

FOREST MANAGEMENT PLAN FOR IMPLEMENTATION OF A PILOT REDD+ PROJECT FOR MASITO COMMUNITY FOREST RESERVE, KIGOMA, TANZANIA FOR 2012-2017: MANAGEMENT DIRECTIVES



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ABSTRACT

Motivation/Background: Management directives form the basis on which management prescriptions are set. The directives range from the general ones at global level to the local site-specific level. The current paper presents management directives of a forest management plan for implementation of a pilot REDD+ project for Masito Community Forest Reserve, Kigoma, Tanzania for the period 2012-2017.

Method: The work mainly involved review of relevant documents enriched by discussions with project management. The directives were also discussed at a forest management planning workshop that involved members from the community-based organization that managed the target forest.

Results: The results are organized under sections for (1) global initiatives, policy statements and directives - focusing on the REDD+ strategy; (2) national initiatives, policy statements and directives. This focuses on national forest policy support for community based forest management and national REDD+ framework and strategy. (3) Management objectives and their management tools, which focus on statement of objectives, forest management zones and forest management units

Conclusions: The management directives formed the basis for the activities planned for the forest for 2012-2017. Also, the management directives should be used as baseline information for assessment of achievement of the planned activities.

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1. INTRODUCTION

A forest management plan is an important tool for implementation of sustainable forest management [Akishin \(2014\)](#); [ATIBT \(2007\)](#); [Dennis-Perez and Kuhns \(2012\)](#); [Nzunda \(2012a\)](#); [WDNR \(2020\)](#). Within the forest management plan, management directives set the basis for what will be prescribed for the forest. The directives emanate from the demands at the global, national and local spatial levels of forest management. Global demands are formulated as conventions, strategies, treaties, agreements, or other names depending on the institutional and legal setting of the directive. National demands are set in national policies, frameworks, strategies and other names depending on the specifics of the directive. For a specific forest management plan, the local directives will be formulated as objectives for a project or for forest management unit that manages the forest.

The current paper discusses forest management directives of a forest management plan for implementation of a pilot REDD+¹ project for Masito Community Forest Reserve, Kigoma, Tanzania for the period 2012-2017. The directives are organized under sections for (1) global initiatives, policy statements and directives - focusing on the REDD+ strategy; (2) national initiatives, policy statements and directives. This focuses on national forest policy support for community based forest management and national REDD+ framework and strategy. (3) Management objectives and their management tools, which focus on statement of objectives, forest management zones and forest management units.

2. METHODOLOGY

The Masito Community Forest Reserve (MCFR) is part of the Masito-Ugalla ecosystem located in Kigoma Region, Tanzania [Makunga and Misana \(2017\)](#). The major vegetation type of the forest is miombo woodlands [Zahabu \(2011\)](#). The management plan was prepared through compilation of data and information on the forest and community around. The data and information were obtained from existing literature that were prepared as part of the REDD+ project managing the forest or before the project. The directives were also discussed at a forest management planning workshop that involved members from the community-based organization that managed the target forest. This paper is an excerpt from a forest management plan report that was submitted to JGI in 2012 [Nzunda \(2012\)](#). The directives are presented in this paper as they were in the report without updating with information that came after the report. This is done deliberately to maintain the relevance of the directives for the forest management plan for 2012-2017.

¹ REDD stands for "Reducing Emissions from Deforestation and forest Degradation"; the "+" signifies the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

3. RESULTS AND DISCUSSION

3.1 GLOBAL INITIATIVES, POLICY STATEMENTS AND DIRECTIVES: THE REDD+ STRATEGY

Reducing Emissions from Deforestation and Forest Degradation plus forest enhancement, sustainable forest management and forest conservation (REDD+) is a set of steps designed to use market/financial incentives in order to reduce the emissions of greenhouse gases from deforestation and forest degradation and increase carbon storage by forests through conservation of existing forests and increase in forested area. Its original objective is to reduce greenhouse gases but it can deliver co-benefits such as biodiversity conservation and poverty alleviation. Reducing emissions from deforestation and forest degradation implies a distinction between the two activities. Deforestation is the permanent removal of forests and withdrawal of land from forest use. Forest degradation refers to negative changes in the forest area that limit its production capacity.

REDD+ is a relatively recent strategy that is still in its development stage and is expected to become a major Land Use, Land Use Change and Forestry (LULUCF) mitigation strategy post 2012 [Phelps \(2010\)](#). REDD+ started as REDD, which was first considered as a possibility for climate change mitigation by the UNFCCC (United Nations Convention on Climate Change) at its CoP 11 (11th Conference of Parties) in 2005 in Montreal, Canada [Olsen and Bishop \(2009\)](#). Further discussions on REDD were held at CoP 12 in Nairobi, Kenya in 2006 and an agreement to start REDD demonstration activities was reached by parties at CoP 13 in Bali, Indonesia in 2007. Discussions on REDD further continued at CoP 14 in Poznan, Poland in 2008 and it was expected that CoP 15 in Copenhagen, Denmark in 2009 would come up with a complete package to guide the implementation of REDD but that was not the case. That notwithstanding, different non-annex I countries, including Tanzania, Indonesia, Thailand, Vietnam, Cambodia and Laos are involved in REDD readiness initiatives, which aim to prepare the countries for implementation of REDD [Phelps \(2010\)](#). Currently, the strategy is referred to as REDD+, the plus signifying the additional aspects of forest enhancement, sustainable forest management (SFM) and conservation that the strategy aims to address as well [Skutsch et al. \(2011\)](#). CoP 16 and CoP 17 also emphasised the need for REDD+ and elaborated further on methodological issues that surround the implementation of REDD+ including standardisation of methods for monitoring, reporting and verification (MRV) of carbon dynamics [Skutsch et al. \(2011\)](#).

REDD is sometimes presented as an offset scheme of the carbon markets and thus, would produce carbon credits. Carbon offsets are emissions-saving projects or programmes that in theory would compensate for the polluters' emissions. The carbon credits generated by these projects could then be used by industrialised governments and corporations to meet their targets and/or to be traded within the carbon markets. Why not reward the countries, and in particular the local communities and

indigenous peoples who have been good forests stewards, sometimes for centuries or even millennia? However this perspective on REDD+ is contested and hotly debated among economists, scientists and negotiators. Recent studies indicate such an offset approach based on projects would significantly increase the transaction costs associated to REDD+ and would actually be the weakest alternative for a national REDD+ architecture as regards effectiveness, efficiency, its capacity to deliver co benefits (like development, biodiversity or human rights) and its overall political legitimacy.

In recent years, estimates for deforestation and forest degradation were shown to account for 20-25% of greenhouse gas emissions, higher than the transportation sector. Recent work shows that the combined contribution of deforestation, forest degradation and peatland emissions accounts for about 15% of greenhouse gas emissions, about the same as the transportation sector. Even with these new numbers it is increasingly accepted that mitigation of global warming will not be achieved without the inclusion of forests in an international regime. As a result, it is expected to play a crucial role in a future successor agreement to the Kyoto Protocol.

Steps to implement REDD+ (1) definition of the geographical and temporal boundary of the project on the basis of activities that are eligible for the carbon standard that the REDD project aims to meet, (2) assessment of changes in green house gas (GHG) emissions that will result from the project, (3) assessment of leakage² that will result from implementation of the project, (4) demonstration of additionality, (5) development of monitoring plan, (6) Estimation of baseline carbon stock changes and GHG emissions and, (7) Estimation of total net GHG emissions reductions (net of project minus baseline and leakage). The JGI³ REDD+ project has already implemented some of the REDD+ steps and will continue to finalise the remaining steps to make MCFR a full-swing REDD+ project. Furthermore, a community based equitable benefit sharing mechanism has to be developed and practiced as stipulated by the National REDD+ Strategy.

3.2 NATIONAL INITIATIVES, POLICY STATEMENTS AND DIRECTIVES

3.2.1 NATIONAL FOREST POLICY SUPPORT FOR COMMUNITY BASED FOREST MANAGEMENT

The national forest policy [URT \(1998\)](#) provides strong support for community based forest management. The policy emphasises clear definition of forest land and tree tenure rights for communities, establishment of village forest reserves, community-based organisation for forest management, exchange of information and awareness raising. Furthermore, the policy encourages participation of communities in forestry-related planning and decision making through promotion of participatory extension methods and approaches. The policy also grants commu-

² Leakage is the increase in GHG emissions outside the project area as a result of reductions of emissions within the project area due to activity shift. Leakage may also be sectoral in the sense of increase in emissions of gases from increased fertilizer use or intensified feed production and manure handling.

³ JGI = The Jane Goodall Institute

nities the right to retain revenue from accrued products and services derived from community-managed forest. Also, provision of technical assistance, establishment of appropriate financial incentives and involvement of women in forestry activities are encouraged by the policy.

The issues supported by the forest policy have been guiding the implementation of management of MCFR so far, and will continue to guide the management during the plan implementation period. For example, JUWAMMA⁴ was formed on the basis of support for formation of community-based organisation provided by the policy. The plan to register MCFR as a community forest reserve is also supported by the policy.

3.2.2 NATIONAL REDD+ FRAMEWORK AND STRATEGY

The vision for the National REDD+ Strategy derives directly from the national development vision of Tanzania, popularly known as Vision 2025 [URT \(2005\)](#), which articulates the economic and social aspiration of the Union Government. Specifically, Vision 2025 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 [URT \(2009\)](#). In line with this policy statement, the vision of the National REDD+ Strategy is that Tanzania implements a National REDD+ Strategy that ensures conservation and/or enhancements of its unique biodiversity values and forest ecosystems and the corresponding benefits, goods and services are equitably shared by all stakeholders for adaptation, mitigation and adoption of a low carbon development pathway under all processes as required by the UNFCCC [URT \(2009\)](#).

The vision of the National REDD+ Strategy will be implemented through its mission, which is that Tanzania actively and beneficially participates in REDD+ initiatives during the readiness phase, negotiation processes under the UNFCCC and the Post Kyoto agreements. The main goal of the National REDD+ Strategy is to facilitate effective and coordinated implementation of REDD+ related policies, processes and activities so as to contribute to climate change agenda and overall sustainable development. The goal has been broken down into operational objectives, which are: (1) To guide the implementation and coordination of 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; (2) To provide guidelines on how to assess, monitor and determine carbon benefits from REDD+; (3) To guide the development of a fair and transparent payment mechanism in order to provide incentives to stakeholders at all levels within the country; (4) To provide guidance on the development of a mechanism for carbon monitoring, reporting and verification (MRV); (5) To guide the required changes and reforms in forestry management and governance systems in terms of institutional

⁴ JUWAMMA is Swahili for: Jumuiya ya Watunza Msitu wa Masito. Which translates into English: Community/Organization of Managers/Care-takers of Masito forest.

arrangements, policy, legal and legislative frameworks and land tenure so as to foster effective REDD+; To guide capacity building in terms of research, training, infrastructure and equipment needed to support REDD+; (6) To guide the development of effective communication and information sharing mechanisms which will allow the stakeholders to exchange lessons learnt and experiences gained; and (7) To provide guidance on how best to address the identified drivers, underlining causes and impacts of uncontrolled deforestation and forest degradation in the various agro-ecological zones.

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. Thus the government envisages to participate fully in the development of REDD+ policy and in its implementation. To guide these processes, a National REDD+ Framework has been developed [URT \(2009\)](#). Furthermore, a National REDD+ Task Force leads a consultative process to develop a National Strategy and Action Plan for REDD+.

The payments for REDD+ will be made to countries on the basis of their average or net achievements in reducing emissions from forests. Thus a national reference scenario i.e. baseline is being established through NAFORMA against which the carbon changes will be assessed and monitored to determine carbon benefits. The entire forest estate within the country will participate in the national efforts of reducing deforestation and forest degradation. This will involve the contribution of different forest regimes e.g. national parks, forest reserves, community forests, and private forests and therefore a large number of different stakeholders. A system to aggregate baselines from all forest regimes is being developed. With this system the individual baselines from different regions and different regimes will add up to the national reference scenario. The government will identify and prioritize high deforestation and forest degradation areas and/or specific forest regimes.

Incentives will be provided for the effective participation of different stakeholders in the REDD+ policy. A fair and transparent payment mechanism will be established in order to provide incentives to stakeholders within the country; in other words, to enable the state to account in a fair way for gains and losses and to reward stakeholders who are responsible for reductions in carbon losses. This requires a clear coordination system.

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 [URT \(2009\)](#). 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. REDD+ is one of the mitigation options to address climate change. The government has put in place a National Climate Change Steering Committee (NCCSC) and National Climate Change Technical Committee to oversee and guide the implementation of cli-

mate change activities in the country. In order to avoid overlaps and duplication of efforts, the same institutional arrangement will also save for REDD+ activities. The NCCSC which handles all climate change related issues in Tanzania will save as a top decision making body for the national REDD+ scheme, and technical issues will be handled by the technical committee. The existing composition of the members of these committees may be broadened as need arises.

Forestry and Beekeeping Division will have important role in implementing, supervising and operationalizing REDD+ initiative [URT \(2009\)](#). 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 Government will ensure smooth implementation of REDD+ related activities in their areas of jurisdiction. In addition, REDD+ coordination at district level will adhere to the existing institutional structure whereby Environmental Officers at district and Municipal levels will serve as coordinators for REDD+ activities in their respective areas.

As REDD policy is currently perceived, REDD+ funds will be received by the national REDD+ scheme and channeled down to different stakeholders responsible for the emission reductions [URT \(2009\)](#). As such no market promotions will be needed at the local level. However at the international level the government will be responsible for providing a credible, verifiable and transparent REDD+ carbon product that will compete at the international market. This will require among other things knowledge on international funding opportunities, marketing and negotiations skills. Since REDD+ funding opportunities are still evolving, there is generally poor knowledge of its funding opportunities. Thus the government and the allied development partners are focusing their efforts on REDD+ market research and training.

3.3 MANAGEMENT OBJECTIVES AND THEIR MANAGEMENT TOOLS

3.3.1 STATEMENT OF OBJECTIVES

The objectives of the current forest management plan are part of and derive from the objectives of the REDD+ readiness project that is on-going for the MCFR landscape. The overall objective is to enable communities and high bio-diversity value forests in western Tanzania benefit from REDD+ based global approaches to climate change mitigation. This will be achieved through building awareness and enhancing capacity and governance mechanisms for local communities and government institutions to administer and benefit from REDD-related obligations and opportunities in the MCFR landscape in support of national REDD readiness. Some aspects of this objective have already been achieved [Nzunda \(2021\)](#). The aspects that have not yet been covered are the ones that will be covered during the period of this forest management plan. The specific objectives that will be covered are:

- 1) To develop, analyse, test, verify, document and disseminate a replicable and scalable methodology for remote sensing/GIS/GPS based forest and carbon account-

ing at village scale. This objective will be (and is actually being) achieved via collaboration between JGI and Google and relevant national institutions such as government GIS units, IRA, SUA and others to develop a forest carbon stock mapping and monitoring methodology that can be used at the village scale but consistent and scalable to the national scale, incorporating WHRC biomass and carbon algorithms, multi-resolution remote sensing data, GIS and ground-based measurements using Google Android ODK (Open Data Kit) mobile technology and Google web-based Forest MRV (Monitoring, Reporting and Verification) platform that would support open and transparent access to the satellite data and results of this project. Furthermore, information on and lessons on major drivers of deforestation in the project area including effects of fire will be generated and used to develop a spatially explicit model of deforestation and forest degradation for the MCFR landscape.

2) To provide communities and CBOs⁵ with tools and skills to monitor forest biomass and carbon stocks. This will be (and is being) achieved through training of a cadre of project, district staff and selected community members to serve as instructors and mentors for CFMs. The instructor/mentor cadre will in turn train and equip community member teams to carry out forest biomass assessments and produce a systematic database on forests and woodlands in designated areas in partnership with Sokoine University and Google. Also, community members and CFMs will be trained in participatory mapping of their forests and threats by visual interpretation of very high resolution satellite imagery (e.g. QuickBird 60-cm, WorldView-1 and WorldView-2) of designated forested areas.

3) To develop and practise a community based equitable benefit sharing mechanism by providing technical assistance to CBOs and village governments to secure certified credits for carbon emission reductions from REDD+ projects established on community lands, and assist village CBOs to work collaboratively with local government to market and contract the sale of these credits. Also, a REDD carbon credit pool fund to be disbursed for certified carbon credits generated by forest management CBOs will be established.

Overall, the project will prepare project documentation consistent with emerging international standards to account for emissions reductions at the project or sub-national level and facilitate monetization of offset value. The aim will be to produce a successfully accepted project design document (PDD) using VCS methodologies and potentially Climate Community and Biodiversity Standards. This document will potentially either allow communities to access carbon market mechanisms and/or to provide rigorous accounting of sub-national project activities for monetization through national REDD financing schemes.

3.3.1.1 FOREST MANAGEMENT ZONES The forest will be managed as a single unit, without division into management zones. The MCFR in this regard can be thought of as the core protective zone of a forest that is managed using management

⁵ CBO = Community Based Organization

zones. This is possible because communities can obtain most of their forest products from forests within their villages.

3.3.1.2 FOREST MANAGEMENT UNITS JUWAMMA will manage the whole of the forest as a single unit without dividing it into management units for the different villages that form JUWAMMA. This is how the management has so far been going on and there has been no problem with that approach.

4. CONCLUSIONS AND RECOMMENDATIONS

The following main conclusions are drawn from the present study:

- Reducing emissions from deforestation and forest degradation implies a distinction between the two activities. Deforestation is the permanent removal of forests and withdrawal of land from forest use. Forest degradation refers to negative changes in the forest area that limit its production capacity.
- REDD is sometimes presented as an offset scheme of the carbon markets and thus, would produce carbon credits. Carbon offsets are emissions-saving projects or programmes that in theory would compensate for the polluters' emissions. The carbon credits generated by these projects could then be used by industrialised governments and corporations to meet their targets and/or to be traded within the carbon markets.
- The national forest policy [URT \(1998\)](#) provides strong support for community based forest management. The policy emphasises clear definition of forest land and tree tenure rights for communities, establishment of village forest reserves, community-based organisation for forest management, exchange of information and awareness raising.
- The vision for the National REDD+ Strategy derives directly from the national development vision of Tanzania, popularly known as Vision 2025 [URT \(2005\)](#), which articulates the economic and social aspiration of the Union Government. Specifically, Vision 2025 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 (URT, 2010).
- 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.
- The payments for REDD+ will be made to countries on the basis of their average or net achievements in reducing emissions from forests. Thus a national reference scenario i.e. baseline is being established through NAFORMA against which the carbon changes will be assessed and monitored to determine carbon benefits.

- Incentives will be provided for the effective participation of different stakeholders in the REDD+ policy. A fair and transparent payment mechanism will be established in order to provide incentives to stakeholders within the country; in other words, to enable the state to account in a fair way for gains and losses and to reward stakeholders who are responsible for reductions in carbon losses. This requires a clear coordination system.
- The objectives of the current forest management plan are part of and derive from the objectives of the REDD+ readiness project that is on-going for the MCFR landscape. The overall objective is to enable communities and high biodiversity value forests in western Tanzania benefit from REDD+ based global approaches to climate change mitigation.
- The forest will be managed as a single unit, without division into management zones.
- JUWAMMA will manage the whole of the forest as a single unit without dividing it into management units for the different villages that form JUWAMMA.

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