



UN-REDD
PROGRAMME

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
FORESTRY AND BEEKEEPING DIVISION/UNREDD

**STAKEHOLDERS' WORKSHOP ON MONITORING REPORTING AND VERIFICATION (MRV) TO BUILD SYNERGIES FOR COORDINATION OF
ACTIVITIES IN TANZANIA**

WORK SHOP REPORT

Peacock Hotel, Dar Es Salaam, Tanzania

3rd-5th February, 2010

EXECUTIVE SUMMARY

Reducing emissions from deforestation and forest degradation in developing countries (REDD) could provide a powerful tool for mitigating global carbon dioxide levels as well as greatly be an effective mechanism for enhancing developing country tropical forest conservation and sustainable development. However, REDD will requires number of systems be put in place to be able to provide intended benefits, and these need to be addressed since they are part of readiness components. 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 biomass related data such as carbon stocks, Reference scenario, expansion factors, potential REDD areas, forest cover changes, basis for payment distribution, evidence of emission reduction and areas of REDD+ interventions and actions. 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. Given that myriads of countries are gearing at implementing REDD schemes, the design and implementation of MRV frameworks relevant for REDD will require especially careful attention and involvement of various actors, and countries should begin testing them as soon as possible. Responding to this challenge, UN REDD Programme with collaboration with governments organizes 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. However, consistent technical support and training will have to be created in countries if MRV processes are to be sustainable and consistently verifiable, at national, district and local community levels.

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. It 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.

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:

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)

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.

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ACRONYMS AND ABBREVIATIONS

CBOs	Community Based Organizations
CCIAM	Climate Change Impacts, Adaptation and Mitigation Programme
CTA	Chief Technical Advisor
DASS	Development Associates
DSM	Dar es Salaam
EAC	East Africa Community
FAO	Forest and Agriculture Organization of the UN
FBD	Forest and Beekeeping Division
FCT	Forest Carbon Tracking
FRA	Forest Resource Assessment
GEO	Global Earth Observation
GoT	Government of Tanzania
ICRAF	International Centre for Research on Agroforestry
IPCC	Intergovernmental Panel on Climate Change
IT	Information and Technology
MNRT	Ministry of Natural Resources and Tourism

MRV	Monitoring Reporting and Verification
NAFORMA	National Forest Resource Monitoring and Assessment
NCAS-T	National Carbon Accounting System- Tanzania
NGOs	Non- governmental Organizations
PSPs	Permanent Sample Plots
PTU	Project Technical Unit
REDD	Reduced Emissions from Deforestation and Forest Degradation
R-PP	Readiness Preparation Proposal
RS	Remote Sensing
SADC	Southern African Development Community
SAR	Synthetic Aperture Radar
TaTEDO	Tanzania Traditional Energy and Development Organization
TFCG	Tanzania Forest Conservation Group
TZ	Tanzania
UDSM	University of Dar es Salaam
UMB	Norwegian University of Life Sciences
UN	United Nations

UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UN-REDD	United Nations- Reduced Emissions from Deforestation and Forest Degradation
WCST	Wildlife Conservation Society of Tanzania
WCMC	World Conservation Monitoring Centre
WWF	World Wildlife Fund

1.0 INTRODUCTION

1.1. UN REDD Programme activities in Tanzania

The UNREDD Tanzania programme is an initiative focused to strengthen Tanzania's readiness for REDD as a component of Tanzania's evolving REDD strategy, and is integrated with other activities in the country. The initiative is an integral part of the Delivering as One UN Program in Tanzania and the Joint Programme on Environment. The programme seeks to achieve the following outcomes:

Outcome 1: National governance framework and institutional capacities strengthened for REDD

Outcome 2: Increased capacity for capturing REDD elements within National Monitoring, Assessment, Reporting and Verification Systems

Outcome 3: Improved capacities to manage REDD and provide other forest ecosystem services at district and local levels

Outcome 4: Broad-based stakeholder support for REDD in Tanzania

The Tanzania UN-REDD Program Document was presented to the UN REDD Policy Board at the occasion of its first meeting in March 2009, and the budget allocation was approved. The programme was officially launched and signed by government and three agencies in November and December 2009 respectively

1.2 Roadmap & Synergies for Coordination of MRV activities in countries

The purpose of the Roadmap was to provide an overview of the monitoring and verification needs of developing countries and the international community, as well as activities planned and needed to make REDD monitoring and verification work.

The Roadmap was set up by the UN-REDD Programme based on the outcomes of the Workshop on REDD Monitoring, Assessment and Verification organized by the UN-REDD Programme in Washington, D.C. on 16 - 17 September 2008, the road map was also intended to serve and support the global REDD community. The UN-REDD Programme uses the roadmap for the planning of its MRV activities. The Tanzania chapter is very much based on the Roadmap. The Roadmap includes MRV related activities according the following topics: Data; Tools;

Capacity building ; Coordination; Infrastructure ; Co-benefits; Field sampling; Historical deforestation trends; Historical degradation; Future monitoring of degradation and Verification. For more information on the UN-REDD Programme visit their website at: www.un-redd.net

1.3 Coordination of REDD activities in Tanzania

Climate change is a cross-cutting issue as such it involves various sectors of the government. The government of the United Republic of Tanzania through Vice President's Office (Division of Environment) and Ministry of Natural Resources and Tourism (MNRT-FBD) has established a National REDD Task Force. The Task Force administer the process of developing a National Strategy for REDD and for enhancement of the voluntary carbon market in Tanzania. It also oversees the coordination of REDD initiatives in the country, hence a useful link between the National Climate Change Technical Committee and National Climate change Focal Point; which is responsible for National Coordination and Policy Issues related to forest management. At present the Task Force constitutes of six members, three from Vice President's Office-Division of Environment and three from Ministry of Natural Resources and Tourism – Forestry and Beekeeping Division. However, the number of Task Force members will increase in the near future to accommodate representatives of other institutions in relation to REDD. The Task Force works in partnership with other stakeholders in the process of establishing and implementing the national REDD Strategy. For more information about REDD Task Force and its activities visit web site at www.reddtz.org

2.0 THE MRV WORK SHOP IN TANZANIA

The government of Tanzania together with the UN REDD programme decided to organize a MRV coordination workshop to provide opportunities to discuss and share information on ongoing and planned initiatives on MRV, and provide a venue for future collaboration among key actors in and outside the country.

The workshop was also used as a platform to provide awareness and to update on issues related to REDD, specifically related to MRV in Tanzania and internationally, and how these various initiatives could be potentially benefit and provide knowledge base and technology to implement REDD.

Participants were drawn from various institutions in and outside Tanzania. These include: Government officials from the MNRT, Vice President office – Environment, Zanzibar’s Forestry department, Non governmental organizations (WWF, TFCG, WCST, Jane Goodall Institute, TaTEDO, DASS), Civil society organizations (Global Witness, Indigenous group representative), Forest research and academic institutions (UMB, Sokoine University, Institute of Resource Assessment-UDSM, University of Oslo), Other institutions (GEO Forest Carbon Track, US Geological Survey, Google Earth through audio conference) development partners (World Bank, Finnish Embassy, Norwegian Embassy) , international organizations and other institutions (FAO, UNDP, UNEP-WCMC, Clinton Foundation, ICRAF) and media (Business Week).

Participants discussed about various issues related to monitoring, reporting and verification and explored how various players can forge workable and partnerships with each other and thereby help the government of Tanzania to respond to positively to MRV challenges by instituting a credible, robust, and transparent MRV system, one likely to be demanded internationally under the future REDD scheme.

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.

3.0 DAY 1: PRESENTATIONS AND ISSUES

Item 1: Introduction (Work shop agenda and objective)

The workshop began with welcoming remarks from a representative of the Director of Forestry and Beekeeping Division, MNRT (Mr Gerald Kamwenda), after that he led the introductions of the participants. Each of the participants introduced himself/herself and his/her organizations/activities as they relate to REDD. Finally, Mr Kamwenda warmly welcomed all the participants to Dar Es Salaam and wished them a fruitful meeting.

Mr Alberto Sandoval (the overall chairperson for the meeting from FAO UN REDD) opened the meeting with some remarks, and then took the meeting through the programme. He gave a brief note about the meeting background and why it was held in such a crucial and need time. He suggested the participants to provide and share their views and input to continue the work of MRV in Tanzania. He also pointed out that the objectives for the work shop were to:

- Share experiences and results from actual projects in Tanzania;
- Harmonize ongoing initiatives with their common goal to support Tanzania in its decision-making regarding development and implementation of a system that is credible and robust for Monitoring, Reporting and Verification (MRV) for REDD related forest carbon;
- Coordinate actions in order to make Tanzania a model country on MRV systems for other REDD countries at least in the region.

Then, Mr Edward Kilawe (FAO) led the election/appointment of meeting rapporteurs, whereby Mr Kamwenda (REDD Task Force), Mr Kaijage (Clinton Foundation Climate Change Initiative) and Mr. Kilawe were appointed to be rapporteurs. They were tasked to prepare key findings of the day and to prepare draft report for adoption by all participants.

Remarks from participants on issues of participation and representation to the workshop

Issue: Representation of Tanzanian experts and institutions not well covered

Response: It was deliberated to leave the session open ended since many technical presenters could not attend at this short notice

Issue: The time table had no item for coordination and not enough presentations from local initiatives

Response: Noted, and more time will be given for discussion for key items and the local initiatives will be able to present their work on Day 3.

Item 2: MRV Needs (International perspective)

A presentation was made by Dr Peter Holmgren (FAO)

Issue: How do we use national reports to address needs of REDD MRV?

Response: Notably NAFORMA addresses most of the key aspects of REDD MRV

Issue: How do we tap into the internationally available support?

Response: For discussions and deliberations

Item 3: Status of NAFORMA

A presentation was made by Prof. Malimbwi (FBD)

Issue: Initial design did not take into account the REDD-MRV/Sub National data sets

Response: The new design will take of this issue

Issue: Financing gap of USD 2.7M as a result of new design to accommodate REDD-MRV & Sub national data sets

Response: This is challenge, collaboration and partnerships are important in order to secure additional resource and support so as to extend work of NAFORMA to meet some demands for REDD MRV. A number of development partners have also shown interest in bridging the gap.

Issue: Dissemination of data & data sharing

Response: Early sharing of data can be made possible particularly at sub national levels; however, FBD will make decision about this

Institutional collaboration: Existence of various efforts/initiatives/projects, etc

Response: Institutional collaborations

Item 4: Potential collaborating partners

Issues: Overlapping actors (different methodologies, resolutions, levels, etc)

Response: Coordination, complementarity, sharing exchange & capacity building should be emphasized

Item 5: NCAS-T by the Clinton Foundation

A presentation was made by Dr Peter Moore

Issues: Integration of various MRV approaches to account for all carbon pools and to report nationally

Response: coordination/complementarity

Item 6: Group work (Brainstorming around key MRV issues)

Below on the table are the summary from individual participants brainstorming key MRV issues that the country need to consider. Underlying issues have been grouped under themes of institution, data, collaboration/networking, and methodological.

6.1 : Institutional issues

Need for enforcement agency

Need for clear diagram illustrating how all the mentioned institutions link/complement one another

Responsibilities/allocation of duty/labour

Development of a legal framework for MRV

Clear government statement and commitment to undertake the MRV tasks

Need to follow existing legal framework

Harmonization of legislation with cross-cutting sectors is crucial

Defining and strengthening the institution that will handle MRV issues

Who is leading the process? Need a leading agency?

6.2: Data sets issues

Need for tracking drives

Need for one official version of datasets

Observations, Remote Sensing, and institute data management

Reliant auxiliary data sets

Processing of data

Data on fire

Enhancement of international access to free data

Establishment of good dialogue among different data sources

Storage/format harmonization for data from different sources and levels (i.e. national, international)

Appropriate and adequate tools and equipments

Remote Sensing data should be verified by field data

Intensified sampling to increase the accuracy

Documentation of baselines

Build capacity on collection, analysis and interpretation

Analysis of the kind of data needed, precision and accuracy levels

Analysis of blend of data types against costs for efficiency

6.3 Collaborations and networking issues

Secure good working relationships

Define duties and responsibility

Collaboration should be on both financial and technical support

Clear analysis of the actor and potential synergies for complementarities

Opportunities for regional data sharing to reduce cost

Publications of what others are doing

Information sharing is currently much skewed. FBD needs to put deliberate efforts to control this

Need to map out of what has been done, what is missing, gaps, etc and allocate actors

Coordination unit/desk established in FBD

6.3 Methodological issues

Need for independent monitoring

Need to consider addressing key governance issues

National Roadmap for MRV process-clearly defining who does what, when, and where

Need to ensure monitoring, reporting, quality assessments, and collaboration

Adoption of existing international systems

Establishment of guidelines/standards/protocol and consensus on the methods to be used on data collection, processing and reporting

Reporting interval (bi-annual)?

Need to define well the parameters/variables to be measured, reported and verified

Flexibility: Should be flexible and cater for needs of a wide range of stakeholders

Simplified methodologies

Continuous sampling of permanent sample plots is important

Improve NAFORMA sampling

Sampling methods should be standardized

A combination of optical SAR and hyper spectral Remote Sensing and ground truthing will be more accurate for NAFORMA

Need of allometric equations

Capturing all co-benefits/multiple benefits/safeguards

Modelling/model developments

NAFORMA should be aligned with IPCC Good Practice Guidelines and methods

4.0 DAY 2: PRESENTATIONS AND ISSUES

Day 2 started by being officiated by the Director of Forestry and Beekeeping, Dr. Felician Kilahama. He highlighted the following progress on the forestry sector and challenges for REDD coordination in Tanzania:

- (a) Major policy, legal and strategic developments have been undertaken in the forest sector to ensure effective conservation/management of forest resources in Tanzania, encompassing the Forest Policy (1998), The National Forest Programme (2001), Participatory Forest Management Guidelines (2001) and the Forest Act (2002).
- (b) Development of enabling environment for effective participation of key stakeholders in the implementation of REDD initiative in Tanzania, i.e. The National REDD Framework is in place, and the subsequent National REDD Strategy is being developed, and the NAFORMA was to be set to be in line with needs for REDD-MRV.
- (c) Need for coordinated actions among Development Partners, UN-Agencies/UNREDD, World Bank, civil society and the private sector among others), in key role play in forest resources development, forest governance, poverty alleviation and improvement of rural livelihoods in the context of REDD.

Item 1: MRV support to countries

A presentation was made by Peter Holmgren

Issue: What is the definition of Monitoring Reporting and Verification (MRV)?

Response: This could be defined as commitment from UNFCCC Convention, a need to report. But, monitoring is another set of requirement, whereby is required for in- country REDD implementation. MRV is part of broader monitoring.

Issue: Will remote sensing be a solution for carbon estimate change and monitoring?

Response: Remote sensing not a silver bullet. Yes, will give all the answers but need to be combined with other methodologies including inventories and field sampling to be able to provide accurate data for monitoring.

Item 2: NAFORMA sampling design

A presentation was made by Prof. Rogers Malimbwi

Issue: How will quality control be done?

Response: NAFORMA will have quality control group

Issue: A number of comments made on NAFORMA

Response: For discussions/considerations by NAFORMA Project Technical Unit

Issue: How do NAFORMA take into account the allometric models?

Response: There are few allometric models; the CCIAM project (Research programme on REDD at universities) will also take into considerations the development of new other models

Issue: Approach for collection of social economic data

Response: There is room for flexibility (for justifiable issues)

Issue: NAFORMA data compliance to IPCC tier II

Response: Noted

Issue: Who will establish the Reference Scenario?

Response: The UN-REDD Tanzania programme add this to their work plan

Issue: NAFORMA looking for high resolution images to enable identification of dwellings in the field

Response: Partners to provide support for higher resolution images, such as Google Earth, GEO FCT, and others

Item 3: Linkage between NAFORMA-MRV

A presentation was made by Mr Mikko Leppanen

Provided detail information about possible areas of linkage and synergy between NAFORMA and REDD MRV.

Item 4: Development of methodology for measuring carbon

UNEP in collaboration with the WCMC have been working on this area, and of more recent is the collaborative work between WCMC and FBD on exploring and mapping carbon, biodiversity, and ecosystem services.

Item 5: Group work (End of day 2)

The following MRV related issues were discussed in group work, and each group looked at key elements, partners to be involved and actions that need to be taken. Groups had reported back in the plenary, and the following are the summaries of their work:

5.1 : Institutional arrangements

Group 1	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Should be multisectoral in nature • Independent in data management/operation • Capacity building • Legal framework in place • Communication and information sharing 	<ul style="list-style-type: none"> • Gov't ministries • Research/academic institutions • NGOs • Local communities including indigenous groups • Development partners • Private sector 	<ul style="list-style-type: none"> • Establishment of a coordination unit • Awareness creation • Mobilization of resources • MRV planning • Data safety • Dissemination/packaging
Group 2	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Project data links to the national carbon 	NGOs, projects, private	<ul style="list-style-type: none"> • Harmonization + coordination of data • Guidance to project developers

	accounting	sector, NAFORMA, GEO FCT, Valuing the Arc Project, Lidar, FRA RSS, UNDP	<ul style="list-style-type: none"> • Gather other ground (to validate satellite data) data while waiting for NAFORMA • Check accuracy, efficiency costs, etc while collecting ground data
Group 3	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Legal framework (analysis of who does what?) • Capacity building 	<ul style="list-style-type: none"> • National ministries, Agencies, sectors • NGOs, CBOs, etc 	<ul style="list-style-type: none"> • Identify a MRV leading entity • Define roles and responsibilities-work plans among actors, etc • Allocate resources (i.e. set budget)
Group 4	Key Elements	Key Partners	Key Actions

6.2: Methodological issues

Group 2	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Field collection needs to 	<ul style="list-style-type: none"> • GEO FCT, 	<ul style="list-style-type: none"> • GEO FCT group should provide data for

	include data to calibrate Remote Sensing data <ul style="list-style-type: none"> • Some one to validate data 	NAFORMA,GoT <ul style="list-style-type: none"> • GEO FCT guidelines document-need to come up with few things like soil data, and activity data from land use 	calibrate Remote Sensing data <ul style="list-style-type: none"> • Immediate guidance to inform data collection
Group 3	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Level of reporting (i.e. nation/international) • International requirements • National interests and priorities • Capacity Building 	<ul style="list-style-type: none"> • Data provider including private companies • Data analyzers 	<ul style="list-style-type: none"> • Field measurements • Develop a clear understanding in-country on the key requirement and practical procedures/steps • Select and agree on selected standards/methods • Set time frame for implementing the activities • Undertake a date/gap/capacity needs assessment

5.3: Integration of different monitoring needs

Group 3	Key Elements	Key Partners	Key Actions
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	<ul style="list-style-type: none"> • Reporting schedules • Community considerations • 	<ul style="list-style-type: none"> • National and international agencies, ministries, sectors, NGOs, CBOs etc 	<ul style="list-style-type: none"> • Identify monitoring needs • Develop strategy for integrating them • Allocate resources

5.4: International functions

Group 3	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Funding • Capacity building • International needs and guidance 	<ul style="list-style-type: none"> • National and international agencies, ministries, sectors, NGOs, CBOs, etc 	<ul style="list-style-type: none"> • Networking • Dialogues
Group 4	Key Elements	Key Partners	Key Actions
	<ul style="list-style-type: none"> • Knowledge sharing • Capacity building mainly for reporting • Data sharing • Methodologies • Funding 	<ul style="list-style-type: none"> • UN-REDD (FAO, UNDP, UNEP, WORLD BANK, GEO FCT, etc) • NGOs/Institutions i.e. Clinton Foundation, World Resources Institute, Global Witness, etc • Bilateral Development partners (Norway, Finland, Brazil, Australia, etc) 	<ul style="list-style-type: none"> • Improved communication structure (IT) • Data supply – mainly satellite data • Training of personnel • Development of verification programmes including independent monitoring

	<ul style="list-style-type: none"> • Guidelines • Technology transfer • Standards • Verification 	<ul style="list-style-type: none"> • Regional bodies – SADC, EAC, COMESA, etc 	
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5.0 DAY 3: PRESENTATIONS AND ISSUES

Item 1: Google Earth collaboration with NAFORMA

A teleconference presentation was made by Rebecca Moore

Group on Earth Observation Demonstration Portal for the GEO FCT Task in 2009-2010

Issues: Forest monitoring challenges, how is Google prepared to capture and disseminate data via web platform

Response: Google Earth will provide a number of cutting edge technologies (Forest MRV Software Algorithms); User categories to support (Scientist/developers; GoTs, NGO, Indigenous People and interested parties); (Improve access and use of data & algorithms); Will also develop conceptual user interface; Forest MRV prototype demos (i.e. Cover analysis, Land cover modelling); Institutional partnership and collaboration (e.g. With GEO FCT, Jane Goodall, NAFORMA, etc.).

Issue: Accessibility, sharing and integration. Should countries have to solve this on their own?

Response: Web-integration and Earth engine (continuous acquisition of free satellite data) i.e. various multi-tasking.

Issue: Will there be high resolution satellite images be downloadable

Response: Currently app. 10 % or so of the country are covered by HR imagery in Google Earth. Google Earth will provide the shape files showing these locations and their acquisition dates to NAFORMA for use in making the initial mapping effort more efficient and for conducting an analysis of the representativity of the socioeconomic component (to answer the question if enough locations to make results from household interviews credible). Currently, ready-to-use HR imagery is not available for download, but the intention is to be able to provide this service within the coming few years. NAFORMA is however in need of HR imageries.

Item 2: Linkage of NGOs activities to national MRV activities

2.1 Jane Goodall Institute – Tanzania project

Presentation was made by Mr Emil Kayega

Issue: Linkage to National MRV activities

Response: There is a need for improving MRV collaboration between NGO activities & NAFORMA e.g. Jane Goodall Institute Google support MRV efforts

2.2 Tanzania Traditional Energy Development Organization (TaTEDO)

Presentation was made by Dr. Robert Otysina

Issue: Linkage to National MRV/NAFORMA activities

Response: There is a synergy for improving MRV collaboration between TaTEDO activities & NAFORMA (Have Permanent Sample Plots [PSP], Monitor land used changes (Agriculture, Livestock & Energy), Social economic monitoring and evaluation, Governance, Wood energy trends)

2.3 WWF-Valuing the Arc project

Presentation was made by Prof. Shadrack Mwakalila

Issue: Linkage to National MRV/NAFORMA activities

Response: There is a synergy for improving MRV collaboration between Valuing the Arc Project & NAFORMA (Have Permanent Sample Plots[PSP], Monitor Land used changes, Map and Model Ecosystem service, develop methods of estimating deforestation, simple carbon baseline mapping, Modelling the land cover to 2025 based on established Business as usual scenario (assumed)).

2.4 Tanzania Forest Conservation Group (TFCG)

Presentation was made by Ms Nike Doggart

Issue: Linkage to National MRV/NAFORMA activities

Response: There is a synergy for improving MRV collaboration between TFCG REDD activities & NAFORMA (Determination and quantification of baseline scenario), use of IPCC guidelines, and target of TFCG is also to promote carbon trading by communities through Voluntary Carbon Markets.

2.5 Monitoring Governance and REDD – Global Witness

Presentation was made by Dr. Rosalind Reeve

The presenter has given an overview of the areas of World Witness involvement in forest monitoring, and how they can also play major role in REDD: Their main area of involvement include: Improve transparency, monitor performance, governance and enforcement.

She also pointed that Global Witness is currently identifying 4 more countries to be included in their programme for independent monitoring.

2.6 Discussion after presentations from NGOs/Civil society with questions and answers

Qn: How do we synchronize various MRV methodologies?

Ans: Sharing of information, methodology and all important. Various efforts are also important as could provide supplementary or complimentary in many aspects. There is need though to have strong MRV coordination and following up activating of different actors.

Qn: How will the information be used in informing the policy (decision making/planning)?

Ans: It will be used in many ways include publishing in the reports and to be disseminated to

Qn: Why REDD Task Force include only members from government?

Ans: Process is underway in expanding the REDD Task Force by bringing in other members from NGOs, CBOs, civil society organizations, Zanzibar, etc.

Qn: How do we organize the collection of data?

Ans: NAFORMA should be core and data collected from projects can be also used for comparability and validation.

Qn: What are the selected study sites for Tanzania Forest Conservation Group so that other actors know to avoid overlaps?

Ans: TFCG will be consulting all stakeholders in identifying the study sites and criteria developed by National REDD Framework would also be applied in determining them.

Other issues:

The REDD Task Force has contracted a special assignment on methodological development for REDD MRV and Communication Strategy among others through funding from the bilateral agreement between Tanzanian government and Norway.

There is need to rethink about the approach that to be used for socio economic survey, there will be so much challenges in locating the plots and identifying where communities reside. Mr Kaale then presented some slides to showcase some of the Tanzanian landscapes and challenges that could be encountered in data collection.

6.0 SUMMARY OF WORKSHOP RECOMMENDATIONS

This section summarizes the key recommendations that emerged from the MRV meeting held from 3-5 February 2010 in Dar es Salaam. They have arisen from the deliberations of the meeting and the results of the group work. Necessary and immediate actions that need to be taken have been also proposed. These will provide the basis to start working more seriously on both technical and organizational aspects of MRV in the country in a more efficient and coherent manner.

The workshop recognized that the issues of baselines/reference scenario, national systems for carbon accounting and monitoring are key components of REDD+ readiness. It also recognized that for the country to get ready; technological and financial support is crucial. In planning and implementing the REDD+ programme, the concerns and priorities of local communities and forest dependent communities must be taken into consideration, including the sharing of benefits. Therefore, the workshop recognized that there is need for urgent mobilization of support to meet these challenges.

One of the key challenges, but also a unique opportunity for establishment and set-up of a robust and credible MRV system in Tanzania as recognized in the workshop is the presence of many actors, all of them with activities contributing to the MRV system. The challenge remains of coordinating these actors which are very much uncoordinated until now. As a result, little opportunity exist in sharing experiences and results from ongoing initiatives due to lack of strong leadership. And it is also still far from clear how these various initiatives will be able to share a common goal to support Tanzania in its decision-making and implementation process of a Monitoring, Reporting and Verification (MRV) for REDD.

Considering the issues above, participants recommended some actions as especially worthy of future follow up. These recommendations have been grouped into three major clusters to make it easy for a follow-up in order to address them:

4. MRV country coordination support needs reinforcement
5. Strengthening institutions that are dealing with issues related to forest assessment, monitoring and reporting
6. Cross-sectoral (both vertical and horizontal) approach is needed as REDD involves several sectors

Issues for coordination:

- REDD+ substantially draws so many actors (now and in the future), and the country will need to have capacity to demonstrate that it can handle them, including the way the benefits will trickle down to targeted beneficiaries. To this end, REDD MRV becomes a backbone for any country develops REDD+ schemes and realize benefits from it.
- Tanzania in the lead to try implement REDD, however, sustained, focused, and coordinated efforts remain crucial to get there.

Actions to reinforce coordination for provision of data and methodologies (with facilitating groups in brackets):

- NAFORMA will be the core provider of official data on the state of the forests and TOF resources. UN-REDD to support reinforcement of NAFORMA set-up to cater for REDD requirements (possibly - similar structure to other Technical Working Groups) (TZ UN-REDD + REDD Task Force)
- Needs assessment for additional requirements (where any) due to REDD – including historical emission levels, beyond C, Safeguards, local monitoring needs for implementation, reporting frequency, reporting capacity (TZ UN-REDD)
- Current initiatives to deliver pilots and options for MRV and Monitoring in Tanzania (Lidar, GEO, Google, FRA, Clinton Foundation)
 - Work plans for initiatives to be developed in coordination with UN-REDD and demonstrate added value to TZ MRV and monitoring (TZ UN-REDD)
 - Experiences to be shared internationally (UN-REDD / FAO/Government of Tanzania)
- Reinforce FAO expert support to Tanzania MRV and monitoring (FAO)

Issues for institutional strengthening:

- Major undertaking to handle REDD process
- Current capacity needs reinforcement
- Needs analysis of how to institutionalize MRV and monitoring for REDD

Actions need to be taken to strengthen MRV institutions:

- Large investment needed to guarantee the process and safeguards
- Investment in short term is required (FBD, TZ UN-REDD) and for long term (GoT/FBD and Development partners)

Issues for Cross-sectoral approach:

- Cross-sectoral (vertical and horizontal) implications need cross-sectoral solutions
- Forestry alone cannot curb Deforestation and Forest Degradation – needs broader and wider cross-sectoral coordination.
- Likewise, MRV and Monitoring will need inputs and support from other sectors

Actions for strengthen cross-sectoral participation:

- Cross-sectoral needs assessment for MRV system
- UN REDD and REDD Task force to coordinate the MRV work of each contributor
- UN REDD commits to work with each individual initiative and develop work plans so that these initiatives contribute to MRV and so that gaps and overlaps are avoided.

Other issues:

- Need to consider MRV approaches of NGOs' pilot REDD project in the development of the national MRV system.
- List of key actors working on MRV issues in Tanzania and their national, regional and international contact person need to be established as this could help TZ UN-REDD in trying to coordinate the work plans, etc.

7.0 CLOSING REMARKS

The workshop was officially closed at 13.00hrs on Friday 5th February 2010. In his closing remarks, Mr Kanizio Manyika from Vice President Office (Environment) and member of National REDD Task Force urged participants to continue working closely together despite differing views and positions but importantly making sure that things are coordinated and the government has the ownership on these issues. He also called for review of coordination mechanism for REDD, and the need to inform actors about their roles.

He also thanked UN REDD Programme for organizing this important workshop which he noted had been one of its kind in the country and urged it had been a big success as it marked the start of critical thinking and analysis of technical aspects of implementing REDD. He mentioned that there will be more challenges ahead including that of participation but insisted these could all be surmounted through transparency and collaboration among key actors. Lastly, he wished all participants the best of lucky and safe journey back to their destination!

8.0 APPENDICES

Appendix 1: MRV Workshop Programme, 3-5 February 2010, Dar ES Salaam, Tanzania

Wednesday 03.02.2010

Time	Topic	Responsible
08.45 – 09.00	Arrival and registration at the Workshop by the participants	Secretariat
09.00 - 09.20	Official welcome Objectives and clarification for the meeting Appointment of rapporteurs MRV needs for REDD (international context)	Director FBD Alberto Sandoval Edward Kilawe Peter Holmgren, Director
<i>Session 1: State of the art in Tanzania: needs and ongoing initiatives</i>		
09.20 – 10.30	- Tanzania MRV needs - NAFORMA status - FAO-Finnish programme/FRA - GEO Forest Carbon Tracking task - REDD Opportunities and Challenges for Africa	MNRT (Director FBD) Dr. Malimbwi/ Mr. Chamuya Mikko Leppanen Per Erik Skrøvseth Edward Kilawe

	- Mapping of co-benefits by UNEP-WCMC	Dr Maurizio Teobaldelli
10.30 – 10.50	Coffee break	
<i>Session 2: Already planned actions</i>		
10.50 – 13.00 20 min ca	<ul style="list-style-type: none"> - Main MRV project - GEO FCT Image processing chain and image construction - Lidar project: design, connections and collaboration - GEO FCT - the collaboration in Tanzania - Biomass inventory map - NCAS-T of the Clinton Foundation 	<p>Andreas Tveteraas</p> <p>Evie Merethe Hagen</p> <p>Erik Naasset</p> <p>Leif Kastdalen</p> <p>Sokoine University (Prof. Munishi)</p> <p>Peter Moore</p>
13.00 – 14.00	Lunch Break	
<i>Session 3: Key areas around MRV needing country focus to build national system</i>		
14.00 – 16.00	<p>Country MRV guidelines:</p> <ul style="list-style-type: none"> - Data - Tools 	<p>Discussion guided by Alberto Sandoval</p>

	- Key MRV issues	
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Thursday 04.02.2010

Time	Topic	Responsible
<i>Session 3: Key areas around MRV needing country focus to build national system (part 2)</i>		
09.00 – 9.30	MRV support to countries	Peter Holmgren
9.30 – 10.30	NAFORMA sampling design Linkage between NAFORMA and MRV: <ul style="list-style-type: none"> - piloting to test current methodologies and approaches - development of single database/information system 	Prof. Malimbwi Mikko Lepannen
10.30 – 11.00	Coffee Break	
11.00-13.00	- Discussion about deliverables - Draft timeline for activities and identification	Discussion chaired by Alberto Sandoval

	of gaps	
13.00 – 14.00	Lunch Break	
<i>Session 4: The joint way forward</i>		
14.00 – 16.00	<ul style="list-style-type: none"> - Mapping of MRV actors and networking, identification of implementing partners to support identified MRV activities and coordination - Google Outreach Project (teleconference) 	<p>Discussion chaired by Edward Kilawe</p> <p>Rebecca Moore (USA)</p>

Friday 05.02.2010

Time	Topic	Responsible
<i>Session 4: The joint way forward (part 2)</i>		
09.00 – 11.00	<ul style="list-style-type: none"> - Discussion on how ongoing activities of NGO's might link up to MRV activities (presentations from NGOs) - Development of information system (data warehouse/ clearing) – how do we link and 	Discussion guided by Ivar Jorgensen

	<p>assemble all REDD related information and data</p> <ul style="list-style-type: none"> - Capacity need requirement for MRV system 	
11.00 – 11.30	Coffee Break	
11.30 – 13.00	<ul style="list-style-type: none"> - Identification of gaps for coordination and facilitating institutions - Final timeline for activities and foreseen shortfalls - Discussion 	Discussion guided by Soren Dalsgaard
13.00 – 14.00	Lunch Break	
14.00 – 16.00	Summarizing findings, recommendations and concise commitments	Secretariat (FBD & UN-REDD/FAO)

Appendix 2: List of workshop participants

SNO.	Name	Institution/Organization	Email contacts
1.	Mr. Jared Otieno	MNRT/FBD/NAFORMA	Otienozuk@gmail.com
2.	Mr. Bruno Bahane	- do -	Brunobahane2@hotmail.co
3.	Ms. Nike Doggart	Tanzania Forest Conservation Group	ndoggart@tfcg.or.tz
4.	Mr. Alberto Sandoval	FAO, Rome (UN-REDD Programme)	Alberto.Sandoval@fao.org
5.	Dr. Peter Holmgren	FAO, Rome	Peter.Holmgren@fao.org
6.	Mr. Nssoko Edwin	FBD/NAFORMA	nssokov@yahoo.com
7.	Mr. Gerald Kamwenda	FBD/REDD Task Force	kamwendabros@gmail.com
8.	Ms. Evie M. Hagen	NSC/GEO FCT Norway	evie@spacecentre.no
9.	Dr. Rosalind Reeve	Global Witness	Roz.reeve@gmail.com
10.	Mr. Andreas Treteraas	Norway (Forest & Climate change)	atreteraas@gmail.com
11.	Dr. Felician Kilahama	FBD - Director	fkilahama@gmail.com
12.	Mr. Per Erik Skrovseth	NSC, Norway	per.erik.skrovseth@spacecentre.no

13.	Mr. Edward Kilawe	FAO, Harare	Edward.Kilawe@fao.org
14.	Mr. Ivar Jorgensen	Embassy of Norway, Dar Es Salaam	ivar.jorgensen@mfa.no
15.	Mr. Yassin Mkwizu	Embassy of Norway, Dar Es Salaam	ybm@mfa.no
16.	Prof. Erik Naesset	UMB, Norway	erik.naesset@umb.no
17.	Dr. Maurizio Teobaldelli	UNEP-WCMC	maurizio.teobaldelli@unep-wcmc.org
18.	Dr. Peter Moore	Clinton Foundation	peter.moore@blacktreemar.com.au
19.	Ms. Molly Bartlett	Clinton Foundation	mhbartlett@clintonfoundation.org
20.	Mr. Kaijage Erneus	Clinton Foundation	ekaijage@clintonfoundation.org
21.	Dr. Robert Otsyina	DASS (Development Associates)	rotsyina@gmail.com
22.	Prof. Shadrack Mwakalila	WWF – Tanzania	smwakalila@wwftz.org
23.	Ms. Heidi Ressel	University of Oslo	heidiresset@hotmail.com
24.	Ms. Amina Akida	MNRT/FBD	amina.akida@gmail.com
25.	Ms. Mwanahamisi Mapolu	MNRT/FBD	mmapolu@yahoo.com
26.	Mr. Mbwana Kiboga	MNRT/FBD	kibogam@gmail.com
27.	Mr. Freddy K. Manyika	Vice President Office – Environment/REDD Task Force	Freddy_Manyika@yahoo.com

28.	Mr. George Kafumu	Vice President Office – Environment/REDD Task Force	grkafumu@yahoo.com
29.	Ms. Veronica Hailakwahi	MNRT/FBD	verohai2@hotmail.com
30.	Mr. Bariki K. Kaale	UNDP	Bariki.Kaale@undp.org
31.	Mr. Nurdin Chamuya	MNRT/FBD/NAFORMA	nuruchamuya@yahoo.com
32.	Mr. George Matiko	MNRT/FBD	gmatiko@mnrt.go.tz
33.	Prof. Pius Yanda	Institute of Resource Assessment- University of Dar ES Salaam, (REDD Task Force Secretariat)	yanda@ira.udsm.ac.tz
34.	Mr. Emil U. Kayega	Jane Goodall Institute - Tanzania	ekayega@janegoodall.or.tz
35.	Prof. Rogers Malimbwi	NAFORMA/SUA	remalimbwi@yahoo.com
36.	Mr. Mikko Leppanen	FAO, Rome	Mikko.Leppanen@fao.org
37.	Mr. Joseph Nyansiro	MNRT/FBD	jnyansiro@mnrt.go.tz
38.	Ms. Kekilia Kabalimu	MNRT/FBD	Kabalimu@hotmail.com
39.	Mr. Patrick M. Ndaki	Vice President Office – Environment	Pattymzee@gmail.com
40.	Ms. Mary Swai	TaTEDO	energy@tatedo.org
41.	Mr. Wence Lugiko	Business Week East Africa (media)	Sengerema7@hotmail.com

42.	Mr. Matthew Mpanda	ICRAF	m.mpanda@cgiar.org
43.	Dr. Aichi Kitalyi	ICRAF	A.Kitalyi@cgiar.org
44.	Mr. Saleh K. Khiari	Department of Forestry, Zanzibar	sakokips@gmail.com
45.	Ms. Hadija Ramadhani	MNRT/FBD	hadijakiimu@gmail.com
46.	Ms. Monica A. Kagya	MNRT/FBD	monicakagya@hotmail.com
47.	Ms. Gemma Aliti	UNDP	Gemma.Aliti@undp.org
48.	Mr. Soren Dalsgaard	FBD/NAFORMA	Soren.Dalsgaard@fao.org
49.	Ms. Teddy Paulo	MNRT/FBD	tpaulo@yahoo.co.uk
50.	Mr. Ibrahim Hussein	MNRT/FBD	ibrasaichy@yahoo.com
51.	Ms Gertrude Lyatuu	UNDP	Gertrude.lyatuu@undp.org
52.	Mr. Hussein Msuya	MNRT/FBD	hmsuya@mnrt.go.tz
53.	Mr. Stephen Msemu	MNRT/FBD	smsemu@mnrt.go.tz
54.	Mr. Joshua Mwakifuna	MNRT/FBD	jmwakifuna@mnrt.go.tz
55.	Mr. Christian Peter	World Bank	Cpeter@Worldbank.Org
56.	Prof. Pantaleo Munishi	Sokoine University of Agriculture	pmunishi@yahoo.com
57.	Ms. Merja Makela	Embassy of Finland –Dar es Salaam	Merja.makela@formin.fi

58.	Dr. Douglas Muchoney	U.S. Geological Survey	dmuchoney@usgs.gov
59.	Ms. Rebecca Moore (by Teleconference)	Google Earth	rmoore@google.com

Appendix 3: List of key MRV actors and their activities in Tanzania

Initiative	Partner(s)	Current MRV related activities	Linkage with development of Tanzania REDD (MRV)
Tanzania REDD initiative	National REDD Task Force with support from Institute of Resource Assessment, Norwegian government, and many partners	<ul style="list-style-type: none"> - Coordination REDD activities in Tanzania - Lead development of REDD strategy - Conduct REDD in-depth studies include, assessment of methodologies for MRV and consultations with stakeholders 	<ul style="list-style-type: none"> - Coordinate REDD actors with government institutions - Contribute work of the methodology development - Communicate Tanzania experience to other countries and internationally



<p>UN REDD Programme for Tanzania (MRV component)</p>	<p>UN REDD programme, in collaboration with several partners (local and international)</p>	<ul style="list-style-type: none"> - Coordinate activities of various initiatives towards establishment of MRV system in Tanzania - Lead activities in establishment of MRV and Reference emission levels - Link Tanzania REDD MRV with other regional and international initiatives - Build long term capacity development support and in institutionalize of MRV 	<p>MRV system for Tanzania</p>
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<p>Research Programme in REDD (Climate Change Impacts, Adaptation and Mitigation)</p>	<p>Sokoine University of Agriculture (SUA), University of DSM, IRA, Ardhi University, Meteorology Institute/Dept., REDD Task Force</p>	<ul style="list-style-type: none"> - Development of methodologies and measurements of forest carbon - Participatory forest carbon assessment and monitoring (community participation) - Biomass models to include all vegetation types - Hosting research programme (Climate Change Impact, Adaptation and Mitigation programme). This programme focuses on building capacity on REDD aspects in local institutions and experts, and is funded through bilateral with Governments of Tanzania and Norway 	<ul style="list-style-type: none"> - Methodologies for forest condition and forest carbon monitoring - Involvement of local communities on MRV - Spatial dataset of forest plots and carbon storage allowing development of a carbon model in GIS
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<p>National inventory of forests in Tanzania</p>	<p>NAFORMA with collaboration with partners (FAO SFM Project, FRARSS, GEO FCT, Google Earth, Metla-Finland, and others)</p>	<ul style="list-style-type: none"> - Undertake forest inventory (bio-physical and socioeconomic data and information) for entire country - Develop capacity of forestry staff in inventory and monitoring of forests - Development of methodology for inventory and monitoring of forest and carbon changes 	<ul style="list-style-type: none"> - National maps of forests - Long term monitoring programme - National forest database - Provision of biophysical and socio-economic data for assessing co-benefits
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<p>Valuing the Arc – Deliver short and long term data on forest carbon stocks across the country</p>	<p>WWF-Tanzania, SUA, in collaboration with University of Cambridge, WCMC</p>	<ul style="list-style-type: none"> - Multidisciplinary programme - Analyse forest disturbance and carbon impacts - develop methods of estimating deforestation, simple carbon baseline mapping in Eastern Arc mountains and surroundings - participatory methods for monitoring, assessing and reporting - development of future scenario up to 2025 based on land cover changes 	<ul style="list-style-type: none"> -Impacts of degradation on forest carbon storage and building a model in GIS -Simple carbon baseline maps -Make science policy relevant
<p>Climate change programme</p>	<p>ICRAF -Tanzania</p>	<p>capacity building on methodological development</p>	<p>research in methodologies</p>

<p>NCAS-T</p>	<p>Clinton Foundation – Tanzania initiative, WRI Fred Stolle, Australia government, GEO, ESRI, WRI, Henz Center</p>	<ul style="list-style-type: none"> - Plan to develop National carbon accounting system - Set in place principles for MRV monitoring capabilities (emissions and sinks) and development of baseline - Develop comprehensive GIS covering Tanzania -Piloting Participatory Forest Management and carbon project in Angai community village forest reserve in Lindi (Miombo forest ecosystem) - Provide inputs required for establishment of Reference emissions level 	<ul style="list-style-type: none"> - Baseline carbon estimate for Tanzania using methodologies developed in Australia - Contribute to development of Reference emission level
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<p>Making REDD work for Communities and forest conservation in Tanzania</p>	<p>Tanzania Forest Conservation Group (TFCG), in collaboration with MJUMITA (network of forest communities), and Tanzania Natural Resources Forum (TNRF) and other local organizations</p>	<ul style="list-style-type: none"> - Focus on development of cost-effective and equitable models at the group and community level for REDD - promote carbon trading by communities based on requirement from Voluntary Carbon Markets (which meet project and community levels requirements) 	<ul style="list-style-type: none"> - Reporting and verification and sub-national level -best practices to deliver robust and credible emissions reduction at local level - information on independent validation and verification
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<p>Google Earth Outreach project</p>	<p>Google Earth, in collaboration with several partners, such as NAFORMA, JGI, GEO FCT, and others</p>	<ul style="list-style-type: none"> - to develop prototype that enables online, global-scale observation and measurement of changes in the Earth's forests - This technology prototype is currently available to a small set of partners for testing purposes not yet available to the general public but expect to make it more broadly available probably by 2011 	<ul style="list-style-type: none"> - locate and measure deforestation and forest regeneration - Forest monitoring and changes
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<p>Remote Sensing in forest assessment and monitoring</p>	<p>FAO FRA Remote Sensing (FRARSS) in collaboration with GEO FCT and others</p>	<ul style="list-style-type: none"> - Strong linkage link between forest and climate change (provide consistent global forest area data) - Generate historical data for forest areas change, global tree cover maps - Involvement of countries in training workshops (include national experts, and Tanzania is part of countries network) 	<ul style="list-style-type: none"> - Contribute methods and analyses sample with other groups (agriculture, land degradation, etc) - Provide data and tools - Build capacity for future forest monitoring
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<p>Ecosystem service mapping</p>	<p>UNEP-WCMC, FBD, FAO in collaboration with local universities (SUA, UDSM-IRA)</p>	<ul style="list-style-type: none"> - Map based approach to estimating carbon stocks - carbon overlaid with non carbon benefits (biodiversity, protected areas, population, fires, non timber forest products, mammal species, etc 	<ul style="list-style-type: none"> - Mapping of co-benefits (Develop maps for forest reserves, overlays carbon with other benefits, etc) - Training in GIS and mapping
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<p>Community based REDD mechanism for sustainable forest management</p>	<p>TaTEDO, DASS and NAFRAC</p>	<ul style="list-style-type: none"> - Monitor land use changes (Agriculture, Livestock & Energy use) - Assessment of socio economic and livelihood changes - Measurement and assessment of key drivers of deforestation and forest degradation in Ngitili landscape, Shinyanga - Assess different mechanism for carbon trading and benefits sharing in these landscapes 	<ul style="list-style-type: none"> - Information of carbon changes and disturbance from other land uses - Feed national process for REDD with project based results
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<p>Airborne LiDAR in support for forest inventory</p>	<p>Norwegian University of Life sciences (UMB) and SUA</p>	<ul style="list-style-type: none"> - Combining field, laser and image/map data - Provide airborne laser data for selected NAFORMA plots - Provide reference data for assessment/validation of other remote sensing techniques (e.g. test bed GEO FCT) 	<ul style="list-style-type: none"> - National inventory of biomass in Tanzania in conjunction with NAFORMA and FRA2010 - Biomass estimation in forest with high biomass density
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<p>Support to national forest carbon estimates and changes analysis</p>	<p>GEO Forest Carbon Tracking Task & FBD</p> <p>In collaboration with NAFORMA, LiDAR/UMB, FAO, SUA, IRA, METLA</p>	<ul style="list-style-type: none"> - Develops systems for measuring changes in above ground forest carbon through time - Provide access in long term data - Sensors and method interoperability - Provide local estimate in addition to national – district - Frequent data update on trends 	<ul style="list-style-type: none"> - Provision of data for small area change (study + community areas) - Provide trend data and baseline
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<p>Assessment and Mapping and Monitoring of Biomass and carbon stocks in selected forests in Tanzania</p>	<p>SUA, CABS, TFCG, WWF-Tanzania and others</p>	<ul style="list-style-type: none"> - Forest change analysis for the eastern Arc mountains and Coastal forests - Assess degradation and carbon assessment stratified by cover types 	<ul style="list-style-type: none"> - Mapping carbon distribution - Information on biomass based on allometric models in selected forest types
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<p>Sustainable Forest management in a changing Climate programme</p>	<p>FAO-Finnish SFM programme, in collaboration with FAO FRA2010, FRARSS</p>	<ul style="list-style-type: none"> - Methodologies development for forest assessment and monitoring - Country capacity in reporting - Promote best management tools and guidelines 	<ul style="list-style-type: none"> - Methodology development for national inventory (NFMA) through support to NAFORMA - Support to REDD monitoring, verification and reporting through linkage to UN REDD - Provide Information needs for different users, through support to national forest information systems
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<p>Monitoring of natural resources by communities</p>	<p>Monitoring Matters (MOMA) initiative on REDD, in collaboration with TNRF, TFCG</p>	<ul style="list-style-type: none"> - monitoring impacts of other forest initiatives - locally based monitoring - community assessment of population and extent of utilization of species(e.g. village patrols, species presences in area, etc) - Support local capacity and provision of alternatives livelihood activities to communities to reduce dependence on forest resources 	<ul style="list-style-type: none"> - Monitoring of impacts and benefits - Forest monitoring at local level
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<p>Monitoring Governance and REDD</p>	<p>Global Witness</p>	<ul style="list-style-type: none"> - Improve business climate in REDD countries - Governance monitoring initiative (forest management and REDD) - Under forest management to conduct independent forest monitoring and develop forest transparency report card) - Under REDD to carry out independent monitoring, help to implement best practices so as to reduce risk and build confidence to REDD investments, build institutions and enforcement and monitor performance 	<ul style="list-style-type: none"> - Monitoring of performance - Implement best practices and ensure protection of safeguards - Involvement of local communities in MRV, especially monitoring
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<p>Local Communities to Protect Forest Habitat and Ultimately Profit from Reducing Carbon Emissions in Masito – Ugalla ecosystem in North western Tanzania</p>	<p>Jane Goodall Institute (JGI) –Tanzania in collaboration with Google Earth , ESRI and Digital Globe such as mobile Android/ODK</p>	<ul style="list-style-type: none"> - Rural communities participation to reduce carbon emissions and sequester carbon through sustainable management of their forest resources - web-based mapping systems along with GIS and high-resolution satellite imagery - assist communities to earn credits for the carbon stored in their protected forest areas - develop methodologies and provide technical training to communities and local and national government partners to help inventory, monitor and manage the forest 	<p>Use of geospatial technologies and the Internet to enable local communities to interact directly with the global carbon marketplace</p>
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<p>Readiness-Proposal Preparation (MRV/REL work plans and guidelines)</p>	<p>FCPF-World Bank</p>	<ul style="list-style-type: none"> - Preparation of a summary of work plan to develop a reference scenario (RE/REL) for greenhouse gas emissions from deforestation and forest degradation in Tanzania and detailed ToRs for the analysis to be undertaken - Preparation of a summary of the work plan to design and implement a monitoring, reporting and verification (MRV) system for emissions from deforestation and degradation in Tanzania 	<p>Guidelines for the development of MRV system and REL</p>
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