACCSC established and functional
Establishment of National REDD Steering Committee		NSC established and functional
Appointment of REDD Task Force		Government led REDD Task Force appointed with officials from the DoE and FBD.
Establish REDD facilitation Secretariat		IRA appointed as the facilitator and secretariat for REDD readiness process to assist the Task Force.
Development UNREDD and FCPF	UNREDD	UNREDD project launched
	FCPF	R-PIN developed and accepted. Proceeding with the development of R-PP.
REDD demonstration projects to develop methodologies for Monitoring Reporting and Verification (MRV) developed and lessons learnt to contribute to UNFCCC CoP15	Initiation of kick start Activities	Show cases were developed from on-going projects indicating lessons learnt. The show cases were presented at the CoP 15
	Develop Website for information dissemination	Web site for REDD now established and all documents and information related posted for public consumption. www.reddtz.org
	Establish pilot demo plots	7 NGO pilot demonstration projects initiated in different parts of the country to assist in testing various mechanisms for addressing key drivers of deforestation, creating awareness and involvement of communities in the REDD process.
Knowledge base on climate change and REDD in Tanzania developed and disseminated.	Facilitate the production of a regular newsletter on the progress on development of the strategy and its implementation.	The first REDD newsletter has been published in English and Kiswahili to share information with stakeholders. Newsletters are available also online at www.reddtz.org Future efforts with this regard will include the use of other multimedia techniques such as radio, TV, newspapers and Drama.
Coordination mechanisms to facilitate development of a National REDD Strategy established and functional	Establishment of National REDD framework	A national framework for REDD established. The framework has proposed key stakeholders, coordination, financing and implementation mechanisms to be considered in the development of a functional and well coordinated REDD strategy (See Annex 1b-1)
National and local level	Zonal Consultation and	Zonal consultations and REDD awareness

consultation and awareness creation on REDD processes established and implemented	awareness creation.	meetings were conducted in all 7 agro ecological zones between August and October 2009. Participants were drawn from Regional and District forest and natural Resources officials, other relevant government institutions and NGOs and Representatives from other natural resources conservation programmes in the relevant regions were also invited. Several lessons and issues to be considered in the development of the REDD strategy were documented. (See details in section 1b).
Study tours in country and internationally to study experiences from programmes and initiatives to reduce deforestation planned and implemented	Study tours for Task Force	Study tours were conducted to Australia & Brazil for the REDD Task Force. Lessons learnt and experiences gained are providing valuable inputs into the readiness process, specifically on National GHG accounting (Australian-NCAS) and REDD Funds (Brazilian).
Special in-depth studies needed for the development and implementation of the REDD strategy planned and implemented	Identify and commission in-depth studies under various themes.	5 in-depth studies have been commissioned to provide additional knowledge and information for effective decision making.



1b. Stakeholder Consultation and Participation

Consultations in the development of the R-PP:

The government of the United Republic of Tanzania, with support from Government of Kingdom of Norway, is in the process of developing a National Strategy for REDD. The first important step towards developing this strategy is the development of the National Framework for REDD which would later provide inputs and guide the development of the National Strategy. Against this background, the government through the Ministry of Natural Resources and Tourism, specifically the Forestry and Beekeeping Division, organized a four-day National Workshop which was held at Kibaha Conference Center from 26th to 29th January, 2009. This workshop brought together a group of key stakeholders and experts from government departments, private sector, NGOs, academic and research institutions. The overall objective of the workshop was to develop a national framework for REDD. The framework will enable rational, equitable and functional national structures and effective coordination of forest management using financial resources and other support from development partners such as the Government of the Kingdom of Norway, UN-REDD, the World Bank, Clinton Foundation Climate Change Initiative among others. Clinton Foundation Climate Change Initiative among others. The workshop agreed on the following key issues that require immediate action to enable Tanzania to prepare a national strategy for implementing REDD, thus be able to share and influence international REDD negotiations at the forthcoming Fifteenth Conference of Parties to be held in Copenhagen, December 2009.

- (i) Establishment of carbon projects at national and local levels
- (ii) Establishment of criteria for selecting both sites for piloting REDD activities and implementing institutions in Tanzania
- (iii) Proposed REDD institutional arrangements and coordination mechanism including among others establishment of a National REDD Technical Committee, the National REDD Coordinating Office, National Carbon Monitoring Centre and REDD Trust Fund
- (iv) Establishment of fair and equitable mechanisms for sharing REDD related benefits

More details on the workshop are presented in subsequent sections.

During the last few months the Institute of Resource Assessment (IRA) has been facilitating a strategy development process coordinated by a task force comprising representatives from the Division of the Environment (Vice President's Office) and Forestry and Beekeeping Division (Ministry of Natural Resources and Tourism)¹. The National REDD Strategy is expected to guide the coordination and implementation mechanisms required for Tanzania to benefit from a post-2012 internationally-approved system for forest carbon trading, based on demonstrated emission reductions from deforestation and forest degradation.

In the last six months a series of awareness and consultative meetings have been conducted nationwide involving national, regional, and district and local level representatives. The meetings aimed at raising awareness about REDD and developing a consultation and outreach plan with the specific aim of enabling key players in the strategy development and implementation to have an adequate knowledge base of REDD.

This report presents a synthesis of the results of those extensive consultations. It includes discussions on key issues and lessons learned from experiences of other initiatives related to REDD, especially so for

¹ The Division of the Environment (Vice President's Office) is responsible for climate change activities coordination and is the national designated authority for UNFCCC. The Forestry and Beekeeping Division (Ministry of Natural Resources and Tourism) is primarily responsible for forestry policy and coordination matters and has started the process on developing a national REDD strategy.

Participatory Forest Management (PFM) and Wildlife Management Areas (WMA), and presents suggestions on the way forward with regard to the establishment and implementation of the proposed national REDD strategy and activities in Tanzania.

The Consultative Process Choice and Location of Consultations

As mentioned above the consultations were conducted in eight zones of Tanzania as shown in Table 1.

Table 1b-1: Consultation Plan and Workshop Locations

Zone	Regions	Dates
Northern Zone	Manyara , Kilimanjaro and Arusha	1 st - 7 th August 2009
Eastern Zone	Tanga , Morogoro, DSM and Coast	8 th - 9 th September 2009
Southern Zone	Lindi and Mtwara	16 th - 17 th September 2009
Southern Highlands Zone	Iringa, Mbeya , Rukwa and Ruvuma	24 th - 29 th October 2009
Lake Zone	Mwanza , Kagera, Mara and Shinyanga	30 th - 31 st September 2009
Central Zone	Dodoma and Singida	15 th -21 st August 2009
Western Zone	Tabora, Kigoma	6 th - 7 th October 2009
Zanzibar	Unguja and Pemba	19 th - 20 th October 2009

Consultations at Regional and District Levels

Consultations in the eight zones were conducted at a selected venues in one of the regional headquarters of the concerned regions in each zone. Participants were selected from a range of regional and district level stakeholders, including people related to Natural Resources Management, and especially so for forestry and other land-based resources. The participants included Regional Natural Resource Advisors (RNRAs), District Natural Resource Officers (DNRO), District Forest Officers (DFOs) and other participants from relevant government institutions and NGOs such as representatives from TANAPA, the Jane Goodall Institute (JGI), TACARE, et cetera. Representatives from other natural resources conservation programmes in the relevant regions were also invited.

Consultations at the Village Level

Meanwhile, one village in a selected ward was selected for village level consultations in each zone. Stakeholders at this level included local communities living adjacent to selected forest resources, villagers involved in PFM, extension staff, village leaders and environmental committee members. The criteria used for selection of villages for local level consultations included the abundance of forest resources, involvement in PFM and/or WMA activities, and the potential for undertaking REDD activities at that level.

The Consultation Team

The consultations were undertaken by a team comprising two intermittent National REDD Task Force members, alternating members from the REDD Secretariat and two facilitators. The Workshops normally began by one of the Workshop Facilitators giving the welcoming remarks, followed by self introductions. After these introductory activities an overview of the objectives of the Workshops was given by one of the Task Force Members who also invited the Guest of Honour, normally the RC for the host region, to give the official opening speech. The opening speech was followed by a Vote of Thanks and a presentation on the Background to REDD delivered by one member of the Secretariat. Finally, another Task Force member provided a brief presentation of the National REDD Framework in Tanzania.

These preliminaries accomplished, the invited participants were given the opportunity to present the experiences with REDD related activities of the institutions they were representing. A synthesis report on consultations is presented in annex 1b.

Analysis of strengths and weaknesses for establishing and implementing REDD in Tanzania.

During the consultative Workshops, an analysis of strengths and weaknesses concerning the establishment and implementation of the REDD Initiative in Tanzania was done by the participants. A summary of the results

of the analyses are as presented in table 1b.2.

Table 1b.2 Analysis of strengths and weaknesses for establishing and implementing REDD in Tanzania.

Strengths	Weaknesses
Existence of some expertise at the district level in issues of forestry conservation	Unsatisfactory enforcement of existing laws and by-laws against forest degradation
Existing policy and legal environment conducive to establishment and implementation of REDD	Inadequate capacity of district councils to manage existing CFRs
Willingness of some developed countries to participate in carbon trade	National Forest Policy and related legal framework not well known to local communities
Existence of considerable awareness of environmental issues among the people	Lack of reliable data base on climate and extent of forest resources, their tenure and use
Existence of NGOs such as AWF, Farm Africa, Friends in Development, TAF, etc, promoting environmental management in the zones	Few officials in the forest sector knowledgeable about REDD
Existence of extensive forest resources as reserves or in public land	Many villages do not have land use plans in support of CBFM
Considerable experience of communities in participating in PFM and WMA activities	Entrenched corrupt practices and lack of good governance in the forest sector and elsewhere
Some villages already have land use plans incorporating areas for forest conservation	Lack of political will due to conflicting sector interests in forest and other natural resources use
-	Conflicting interests between conservationists and politicians
-	Very few people in the communities are aware of REDD and the available opportunities
-	Contribution of the forest sector to poverty reduction not clearly visible

Consultation and Participation Plan:

Following the initial consultations several challenges and gaps were identified. Some of these are presented in the table below. The REDD consultation and participation plan will focus on the challenges identified at all levels. As an initial step in the readiness plan, a national workshop will be organized in the first year to discuss issues raised in the zonal meetings. This will involve key stakeholders, particularly groups which are not well represented in the high level committees. This national forum will also provide a platform for discussion of the draft national REDD+ strategy.

The initial consultations will be followed by a more detailed consultation and participation activities. Active involvement and participation of stakeholders including the private sector, civil society, local government officials, associations and community groups including the vulnerable will be targeted. A detailed stakeholder analysis will be conducted to identify key stakeholders, their interests and responsibilities. Awareness raising on REDD issues will include good governance practices (transparency, accountability and dispute resolution). Various communication channels and participatory approaches will be adopted.

Challenges will be addressed in several activities proposed by the in-depth studies, pilots, individual NGO and private sector projects and UN-REDD project. A detailed implementation plan and budget for the UNREDD programme is attached as Annex 2c. The UNREDD capacity building programme and activities will complement other capacity building programmes at national and sub-national levels.

Stakeholders engagement, forest dependent and local communities

The REDD approach will involve a large number of stakeholder groups performing different roles and responsibilities at different levels. It has therefore been important to take a stock of who is doing what and

where. The analysis of their interest and commitment to participate in the REDD policy implementation is also important.

It is also important that non-state umbrella organizations will be needed to bundle stakeholders interests, for example, in providing support and training in forest inventories and in registering carbon stock changes in the national database. Support may be needed to get such organizations up and running.

Concerns have been expressed in the debate on REDD as regards the rights of indigenous people and communities dependent on forests and the impact of REDD programmes on such groups. The overwhelming need as regards local communities and forest dependent people is to ensure that they are involved in a positive and mutually beneficial way in management, since this is one of the very few effective means of controlling degradation over very large areas. Already there are some very positive models and success stories in Tanzania with regard to PFM implementation.

Decision 2/CP.13: Recognizes that reducing emissions from deforestation and forest degradation in developing countries can promote co-benefits and may complement the aims and objectives of other relevant international conventions and agreements. The decision further affirms that the following safeguards should be promoted and supported:

- Actions complement or consistent with the objectives of National Forest Programmes and relevant international conventions and agreements.
- Transparent and effective national forest governance structures, taking into account national legislation and sovereignty.
- Respect for the knowledge and rights of forest dependent people and members of the local communities, by taking into account relevant international obligations, national circumstances and laws.
- Full and effective participation of relevant stakeholders, including, in particular forest dependent peoples and local communities in actions.
- Actions that are consistent with the conservation of natural forests, and biological diversity
- Actions to address the risks of reversals.
- Actions to reduce displacement of emissions

The engagement of forest dependent and Local communities in Tanzania is being handled with respect to their knowledge and rights by taking into account relevant international obligations (i.e. as explicitly put forward in the National Forest Programme through PFM regimes), national circumstances and laws (as explicitly put forward under The Constitution of The United Republic of Tanzania of 1977.

Tanzania recognizes the right of all citizens and the rights of all to be heard. The REDD readiness consultation and implementation process will make conscious efforts to consult with and encourage participation of all stakeholders including minority and disadvantaged groups through recognized civil society and community groups and organizations. Concerns of such groups and communities will be considered in the development of the REDD implementation strategy. A detailed study will be conducted to specifically identify forest dependent communities, legal institutions and organizations representing them, challenges and opportunities for REDD, mechanisms for effective participation in the REDD readiness and implementation processes and how identified challenges could be addressed to maximize benefits of REDD to such communities. A Terms of Reference (ToR) for this study is presented as annex 1c.

Table 1b-3: Summary of National Readiness Management Arrangements Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands US\$)				
		2010	2011	2012	2013	Total
Strengthen capacities of national steering and technical committees						
	Support to NCCSC to meet regularly	\$5	\$6	\$7.5	\$8	\$26.5
	Capacity building on REDD governance	\$150	\$30	\$160	\$0	\$340
Strengthen capacities of REDD task force and Secretariat	Training and capacity building	\$120	\$90	\$50	\$50	\$318
	Office Running	\$30	\$35	\$40	\$45	\$158
Training and awareness of LGA and other key stakeholders (all districts)	Stakeholder analysis and awareness raising on REDD	\$190	\$200	\$200	\$150	\$740
	Technical training (governance etc)	\$80	\$90	\$90	\$60	\$320
	Publications and documents	\$20	\$22	\$22	\$18	\$82
	Functioning costs	\$25	\$25	\$27	\$25	\$102
National level follow up stakeholder consultation	Conduct National workshop and produce detailed proceedings.	\$150	\$0	\$	\$	\$150
Total		\$577	\$498	\$596.5	\$356	\$2086.5
Domestic Government		\$27	\$20	\$30	\$25	\$102
FCPF		\$	\$	\$	\$	\$
UN-REDD Programme		\$200	\$150	\$150	\$150	\$650
CCIAM		\$150	\$128	\$120	\$120	\$518
Norway-Tanzania Climate Change Partnership		\$200	\$200	\$296	\$196	\$892

Component 2: Prepare the REDD Strategy

2a. Assessment of Land Use, Forest Policy and Governance

1. Background

Tanzania is endowed with vast forest resources. In 2005, Tanzania mainland had a total forest area of 35.257 million hectares (ha) representing 39.9% of the total land area^{2,3}. Woodlands occupy most of the forest area, which cover about 90% of the total forest area. The rest are mangrove forests, montane forests, small patches of coastal forests and plantations of softwoods and hardwoods. However, 57% of all of these forests are on general land with open access and only 43% of the forested land is designated as forest reserves (FRs) and national parks (protected). These forests are supposed to be managed for either production and/or protection based on forest management plans.

The forests provide a range of benefits, from ecosystem services to wood and non-wood products (NWFPs) primarily within local villages and households. The value of these forests is high. The combined value of forest goods and services is \$ 2.2 billion which is equivalent to 20.1% of Gross Domestic Product based on 2006 prices². The wood products include: firewood, charcoal, round wood and sawn wood. The most important use of wood in Tanzania is for fuel and about 95% of the country's energy supply is met by fuelwood. The NWFPs consist of game meat, medicinal plants, fodder, latex, beverages, dyes, fibres, gums, resins, oils, beeswax and honey, tannins and toxins. Several of these are subsistence products providing nutrition, critical in situations of drought and famine. Traditional medicine is the only affordable alternative available to most rural and urban population. Ecosystem services which accrue from the forests include: watershed functions, maintenance of soil fertility, conservation of biodiversity, sustaining cultural values, carbon dioxide (CO₂) sequestration, climatic amelioration and eco-tourism. Forest areas also support agriculture and livestock.

Despite all the invaluable goods and services provided by natural forests, there are high rates of deforestation and degradation. Although a worldwide problem, deforestation and forest degradation is most acute in Sub Saharan Africa (SSA) where it is characterized by decreasing production of forest products and food and worsening levels of poverty and malnutrition. For Tanzania, between 2000 and 2005, high rates of deforestation led to a loss of 412,000 ha of forest per year¹. Deforestation and degradation are taking place in both reserved and unreserved forests but more so in the later due to inadequate resources to implement active and sustainable forest management (SFM)².

Other than deforestation and degradation, there is growing evidence that climate change is impacting on forests and forest ecosystems and therefore livelihoods of forest dependent communities as well as national economic activities that depend on forest products and services. The problem is manifesting itself through, amongst others, unusually high temperatures, floods, droughts, hurricanes, epidemics, poor crop yields, unreliable water supplies, and increasing fire intensity. River flows and water stocks in reservoirs may

² FAO 2006. Global Forest Resources Assessment 2005. FAO Forestry Paper 147, FAO, Rome, Italy. 320pp.

³ URT 2009. Final Draft National Forest Policy. FBD, MNRT, Dar es Salaam, Tanzania. 40pp.

decline considerably under a warmer climate while forest ecosystems may shift their ranges and lose some of their biodiversity.

Thus, climate change might have dramatic consequences on Tanzanian forests, and may make some sites unsuitable climatically for some of the endemic species that are found there. However, currently little is known about climate change's effect on forests and how this may impact on the livelihoods of the communities. Evaluation of the impacts of climate change on forests and forest ecosystems and livelihoods is an urgent area of study.

On the other hand, forests are important sinks for removing CO₂ from the atmosphere and are currently one of the technologies that are being used for mitigating future climate change. Forest loss and other land use change contribute 20-25% of green house gases; avoiding deforestation and degradation i.e. Reduced Emissions from Deforestation and forest Degradation (REDD) is now part of the solution in tackling climate change.

2. Overview of land use, forest policy and governance

Land use: Land use in Tanzania is shown in Table 2.1. It is however worth noting that reports differ as to the percentages of various land use categories. A country wide land use study is urgently needed.

With regard to forest resources, knowledge on the extent of the resource is limited and outdated². Regular resource assessments have not been carried out due to inadequate financial resources and consequently management has not been based on reliable data². A three year National Forest Resources Monitoring and Assessment Project is underway.

Table 2a.1 Land use categories in Tanzania mainland⁴

Land use type	Area (000 ha)	Percentage
Small holder cultivation	3,880	4.1
Large scale cultivation	585	0.6
Urban development	1,600	1.7
Inland water	5,900	6.3
Grazing land	48,740	51.7
Forest and woodlands	33,555	35.6

Several land use related studies have been carried out in Tanzania, but they have mainly covered small areas at a level of a forest area, Village, Ward, Division or District (See e.g.^{5,6}). Overall, the studies show decreasing forest/woodland resources and increasing areas under cultivation due to deforestation. The main direct causes of deforestation and degradation were shown to be shifting/permanent cultivation and firewood and poles gathering and charcoal production. The main underlying cause was found to be population growth. For example a study done in the Coast region (Table 2.2) showed that tree cover was worse in 1998 than ten years ago (1991) due mainly to charcoal production.

⁴ FBD 2000. National Forest Programme Workshop Proceedings on the Status of Ecosystem

Conservation and Management in Tanzania and Vision for the Future. Volume 1. Task Force on Land Management. National Forest Programme Formulation in Tanzania. FBD, MNRT, Dsm, Tanzania.

⁵ Nduwamungu, J. 2001. Dynamics of deforestation in miombo woodlands: the case of Kilosa District, Tanzania. PhD Thesis. SUA. Morogoro, Tanzania. 274pp.

⁶ CHAPOS. 2002. Charcoal potential in Southern Africa. Final Report. EU/Sida. 304pp.

Table 2a.2. Land cover changes in the northern study area (1991-1998), Coast region, Tanzania⁵.

Cover type	Areal extent, ha 1991	Areal extent, ha 1998	Net change, ha	7 year change, %
Open woodland	183,000	99,000	-84,000	-46
Bushland	152,000	223,000	71,000	47
Closed woodland	119,000	91,000	-28,000	-24
Mixed cultivation	60,000	94,000	34,000	57
Grassland/fallow	12,000	3,200	-8,500	-73
Thicket	4,900	3,900	-1,400	-29
Bushed grassland	3,500	19,000	16,000	441

The table shows that the both open and closed woodland decreased while other cover categories such as thicket, bushland, bushed grassland and mixed cultivation showed a tremendous increase in areal extent⁵. The direct and indirect causes of the deforestation are discussed in section 3.

The study concluded that, it was true that in the absence of any further disturbance after tree cutting, the areas may progressively revert to woodland. However, in the face of increased population and the demand for agricultural land, such areas may not be given enough room to regenerate.

The National Land Act and Village Land Act of 1999⁷ provide the legal framework for the three land categories, namely general land, reserved land and village land. General land is a residual category i.e. unoccupied land that is available for other purposes. It includes all land that is not reserved land or village land. Reserved land denotes all land set aside for special purposes, including FRs, game parks, game reserves, land reserved for public utilities and highways, hazardous land and land designated under the Town and Country Planning Ordinance. The village land constitutes all land in the village.

The deforestation and degradation reported in the previous paragraphs has been a result of among other things insecure land tenure resulting from absence of land use planning⁸. While the land policy⁹ recognizes the existence of two main types of tenure: customary (deemed) land rights and granted right of occupancy, the forest resources in the unreserved or general land (57% of area) are open access resources due to unclear ownership, absence of security of tenure and formal user rights⁷. As a result, these forests have been under constant pressure for conversion to other competing land uses such as agriculture (shifting cultivation), livestock grazing, settlements and industrial developments and also suffer from repeated forest fires⁷. Current cross sectoral efforts are geared at provision of property rights to communities and the private sector to sustainably conserve and manage the forests and trees on the general lands⁷.

Forest Policy: The first forest policy in the then Tanganyika was promulgated in 1953. The policy emphasised among other things the need to protect forest resources and managing them in the most productive way to meet present and future needs. The policy envisaged shared responsibilities, but there were no legal provisions to enforce such visioned responsibilities¹⁰. The Forest Legislation of 1957 was not effective beyond the government controlled forest estate because it was not explicit on how to monitor forest development in areas outside state ownership. The consequence has been massive deforestation in the forests on general (public) lands (57% of total forest area).

⁷URT 1999. The Village Land Act No. 5. Ministry of Lands and Human Settlements Development. Dsm, Tanzania

⁸ FBD. 2001. Tanzania national forest programme. FBD, MNRT, Dar es Salaam, Tanzania. 109 pp + appendices.

⁹ URT 1995. Land policy. Ministry of Lands, Housing and Urban Development. Dar es Salaam, Tanzania.

¹⁰ Kaoneka, A.R.S. 2000. A review of forest land management: Retrospects and Prospects. FORCONSULT, SUA, Morogoro, Tanzania. 74pp.

Thus for over four decades, Tanzania has been implementing a forest policy of 1953, until 1998 when a new policy was approved by the government¹¹. The overall goal of the National Forest Policy is to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations. The objectives of the forest sector on the basis of the overall goal are as follows:

- Ensured sustainable supply of forest products and services by maintaining sufficient forest area under effective management;
- Increased employment and foreign exchange earnings through sustainable forest-based industrial development and trade;
- Ensured ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility; and
- Enhanced national capacity to manage and develop the forest sector in collaboration with other stakeholder.

The policy encourages community and private sector involvement in forest management through establishment of Village Land Forest Reserves (VLFs), individual, group and community forests over which they have full rights of ownership and management and Joint Forest Management (JFM) through joint management agreements with government where communities have user rights and management responsibilities. All this aims at enhancing conservation of forests by reducing illegal use of the resources.

The forest policy explicitly makes reference to linkage with other sectors. These include agriculture, livestock, mining, energy, wildlife, beekeeping, environment and land. Policy failures in some of these sectors have contributed to the deforestation and degradation of forest resources. This has been due to inadequate sectoral coordination and harmonization of policies⁷.

The forest policy has been revised to take into consideration significant changes and climate change issues which have occurred in the country since 1998. Specifically, the policy stipulates that (i) PFM approaches will be scaled up for improved forest governance, livelihoods, forest condition and mitigation of climate change, (ii) research on the effects of climate change on forests and the environment in general and mitigation measures will be accorded high priority. The revised forest policy awaits government approval². Following approval of the forest policy, the National Forest Programme (NFP) will be revised to accommodate REDD issues.

Following review of the National Forest Policy in 1998, the government enacted Forest Act No 14 of 2002 (Cap 323 R.E 2002)¹². The Act is the legal instrument to implement the National Forest Policy. The Act among others provides for implementation of Participatory Forest Management (PFM) in the form of Community Based Forest Management (CBFM) and JFM.

Governance: The Tanzania Development Vision to 2025¹³ articulates the economic and social aspiration of the Government. Specifically, the vision aims at attaining (i) high quality livelihood (ii) peace, stability and unity (iii) good governance (iv) a well educated learning society and (v) a competitive economy capable of producing sustainable growth and shared benefits. The National Strategy for Growth and Reduction of Poverty (NSGRP)¹⁴ is the main instrument for realizing these targets by pursuing three main outcomes (i) high shared growth and reduction of poverty, (ii) improved quality of life and social wellbeing, and (iii)

¹¹ URT 1998. Tanzania Forest Policy. FBD, MNRT, Dar es Salaam, Tanzani. 59pp.

¹² URT 2002. Forest Act. FBD, MNRT, Dar es Salaam, Tanzania.

¹³ URT 2005. The Tanzania Development Vision 2025. Dar es Salaam, Tanzania.

¹⁴ URT 2006. MKUKUTA (National Strategy for Growth and Reduction of Poverty. Status Report. Ministry of Planning, Economy and Empowerment. 58pp.

good governance and accountability. In addition to NSGRP, there are other reforms to ensure good governance. The reforms include the Public Sector Reform Programme (PSRP) and the Local Government Reform Programme (LGRP). PSRP aims at improving performance and service delivery of public institutions. LGRP focuses on decentralization by devolution (D by D), which entails decentralization by devolution of powers and resources to the local government. Thus governance is given due consideration in government policy documents and reforms though the situation on the ground may be different.

Centralized forest management and PFM are the main strategies used by the FBD to ensure the sustainable management and conservation of Tanzania's forests. However, SFM is not being fully realized due to among others poor governance at local as well as district, regional and national levels. At the local level, key governance issues concern (i) corruption (ii) elite capture and/or (iii) minority marginalization in terms of access to forest resources (iv) low accountability (v) lack of transparency (vi) low participation (vii) weak law enforcement^{15,16}. At higher levels, the main issues are (i) corruption (ii) weak law enforcement (iii) accountability^{2,16}.

Weak governance is partly attributed to the existing forestry sector institutional framework. The forest sector administration involves the FBD of the Ministry of Natural Resources and Tourism (MNRT) and the Prime Minister's Office Regional Administration and Local Government. The administration has been weak especially in linking the local governments, regional administration and central levels^{7,17}.

To improve governance at local level, the village government needs capacity development in areas such as planning, mobilization, finance management, good governance, and lobbying. The local/central government needs to provide the different skills through various training programmes done at village level.

At district and regional levels, protection of the FRs against the various threats they face is key to ensure maintenance of habitat cover and quality. However, the current capacity of forestry staff for law enforcement (in the FRs) and providing advisory services to the communities is generally weak². Staff strength should be improved by recruitment, professional competence, proper remuneration and deployment to at least each Ward. The staff should also be provided with transport and other facilities for effective implementation of their law enforcement and advisory duties.

3. Threats to forests in Tanzania

The major direct causes of uncontrolled deforestation and soil degradation in the forests are: settlement and agricultural expansion, overgrazing, firewood and charcoal production, uncontrolled fires, timber extraction, development of infrastructure/industry, refugees and most recently the introduction of large scale agriculture of bio-fuel production. These direct causes of uncontrolled deforestation and thus land degradation are driven by market and policy failures, rapid (and uncontrolled) population growth and rural poverty, and the state of economy.

The analysis of the drivers and underlining causes of deforestation and forest degradation are based on desk studies. Further analysis is needed to identify and understand the drivers, underlining, causes and impacts in various agro-ecological zones so as to develop eco-regional specific strategies and programmes that can be utilized to address them (See Annex 2a-2 for terms of reference for the proposed study.

¹⁵ Mndolwa, M., Japhet, E. and Mauya, E. 2009. Effectiveness of governance on community based forest management approach: a case study of Iringa district, Tanzania. Pp. 147-158. In: Nshubemuki, L., *et al.* (Eds). Proceedings of the first PFM research workshop. Morogoro, Tanzania. 225pp.

¹⁶ Nuru, H., Rubanza, C.D.K. and Nezia, C.B. 2009. Governance of key players at district and village levels on health improvement of Urumwa forest reserve, Tabora: ten years of joint forest management. Pp.111-122. In: Nshubemuki, L., *et al.* (Eds). Proceedings of the first PFM research workshop. Morogoro, Tanzania. 225pp.

¹⁷ Milledge, S. and Elibariki, R. 2005. The status of logging in Southern Tanzania. TRAFFIC East/Southern Africa. 73pp.

Direct causes:

Uncontrolled deforestation and degradation are caused by various actors including, local communities, small and large scale timber and charcoal traders, large scale farmers and refugees. The major direct causes of uncontrolled deforestation and degradation in the forests are:

- (a) Agricultural expansion, human settlements and processing: reduced fallow shifting cultivation and permanent agriculture, development of human settlements, wood for curing tobacco, wood for fish smoking and making burned bricks
- (b) Overgrazing: mainly due to large herds of cattle arising from unwillingness among livestock owners to de-stock and the fact that most of the forests/woodlands are open access (not reserved);
- (c) Firewood and charcoal production: rapid population increase and fast rate of urbanisation have increased the demand for these products while poverty has prevented transition to other sources of energy;
- (d) Uncontrolled fires: fires during land preparation for shifting cultivation, collecting honey, making charcoal, hunting or livestock owners burning to prepare areas to provide green flush for livestock and to control pests such as ticks. Late season fires are most destructive;
- (e) Timber extraction: one of the major causes of loss of forests. Often, far more timber than the official licence allows appears to be taken out illegally from the forest reserves. Timber extraction also leads to disturbed natural regeneration by taking out trees with good gene pool qualities. It can also damage the remaining smaller trees, destroy much of the original forest and disturb the topsoil. Other effects include: suppression of regeneration by weeds or failure to regenerate and damage to the watershed functions of the forests;
- (f) Development of infrastructure/industry: Investments in road and railway construction, industries, hydroelectric projects and mineral and oil extraction, necessary to meet development objectives, often entail environmental trade-offs;
- (g) Refugees: land clearing for refugee campsites, construction material, fuelwood and agricultural crop production constitute a major threat to forest resources in refugee-populated areas associated with rapid depletion of forests and land degradation; and
- (h) Bio-fuel production: This is more recent. Large areas of natural forests habitats (e.g. the Coastal forests) with high biodiversity are been cleared to give way to biofuel crop farming.

The relative importance of these factors has not been determined, but landuse/cover change studies show the major causes of deforestation and degradation to be: shifting/permanent cultivation, timber extraction, firewood/ poles gathering, charcoal production and overgrazing as the major causes.

Underlying causes: These direct causes of uncontrolled deforestation and thus land degradation are driven by:

- (a) **Market failures:** refer to the inability of market prices under certain conditions, such as the presence of open access exploitation, externalities, incomplete information and imperfect competition, to reflect accurately the value of marketed and non-marketed or non-tradable environmental services¹⁸. Such failures also mean that markets are unable to ensure equitable resource and income distribution to promote maximization of collective welfare of the society¹⁷. Under corrupt conditions, a government has no motivation to move from administrative stumpage pricing to competitive stumpage markets.
- (b) **Policy failures:** these are consequent upon the following^{9,17}. Inability of governments to institute strict centralised management without adequate financial and managerial capacity, the consequence has been inefficient management of forest resources; Inability of governments to adequately define property rights thereby rendering forests an “open access” resource with consequent risk of over-exploitation and general resource degradation and lack of investment incentives on forest activities; Inability of governments to

¹⁸ Wardle, P. and Kaoneka, A.R.S. 1999. Perceptions and concepts of the importance of forests. Pp 43-56. In In: Palo, M. and Uusivuori, J. (Eds). World forests, Societies and Environment. Kluwer Academic Publishers. 404pp.

charge a sufficiently high forest rent which reflects the real financial cost of managing forests. The low forest rent creates an incentive for inefficient use and over-exploitation of forest resources; Implementation of old forest policies which fail to adequately address emerging opportunities and constraints imposed by national aspirations, international agreements and conventions; Non-forest incentives (pricing policies, tax incentives and other subsidies) encouraging private investments in leading sectors such as agriculture, energy, mining and transportation, leading to forest conversion to these uses; effects of implementing structural adjustment programmes (SAP) including reduced financial capacity of forest departments to manage forest resources effectively and secondly, peasant farmers who, hitherto, depended on subsidized farm inputs have been compelled to encroach forests in order to expand farmlands to meet the rising demand of food a consequence of family expansion and population growth. This leads to an upsurge in deforestation and degradation. On the other hand, higher crop prices may result in increased land clearance as new land is opened up for cultivation.

(c) **Rapid population growth and rural poverty:** Reports by Palo¹⁹ among others, have shown that there is a significant correlation between population pressure and deforestation, especially when there is a prevailing poverty, an ambiguous land tenure system, lack of agricultural intensification, market and policy failures, and political instability. Rapid population growth often intensifies pressure to convert forest areas to other uses, as well as exploit forests for short-term benefits (e.g. food and fuelwood supply)^{4,18}. Poverty-led environmental degradation is responsible for much of the deforestation and degradation of forests. The majority of rural poor rely heavily on forests and woodlands for income and subsistence. While some traditional rural communities have developed comparatively sustainable forms of resource use, many others are compelled, by circumstances often beyond their control, to exploit forests unsustainably for short-term gain.

4. Past experiences with reducing deforestation and forest degradation

Centralized natural forest management: The FBD holds primary responsibility for the management of natural forests in FRs. However, in practice, the decentralized system of government places much responsibility for forest conservation and management with FBD district administrations. Exceptions are made for several major catchment forests and for forests with high biodiversity values; all these remain under the direct management of FBD. Overall, centralized management of FRs is poor leading to deforestation and degradation. This is due to among others: low staffing levels, lack of motivation caused by poor working conditions (e.g. lack of transport and adequate field work budgets) and relatively low salaries. Further, forest management and law enforcement are lower priorities in local government when compared to revenue collection¹⁶.

Participatory forest management (PFM): By the mid-1990s a global shift towards decentralized forest management was taking place, with delegation of forest management rights and responsibilities to a local level as a strategy to achieve SFM and development. In Tanzania, as elsewhere, this led to a major review of forest policy and legislation. The Forest Act of 2002 thus makes transfers of forest resource ownership and management responsibilities to local communities feasible. Consequently, a community-based approach to securing and managing forests, generally referred to as PFM, has emerged as a central element in the FBD's strategy for ensuring the sustainable management and conservation of Tanzania's forests⁷. There are three main objectives of PFM in Tanzania namely (i) improving rural livelihoods, (ii) conserving and regenerating forest resources and (iii) promoting good governance.

In Tanzania, the two major approaches to the implementation of PFM are CBFM, and JFM. CBFM and JFM approaches differ in terms of forest ownership and cost/benefit flows. CBFM, where trees are owned and managed (using a management plan) by a village government through a Village Natural Resources

¹⁹ Palo, M. 1999. No end to deforestation? Pp 65-77. In: Palo, M and Uusivuori, J (Eds). World forests, society and environment. Kluwer Academic Publishers, Dordrecht, The Netherlands. 404 pp.

Committee (VNRC), applies on village land or private land. By 2008, the area under CBFM was 2,345,000 ha which represents 11.6% of unreserved forests²⁰. A number of PFM studies have since reported improved forest regeneration, biodiversity, forest growth and well-being of community members^{21,22}.

JFM is currently a strongly favoured approach to the management of state owned forests, with management responsibilities and returns divided between the state and the communities adjacent to the forest. It takes place on “reserved land” owned and managed by either central or local government. Villagers typically enter into agreements to share management responsibilities with the forest owner. The Forest Act requires a joint management agreement prepared by the central government, or designated district authority, to be formally made with local communities adjacent to the state forests before any JFM initiative starts. By 2008, the area under JFM was 1,780,000 ha mostly montane and mangrove FRs²⁰.

The factors that may negatively influence communities as regards taking up PFM are unfair benefit sharing or fears of this, lack of availability of forest land, lack of community interest in forest management (which may itself relate to opportunity cost involved in foregoing other activities, or to the availability of alternative income sources), an unfavourable legal and policy environment, lack of facilitation capacity, and lack of availability of up-front internal and external financing. Experience shows that village leaders, particularly the members of the village forest reserve committee, participate more than others in different forest activities, especially those involving payment of wages. Other villagers are not given the chance to participate. This situation can only be expected to become worse when the REDD funds become available to villages. *A major consideration is that if villagers as a whole do not see any benefits, then they are likely to withdraw their cooperation from the communal effort for increasing carbon stock. This might jeopardise the anticipated contribution of PFM to the REDD policy. For the success of PFM under REDD therefore a system to ensure fair sharing of benefits needs to be established.*

The main challenges of PFM include: high donor dependency, casting doubts on its sustainability; too short in duration to effectively empower communities to manage the forest effectively; PFM has proven to be a very long process, some villages involved for at least three to five years have still not completed the process; poor exit strategies by some Non Governmental Organisations; Under few PFM management plans are silvicultural rules implemented ; cost-benefit sharing mechanism under JFM still not operational^{16,23}. There are thus no benefit sharing mechanisms that may inform REDD. Also although there exists a favourable legal framework for PFM at national level, awareness of this among villagers and general public is still limited and should be raised. There are human and financial resources available to promote PFM (local NGOs and some donor funds) but it was observed that a flat ceiling rate is issued to the district for PFM activities without taking into consideration the district's location, population and forest resources endowment. An in-depth study on cost and benefit sharing is proposed and discussed under component 2b. A detailed terms of reference for this study is presented in Annex 2b-3

Forest plantations: Tanzania embarked on large scale plantations development in the 1950s. Currently, there are 19 state owned industrial plantations covering some 89,000 hectares mainly planted with softwoods and a few hardwood species. There are over 60,000 ha of privately owned plantations. The

²⁰ FBD 2008. Participatory forest management in Tanzania. Facts and figures. FBD, MNRT. Dsm, Tanzania. 13pp.

²¹ Topp-Jørgensen, E., Poulsen, M.K., Lund, J.F. and Massao, J.J. 2005. Community-based monitoring of natural resource use and forest quality in montane forests and miombo woodlands of Tanzania. *Biodiversity and Conservation* 14: 2653-2677.

²² Blomley, T. and Ramadhani, H. 2006. Going to scale with Participatory Forest Management: early lessons from Tanzania. *International Forestry Review* 8: 93-100.

²³ Vyamana, V.G., Chonya, A.B., Sasu, F. V., Rilagonya, F., Gwassa, F.N., Kivamba, S., Mpessa I. and Ndowo, E. A. 2008. Participatory Forest Management in the Eastern Arc mountain area of Tanzania: who is benefiting? Paper presented to symposium: “Who benefits from community forestry? Insights from North and South”. 12th Biennial Conference of the International Association for the Study of Commons on ‘Governing shared resources: connecting local experience to global challenges’, Cheltenham, UK. July 14-18, 2008.

productivity of government plantations is generally low ($15 \text{ m}^3\text{ha}^{-1}\text{yr}^{-1}$) due to use of unimproved seed and low intensity management^{24,25}. With improved seed and good forestry practice a yield of up to $30 \text{ m}^3\text{ha}^{-1}\text{yr}^{-1}$ is possible²⁵. On the other hand, privately owned plantations have been found to have high productivity due to careful site selection, intensive cultural practices and selection of genetically improved seed/propagules. Government owned plantations are characterized by planting and replanting backlogs, low intensity site preparation techniques, poor quality trees due to use of un-improved seed and low survival due to poor species-site matching and delayed or low intensity weeding⁷. It is also noted that they are generally neglected or have irregular pruning and thinning, constant fire, disease and pest attacks, and generally suffer illegal felling and encroachments⁷. On a positive note, new plantation tree species have been introduced in order to increase biodiversity, and reduce the impacts of fire, diseases and insect outbreaks². There have never been efforts to expand the government forest plantations areas for many years now. On the other hand, the area under private sector plantations is increasing. Overall however, the total area of forest plantations which is about 150,000 ha is low given high domestic and export demand of forest products and the fact that Tanzania is one of the few African countries with potential areas for expansion of forest plantations^{1,26}.

Establishment of forest plantations by private companies is a recent experience in Tanzania, thus there are limited lessons to learn. Given the potential for plantation expansion by the private sector, public/private partnerships will be key. The government should create a conducive environment which will encourage private investments in forest plantation development. The private sector should involve communities as out-growers so that they benefit from the investment to improve their livelihoods.

Woodlots and trees on farm: During the 1970s, Tanzania encouraged individuals and communities to establish woodlots and trees on farm (TOF) aimed to meet the increasing demand for wood and NWFPs, as well as improve environmental services. Response has been variable, and adoption of these activities is not promising in most parts of the country. To the contrary, people in a number of districts responded positively to tree planting.

With regard to individual and community woodlots, management has generally been variable. In places like Makete, Southern Tanzania, individual woodlots have generally showed satisfactory performance and now have a significant contribution to the livelihoods of the communities²⁷. While communal woodlots is another important source of wood and NWFPs, they have in some cases become free access resources and the weakening of traditional systems of management have led to resource degradation²⁵.

On the contrary, today TOF constitute a vast tree resource in Tanzania and form a major source of wood and NWFPs for domestic use and for sale. However, little information is available as to their extent and overall contribution to wood production as most national forest inventories tend to focus only on “designated forest lands”²⁵. In view of the increased demands on forest products and declining “forest land”, all indications are that TOF will become a major source of wood supply to meet growing rural and urban demand, provided issues such as tenure and access to markets are sorted out²⁵.

At present, the sources of most of the plantings for TOF are largely unknown. While nursery raised

²⁴ FFNC 2006. Management plan for SUA training forest. Faculty of Forestry and Nature Conservation, Sokoine University of Agriculture, Morogoro, Tanzania. 64pp.

²⁵ Chamshama, S.A.O. and Nwonwu, F.O.C. 2004. *Lessons Learnt on Sustainable Forest Management in Africa: Case study on forest plantations in Sub-Saharan Africa*. FAO, AFORNET, KSLA. 89pp.

²⁶ FAO 2003. Forestry outlook study for Africa: subregional report East Africa. FAO, Rome. 54pp.

²⁷ Malimbwi, R.E., Zahabu, E., Katani, J. and Mwembe, U. 2010. Woodlot management guidelines for smallholder farmers. Dept of Forest Mensuration and Management. Sokoine University of Agriculture, Morogoro, Tanzania. 18pp.

seedlings are sometimes planted, especially for the exotic tree species, trees are also established from transplanted naturally regenerated seedlings (wildings) on farm. Other trees are retained while establishing new farms in forested areas. Some studies have shown that the quality of TOF is generally low. This is due to low seed quality linked to inbreeding and poor selection of trees for seed collection, low availability of quality planting stock/seed, and sometimes poor species-site matching. Support to farmers in the form of improved germplasm can lead to significant improvement in productivity, quality and resistance against pests and diseases of TOF. With regard to tree management, activities include pruning, pollarding and thinning for overcrowded trees, which excessively shade food and cash crops. Silvicultural advice is generally limited, and thus most of these operations are based on the farmer's own experience. Consequently the quality of the trees for use especially for timber is generally low. Imparting silvicultural management skills among farmers would improve wood quality for various uses.

The sale of wood and NWFPs produced from TOF has often been problematic. Farmers need to be assisted in all aspects of marketing and value addition to improve their returns from sale of wood and NWFPs.

Forest landscape restoration: Forest landscape restoration is a process for re-establishing ecological integrity and enhancing human well-being in deforested or degraded landscapes²⁸. Natural regeneration, assisted natural regeneration, enrichment planting, plantations, agroforestry and various soil and water conservation techniques are all used in forest landscape restoration. In Tanzania, techniques already in use include plantations, natural regeneration, agroforestry and various soil and water conservation techniques²⁸. Plantations are too restricted in extent to provide sustainable livelihoods and environmental services for the large land areas demanding restoration, while assisted natural regeneration and enrichment planting have been tried only in research activity²⁹. Kaale³⁰ concluded that natural regeneration through active involvement of local communities promoted under PFM, and supported by the new forestry legislation and programme, was by far the most promising option for restoration of the large areas of degraded land in Tanzania. CBFM is regarded as the most appropriate way to achieve forest landscape restoration, and is expected to be successful because local communities are allocated clear forestland rights, and traditional knowledge and practices are taken into account.

Example of a successful forest landscape restoration is the *Ngitili* system of agro-pastoral communities in Shinyanga region, Tanzania. Monela *et al.*³¹ found that more than 350,000 ha of land was occupied by restored or newly established *ngitili*, of which about 50% was owned by groups and another 50% by individuals. Benefits from *ngitili* were estimated at 14 US\$ per person per month, which is much higher than the average monthly spending per person in rural Tanzania (8.5 US\$).

Although the science of landscape restoration may be new, efforts to restore degraded landscapes in Tanzania are not. The success stories on forest landscape restoration (e.g. Ngitili and SULEDO) have always been associated with situations where communities were actively involved, and their interests, local knowledge and practices taken into account. This notion is already part of the current policies and legislation in almost all sectors, which provide the necessary enabling environment for restoration of degraded lands. The initial positive impacts of landscape restoration provide guidance and encouragement for wider success in the future.

²⁸ WWF 2007. Five Years of Implementing Forest Landscape Restoration Lessons to Date. WWF International, Gland. 23pp.

²⁹ Mugasha, A.G. 1996. Compendium of Silviculture in the Tropical Natural Forests with Special Reference to Tanzania. Faculty of Forestry, Sokoine University of Agriculture, Morogoro.

³⁰ Kaale, B.K. 2001. Forest Landscape Restoration: Tanzania Country Report. WWF/IUCN, Dar es Salaam, Tanzania. 53pp.

³¹ Monela, G., Chamshama, S.A.O., Mwaipopo, R. and Gamassa, D. 2005. A Study on the Social, Economic and Environmental Impacts of Forest Landscape Restoration in Shinyanga Region, Tanzania. United Republic of Tanzania Ministry of Natural Resources and Tourism/International Union for the Conservation of Nature and Natural Resources. Eastern Africa Regional Office, Nairobi. 205 pp.

Integrated conservation and development and landscape based projects: Conservation of biodiversity and ecosystem services has for several decades been achieved by the “fines and fences” (non participatory) approach to conservation. In the mid 1980s, the World Wildlife Fund (WWF) first introduced Integrated Conservation and Development Projects (ICDPs) to attend to some of the problems associated with the “fines and fences” approach. ICDPs are biodiversity conservation projects with rural development components aimed to improve livelihoods and reduce human pressures on biodiversity. ICDPs have mainly been implemented at the level of sites/watersheds and not landscapes. Examples in Tanzania include the East Usambara Mountains Project in Amani, Tanga, the Soil and Conservation and Agroforestry Project in Lushoto and the Conservation and Management of the Eastern Arc Mountains Forests Project based in Morogoro, Tanzania. The projects aimed at biodiversity conservation, increasing agricultural productivity and reducing poverty by encouraging communities to undertake income generating activities. There are success stories from some of these projects, and there are many lessons learnt³². Despite the efforts to improve the management of the FRs and community activities in the projects outlined above, problems of natural resource degradation, biodiversity loss and rural livelihood decline persist. To reverse this situation, increased, long term and landscape focused investment is key. All stakeholders must participate effectively.

Other than the integrated conservation and rural development programmes discussed in the outgoing paragraph, the Government has recently promulgated a campaign for agricultural revolution famously known as KILIMO KWANZA. The campaign emphasizes increased production, intensification of agriculture, efficient use of inputs, effective marketing and sustainable use of natural resources. The likely effects of Kilimo Kwanza on REDD are mixed. Increased productivity and incomes are likely to reduce dependence and pressure on forest resources leading to increased conservation and REDD. On the other hand, it is envisaged that it will take long for the poor farmers who are most dependent on forest resources to access necessary inputs to improve agriculture therefore continued dependence on forest resources and thus increasing deforestation and degradation.

Effects of the KILIMO KWANZA initiative on carbon emissions and livelihoods will be monitored by the respective sectors and ministries. The

5. Conclusion

Tanzania is still endowed with extensive forest resources but their sustainability is threatened by the human activities that cause deforestation and forest degradation, and occur when communities strive to earn their livelihoods. Thus it is important to recognize a forest-livelihoods linkage if SFM is to be achieved. As peoples' livelihoods are embedded in many sectors (e.g. agriculture, fisheries, forestry), halting deforestation must be approached from the multi-sector perspective. Similarly, SFM can only be realized if the forestry sector aims to optimize the dual objective of improving forest condition and conserving the environment, while at the same time improving livelihoods of the people, particularly the poor, who largely depend on forest resources for their livelihoods.

Table 2a.4: Summary of Assessment of Land Use, Forest Policy and Governance Activities and Budget (Follow-up Activities Needed)

³² Burgess, N.D., Nummelin, M., Fjeldsa, J., Howell, K.M., Lukumbuza, K., Mhando, L., Phillipson, P., and Berghe, E.V. 1998. Biodiversity and conservation of the Eastern Arc Mountains of Tanzania and Kenya. *Journal of East African Natural History* 87:1-367.

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Synthesis of experiences on forest governance at national and community levels.	Synthesis and analysis of governance issues (Study)	\$50	\$50	\$	\$	\$100
	Cross sectoral analysis of current knowledge and activities in addressing drivers of deforestation.	\$120	\$	\$	\$	\$120
Policy analysis to identify gaps (cross-sectoral)	Consultations at national and district levels	\$50	\$50	\$	\$	\$100
	Synthesis and validation workshops	\$45	\$	\$	\$	\$45
Study of impacts of drivers and underlying causes of deforestation and degradation		\$45	\$	\$	\$	\$45
Total		\$265	\$100	\$	\$	\$365
Government		\$35	\$10	\$	\$	\$45
FCPF		\$	\$	\$	\$	\$
UN-REDD Programme (if applicable)		\$150	\$50	\$	\$	\$200
Norway-Tanzania Climate Change Partnership		\$88	\$40	\$	\$	\$128
Other Development Partner 2 (name)		\$	\$	\$	\$	\$
Other Development Partner 3 (name)		\$	\$	\$	\$	\$

2b. REDD Strategy Options

Strategy Building Framework

The REDD strategy in TANZANIA will be based on the National Framework for REDD developed in 2009 and the National Forest Programme (NFP) (which has addressed issues/drivers of deforestation and degradations) and other issues addressed in section 2a. The National Forest Programme (NFP) for 2001-2010 is based on four implementation programmes that cover both forest resources management as well as institutional and human resources development aspects. The programmes are: (i) Forest Resources Conservation and Management programme which aims at promoting gender balanced stakeholders participation in the management of natural and plantation forests, giving priority to ecosystems conservation, catchment areas and sustainable utilization of forest resources; (ii) Institutions and Human Resources Development programme which aims at strengthening institutional set up, coordination of forest management, establishing sustainable forest sector funding and improvement in research, extension services and capacity building through strengthening human resources; (iii) Legal and Regulatory Framework programme which focuses on the development of regulatory issues including the Forest Act, rules, regulations and guidelines to facilitate operations of the private sector and participatory management, and (iv) Forestry Based Industries and Sustainable Livelihoods programme which is intended to enhance forest industry development by promoting private sector investment, improving productivity and efficiency and to tap the income generation opportunities provided by non wood forest products. The strategy will also be aligned to other national and sectoral policies and strategies.

The National REDD Framework is based on the strategy and objectives of reducing emissions related to deforestation and forest degradation as well as reducing poverty of forest dependent communities.

The key direct and indirect drivers of deforestation and degradation and carbon emissions are associated with domestic and industrial land uses as well as governance issues such as weak natural resources management especially on general lands, market failures, social and economic factors such as poverty and poor livelihoods for local forest dependent communities. The wide range of consultations among stakeholders presented in section 1b along with experiences and challenges from implementation of PFM and other interventions discussed in component 2a as well as the National Framework for REDD provide strategic options for addressing the identified drivers of deforestation and degradation as well as reducing carbon emissions from Tanzanian forests. These options include improvements in policies and regulations guiding forest management and utilization, natural resources management practices and improved technical skills at the national and sub national levels for various stakeholders involved in the REDD implementation process, strategic linkages and synergies between forestry and other sectors such as agriculture, energy, mining, infrastructure and livestock. Table 2b-1 presents the key drivers and underlying causes as well as the strategic options for addressing each option.

Table 2b-1: Strategic options by drivers and underlying causes

S/n	Driver /underlying causes	Strategic options
1.	Agricultural expansion, human settlement and processing	<ul style="list-style-type: none"> Accelerate participatory land use planning and establishment of village land forest reserves (VLFRs) in general lands or joint forest management (JFM) for villages adjacent to forest reserves (FRs). Develop and operationize cost benefit sharing mechanisms to ensure fair benefits sharing to communities under JFM, CBFM and REDD. Develop buffer zones around FRs with catchment, biodiversity and other amenity values in collaboration with local communities

		<ul style="list-style-type: none"> • Re invigorate the extension service to ensure communities have more productive and profitable farming systems • Ensure communities have appropriate crops in terms of better yield, environment friendly, and high value that will generate higher income on smaller piece of land • Encourage agroecosystems that sponsor their own soil fertility, productivity and crop protection • Encourage establishment of woodlots for various uses including timber, domestic fuelwood, fish curing and burned brick making • Assist communities to access small scale processing equipment for processing /value adding to crops/products to increase shelf life, have better prices and reduce post harvest losses • Promote alternative environmentally friendly income generating activities e.g. non timber forest products, beekeeping, eco and cultural tourism and butterfly farming.
2.	Uncontrolled fires	<ul style="list-style-type: none"> • Accelerate participatory land use planning and establishment of VLFRs, Ngitilis and woodlots on farms and general lands or JFM for villages adjacent to FRs. • Develop and operationalise early fire warning systems • Develop and operationalise fire prevention strategies such as early burning in woodlands and construction of fire breaks in conserved forests. • Sensitize communities on the negative impacts of fires and promote participation in fire management and control
3.	Overgrazing	<ul style="list-style-type: none"> • Accelerate participatory land use planning and demarcation of grazing areas in each village as well as establishment of VLFRs in general lands or JFM for villages adjacent to FRs and WMAs. • Sensitize livestock owners to destock • Encourage livestock owners to keep improved and more productive breeds • Develop and execute plans to promote fodder production on private and public/forest lands
4.	Firewood gathering and charcoal making	<ul style="list-style-type: none"> • Accelerate participatory land use planning and establishment of firewood/charcoal production areas on village lands. • Encourage establishment of trees on farm (ToF) and/or woodlots for firewood and charcoal • Assist communities to access firewood and/or charcoal energy saving stoves in order to reduce pressure on forests and reduce workload of fuelwood collectors. • Reduce taxes of other sources of energy to encourage switching by the poor rural and urban communities • Encourage use of alternative technology for charcoal production • Promote sustainable harvesting techniques in natural productive forests.
5.	Illegal timber extraction	<ul style="list-style-type: none"> • Accelerate participatory land use planning and establishment of VLFRs in general lands or JFM for villages adjacent to FRs • Develop and implement forest management plans for all forest

		<p>categories.</p> <ul style="list-style-type: none"> • Encourage establishment of ToF and/or woodlots for timber • Provision of alternative income generating activities (IGAs). • Encourage forest certification
6.	Infrastructure and industrial development	<ul style="list-style-type: none"> • Ensure inter-sectoral coordination and environmental impact assessment to minimize negative impacts of development activities on forest resources
7.	Refugees	<ul style="list-style-type: none"> • Site refugee camps outside forest areas • Provide alternative sources of energy
8.	Bio fuel projects	<ul style="list-style-type: none"> • Proper land use planning and monitoring of activities of bio fuel companies • Need for government policy and guidelines on bio fuel projects.
9.	Market failures	<ul style="list-style-type: none"> • Move from administrative to competitive stumpage markets • Operationalize payment for environmental services (PES) as a poverty reduction strategy for communities involved in protection of forest resources. • Develop and operationalise cost/benefit sharing mechanisms for PFM and REDD. • Ensure proper valuation for land and other ecosystem services.
10.	Policy/Governance failures	<ul style="list-style-type: none"> • Ensure adequate incentives to forest staff • Ensure adequate financial, technical and managerial capacity to improve law enforcement. • Ensure efficient centralized and decentralized management of forest resources at all levels. • Ensure transparency and accountability. • Establish mechanisms for dispute/grievances resolution at all levels. • Definition of property rights and acceleration of participatory land use planning so that forests do not remain as open access resources • Strengthen inter-sectoral coordination and NGO/private sector coordination in order to harmonise approaches, avoid duplication, competition and conflict in implementation of interventions and ensure effective use of resources • Encourage public-private sector partnership for forest resources management. • Harmonization of Policies and Acts with regard to forest resources aspects • Monitor all forest investments and development projects to ensure adherence to the sector specific Environmental Impact Assessment (EIA) guidelines • Promote participation of all stakeholders in planning, monitoring and evaluation of REDD projects • Develop policies that provide incentives for establishment of private and community forest plantations, woodlots and ToF
11.	Population growth and rural poverty	<ul style="list-style-type: none"> • See strategic options for drivers 1, 3 and 4 above (Agricultural expansion, human settlement and processing; Overgrazing; and Firewood gathering and charcoal making)

Further details of the drivers as well as direct and indirect causes of deforestation and degradation and strategic options for each driver is presented as annex 2b-1.

The REDD strategy will be closely linked to the strategies which are under review/development such as the National Growth and Poverty Reduction Strategy (NGRSP), the National Forest Programme, the Agricultural Development Strategy (ASDS) and follow up strategies such the Kilimo Kwanza which contribute to effective conservation and utilization of its natural and renewable resources and improving the livelihoods of its people.

TANZANIA has developed a roadmap to the development of the REDD strategy and initiated several activities towards building a strong national REDD strategy that should be finalized by December 31, 2012. A preliminary REDD strategy will be produced by July 1, 2010. A test implementation phase will follow which will make it possible to verify the hypotheses and assumptions.

The strategy development process is envisaged in three phases:

- A preliminary analytical phase
- Strategic analysis and piloting of activities
- Consolidation of the National REDD strategy

The National REDD Task Force and its Secretariat are guiding the process. The TF works closely with execution partners in the Ministries, Civil Society NGOs, and the REDD Climate Work Group at the national and decentralized levels (Districts).

Process for developing REDD+ National Strategy

Step1 Understanding and building knowledge on REDD

This involved the scoping studies to identify potentials for REDD in Tanzania, assess capacities for REDD implementation, identify gaps and issues to be addressed.

Institutional structures were established including the REDD Task Force and its Secretariat (See section 1) and a national REDD framework was developed.

Awareness and knowledge sharing workshops were conducted at the national level and in all nine agro-climatic zones including Zanzibar. These activities provided information on REDD potentials and opportunities in Tanzania (see section 2a), institutional and capacity gaps and possible strategies to address REDD.

Step 2. National strategic in-depth studies and pilots.

Five strategic in-depth studies and 5 pilot projects listed below were commissioned and on-going to provide additional knowledge on implementation of various REDD+ activities at national and sub-national levels. Detailed terms of reference for the in-depth studies and summaries of the pilot projects are presented in annex 2b-2.

Planned in-depth studies under the 5 key themes are as follows:

Theme 1. Modalities of establishing and Operationalising National REDD Trust Fund

This study is designed to provide information and modalities associated with financial flow of REDD management to ensure that both conservation and communities' needs are taken on board.

Theme 2. Role of REDD for rural development:

- Cost benefit analysis of different land uses in the context of REDD
- Governance issues
- Role of REDD in reducing poverty

- Incentives and co-benefit sharing:

The linkages between deforestation, development and poverty are complex and context-specific. Weak governance and institutional capacity in some countries, as well as inadequate mechanisms for effective participation of local communities in land use decisions, could seriously compromise the delivery of both local and global benefits and the long-term sustainability of REDD investments. If REDD programmes are not carefully designed, they could marginalize the landless and those with informal usufructual rights and communal use-rights. This theme therefore addresses the cost and benefit aspects of REDD investments. Governance issues, and incentive sharing mechanisms.

Theme 3. Legal and institutional framework review in the context of REDD intervention:

- Macro and multi-sectoral policy review including the identification of possible positive of adverse effects on forest quality
- Land tenure and forest resources use rights in the context of REDD
- Coordination of REDD initiatives at different levels.

The linkages between deforestation, development and poverty are complex and context-specific. Weak governance and institutional capacity in some countries, as well as inadequate mechanisms for effective participation of local communities in land use decisions, could seriously compromise the delivery of both local and global benefits and the long-term sustainability of REDD investments. If REDD programmes are not carefully designed, they could marginalize the landless and those with informal usufructual rights and communal use-rights. This theme therefore addresses the cost and benefit aspects of REDD investments.

Theme 4. Development of business case for carbon trade through REDD initiative:

- Documenting existing carbon trading in Tanzania (both under Kyoto Protocol and voluntary markets)
- Document opportunities for carbon marketing including negotiations, liability and contractual issues.

The government of the United Republic of Tanzania considers the REDD policy a viable option that can provide opportunities for the country to meet its obligations of managing her forests and woodlands on a sustainable basis and at the same time respond to poverty reduction initiatives accordingly. In this respect the government is envisaging to participate in the future REDD policy and in its development. It is envisaged that the proposal should aim at developing a business case for REDD initiative and also document opportunities for carbon marketing including negotiations, liability and contractual issues.

Theme 5. Prepare REDD information needs, communication and REDD knowledge management.

The REDD policy is evolving and is expected to start in 2013. There is need to address Lack of awareness on forest assessment and monitoring including carbon accounting at all levels. For specific countries and international communities to benefit from these lessons and experiences from pilot activities there should be in place an efficient communication and information sharing mechanism. However, there is poor communication and information sharing networks in most developing countries including Tanzania. This study aims at establishment of national networks for REDD that also provide gateway to the international community. The study will indicate how REDD awareness can be raised and to motivate stakeholders to implement operational forest monitoring programmes at all levels. It will further include development of training of trainers programmes for forest carbon monitoring and assessment program to be mainstreamed to national extension systems (education, forestry, agriculture etc).

Pilots projects initiated.

A number of ground activities (pilots) are being undertaken to study various aspects and options of REDD. Results of these studies will inform the REDD strategy development.

These include:

- ▶ Approaches to organizing REDD work at the local level, with a focus on governance and tenure;
- ▶ Incentive schemes that provided equitable benefit sharing mechanisms, especially to local communities;
- ▶ Baseline studies and methods for estimating deforestation, carbon sequestration and emissions;
- ▶ Participatory methods for monitoring, assessing, reporting and verifying; and
- ▶ Approaches that address drivers of deforestation and forest degradation.

Other related REDD programmes in support of the REDD strategy include the UN-REDD programme, Valuing the Arc, community level carbon monitoring initiatives (Think Global Act Local) and the National Carbon Accounting System (NCAS-T). These are discussed in detail in sections 3 and 4. In addition to the specific projects and studies listed above a number of projects and programmes are on-going among NGOs, the private sector as well as other sectors related to REDD such as agriculture, Mining and roads for example. These activities will be identified and analysed. Lessons and experiences gained from the studies and pilot projects as well as analysis of other sector projects will inform the development of the National strategy.

Step 3. Formulation of the Strategy.

The next steps will involve systematic follow up and analysis of the on-going programmes and projects to identify lessons and inputs into the strategy development process, engagement of other sectors outside of the forest sector into the process through strategic awareness and inclusion at national and sub-national levels, analysis of sector policies and programmes in relation to REDD to identify synergies and gaps to be addressed by the strategy. The draft strategy will be formulated based on knowledge and experiences from all on-going consultations, pilots and special studies. Activities of the task Force leading to the strategy development are presented in annex 1a.

Step 4. Implementation

Beyond the studies and training by the projects in progress, it is essential to experiment the different REDD+ strategy options in the field in order to test their multiple implementation conditions (legal, organizational, financial, human). This will involve testing and redesign of various aspects of the strategy at national and district levels. Specifically, it will test the functioning of baseline and carbon assessment methods and practices at national and sub-national levels, information and knowledge sharing systems, coordination, monitoring, reporting and verifications, resource sharing mechanisms as well as governance issues. Details of the strategy implementation activities are presented in section 2c.

The National REDD Task Force and its Secretariat will coordinate monitoring and analysis of the different “sectoral” projects in progress during the strategy development phase.

This phase will also include training and capacity building for improved governance as well as strengthening the institutional structure and capacity to implement REDD at national and sub-national levels.

Table 2b-2: Summary of Strategy Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Follow-up of ongoing studies and pilot projects	Supervision visits to projects	\$100	\$120	\$120	\$	\$340
	Documentation, workshops	\$15	\$20	\$25	\$25	\$85
Review and analysis of sector based programmes & REDD related activities (Feasibility assessments)	Technical assistance (Consultancies)	\$70	\$70	\$	\$	\$140
	Documentation, workshops	\$15	\$20	\$20	\$25	\$80
Training and institutional capacity for improved governance, monitoring and knowledge sharing	Training of local government and district officials on governance and knowledge sharing issues	\$150	\$150	\$150	\$150	\$600
	Support Inclusion and participation of NGO and civil society stakeholders	\$30	\$35	\$37	\$40	\$142
Total		\$380	\$417	\$352	\$240	\$1389
Government		\$40	\$25	\$25	\$20	\$110
FCPF		\$	\$	\$	\$	\$
UN-REDD		\$170	\$200	\$200	\$70	\$640
Norway-Tanzania Climate Change Partnership		\$170	\$207	\$127	\$150	\$654

2c. REDD Implementation Framework

REDD Implementation Framework.

The REDD strategy development and implementation will follow the already developed REDD framework and the National Forest Programme. The strategy will be implemented in the context of the national development priorities such as the Vision 2025 and MUKUKUTA. Activities for the test implementation of the strategy are based on the premise that a transparent institutional, economic, legal and governance arrangements are robust enough to facilitate REDD policy implementation. Implementation process will involve all stakeholders at all levels. Key processes, structures and institutions envisaged for implementation of the REDD strategy are shown figure 2-1 below.

Earlier discussed, there are several issues still yet to be addressed before a comprehensive REDD+ strategy can be finalized. Key issues include the following:

- Ownership and tenure security arrangements
- Capacity Building (Training and Infrastructure)
- Control and participation in the carbon trade and the role of national and local governments
- Baseline Establishment, Monitoring, Reporting and Verification
- Effective monitoring and evaluation of processes at national and sub-national levels
- Stakeholders engagement and involvement of local communities
- Effective functioning and of all institutional arrangements envisaged in the implementation framework at national and sub-national levels.
- Financial Mechanisms and Incentive
- Benefit sharing mechanisms
- Anti-corruption laws and measures, national best practices for fiscal transparency,
- Roles and responsibilities within a decentralized forest management system.
- Coordination of REDD activities
- Information/knowledge dissemination and networking

Table 2c-1 summarizes key issues, proposed activities and responsible institutions/facilitators. Some of these issues are being addressed within the pilot projects and special studies being implemented at national and community levels. Others are planned for implementation within the UN REDD programme and other activities by NGOs and specific projects.

It is expected that the REDD Task Force and its secretariat will coordinate all initial implementation activities. Figure 2c-1 presents a sketch of the REDD strategy implementation framework.

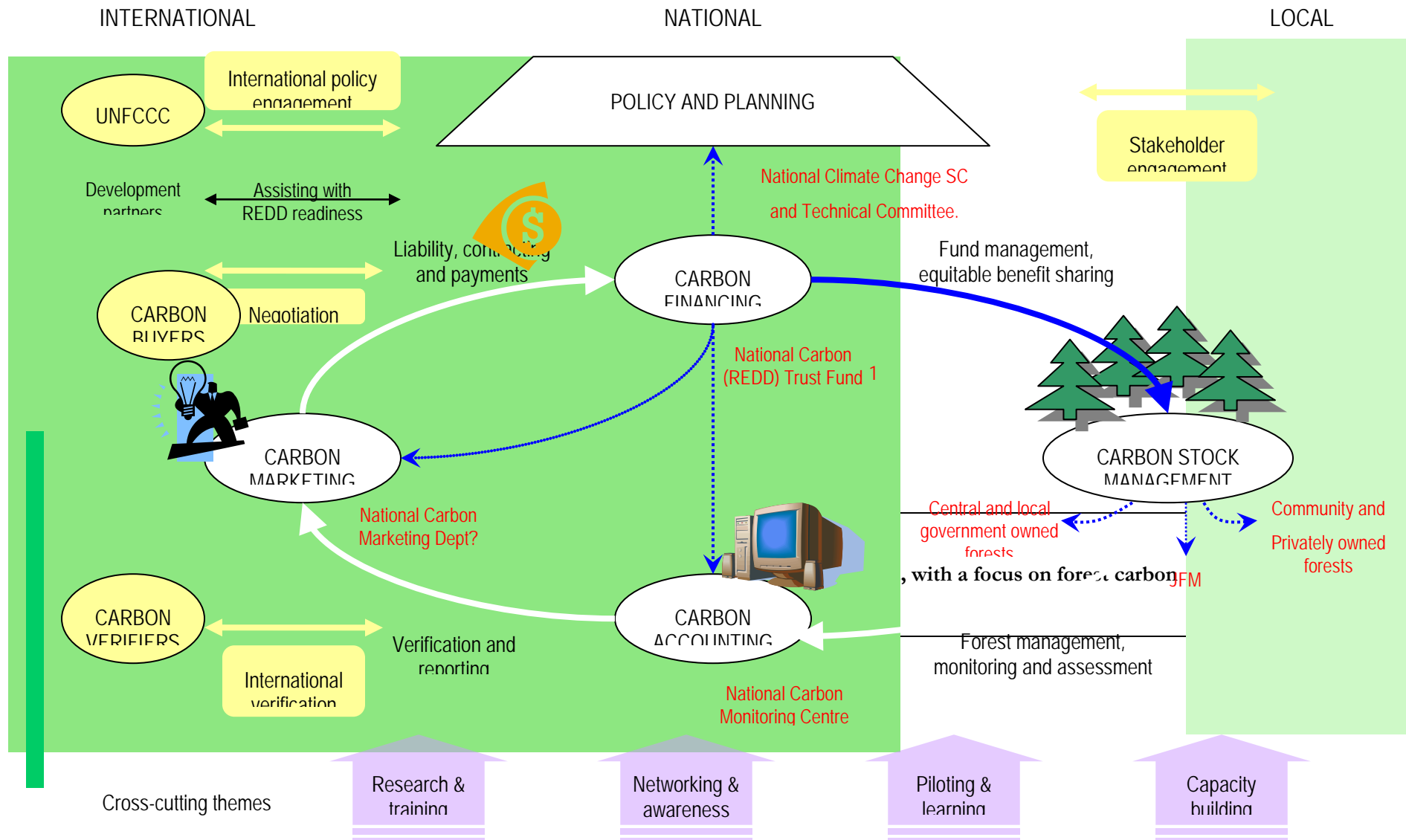


Table 2c-1. Issues, key activities and responsible institution/facilitators

Issues to be addressed	Actions	Lead institution/ Facilitator
1. Baseline Establishment, Monitoring, Reporting and Verification		
1.1. Baseline Determination and Monitoring		
1.1.1. Baseline for Deforestation		
<ul style="list-style-type: none"> • Inadequate access to remote sensed data • Inadequate ground data on forest carbon stock/s • Inadequate capacity to undertake baseline studies 	Carryout national forest inventory	Government and research institutions
	Carry out research on implications of different methods for Reduced Emission Levels through deforestation.	Research institutions Universities
	Address drivers of deforestation	Research institutions, CSOs and private sector
	Training to undertake national and sub-national forest inventories and remote sensing	Government and academic institutions NGOs and CSOs
	Development of tools for assessment and monitoring of deforestation	Research institutions NGOs
1.1.2. Baseline for degradation		
<ul style="list-style-type: none"> • Inadequate Methods, tools and guidelines to measure and monitor degradation • Inadequate data on degradation • Inadequate capacity on degradation assessment and monitoring 	Development and testing of methodologies to measure and monitor degradation	Research institutions, NGOs, CSOs & Private institutions
	Carryout assessment and monitoring of forest degradation	Research institutions, NGOs, CSOs & Private institutions
	Development of tools, guidelines and manual for degradation assessment and monitoring	Research institutions, NGOs, CSOs & Private institutions
	Review and synthesize existing studies of field/pilot cases	Research institutions, NGOs, CSOs & Private institutions
	Conduct case studies to quantify emission factors for different forest types	Research institutions, NGOs, CSOs & Private institutions
	Conduct demonstration projects for establishing historic degradation emission factors including cost implications, accuracy, and causes	Research institutions, NGOs, CSOs & Private institutions
1.2. Future monitoring of deforestation and forest degradation		
<ul style="list-style-type: none"> • Absence of recurrent inventories • Absence of annual forest assessment • Inadequate data processing and management • Inadequate capacity for monitoring deforestation and forest degradation 	Establish permanent sample plots as part of the National Forest Inventory	Government, Research institutions
	Development of carbon database to be linked to NAFOBEDA	Government Research institutions
	Training at all levels on continuous assessment and data handling	Research institutions, NGOs, CSOs & Private institutions
1.3. Verification		

Issues to be addressed	Actions	Lead institution/ Facilitator
<ul style="list-style-type: none"> Lack of independent carbon verification system at national level 	Establish independent, transparent verification system	Government, Research institutions
	Carryout field spot checks of carbon data	Relevant institutions
	Convene national meeting on issues of governance, transparency to provide NGOs and other institutions meaningful input into process (possibly not limited to monitoring)	Government, Research institutions
	Country-level case study on verification such as the use of LiDAR Technology	Government, Research institutions
<ul style="list-style-type: none"> Lack of knowledge on independent verification at international level 	Identify and engage independent international verifiers	Government,
	Establish and use independent data sets for verification and make them available to verifiers	Government, Research institutions
<ul style="list-style-type: none"> Lack of coordination on deforestation and forest degradation monitoring 	Establishment of a semi-autonomous National Carbon Monitoring Centre for coordinating all carbon data in the country	Government, Research institutions
1.4 Reporting		
<ul style="list-style-type: none"> Lack of clear flow of report at various level 	Reporting on the carbon data to the national REDD scheme for funding	Research institutions, NGOs, CSOs & Private institutions
	International obligatory reporting on REDD issues	Government,
	Reporting on financial flow (community to national level and vice versa)	Government, CSOs
	Reporting on livelihood issues	Government, Research institutions CSOs
1.5. Co-benefits		
<ul style="list-style-type: none"> Lack of an integrated methods to quantify other forest benefits such as: Biodiversity, Ecotourism, Water catchment and all others benefits related to payment for environmental services 	Review possibilities to include co-benefits in the assessment and monitoring methodologies	Government, Research institutions
	Carry-out multi-resources forest inventories	Government, Research Institutions
	Document benefits' and develop and test quick assessment methods	Research & Academic Institutions, CSOs

Issues to be addressed	Actions	Lead institution/ Facilitator
2. Financial Mechanisms and Incentive		
2.1. Financial Mechanisms		
Lack of transparent financial mechanisms to receive and	Review existing Trust Funds and fund holding arrangements, and	Government

Issues to be addressed	Actions	Lead institution/ Facilitator
channel REDD funds to stakeholders	options for efficient and independent management of REDD Fund	
	Establish National REDD Trust Fund	Government
	Review existing models and options for fair and equitable (financial and non-financial) benefit sharing	Government, academic institutions
	Produce guidelines for benefit sharing mechanism	Government
	Assessment of REDD contractual requirements (both between GoT and Carbon buyers, and GoT to beneficiaries/implementers)	Government
	Implementation of REDD contractual requirements	Government, Beneficiaries
Inadequate social safeguards	Develop guidelines to ensure social safeguards and national oversight/monitoring for carbon markets	Government
	Review issues of liability, taxation, etc.	Government
In adequate incentives for sustainable forest management	Undertake cost-benefit analysis of REDD to fully understand incentives and disincentives (including transaction and opportunity costs foregone)	Government
	Feasibility for carbon tax relief to act as an incentive needs to be reviewed	Government
	Identification and valuation of the co-benefits that could accrue through REDD actions	Government
Identification of measures to address disincentives	Explore linkages with relevant sectors to address competing land-use options that act as disincentives to REDD	Government
	Risk analysis of REDD incentives and co-benefits	Government

Issues to be addressed	Actions	Lead institution/ Facilitator
3. Stakeholders engagement and involvement of local communities		
Lack of information on stakeholders	• Stakeholders analysis (who, roles and responsibilities)	Consulting institutions
	• Stakeholder consultation and awareness	Government, CSOs
	• Carry out study to assess stakeholders willingness to participate to form partnerships	Government, CSOs

Issues to be addressed	Actions	Lead institution/ Facilitator
	and implement REDD programs	
Inadequate information on local and indigenous rights	Identification of the local and indigenous rights with respect to REDD	Government, Research Institutions
Lack of linkage between REDD and existing conservation approaches	Review and build on existing community involvement mechanisms	Government
There are number of unforeseen risks	Carry out detailed analysis of risks related to REDD eg power distribution, replacement of existing culture conservation to commercial and elite capture for legitimate beneficiaries	Government, Research and academic institutions

Issues to be addressed	Actions	Lead institution/ Facilitator
4. Coordination of REDD activities		
Inadequate coordination and communication	Establish horizontal and vertical linkages between negotiators, implementers, National Carbon Monitoring Centre, verifiers and National Carbon Trust Fund, and other stakeholders.	Government
Lack of mechanism for conflict resolution under REDD	Develop modalities for conflict resolutions Harmonising existing policies to accommodate REDD	Government
Inadequate coordination between various sectors	Ensure strong coordination between primary institutions involved with REDD implementation and other sectors such as water, agriculture and lands	Government

Issues to be addressed	Actions	Lead institution/ Facilitator
5. Market Access/negotiations		
<ul style="list-style-type: none"> Lack of access for REDD market Poor knowledge of funding opportunities 	<ul style="list-style-type: none"> Support negotiations for international market access and security 	Government
	<ul style="list-style-type: none"> Preparation of National Positions for negotiations on REDD 	Government, CSOs
	<ul style="list-style-type: none"> Analysis of markets 	Government, research and academic institutions, CSOs

Issues to be addressed	Actions	Lead institution/ Facilitator
6. Governance for REDD		
6.1 Institutional arrangement		
<ul style="list-style-type: none"> Lack of proper land use plans limited spread of PFM unsustainable harvesting. 	<ul style="list-style-type: none"> Set up proper land use plans for the village including protective and productive forest areas 	Government
	<ul style="list-style-type: none"> scaling up PFM activities 	Government

Issues to be addressed	Actions	Lead institution/ Facilitator
	• develop sustainable harvesting plans for productive forests	Government, research and academic institutions
	• draw up forest management plans	Government and relevant institutions
	• enhance good governance at all levels	Government
Inadequate efforts to engage stakeholders in addressing drivers of deforestation and forest degradation, e.g. forest fires, poverty, shifting cultivation	• Operationalise the Forest Fires Communication Strategy	Government, CSOs
	• Enhance agro-forestry practice	Government, CSOs
	• Development of Wood fuel Action Plan	Government
6.2. Policy and legal framework		
• Lack of policy and legal provisions to support REDD implementation	• National Forest Policy and Act, and other relevant acts should be reviewed to accommodate climate change issues including the REDD policy	Government
• Inadequate implementation of the National Forestry Programme	• Support implementation of relevant programme components, e.g. Biodiversity and Ecosystem conservation component	Government
6.3. Land tenure		
• Land of security on land ownership	• Harmonization of the National Land Act and Village Land Act	Government
	• Registration of village land	Government
	• Analysis of factors limiting tenure security	Government and research institutions

Issues to be addressed	Actions	Lead institution/ Facilitator
7. Capacity Building (Training and Infrastructure)		
7.1. Capacity Building for Baseline Establishment, Monitoring, Reporting and Verification		
- Lack of awareness on forest assessment and monitoring methodologies at all levels	Raise REDD awareness and motivate stakeholders to implement operational forest monitoring programmes through seminars and workshops at all levels	Government, NGOs, Research, academic institutions
- Inadequate Technology	Training on various MARV tools including GIS, remote sensing LiDAR, and forest inventory at various levels	Research and academic Institutions
- Lack of awareness carbon accounting at all levels	Develop training of trainers for forest carbon monitoring and assessment program to be mainstreamed to national extension systems (education, forestry, agriculture etc)	Government, academic institutions

Issues to be addressed	Actions	Lead institution/ Facilitator
	Implement the National Capacity Self Assessment Action Plan	Government
<ul style="list-style-type: none"> • Shortage of equipment and softwares • Inadequate remote sensing skills • Lack of physical infrastructure • Poor communication and transport 	Improve access to hardware, software, internet	Government, Relevant institutions
	Build infrastructure for NCMC, REDD Trust Fund, RS, e.g., set up RS labs	Government, Relevant institutions
	Put in place infrastructure for communication with local communities	Government
	Purchase of equipment such as vehicles, mensuration tools	Government
7.2 Capacity building for financial mechanisms and Incentives		
Lack of business and negotiation skills relevant REDD implementation	Train the negotiators and beneficiaries in articulating and refining the national policy position with regards to REDD	Government, NGOs,
	Undertake participatory national workshops for all stakeholders on REDD and Bali Roadmap	Government, NGOs
Awareness on REDD at all levels with emphasis to the communities	Develop communication, education, and public awareness strategy on REDD related issues	Government, CSOs

Issues to be addressed	Actions	Lead institution/ Facilitator
8. Research		
Lack of comprehensive research and methodology development programme for climate change adaptation and mitigation activities	Undertake research on climate change adaptation and mitigation	Research and academic institutions
Lack of focused research relevant to Tanzania in support of REDD implementation	Undertake focused research in the areas of REDD relevant to Tanzania	Research and academic institutions

Issues to be addressed	Actions	Lead institution/ Facilitator
9. Information/knowledge dissemination and networking		
Ineffective communication and information sharing mechanism	a) Establish REDD networking mechanism and expert working groups	Government
	b) Establishment of a website/portal at the National Climate Change Focal Point	Government, Consulting firm
	c) Create a REDD web based database	Government, CSOs

Table 2c-2: Summary of Implementation Framework Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Building and strengthening the implementation capacity	Completion of legal and institutional processes	\$20	\$	\$	\$	\$20
	Capacity building of all key implementing structures and organs.	\$50	\$80	\$80	\$60	\$270
Information flow procedures at national and district levels	Develop and share information and data collection and knowledge sharing procedures	\$30	\$30	\$35	\$35	\$130
	Monitoring and information tools harmonized	\$10	\$10	\$	\$	\$20
Carbon accounting and registry established	Carbon accounting systems verified and procedures harmonized	\$20	\$25	\$25	\$	\$70
	Development and operationalisation of REDD fund	\$15	\$20	\$20	\$20	\$75
Support operations of all institutional structures at district and national levels	Facilitation of operations	\$120	\$125	\$100	\$100	\$345
Total		\$265	\$210	\$260	\$215	\$950
Government		\$26	\$10	\$15	\$20	\$91
FCPF		\$	\$	\$	\$	\$
UN-REDD Programme (if applicable)		\$70	\$40	\$50	\$60	\$220
Norway-Tanzania Climate Change Partnership		\$100	\$80	\$130	\$120	\$430
CCI		\$69	\$80	\$50	\$15	\$214

2d. Social and Environmental Impacts

Strategic and Environmental Impacts

The Strategic Environmental and Social Impact Assessment (SESA) is a tool that seeks to integrate social and environmental considerations into the policy-making process, leading to sustainable policies and programs. Tanzania has a detailed Environmental protection Act (EMA) and regulations which guide the conduct of environmental impact assessments and audits. The development of SESA will be informed by an analysis of the current environment policies and regulations (EMA 2004), World Bank Safeguards and any foreseen social and environmental impacts as a result of REDD implementation.

The ToR SESA will include an initial diagnostic work, including an initial analysis of the environmental and social context of the legal, institutional and biophysical activities as presented in sections 1 and 2, stakeholder analysis designed to map out the expected outcomes, opportunities and risks related to the REDD and REDD readiness, consultations with key stakeholders and interest groups, including forest-dependent indigenous peoples in transparent manner. The SESA will give special consideration to livelihoods, rights (including those of forest dependent Peoples), biodiversity, cultural heritage, gender, the special protection of vulnerable groups in society, capacity development and governance.

National capacities and tools for conducting SESA are very limited at the moment. This capacity will have to be built at national and local levels. The National Environmental Management Council which is responsible for enforcement of environmental policies and regulations will coordinate SESA activities at national and sub-national levels. It will also assist in capacity building for SESA. REDD pilots have just started and it is too early to anticipate any impacts.

Elements of a proposed SESA study are presented below.

Strategic Requirements

REDD has the potential to increase incentives for sustainable forest management. The Government of Tanzania in collaboration with the Embassy of Norway welcomes Full Proposals addressing the following theme: “Strategic environmental and socioeconomic impact assessment.”

REDD schemes do not automatically guarantee a capacity to link carbon sensitive policies with pro poor and environmental policies (for income, employment generation, for asset/rights/biodiversity preservation and for social/cultural cohesion). REDD induced changes to legal frameworks that regulate incentives, rights, financing options (including taxation) and practices do not necessarily ensure environmental safeguards and possible impacts on the environment as well as livelihoods and rights of communities.

Scope of work

The assignment will involve an initial diagnostic work, including an initial analysis of the environmental and social context of the legal, institutional and biophysical activities in relation to REDD as specified in the REDD framework document and the draft REDD strategy, stakeholder analysis designed to map out the expected outcomes, opportunities and risks related to REDD and REDD readiness, consultations with key stakeholders and interest groups, including forest-dependent indigenous peoples in transparent manner. The SESA should give special consideration to livelihoods, rights (including those of forest dependent Peoples), biodiversity, cultural heritage, gender, the special protection of vulnerable groups in society, capacity development and governance.

The study should come up with a detailed Environmental and Social Management plan (ESMP) which will clearly indicate strategies and processes to be adopted during the REDD process, national and sub-national

capacity building measures to ensure effective implementation of the ESMP, estimated implementation costs, simple monitoring system to monitor impacts.

Specific requirements

The proposal should be elaborate with a focused objective, appropriate methodology and should clearly spell out the expected outputs addressing REDD impacts. The proposal should not exceed twenty five (25) pages and include the following:

- i. Clear statement of the problem addressed
- ii. State the geographic focus/target group and justification for site selection;
- iii. State clearly how objectives are addressing REDD in the specified theme
- iv. Describe the approach and methods to be employed
- v. Indicate clearly if there any partners/collaborators and specify their roles;
- vi. All participating institution indicated in the proposal should provide a proof that the proponent has agreements with collaborating institution for the proposed project.
- vii. Indicate Timeframe and budget. A significant proportion of the budget should be allocated on actual implementation of project activities
- viii. State clearly the expected outputs: The study must result in some demonstrable (direct or indirect) contribution towards promotion of REDD initiative in Tanzania, especially in the designated target areas.
- ix. Policy implications and Feedback mechanism
- x. Include a Risk analysis;
- xi. Indicate relevant experience to the addressed theme and to undertake the study
- xii. Legal mandate of the proponent to undertake proposed activities

Detailed terms of reference for a complete SESA study are presented as annex 2d.

Table 2d: Summary of Social and Environmental Impact Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Conduct finalization of the SESA Training and Capacity building of national institutions to undertake SESA	Consultants and technical assistants	\$120	\$50	\$	\$	\$150
	Coordination and support to NEMC and TF	\$30	\$30	\$50	\$30	\$140
	National stakeholders workshop for sharing results	\$55	\$	\$	\$	\$55
	Training at national and sub-national levels	\$80	\$55	\$40	\$	\$175
	Support to LGAs and other organizations to implement SESA	\$40	\$35	\$30	\$	\$105
Total		\$325	\$170	\$120	\$30	\$625
Government		\$25	\$30	\$15	\$3	\$73
FCPF		\$	\$	\$	\$7	\$237
UN-REDD Programme (if applicable)		\$100	\$70	\$45	\$20	\$235
Norway-Tanzania Climate Change Partnership		\$100	\$70	\$60	\$7	\$237

Component 3: Develop a Reference Scenario

Rationale

A REDD reference scenario (i.e., a scenario of forest cover change and greenhouse gas emissions over time for a country) is defined here as a combination of recent historical data on emissions from deforestation and/or forest degradation and other relevant land uses, and estimated future emissions and removals, leading to a national scenario through time of greenhouse gas emissions, in the absence of additional incentives for REDD.

Objectives for Component 3

The overall objective of Component 3 is to develop reference scenarios i.e. historical trends against which additional carbon benefits as a result of carbon project and policy intervention can be determined. Under REDD+, the reference scenario will be the baseline against which achievements made by a country can be measured and credited. However, there is considerable uncertainty at the moment about how baselines may be determined for operationalisation of REDD policy, since it is not yet decided what will be included. The possible options include crediting: reduction in emissions from deforestation; reduction in emissions from degradation; enhancement; forest conservation; and carbon stock. The last two options relate to forests with long protection status which would be credited based on the maintenance of carbon stock which would be compensated through a “conservation” fund that would be included under REDD.

Since the REDD policy is likely to be undertaken nationally, the country deforestation baseline would be determined by depicting historical land use changes from satellite imageries and typical carbon stock data for different types of forests to calculate the changes in terms of tons of carbon. However, Tanzania has inadequate resources to access remote sensed data and even the available ground data on forest carbon stock/s are in patches and inadequate.

In the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF), REDD related activities are covered in three categories:

- | | | |
|-------|---------------------------------------|---|
| (i) | “forest land converted to other land” | – deforestation |
| (ii) | “forest remaining as forests” | – degradation, forest conservation, sustainable forest management, and enhancement of carbon stocks |
| (iii) | “other land converted to forest” | – afforestation/reforestation of non-forest land. |

IPCC GPG is at present a widely acceptable official document that provides methodologies for the estimation of emissions and removals of GHGs. It refers to two basic data inputs:

- (i) Activity data i.e extent of emission/removal category: in case of deforestation refers to area of deforestation presented in hectares over known time period. This can be determined using the following approaches:
- Approach 1. Identifies the total area for each land category and provide net area changes i.e deforestation minus afforestation
 - Approach 2. Involves tracking of land conversions between categories, resulting in a non-spatially explicit land-use conversion matrix
 - Approach 3. Extends Approach 2 by using spatially explicit land conversion information, derived from sampling or wall to wall mapping techniques

Under a REDD mechanism, land cover/land use changes will need to be identifiable and traceable. Thus Approach 3 is the only option that will meet this goal.

(ii) Emission factors i.e emissions/removals of GHGs per unit area eg. CO₂ emitted or sequestered per hectare. The carbon changes are determined in the five IPCC pools: aboveground biomass, belowground biomass, litter, dead wood and soil organic carbon. There are three Tiers of data for emission factors in the IPCC GPG that are derived from ground measurements:

- Tier 1: The use of IPCC default values such as aboveground biomass in six ecological zones per Africa, Asia and Latin America (IPCC Emission Factors Data Base – EFDB). This provides crude estimates of $\pm 70\%$ of the mean.
- Tier 2: This is the improvement of Tier 1 where country specific data collected within the national boundary are used. More detailed strata may also be delineated to improve the precision of estimations.
- Tier 3: Uses actual inventory with repeated measurements from permanent sample plots for the directly determination of forest biomass changes. This is the most rigorous approach associated with highest level of efforts.

Moving from Tier 1 to Tier 3 increases the accuracy and precision of the estimates, but also increases the complexity and the cost of monitoring. Before moving to Tier 3, approach 2 for activity data and a combination of Tier 1 and 2 for emission factors could be used. This information can be provided through NAFORMA. As more data will be generated from demonstration activities during the REDD piloting phase, higher tier levels will be used in the monitoring system. Internationally acceptable methods, guidelines, and standards should be used for the collection of high quality data.

Proposed approaches for assessing historic carbon stocks and emissions.

Forest inventories so far conducted in Tanzania have been geared towards assessing forest for reconnaissance and land use management classifications. The FBD conducted different management and reconnaissance forest inventories and land use management classifications. During 1971 -1973 government under the financial support from Canadian International Development Agency (CIDA) conducted a reconnaissance indigenous forest Inventory for five blocks i.e. Kilimanjaro, Tanga, Kilombero, Tabora and Mtwara. During 1975/1977 an industrial inventory was done by Jaako Poyry in five blocks previously inventoried in Kilimanjaro, Tanga, Kilombero, Tabora and Mtwara. In 1996, The Swedish Government through her technical cooperation (Sida) supported a Reconnaissance Forest Inventory in three regions of Singida, Arusha and Dodoma from 1992-1996. In 1999, FBD conducted a study on the status of Non Timber Forest Products in Tanzania. The Catchment Forest Project also carried also inventories for some forest reserves for the preparation of forest management plans. During 2005 FBD conducted a reconnaissance forest inventory in 11 districts covering Liwale, Mkuranga, Tunduru, Nachingwea, Rufiji, Kilwa, Kisarawe in Southern part of the country and Kilombero/Ifakara and Mvomero in the Eastern; Handeni/Kilindi in the Northern and Mpanda in the Western. In 2007 while doing Valuation of FBD Assets conducted a reconnaissance inventory of the Central Government Forest Reserves in 12 regions including Morogoro, Coast, Lindi, Ruvuma, Iringa, Mbeya, Rukwa, Tabora, Kigoma, Kagera, Shinyanga, and Dodoma.

Apart from the FBD forest inventories mentioned above, several inventories for individual forest reserves have been carried out by researchers and students from within and outside the country. However, there is no archive for the data generated from these inventories.

From Table 3.1, it is deduced that; a number of remote sensing data sources of reasonable quality are of free of charge. These include FAO Remote Sensing Survey with original Landsat scenes of 1975,

1990, 2000, 2005. These with combination of some available digital maps (Table 3.1) will be useful in the change detection analysis.

Table 1.1 Previous/on-going remote sensing/mapping related projects and initiatives in Tanzania

Type of map	Year	Scale	Coverage	Major feature and usefulness
Vegetation cover map	1984	1:2,000,000	Tanzania	<ul style="list-style-type: none"> • 5 major vegetation classes, 12 subclasses • Problem: subjectivity, theoretical background lacking, open-closed: no threshold defined
Topographic maps	1987	1:50,000	Tanzania	<ul style="list-style-type: none"> • Very good and reliable • Shows locations of forests
Land Use and Natural Resources Map (Hunting Technical Services)	1997	1:2,000,000	Tanzania	<ul style="list-style-type: none"> • 8 major vegetation classes • Advantage: meta-data (description) available, useful in vegetation classification • Disadvantage: woodland not correctly classified as forest, based on visual interpretation of imagery
Change detection analysis	2006		Eastern Arc	<ul style="list-style-type: none"> • Quantify and locate deforestation of forests and woodlands that had occurred between 1970s and 2000s • Useful for REDD baseline development for Eastern Arc
The carbon baseline study			Eastern Arc	
Forest cover change	2006		East Usambara	<ul style="list-style-type: none"> • Covers the period between 1975-2006 ca 16,680 ha lost! By Jackline Hall • Useful for REDD baseline development for Eastern Arc

Digitized forest reserve boundary maps by InfoBridge	2007		Tanzania	<ul style="list-style-type: none"> • All forest reserves are covered • About half of them are in national coordinates system and may be useful in categorizing forest reserves by ownership • Others are in local coordinates that need to be transformed into the national coordinates. They may therefore benefit from NAFORMA data
FAO AFRICOVER:	2002	1:200000	Tanzania	<ul style="list-style-type: none"> • Land cover map for general planning purposes • 8 major classes • Used Landsat ETM 1995-1998 • Available from FAO • Have individual road layer: useful for cost analysis to measure plot access/cost ratio
Vegetation map (used MODIS: 300 m resolution)	2000			<ul style="list-style-type: none"> • Available free of charge from: http://glcfapp.umiacs.umd.edu:8080/esdi/index.jsp •
Globcover (used MERIS: 300 m resolution)	2008			<ul style="list-style-type: none"> • Available for free of charge from: http://ionia1.esrin.esa.int/ • - Globcover_V2.2_EasternEurope.zip 167 Mb for Tanzania
JRC land cover map Africa (used: SPOT VEGETATION-4: 10 m resolution)	2003			<ul style="list-style-type: none"> • Land cover map: classification GLC2000 based on LCCS • Available free of charge from: http://bioval.jrc.ec.europa.eu/products/glc2000/data_access.php •
				•
Source data: FRA RSS Survey			Tanzania	<ul style="list-style-type: none"> • Available free of charge from: http://globalmonitoring.sdstate.edu/projects/fao/index.html • Original Landsat scenes of 1975, 1990, 2000, 2005 for free: http://glcf.umiacs.umd.edu/data/landsat/ • 79 FRA tiles to be processed
Source data: DMCii: 20-32 m pixel size	2009			<ul style="list-style-type: none"> • Costs/scene 1000 USD
Source data: SPOT: 2.5-5-10m resolution			Only few places are covered	<ul style="list-style-type: none"> • Cost/scene: 8900-1900 € • Download from: http://catalog.spotimage.com/PageSearch.aspx •
Source data: CBERS2B: 20m resolution			about 70% of country	<ul style="list-style-type: none"> • Free download from: http://www.unsdi.nl/news/newsarchive/03510d9b820c45203.html

				<ul style="list-style-type: none"> •
SRTM3: 90m data, 3-arc-seconds from NASA, NGA,				<ul style="list-style-type: none"> • Cost: 981 USD • Download: http://www.cartographic.com/xq/asp/tanzania/digital/elevation/models/90m/dem:/srtm3/(version2)/rid.251/tid.7/sid.706/cid.7000026/vid.0/oid.0/mod.e.a/ navmode.R/qx/hub/index.asp
DEM from Geological survey in Tanzania	2003		Tanzania	<ul style="list-style-type: none"> • Cost: 0.05 USD per 1sq. km: 45000 USD for Tanzania • Download: http://www.gst.go.tz/pricelist_geophysical_Digitaldata.html •
New DEM from ASTER – 30m resolution,			global	<ul style="list-style-type: none"> • FAO NRCE is planning to download and test it soon, so sections should be available within FAO. • Download: http://www.gdem.aster.ersdac.or.jp

A clear characteristic of these inventories is that they are fragmented and lack continuity to enable follow up for the determination of change in the forest resource. The sampling intensities were low hardly reaching 0.1% hence resulting in low precision estimates. It is difficult to give an acceptable appreciation of how much forest exists and what had happened over the last decades. The quality of existing maps is questionable. The vegetation classification system used by Hunting and Technical Services will be used to create a new map to be used as basis for change detection. FAO AFRICOVER map may also be useful in this regard. The situation is aggravated by limited financial, technological and human capacity.

Also since there is no data on change in forest stocks for all forests types, a historical trend as regards degradation is challenging to be established. This implies that a reference emission level based on historical data is virtually complex, and that a rather different system for carbon accounting needs to be considered. Degradation and forest enhancement therefore need to be captured within the MRV system.

The National Forest Resources Monitoring and Assessment (NAFORMA) has been adopted as the national framework for Assessment, monitoring, reporting and verification of REDD related activities, data and information. NAFORMA which is already underway is expected to deliver the following:

- Train on national forest inventories and remote sensing
- Determine land use cover changes for the past
- Determine the rate of deforestation
- Identify drivers of deforestation
- Produce a map showing different forest types and their detailed stocking parameters
- Conduct case studies to quantify emission factors for different forest types
- Design a forest monitoring system using PSP

With this information, a National REDD baseline will be established through a National Carbon Accounting System (NCAS-T). Tanzania is currently preparing its National REDD Strategy, and in future it shall make use of data and analysis compiled by the NCAS-to provide robust estimates of emissions resulting from land use change.

The NCAS-T will pull together information on deforestation, land use change and land use from Tanzania's forest lands and other lands (primarily agricultural lands) to:

- 1) Inform policy development and implementation
- 2) Support Tanzania's position in the international sustainable development of policy and guidelines on sinks activity and greenhouse gas emissions and their mitigation from land based systems.
- 3) Reduce the scientific uncertainties (particularly about emissions from land-use change) that surround estimates of emissions and removals of both CO₂ and non- CO₂ greenhouse gases from land-use change monitoring capabilities for existing emissions and sinks.
- 4) Provide the scientific and technical basis to international negotiations and promote Tanzania's interests in the international fora.
- 5) Develop a comprehensive GIS that includes digital map-based information such as carbon mapping, remotely sensed images covering the whole of Tanzania on various thematic areas at various resolutions e.g. climate and vegetation among others.
- 6) Assist to predict future GHG emissions and sinks in the country.
- 7) Support Tanzania's negotiations on REDD and Land Use, Land Use Change and Forestry (LULUCF) provide the necessary inputs required for establishing a credible Reference Emission Level.

The NCAS-T will be a highly integrated system that will compile information from Tanzania's forestry and agricultural sectors on: remotely sensed land cover change data; land use and land management data including agriculture and other land uses; climate and soil data; growth and biomass data; spatial and temporal ecosystem modeling relevant to estimating GHG flux; and social and economic data for assessment of impacts.

The construction of the REDD baseline will start as the data becomes available. However, a system of interlocked baselines will be adopted to operationalize REDD internally in different geographic regions and to account for carbon in different forests regimes such as national parks, forest reserves, community and private forests. The sum of the different baselines from different regions and forest regimes will add up to the national reference scenario.

Tanzania already has valuable experiences from carbon stock and other biodiversity measurements from the Valuing the Arc project in the Eastern Arc Mountains (see figure below). The approach adopted involved the use of high resolution satellite imagery and ground measurements to assess carbon levels from above and below ground carbon pools. The Valuing the Arc Program, through Sokoine University of Agriculture (SUA) with other collaborators have been implementing a series of detailed permanent carbon assessment and monitoring plots across the Eastern Arc Mountains region using the 1 Ha Tropical Ecology Assessment and Monitoring (TEAM) methodology. This approach has also been used by UNDP/FBD and the Eastern Arc Mountain Conservation Endowment Fund (EAMCEF) through SUA to put up carbon monitoring plots in the Nature Reserves. The Valuing the Arc project, with technical support from the Natural Capital Project, has developed a model and methodology for using the Tanzanian land cover map and available carbon data (above and below ground) to map the distribution of carbon across the eastern part of the country to provide a simple way to visualize the distribution of carbon in Tanzania.

The valuing the Arc approach will be used to map out carbon levels in different forest and woodland regimes for the sub-national levels in the country. The terms of reference for sub-national levels carbon stock assessment is presented as Annex 3a.

Further more, Group on Earth Observation –Forest Carbon Tracking (GEO-FCT) is working on very promising data sets for Countries where Tanzania among others is a National Demonstrator. The GEO-FCT will solve substantially a number of data gaps aspects on MRV.

At project level, major concerns include the expense of ground-based surveys by experts and alienation of carbon stocks from local communities. Community-based monitoring of carbon stocks can overcome these challenges. In Tanzania it has been demonstrated through research projects such as Kyoto: Think Global Act Local (K:TGAL) that local people are able to collect forest condition data of comparable quality to trained scientists, at half of the cost. Empowering communities through ownership of carbon could provide a rapid and cost-effective way of absorbing carbon dioxide emissions whilst contributing to poverty reduction, sustainable development and conservation objectives.

Community participation in international carbon payment systems such as REDD could potentially provide a source of income for poor and marginalized people in forest areas, and contribute to the attainment of the Millennium Development Goals (MDGs). In Tanzania, these goals are encapsulated in the National Strategy for Growth and Reduction of Poverty (NSGRP or MKUKUTA in its Kiswahili acronym), which envisaged reducing rural poverty (< \$1 per day per head) by 50% compared to baseline 1990, by 2010, although the global goal was to reach this level of reduction by 2015. A second relevant goal belonging to the MDGs is that of environmental sustainability, and particularly the first two targets in this regard: the integration of principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources; and reduce biodiversity loss.

Through its established Participatory Forest Management (PFM) approaches, Tanzania will continue testing and scaling up community based assessment and monitoring of carbon stocks. **However, this should go hand in hand with special efforts to address the main drivers of deforestation and forest degradation and their underlining causes as outlined in component 2a.**

The national reference scenario and carbon assessment will be closely linked to the MRV systems (component 4a) for compatibility of data and information sharing.

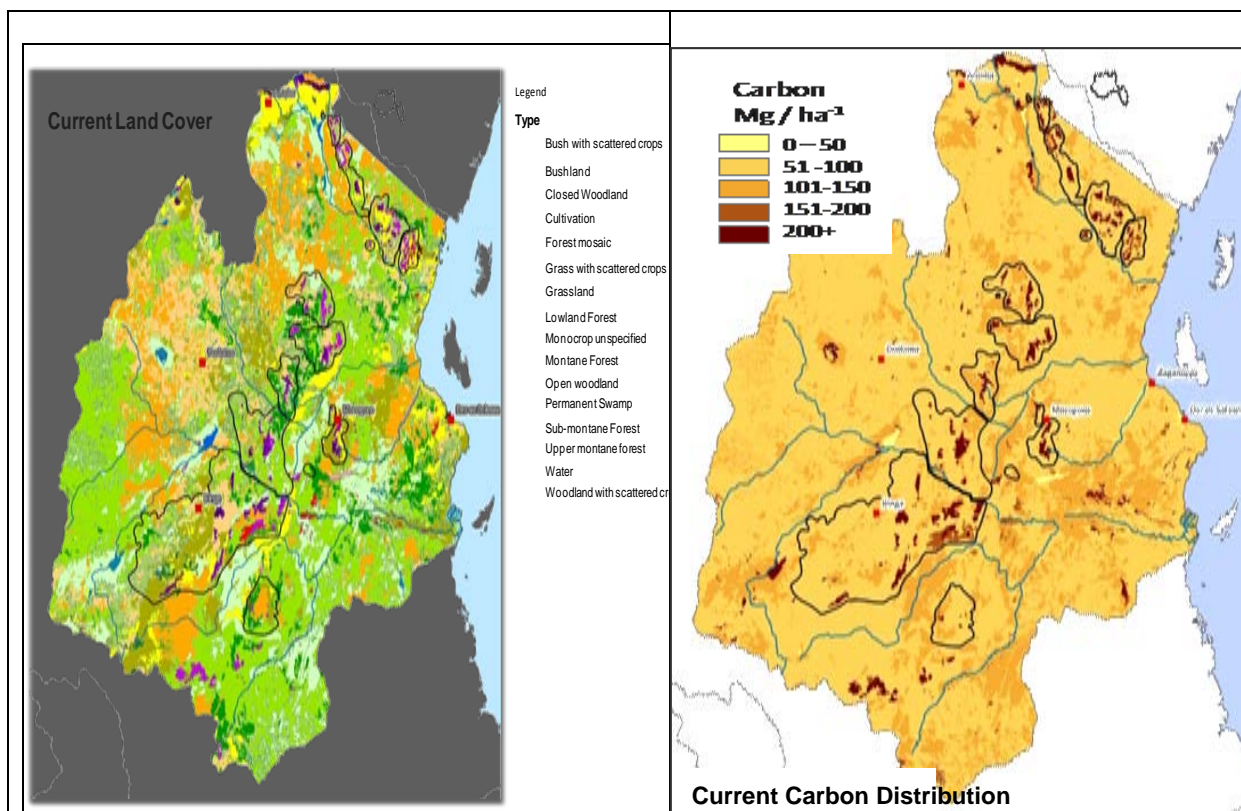


Figure: 3.1 Carbon stocks and their distribution as estimated from Carbon Density in Different Land Cover Types in the Eastern Arc Mountain Region (Source: Valuing the Arc Project).

The valuing the Arc approach will be used to map out carbon levels in different forest and woodland regimes in the country. The methodology involves carbon stocks estimated from compiling existing data from literature - published means from different studies for different Land Cover Types as well as use of IPCC Publications. Further field estimates of carbon for different land cover types done by measurements on 1 Ha permanent sample plots to enable future monitoring using the Tropical Ecology Assessment and Monitoring (TEAM) Methodology which is a robust international methodology for vegetation/carbon monitoring. Modeling of C distribution done by using the Integrated Valuation of Ecosystem services and Tradeoffs model (InVEST) (Natural Capital 2008).

The following steps and activities are planned for developing the national carbon accounting system and baseline scenarios for assessing carbon stocks, estimating GHG emissions as well as assessing social, environmental and biophysical impacts of REDD activities.

1. Development of a base map for Tanzania (UN-REDD is producing a base map; NAFORMA and others GEO-FCT, Google Earth, LiDAR producing data)
2. Create a time series of vegetation change, which is important and powerful in estimating GHG emissions
 - a. To initiate, support and build capacity run a workshop on remote sensing methods. Consider putting in place long term arrangements for exchange and interaction with relevant institutions (DCC, WRI, ESRI and others)

3. Develop/adapt/adopt data standards and protocols
 - a. Harmonise methodologies for data collection that are being used now so that any/all data is compatible and can be included in the national carbon account.
 - b. Run a workshop on data standards and collection protocols
4. Assess Existing Data
 - a. Recognising the importance of data that is already held and might be used; assess existing data for its utility to contribute to the national carbon account. Nearly all data can have a role in a comprehensive system.
 - b. Collate all the climate data available and develop climate surfaces based on time.
 - c. Utilize the collaboration of NAFORMA with GEO FCT; LiDAR, Google EO, FRA RSS, NCAS-T, ESA, TaTEDO at Shinyanga, WWF, Finnish LiDAR research, the GEO FCT plots and the FAO Global sites.
5. Consider and integrate soils data:
6. Create a regression by collating data sets to known biomass
7. Extract land management information setting out the types of management and the implications of management interventions at a given time and place.
8. Identify, test, validate and run potential biomass/carbon/growth models
9. Long term Institutional set up for NCAS-T (National Carbon Monitoring Centre)

A working group has been formed to develop modalities for establishing the NCAS -T including the development of the terms of reference for a local and international consultant to assist in the actual establishment.

The detailed terms of reference for the establishment of the national carbon baseline using the experiences and approaches from the Eastern Arc are presented in Annex 3.

Capacity Building and infrastructure development

Available capacity and infrastructure for effective implementation of the carbon accounting system are limited, especially in the areas of modeling, GIS simulation, monitoring and evaluation, and carbon stock assessments. The REDD strategy will put considerable emphasis on capacity building and infrastructure development at the national and sub national levels.

A four year research and training programme on Climate Change, Impacts, Adaptation and Mitigation in Tanzania (CCIAM) has been initiated to support the REDD implementation capacity in the country. The programme is implemented by the Sokoine University of Agriculture (SUA), in collaboration with University of Dar es Salaam (UDSM); Ardhi University (ARU) and the Tanzania Meteorological Agency (TMA). The purpose of this programme is to: develop and sustain adequacy in national capacity to participate in climate change initiatives and address the effects and challenges of climate change. The emphasis of the programme is on better management of forest and other land resources for REDD readiness. The programme will also address socio-economic and gender aspects related to climate change such as livelihoods of various communities, vulnerability and adaptation options. It focuses on developing and undertaking training and education programmes contributing to scientific knowledge on climate change with particular emphasis to the REDD initiatives. The programme will also contribute to capacity building among other REDD actors at all levels and opportunities will be availed to all Tanzanians.

The programme will address the following specific objectives:

- To determine and develop appropriate climate change mitigation and adaptation strategies in forestry, other land uses, ecosystems and biodiversity management
- To assess climate change impacts on and vulnerability of ecosystem services and livelihoods under REDD initiatives

- To conduct policy and legal framework analysis of climate adaptation and mitigation with emphasis on economic efficiency, ecological effectiveness and wider political legitimacy
- To develop and undertake capacity building, dissemination and strategic interventions for adaptation and mitigation to climate change

The proposing institutions have the capacity and expertise to adequately undertake the projects. It is expected that by the end of the programme, a comprehensive research and methodology development programme for climate change adaptation and mitigation will have been completed and enable Tanzania to implement the post-2012 climate mitigation and adaptation regimes.

Specific focus areas for capacity building include;

- Develop and undertake human capacity building to address adaptation and mitigation to climate change
- Mainstreaming climate change issues in tertiary institutions curricula.
- Conducting specialised climate related training at various levels for Tanzanians including 50 MSc and 17 PhD students with special emphasis on climate and ecological modeling, MRV and Remote sensing using REDD pilot areas as study sites.
- Developing modules incorporating analytical modeling in socio-economic and ecological issues to be used for analysis of adaptation to climate change and variability.
- Developing short courses on different topics on climate change for policy makers and trainers.
- Conducting training and dissemination workshops for various stakeholders
- Enhancement of special skills in modeling for technicians and scientists
- Engagement of 15 young and 12 senior professionals in exchange programmes. This will involve Norwegian and Tanzanian postgraduate students and other young researchers in collaborative research projects to acquire skills and/or exposure to experiences that may add value to their study programmes.

The focus on physical infrastructure development includes:

- Establishment of database to pool all information generated by the programme
- Provision of equipment (e.g. weather monitoring equipment (Automatic Weather Stations), data loggers, GIS software and equipment, computers).
- Provide reliable internet services and connectivity in partner institutions to facilitate access of scientific information for research
- Strengthening existing climatological monitoring station network and communication system by TMA
- Strengthening the existing climate research and establish modeling laboratories
- Avail hardware and software for short course training of various participants on modeling climate change effects.
- Improvement of field research laboratory at Mazumbai for monitoring of climate change impacts on high forest ecosystems and related biodiversity
- Strengthening of research laboratory for monitoring of climate change impacts on aquatic ecosystems and related biodiversity at UDSM
- Acquire tide gauges for continuous observation reference station for sea level monitoring by ARU.

Details of the CCIAM programme is presented in Annex 2b-3

Table 3-1: Summary of Reference Scenario Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Assessment of Carbon levels from different forest regimes	Engagement of national consultants for the study	\$50	\$195	\$100	\$	\$345
	Harmonization of methodologies and data capture systems with MRV systems	\$15	\$15	\$	\$	\$30
Knowledge and information sharing with all stakeholders (Dissemination)	Synthesis and development of results into user friendly formats (brochures)	\$30	\$50	\$55	\$30	\$160
Training and Capacity Building of national experts	Training (Capacity Building) in MRV, carbon modeling and mapping, remote sensing methods and data synthesis	\$60	\$80	50	50	\$240
Carbon Mapping using various techniques	Carbon mapping	\$90	\$90	\$80	\$40	\$300
	Backcasting of Carbon lost/changes	\$85	\$100	\$50	\$40	\$275
National workshop to share info on NCAS-T	Operationalisation of national workshop	\$200	\$	\$		\$200
Total		\$530	\$530	\$335	\$160	\$1555
Government		\$45	\$15	\$	\$	\$65
FCPF		\$	\$	\$	\$	\$0
UN-REDD Programme (if applicable)		\$80	\$70	\$55	\$30	\$235
Clinton Climate Initiative (CCI)		\$100	\$52	\$20	\$	\$172
Norway-Tanzania Climate Change Partnership (Including CCIAM)		\$300	\$368	\$265	\$150	\$1083
GRAND TOTAL		\$530	\$530	\$335	\$160	\$1,555

Component 4: Design a Monitoring System

4a &b Emissions and Removals

Monitoring, Reporting and Verification

Background

Monitoring and reporting for REDD entails developing the Monitoring, Assessment, Reporting and Verification (MRV) system which will provide required set of systems to understand carbon and ecosystem services related data such as carbon stock changes, water quantity and quality, biodiversity and ecotourism. Monitoring is also essential for keeping track of co-benefits and the degrees of equity in managing resources under REDD, including changes over time as the frameworks mature and settle. In addition, a robust monitoring system will provide social and economic information on impacts and benefits of REDD at community levels. The design and implementation of MRV frameworks relevant for REDD will require especially careful attention and involvement of various actors at national sub-national and local levels.

Tanzania intends to establish a participatory and functional MRV system to monitor deforestation and degradation and respond to the needs for data collection, synthesis and analysis of data and information and provision of information on all aspects of REDD. The MRV system will also monitor socio economic factors related to rural livelihoods, conservation of biodiversity, key governance factors related to REDD implementation and assess the impacts of the REDD strategy in the forest sector. The monitoring system will be implemented at national, sub-national and local levels involving Government and state actors, civil society, Non Governmental organization, private sector entities, local government authorities including villages, women groups, the youth and teens and consumer groups. Socio-economic monitoring tools, methodology and monitoring frequency will be developed.

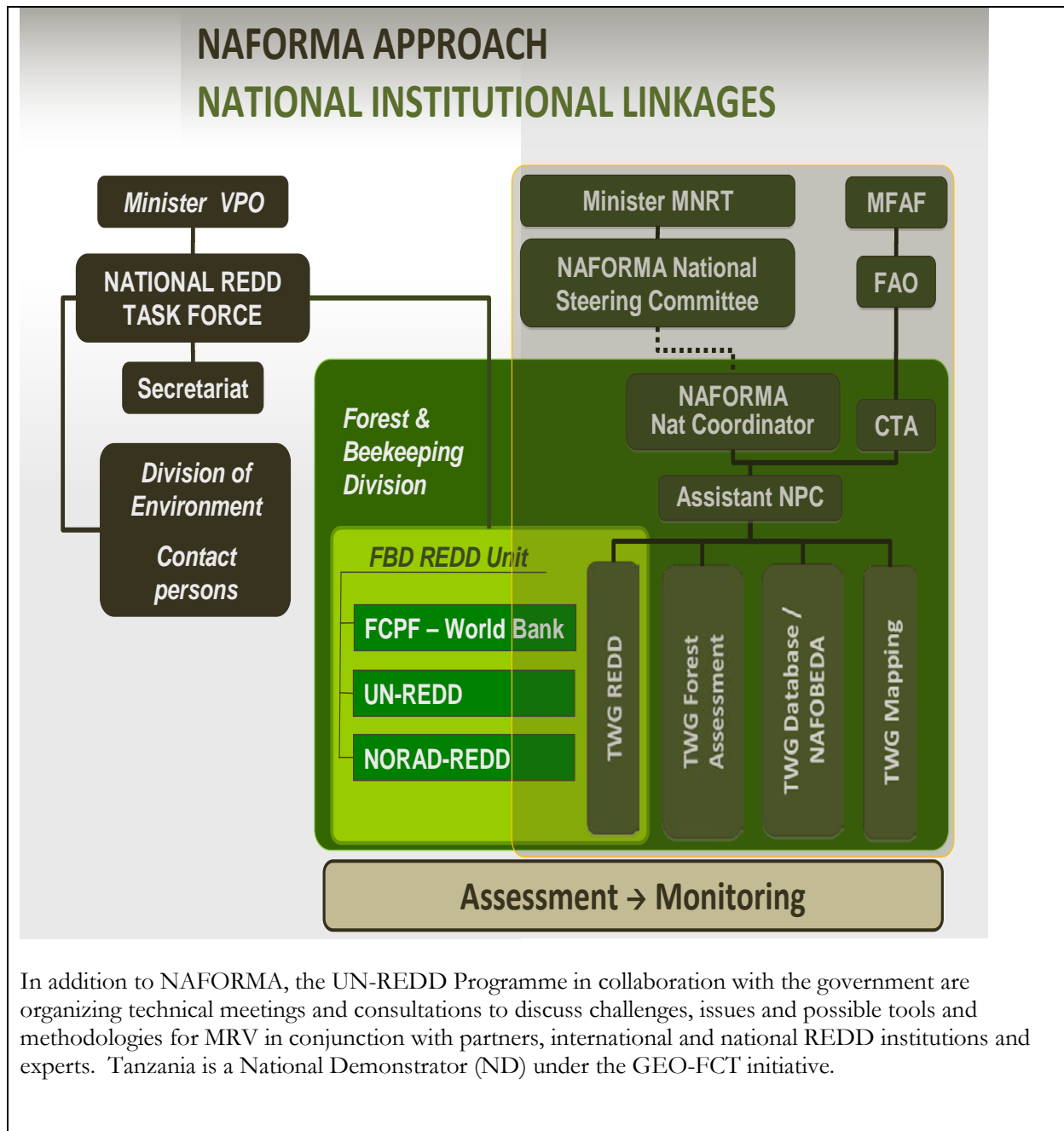
Monitoring for REDD

A key aspect of determining the carbon benefit of any forest carbon project is to accurately quantify the levels of carbon changes to known levels of precision. After setting up a baseline as pointed out in Section 3, A system of monitoring the changes need to be established.

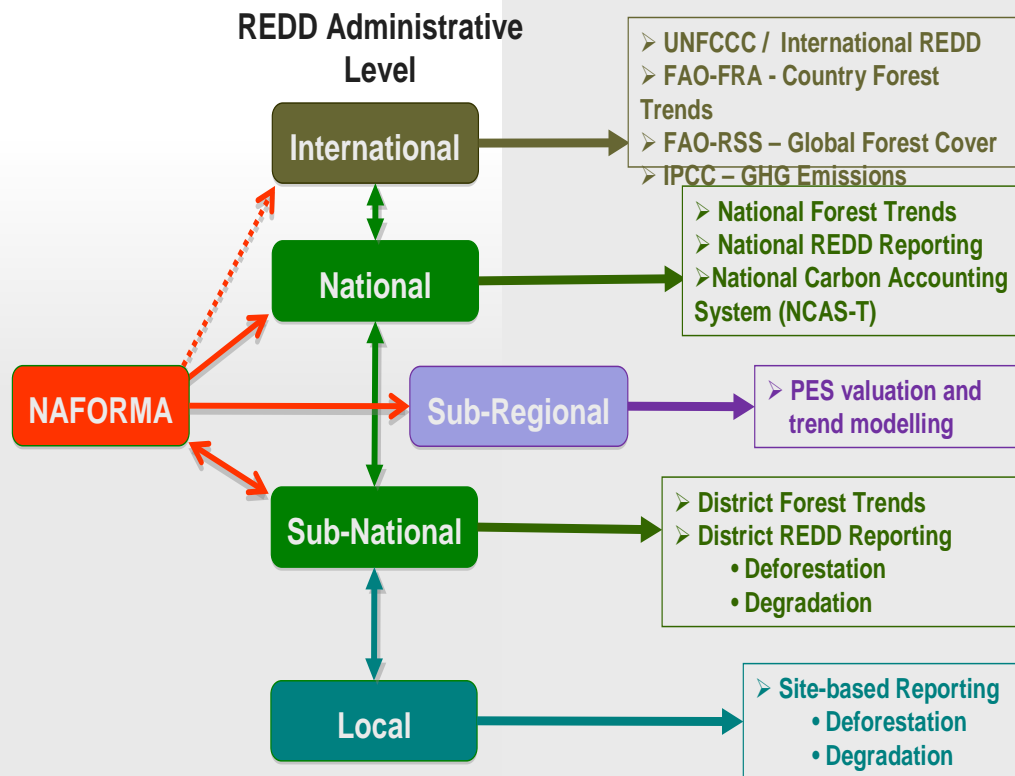
NAFORMA has been adopted as one of the national data set framework for monitoring, reporting and verification of REDD related activities, data and information. The inventory based on *Permanent Sample Plots* is the backbone of NAFORMA/MRV: It consists of two major components:

- *Biophysical component*
[direct measurements and observations]
 - Provides information on extent and condition of the Forest and TOF resources.
 - Captures Deforestation and Forest Degradation through re-measurements.
- *Socioeconomic Component*
[interview based (key informants / transect walks / household interviews)]
 - Provides knowledge about the human factors that affect changing forest conditions in a country – driving forces for forest change.

Both together, provide a powerful tool in assessing the effectiveness of policies aimed to improve forest conditions.



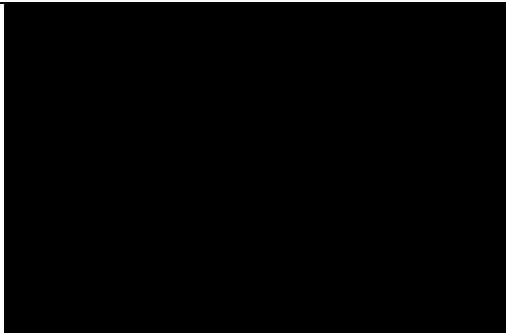
NAFORMA APPROACH REDD FEEDINGS AND OUTPUTS



The NAFORMA sampling design started with FAOs conventional concept to supporting NFMA activities i.e. the collection of biophysical and socioeconomic data related to the state of the forest and TOF resources, collected through direct measurements, observations and interviews on a network of permanent field sample sites and mapping based on satellite imagery.

Careful consideration was done on which parameters to include in NAFORMA before embarking on a lengthy, demanding fieldwork phase, in order to meet the national and international information needs. After critical information need study, and considering the IPCC Good Practice Guidelines (2003-6), NAFORMA Tanzania came up with a slightly different inventory design compared to the conventional NFMA approach.

The inventory design is a systematic stratified cluster sampling covering the entire country. The strata are the vegetation types classified according to the Hunting Technical Services (1995). A cluster consists of ten plots in an L shape arrangement. The average distance between clusters is 15 kms. However, there are small variations on this distance depending on land cover type. Cluster intensity is higher in forested area than in less forested areas such as agriculture lands.



Lay out of sample plots in a cluster for NAFORMA, Tanzania

The distance between plots is 250 m. The sampling design has also considered variation within vegetation types.

Tropical natural forests are characterized with high variation in terms of tree ages, sizes and species. The distribution of stem numbers by diameter classes assumes a negative exponential or reversed J-shape such that there are many small trees, with the numbers decreasing with increasing tree dbh. In order to measure approximately the same number of trees for each size class, circular concentric plots of 2, 5, 10 and 15 m are used. Similar shape and size of plots were used in previous inventories in Tanzania.

From each plot species name and dbh of all measured trees will be recorded in the following manner

- i) Within 2 m radius: all trees with dbh ≥ 1 cm will be recorded
- ii) Within 5 m radius; all trees with dbh ≥ 5 cm will be recorded
- iii) Within 10 m radius; all trees with dbh ≥ 10 cm will be recorded
- iv) Within 15 m radius; all trees with dbh ≥ 20 cm will be recorded

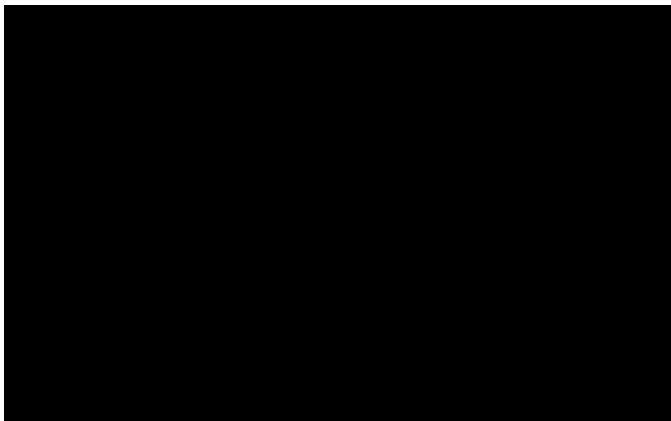


Fig. The NAFORMA concentric plot

Local tree identifiers are used to identify tree species for later translation into botanical names using checklists and botanists. The total height and stump diameter of three trees ("sub-sample trees") are measured. The sub-sample trees will be every 5th tree in the entire cluster. Example; If the first plot has 13 trees, the sample trees will be the 5th and the 10th tree. The remaining two trees will be carried over to the next plot to be included in the selection of other sub-sample trees. If the second plot has 10 trees, starting with the two trees carried over from the first plot, the subsample trees will be the 3rd tree and the 8th tree.

Tree calipers or diameter tapes (for large trees) are used to measure tree dbh while total tree heights are measured using hypsometers (Suunto). The basal diameter (at 15 cm from the ground) and bole height are also measured. The stump diameter of all cut trees in a plot are also measured. Other plot details recorded include: Date and name of recorder, name of the district, ward and village, name of forest, ownership, cluster number, plot number, vegetation type, slope, elevation, and GPS location.

Tanzania is one of nine countries where the UN-REDD Programme is supporting the development of REDD+ readiness and one of the ten Countries under the GEO-FCT National Demonstrators. The country has been developing several MRV tools and methodologies over the past year, with the support of various international initiatives. During the first week of February 2010, the Government of Tanzania represented by the Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division organized a Measurement, Reporting and Verification (MRV) workshop in Tanzania, with the support of the UN-REDD Programme. The workshop was to share experiences and results from actual projects in the country and to harmonize with ongoing initiatives in other REDD+ countries.

In terms of monitoring and reporting, Tanzania needs enhanced capacity and capturing of relevant data, combined with work by other players, UN REDD Programme should provide that capacity and deliver the required data. Capacity building on MRV needs at the national level to assess the specific forest areas under REDD that need to be monitored and the results reported upon, these could be provided in the form of training on remote sensing, GIS, IPCC Good Practice Guidance, and linked to the ongoing Tanzanian National Forest Inventory work (NAFORMA) and various work conducted with different actors.

Consultation with various actors about their related MRV work in country and internationally, identified three main areas that are central to ensuring successful MRV REDD establishment in Tanzania these are:

1. Need to reinforce MRV country coordination for provision of data and methodologies
2. Need to strengthen institutions that deal with issues related to forest assessment, monitoring and reporting
3. Need to strengthen cross-sectoral participation and approach (both vertical and horizontal)
4. Need to have the NCAS-T and the National Carbon Monitoring Centre (NMC)

Verification of the measurements

Before the transactions of carbon credits take place verification of the measurements is necessary. Verification is done by an independent party and establishes that the carbon measurements are reliable and accurate. Both national and international levels verification will be necessary since the baselines will be set at these levels. The verification of the national baselines will require independent verifier. Within the country independent party would have to be a licensed and registered agent, in the same sense as a chartered accountant, but would not necessarily have to be external to the country. Ideally the verifier will undertake ground spot measurements to check the accuracy of the field measurements by the villagers. After verification, carbon will be purchased through national REDD scheme.

At present the country lacks knowledge on international independent verifier & verification. Similarly, the system for independent verification at the national level is missing. It is therefore important to establish independent semi-autonomous National Carbon Monitoring Centre (NMC) for this purpose. Apart from verification of the carbon data using approved guideline, the NMC will among other things undertake the following core tasks:

- a) Development and updating of national baseline database using data from NAFORMA and other sources,
- b) Development and improvement of approved carbon assessment methods,
- c) Training of foresters on the approved carbon assessment methods,
- d) Development and maintenance of the carbon database,
- e) Analysis of data,
- f) Submission of the results to the government REDD scheme and stakeholders,
- g) Submission of the data to the NAFOBEDA, and
- h) Verification of the amount of carbon reduced.
- i) Develop and institutionalize the NCAS-T

Regular reporting

Reporting will be needed at various levels. Individual projects need to report on the carbon data to the national REDD scheme for funding. This should be done regularly. The government will then market the carbon to the international community. Reporting on the financial flow and livelihood issues will also be required at all levels.

Tanzania has adequate support to access remote sensed data and even bridge the gap in available ground data on forest carbon stock/s. The technological and human capacity to undertake baselines is/will be supported by UN-REDD, the GEO-FTC, Google Earth and the Lidar Project.

NB: FCPF-World Bank implies the FCPF initiative or process under the Facilitation of the Facility Management Team, it does not mean/imply the World Bank under any circumstances or interpretation

UN-REDD implies the process under FAO/UNDP & UNEP initiative/processes it does imply the UN-Agencies which are forming part of it under any circumstances or interpretation

NORAD-REDD implies the process being supported under the Bilateral agreement between Tanzania & Norway (Norway-Tanzania Climate Change Partnership), it does not imply the Norad.

On- Going Initiatives related to the monitoring system.

In responding to this challenge of establishing a MRV in readiness to implement REDD, a number of projects and programmes have been initiated to provide the necessary capacity and tools for the establishment of the REDD MRV.

1. The National Forest Assessment (MRV/NAFORMA)

The national forest inventory is currently underway. The inventory based on *Permanent Sample Sites* is the backbone of NAFORMA/MRV: It consists of two major components:

- **Biophysical component**
[direct measurements and observations]
 - Provides information on extent and condition of the Forest and TOF resources.
 - Captures Deforestation and Forest Degradation through re-measurements.
- **Socioeconomic Component**
[interview based (key informants / transect walks / household interviews)]
 - Provides knowledge about the human factors that affect changing forest conditions in a country – driving forces for forest change.
- Potential REDD+ linkages (ecosystem services).

Both together, a powerful tool in assessing the effectiveness of policies aimed to improve forest conditions – and policy development

2. The UN-REDD Programme in collaboration with the government is organizing technical meetings and consultations to discuss challenges, issues and possible tools and methodologies for MRV in conjunction with partner international and national REDD institutions and experts.

Tanzania is one of nine countries where the UN-REDD Programme is supporting the development of REDD+ readiness. The country has been developing several MRV tools and methodologies over the past year, with the support of various international initiatives. During the first week of February 2010, the Government of Tanzania represented by the Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division organized a Measurement, Reporting and Verification (MRV) workshop in Tanzania, with the support of the UN-REDD Programme. The workshop was to share experiences and results from actual projects in the country and to harmonize with ongoing initiatives in other REDD+ countries.

In terms of monitoring and reporting, Tanzania needs enhanced capacity and capturing of relevant data, combined with work by other players, UN REDD Programme will provide that capacity and deliver the required data. Capacity building on MRV needs at the national level to assess the specific forest areas under REDD that need to be monitored and the results reported upon, these could be provided in the form of training on remote sensing, GIS, IPCC Good Practice Guidance, and linked to the ongoing Tanzanian National Forest Inventory work (NAFORMA) and various work conducted with different

actors.

This workshop report includes brief presentations from various actors about their related MRV work in country and internationally, which served as a basis for further analysis and recommendations for the coordination and delivery for MRV REDD in Tanzania. The report identifies the following three main areas central to ensuring successful MRV REDD establishment in Tanzania and elaborates relevant actions and other considerations with regard to each:

- i. Need to reinforce MRV country coordination for provision of data and methodologies
- ii. Need to strengthen institutions that deal with issues related to forest assessment, monitoring and reporting
- iii. Need to strengthen cross-sectoral participation and approach (both vertical and horizontal)

Key outputs from the workshop included the decision to enhance coordination among various MRV initiatives in Tanzania and to develop the National Forest Inventory by NAFORMA, using tools such as LIDAR, estimations from remote sensing, Geographic Information Systems (GIS) and carbon models. Workshop participants agreed that Tanzania's MRV efforts could be used as a case study for other REDD+ countries, given that MRV initiatives in Tanzania are on track to be ready for a post-2012 agreement.

The workshop is considered a success as it achieved the following:

- Created awareness on current status of REDD at global level and how it affects the country in terms of challenges and opportunities presented by future REDD MRV implementation/execution;
- Identified main issues posed by institutionalizing REDD MRV;
- Identified key actors /organizations/stakeholders working on MRV issues in Tanzania;
- Agreed on actions that need to be taken by various players in order to overcome current challenges brought by MRV;
- Explored linkages among different ongoing initiatives on methodological developments to support Tanzania towards a MRV set-up, implementation and national institutionalization;
- Recommended on key steps for moving forward including the need for coordination of the different ongoing initiatives to better integrate among the different partners and maximize the benefits of the unique contribution/strength each group/partner brings;
- Agreed on how to communicate and disseminate results among the actors during the process and going forward;
- A special call was made to link MRV methodologies of the NGOs' pilot REDD activities with the national MRV system to create a national-sub national synergy.

3. The national Carbon Accounting System for Tanzania (NCAS-T)

The National Carbon Accounting System (NCAS) is on-going and is based on the Australian experience (refer Component 3).

4. Community level carbon monitoring systems (The Kyoto: Think Global Act Local Projects)

The Kyoto: Think Global Act Local Project being implemented in Morogoro, Tanga and Manyara in Tanzania present valuable lessons for the Tanzania REDD programme. The project is based on empowering communities to manage and conserve forest resources for various economic and material benefits. Communities already engaged in local forest management (PFM) have been trained in the use of a small, hand-held computer with global positioning and geographic information systems equipment, which enables them accurately to map the boundaries and the strata in the forest—a prerequisite if carbon savings are to be verifiable. Further they have been trained in standard forest inventory methods, using fixed sample plots, and in entering this data into a tailor-made database on the computer. None of these villagers has more than 7 years of primary education, and none of them had ever seen a computer before, but this is no hindrance. The local NGOs help in the training, maintain the computers and supervise the laying out of sample plots to ensure that carbon measurements meet rigorous scientific standards.

Documented experiences of community forestry have shown very positive results. On many of the areas managed by the communities natural regeneration has taken place and biomass has become denser, so that instead of being a net emitter of carbon forest degradation, the forest becomes a sink. Some of these experiences are being used to involve communities in monitoring and evaluation of carbon in various pilot projects. Training and capacity building of communities and individuals will be critical during the implementation phase.

The monitoring system will provide opportunities for participatory and transparent operation of the strategy and information sharing. This will be critical for addressing key governance issues such as corruption. All stakeholders including government institutions, Civil Society Organs, NGOs and private sector entities will be involved in the implementation and knowledge sharing. Environmental and social impacts will be monitored at individual, district and national levels. Forest owners will be responsible for monitoring activities and changes at their levels while government agencies and civil society associations and district councils will compliance of basic environmental safeguards and standards. At the national level, the Vice President's office department of Environment is responsible for environmental policy formulation while NENC is responsible for enforcement of environmental regulations. They will continue to assume this role also under REDD+. They will involve civil society and other stakeholders in the implementation of environmental safeguards.

Capacities for participatory monitoring and evaluation of land use changes and environmental impacts is very low at both national and district levels. All stakeholders including communities, government officials, Civil society personnel will require technical capacity building as well as support with equipment such transportation, computers, software and hardware to adequately equip them for effective monitoring and reporting. This will require financial support from the government, development partners. Consider the potential benefits of designing the system to integrate across sub national regions; or at a multi-country regional level, if either of these is relevant, based on your ecological, institutional and economic context.

Table 4: Summary of Monitoring Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Establishment and strengthening of the NCMC	Establish NCMC	\$10	\$	\$	\$	\$
	Upgrade national database	\$20	\$20	\$20	\$20	\$80
Development and updating of national baseline database using data from NAFORMA and other sources,	Data collection and synthesis	\$30	\$35	\$40	\$40	\$155
	Update baseline with current data	\$30	\$30	\$30	\$30	\$120
Development and updating of national baseline database using data from NAFORMA and other sources,	Capacity building at all levels	\$120	\$120	\$140	\$140	\$394
	Support operations at national and district levels	\$70	\$70	\$80	\$80	\$300

Total	\$281	\$275	\$310	\$310	\$104 9
Government	\$15	\$20	\$25	\$25	\$85
FCPF	\$	\$	\$	\$	\$
UN-REDD Programme (if applicable)	\$70	\$80	98	\$98	\$346
Norway-Tanzania Climate Change Partnership	\$80	\$100	\$120	\$120	\$420
NAFORMA	\$80	\$50	\$50	\$50	\$330
CCI	\$36	\$25	\$17	\$17	\$59

Component 5: Schedule and Budget

5a Provides a provides a summary of scheduled activities by component and financial requirements for each activity while schedule 5b summarizes donor contributions to cover the financial requirements. Please note that most of the funds for Tanzania will be sourced from NORAD thus no financial requests will be made from FCPF. Please note that the budgets indicated in the tables below only cover activities indicated under the FCPF and thus represent only parts of budgets for various on-going projects and initiatives under the CCIAM, UNREDD and the Norwegian programme.

Table 5a: Proposed detailed schedule, budget and allocations

Major Activity	2010	2011	2012	2013	Total
Component 1a					
Strengthen capacities of national steering and technical committees	\$155	\$36	\$167.5	\$8	\$366.5
Strengthen capacities and operations of REDD task force and Secretariat	\$150	\$125	\$90	\$95	\$476
Training and awareness of LGA and other key stakeholders (all districts)	\$315	\$337	\$339	\$253	\$1244
Sub Total	\$577	\$498	\$596.5	\$356	\$2086.5
Component 1b					
Component 1c					
Synthesis and analysis of governance issues (Study)	\$50	\$50	\$	\$	\$100
Cross sectoral analysis of current knowledge and activities in addressing drivers of deforestation.	\$120	\$	\$	\$	\$120
Consultations at national and district levels	\$50	\$50	\$	\$	\$100
Synthesis and validation workshops	\$45	\$	\$	\$	\$45
Sub Total	\$265	\$100	0	0	\$365
Component 2b					
Follow-up of ongoing studies and pilot projects	\$115	\$140	\$145	\$25	\$425

Review and analysis of sector based programmes.	\$85	\$90	\$20	\$25	\$220
Training and institutional capacity for improved governance	\$180	\$185	\$187	\$190	???
Sub Total	\$265	\$210	\$260	\$215	\$950
Component 2c	2010	2011	2012	2013	Total
Consultants and technical assistants	\$120	\$50	\$	\$	\$150
Coordination and support to NEMC and TF	\$30	\$30	\$50	\$30	\$140
National stakeholders workshop for sharing results	\$55	\$	\$	\$	\$55
Training at national and sub-national levels	\$80	\$55	\$40	\$	\$175
Support to LGAs and other organizations to implement SESA	\$40	\$35	\$30	\$	\$105
Total	\$325	\$170	\$120	\$30	\$625
Component 3	2010	2011	2012	2013	Total
Engagement of national consultants for the study	\$50	\$195	\$100	\$	\$345
Harmonization of methodologies and data capture systems with MRV systems	\$15	\$15	\$	\$	\$30
Synthesis and development of results into user friendly formats (brochures)	\$30	\$50	\$55	\$30	\$160
Training (Capacity Building) in MRV, carbon modeling and mapping, remote sensing methods and data synthesis	\$60	\$80	\$50	\$50	\$240
Carbon mapping	\$90	\$90	\$80	\$40	\$300
Backcasting of Carbon lost/changes	\$85	\$100	\$50	\$40	\$275
Operationalisation of national workshop	\$200	\$	\$		\$200
Total	\$530	\$530	\$335	\$160	\$1555

Component 4	2010	2011	2012	2013	Total
Establish NCMC	\$10	\$	\$	\$	\$
Upgrade national database	\$20	\$20	\$20	\$20	\$80
Data collection and synthesis	\$30	\$35	\$40	\$40	\$155
Update baseline with current data	\$30	\$30	\$30	\$30	\$120
Capacity building at all levels	\$120	\$120	\$140	\$140	\$394
Support operations at national and district levels	\$70	\$70	\$80	\$80	\$300
Total	\$281	\$275	\$310	\$310	\$1049
Component 6	2010	2011	2012	2013	Total
NCAS-T / MRV working groups formed	\$30	\$	\$	\$	\$30
Operations of MRV/NCAS-T supported	\$ 20	\$30	\$40	\$	\$90
Capacity for M &E of all institutions at national and sub-national levels strengthened through training.	\$500	\$600	\$600	\$200	\$1900
Awareness at national level.	\$ 45	\$50	\$	\$	\$95
Awareness at district level	\$55	\$100	\$50	\$50	\$255
Data collection and synthesis	\$100	\$250	\$300	\$300	\$ 950
Data and information from pilots and special studies synthesized and reported	\$20	\$20	\$20	\$15	\$75
Development of partnerships at national (sectoral) and sub-national levels	\$25	\$30	\$20	\$0	\$75
Total	\$795	\$1080	\$1030	\$565	\$3,470

5a. Sources of Funds by Donor.**Component 1b**

Source of Funds	2010	2011	2012	2013	Total
Government of Tanzania	\$27	\$20	\$30	\$25	\$102
FCPF	\$	\$	\$	\$	\$0
UN-REDD Programme	\$200	\$150	\$150	\$150	\$650
CCIAM	\$150	\$128	\$120	\$120	\$518
Norway-Tanzania Climate Change Partnership	\$200	\$200	\$296	\$196	\$892

Component 2a

Source of Funds					
Government	\$35	\$10	\$	\$	\$45
FCPF	\$	\$	\$	\$	\$
UN-REDD Programme	\$150	\$50	\$	\$	\$200
Norway-Tanzania Climate Change Partnership	\$88	\$40	\$	\$	\$128
	\$	\$	\$	\$	\$

Component 2b

Government	\$26	\$10	\$15	\$20	\$91
FCPF	\$	\$	\$	\$	\$
UN-REDD	\$70	\$40	\$50	\$60	\$220
Norway-Tanzania Climate Change Partnership	\$100	\$80	\$130	\$120	\$430
CCI	\$69	\$80	\$50	\$15	\$214

Component 2c

Government	\$25	\$30	\$15	\$3	\$73
FCPF	\$	\$	\$	\$7	\$237
UN-REDD Programme (if applicable)	\$100	\$70	\$45	\$20	\$235
Norway-Tanzania Climate Change Partnership	\$100	\$70	\$60	\$7	\$237

Component 3

Government	\$45	\$15	\$	\$	\$65
FCPF	\$	\$	\$	\$	\$0
UN-REDD Programme (if applicable)	\$80	\$70	\$55	\$30	\$235
Clinton Climate Initiative (CCI)	\$100	\$52	\$20	\$	\$172
Norway-Tanzania Climate Change Partnership (Including CCIAM)	\$300	\$368	\$265	\$150	\$1083

Component 4

Government	\$15	\$20	\$25	\$25	\$85
FCPF	\$	\$	\$	\$	\$
UN-REDD Programme (if applicable)	\$70	\$80	98	\$98	\$346
Norway-Tanzania Climate Change Partnership	\$80	\$100	\$120	\$120	\$420
NAFORMA	\$80	\$50	\$50	\$50	\$330
CCI	\$36	\$25	\$17	\$17	\$59

Component 6

Government	\$40	\$50	\$30	\$40	\$160
FCPF	\$0	\$	\$	\$	\$0
UN-REDD Programme	\$500	\$50	\$50	\$70	\$670
Norway-Tanzania Climate Change Partnership	\$200	\$900	\$900	\$400	\$2400
CCI	\$55	\$80	\$50	\$55	\$240

Component 6: Design a Program Monitoring and Evaluation Framework

The purpose of the Program Monitoring and Evaluation (M&E) framework is to encourage efficient and transparent management of resources and to help a country keep track of its progress towards readiness and identify and address gaps, shortfalls, and program underperformance as they emerge. The Program M&E framework helps monitor progress with respect to the components, schedule of activities to be undertaken, the outputs and the final outcome using simple indicators and serves to provide real time feedback to the government and other stakeholders of how well the preparatory work towards REDD readiness is progressing.

The Program M&E framework is a combination of ‘process’ indicators and ‘product’ indicators. The process indicators are useful for internal REDD readiness program monitoring at the country level to review whether or not the progress for the various activities/studies for the R-PP are on target, and to help address problems in a timely manner. It also includes benchmarks and quantitative and qualitative indicators such as: level of transparency in the R-PP development, inclusiveness of stakeholders, dissemination of information and products of R-PP, means of feedback, and adherence to guidelines for procurement, effectiveness and timeliness of readiness preparation process, efficiency of resource use, etc.

The Tanzania framework is guided by a number of specific features:

1. There is already a number of on-going policy and development initiatives. These have been described in Component 4 and include the UN REDD, National Forest Assessment NAFORMA and NCAS-T at the national level as well as various projects at sub-national level. Key features in each of these programmes are complementary to the REDD+ proposal.
2. Thus to avoid duplication, and to promote effective coordination, inclusiveness and transparency, a unified monitoring framework including indicators that address transparency and inclusiveness will be established at the national and sub-national levels.

A potential Tanzania framework for monitoring and evaluation of REDD+ is proposed below.

The framework at this point will address the major policy objectives or activities specified in the National REDD Framework. In broad terms, potential targets and outcomes are presented under the following key policy and institutional objectives:

- policy framework for REDD in place
- institutional structures in place and capacities strengthened
- awareness creation on REDD at national and sub-national levels,
- baseline and carbon accounting mechanisms established at national and sub-national levels
- natural resources management systems to address drivers of deforestation

- REDD information synthesis and sharing system established and linked to NAFOBEDA.
- monitoring reporting and verification (MRV) framework developed and functional
- cross sector natural resources and environment management partnerships development and
- equitable resource sharing mechanisms developed.

Table 6.1 Proposed REDD Monitoring and Evaluation Framework

Policy Objective/Outcome	Suggested MoVs	Suggested targets 2010	Suggested targets 2011	Suggested targets 2012	Suggested targets 2013
REDD strategy developed and implemented	REDD Strategy document developed and published	Draft strategy developed	Strategy endorsed and implementation modalities formulated.	Awareness on the strategy created. Strategy operational	Awareness on the strategy created. Strategy operational
Policy and legal framework for REDD in place	Forest and other related policies revised to incorporate climate change issues.	Forest policy revised	Forest policy endorsed by Parliament and regulations formulated Other related policies revised	Awareness on policy created at community level. Other related policies endorsed by Parliament and regulations formulated	Awareness on policy created at community level.
REDD institutional structures in place and capacities strengthened	REDD implementing committees and units and working groups formed and functional	The NCCSC, NCCTC, FBD REDD Unit and NCMC/NCAS/REDD Trust Fund working groups formed	Legal Framework for the REDD implementing committees, units and working groups established and approved	Legal Framework for the REDD implementing committees, units and working groups established and approved	The REDD implementing committees, units and working groups functional
	REDD framework at local government	Local government level information,	Local government level information,	Local government level information,	Local government level information,

	levels formalized.	implementation & reporting channels formed	implementation & reporting channels established and operational	implementation & reporting channels operational	implementation & reporting channels operational
	Capacity of all institutions strengthened through training.	Capacity for the committees, units, working groups and local governments improved	Capacity for the committees, units, working groups and local governments improved	Capacity for the committees, units, working groups and local governments improved	Capacity for the committees, units, working groups and local governments improved
Awareness on REDD M&E Framework at national and sub-national levels.	Awareness created at national and district levels.				
Baseline and carbon accounting mechanisms established at national, sub-national and project levels	National Forest Assessment completed	NAFORMA initiated	NAFORMA is continuing and some data available	NAFORMA is continuing and some data available	NAFORMA is completed
	Carbon Accounting system established	Modalities for establishing the carbon accounting system in place	Draft national carbon accounting system in place	National carbon accounting system tested and reviewed	National carbon accounting functional
	MRV system established	Modalities for establishing the MRV system in place	Draft MRV system in place	MRV system tested and reviewed	MRV system functional
Strategies to address drivers of deforestation	Cross sectoral initiatives to	Cross sectoral initiatives to address	Cross sectoral initiatives to address	Cross sectoral initiatives to address	Cross sectoral initiatives to address

	address drivers of deforestation & degradation identified and integrated into REDD Strategy	drivers of deforestation & degradation identified and linkages with REDD established	drivers of deforestation & degradation identified and linkages with REDD established	drivers of deforestation & degradation implemented	drivers of deforestation & degradation implemented
REDD information synthesis and sharing system established and linked to NAFOBEDA.	REDD Information system established at national level.	District level information systems established	Data and information on governance and other resource management issues from projects synthesize and shared.		Data and information on governance and other resource management issues well coordinated.
Cross sector natural resources and environment management partnerships development	Cross sectoral Organisations and institutions involved in REDD+ identified.	REED related activities identified	Integration of information and data from all other sources into MRV system		
Equitable REDD benefits sharing mechanisms established.	REDD Trust Fund established	Modalities for establishing the REDD Trust Fund in place	Draft REDD Trust Fund in place	REDD Trust Fund tested and reviewed	REDD Trust Fund functional
	Mechanism for the distribution	Options for REDD benefits	REDD benefits distribution modalities	REDD benefits distribution	REDD benefits distribution

	of REDD benefits established	distribution modalities identified and analysed	established	modalities established and awareness created among stakeholders	modalities established and awareness created among stakeholders

Table 6.2: Summary of Program M&E Activities and Budget						
Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2010	2011	2012	2013	Total
Institutional structures in place and capacities strengthened	NCAS-T / MRV and NCAC working groups formed	\$30	\$	\$	\$	\$30
	Operations of MRV/NCAS-T/NCAC supported	\$ 20	\$30	\$40	\$	\$90
	Capacity for M &E of all institutions at national and sub-national levels strengthened through training.	\$500	\$600	\$600	\$200	\$1900
1900 Awareness on REDD M&E Framework creation at national and sub-national levels.	Awareness at national level.	\$ 45	\$50	\$	\$	\$95
	Awareness at district level	\$55	\$100	\$50	\$50	\$255
	Data collection and synthesis	\$100	\$250	\$300	\$300	\$ 950
Natural resources management systems to address drivers of deforestation	Data and information from pilots and special studies synthesized and reported	\$20	\$20	\$20	\$15	\$75
Cross sector natural resources and environment management partnerships development	Development of partnerships at national (sectoral) and sub-national levels	\$25	\$30	\$20	\$0	\$75

Total	\$795	\$1080	\$1030	\$565	\$3470
Government	\$40	\$50	\$30	\$40	\$160
FCPF	\$0	\$	\$	\$	\$0
UN-REDD Programme	\$500	\$50	\$50	\$70	\$670
Norway-Tanzania Climate Change Partnership	\$200	\$900	\$900	\$400	\$2400
CCI	\$55	\$80	\$50	\$55	\$240
Other Development Partner 3 (name)	\$	\$	\$	\$	\$