



Carbon, Communities, and Conservation: Developing a Framework for Generating Socioeconomic and Environmental Benefits using the Voluntary Carbon Market in Tanzania

**A Roundtable Workshop hosted by TNRF
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Summary

Through the auspices of its Tanzania Forestry Working Group, the Tanzania Natural Resource Forum convened an informal roundtable meeting in Arusha to discuss the voluntary carbon market in relation to local community development and forest conservation. The meeting provided an opportunity to share ideas and information on the potential to use the growing voluntary carbon market as a practical tool for a) increased income to forest-adjacent villages and b) local-level incentives for forest conservation.

Introduction

The meeting's agenda included the following general topics, which were addressed iteratively and adaptively during the course of the discussions:

- Understanding the formal international framework for carbon trading under the Clean Development Mechanism (CDM), following the last international climate change meeting in Bali, Indonesia, in December 2007;
- Opportunities and constraints of voluntary carbon markets;
- Standards/certification/auditing for voluntary carbon offset projects

- Understanding the emerging policy, legal and institutional environment in Tanzania in relation to carbon trading;
- Development of appropriate business models and institutional arrangements that minimize transaction costs (e.g. project facilitation, monitoring and evaluation, and risk)
- Community benefits – how can community benefits be optimally realized and managed by communities?
- Practical implementation – looking at approaches and key steps necessary for taking the concept of ‘carbon, communities and conservation’ forward?

Proceedings took the form of informal discussion, structured around presentations by the following individuals:

- Fred Nelson- a general overview of key concepts in payments for environmental services;
- Eliakimu Zahabu- overview of international trends in carbon trading (e.g. emergence of increasing focus on Reduced Emissions from Deforestation and Degradation [REDD] following the Bali conference) and biophysical methods for measuring and monitoring carbon storage in Tanzanian forests
- George Jambiya- overview of business issues from the perspective of buyers and sellers of carbon credits
- Selemani Kinyunyu- assessment of voluntary carbon markets from the private sector perspective, in terms of risks, opportunities, and key considerations
- Marc Baker- overview of requirements of different voluntary carbon certification standards and auditing provisions

Many key issues emerged recurrently throughout the different presentations and discussions, with the aim throughout to move closer to a practical understanding of the opportunities and challenges to developing working frameworks for community-based voluntary carbon market projects in Tanzanian forest environments. Among the key emerging issues from the meeting included the following:

Opportunities and Challenges of the Voluntary Carbon Market

Several key trends are evident with respect to voluntary carbon markets and community-based forestry initiatives and objectives at present. First, the voluntary carbon market has grown rapidly in recent years, more than doubling annually since 2005. This growth has been driven primarily by the expanding demand for carbon reduction mechanisms in Europe and North America. The vast majority of these carbon credits (quantifiable and saleable carbon emission reductions) comes from a range of energy efficiency or energy-use reduction projects. Forestry projects are difficult for a number of reasons, including challenges in measuring the amount of carbon sequestered and assuring the permanence of the reduction in carbon emissions resulting from forest growth.

This makes forestry projects **high risk** from the perspective of carbon credit buyers. Projects based on collective management of forests (community-based forestry), using ecologically heterogeneous indigenous forests as opposed to plantations, and situated in countries such as Tanzania with a relatively unreliable business and regulatory environment, will be even more high risk. Thus, projects which seek to maximize local

community gains and to support community-based management of natural forests, will be among the **least competitive projects** if they are evaluated solely in terms of the market for carbon emission reductions. Such projects need to find ways of accessing niche markets which recognize not only the value of carbon emission reductions, but also add-on values related to local socioeconomic benefits and biodiversity conservation benefits. **Finding and exploiting such niche markets** is the only way that these projects will be able to compete with projects promoting plantations and forest monocultures on private lands, which, from a strictly emission reduction-based perspective, will almost always be more efficient. Certain well-recognized certification standards, such as the Climate, Community, and Biodiversity Alliance standards, provide guidelines for the design of projects that should be able to effectively target such niche markets and help capture the multiple bundled value of such projects.

Post-Bali and Post-Kyoto Frameworks

The growth of the voluntary carbon market has occurred, at least in part and particularly in the United States, in response to the absence of leadership at the national and international level for reducing carbon emissions. New and enhanced international commitments to reduce carbon emissions nationally and globally seem likely to emerge in the Post-Kyoto international climate framework. In addition, the Bali climate conference in December, 2007, placed a high emphasis on incorporating Reduced Emissions from Deforestation and Degradation (REDD) into that Post-Kyoto framework. REDD was explicitly excluded from the Kyoto Protocol, and pressure for its including comes from both forest-rich developing nations (e.g. Brazil, Malaysia, Papua New Guinea) and from developed-country conservation organizations and interests.

These developments have several basic implications for community-based forestry projects seeking to access carbon market financing. First, as formal international carbon emission reduction efforts broaden, there may be reduced demand among wealthy-country citizens for voluntary market purchases. Second, as REDD is incorporated into these international agreements (CDM- Clean Development Mechanism), market opportunities for community-based forestry projects able to supply carbon reductions may expand. **A key aspect of REDD is how its management under future treaties or national frameworks will bridge the gap between national and local.** The assumption is that REDD will be based on national baselines of deforestation, which countries will then be compensated for reducing. Such reductions may come from local initiatives, which would presumably receive payment accordingly from national governments. Operationalizing REDD in Tanzania under future global climate treaty regimes will have a significant influence on future carbon markets in the country.

The Emerging Regulatory Environment in Tanzania

At this point, little is known about how Tanzania will regulate carbon markets, or attempt to regulate these markets, in part due to the uncertainty of the country's future opportunities and obligations under the post-Kyoto international climate framework. The two key authorities for community-based forestry projects targeting voluntary carbon markets will be the Division of Environment in the Vice President's Office, which has the mandate for climate-related issues, and the Forestry and Beekeeping Division in the Ministry of Natural Resources and Tourism, which holds the mandate for all forest

management issues in the country. There appears to be little interaction or coordination between these two entities thus far in relation to REDD and carbon trading issues.

Business Models and Institutional Arrangements

The basis for carbon market community-based forestry initiatives, from a business perspective, is a legal contract between the buyer of the carbon credits and the seller (the communities). In many instances intermediaries will play a key role moving the credits from the level of production (the community forest) to the marketplace in the North. Facilitation of contracts will be key, as will the structuring of contracts. Transparency and the distribution of benefits will be central to developing effective agreements; **weak collective business arrangements will increase the risk** associated with the carbon credits from a given project. It is therefore essential that projects invest heavily and thoughtfully in establishing transparent business arrangements and which ensure collective accountability from the contracting party (village councils) to the producer and beneficiary community (village assembly). Many lessons from long-standing contractual arrangements between villages and private tour companies, particularly in northern Tanzania, exist and incipient carbon projects should draw on those lessons. Contracting at the village level also needs to consider the possibility of **individual and/or communal contracts**, as different locales will have different land tenure mosaics in terms of individual land holdings (e.g. agricultural plots) and collective land holdings (e.g. village forests, pasture lands).

From the perspective of carbon credit buyers or project investors, **this market is a fundamentally high risk one** and these sources of risk need to be understood and mitigation strategies developed. Sources of risk include: fire; illegal harvesting (potential collective failures in local enforcement mechanisms); land tenure security and land conflicts; lack of technical data in Tanzania; an erratic business environment; and the permanence of local forest management arrangements. One potential mitigation strategy is moving towards a more diversified portfolio, by developing a range of community-based initiatives which collectively serve to spread risk as well as share lessons in this emerging market.

Biophysical Measurements and Monitoring

Through the *Beyond Kyoto* project, methodology for measuring carbon storage in Tanzanian forests (based on trees but not on soil storage and loss rates) has been developed. Community-based monitoring systems which reduce transaction and management costs have also been developed and piloted in a number of community forests on an experimental basis. These methods have not yet been incorporated in any project that is actually involved in carbon trading, however.

Different types of forests will sequester and store carbon at different rates, and rates will vary from year to year based on variations such as the annual amount of rainfall. Through the *Beyond Kyoto* project, experimental forest plots have been established in montane, lowland, and Miombo forests to examine the rates of carbon storage in each and establish baseline estimates for different types of Tanzanian forests. In general, montane forests have much higher rates of growth and forest biomass than drier, lower-

volume Miombo woodlands, and thus unsurprisingly there is much higher annual incremental carbon storage in montane forests.

Methodologies for measuring carbon storage from Tanzanian forests established by the Beyond Kyoto project may be adapted for use by carbon projects in the country. The methodology involved forest mensuration (measurements) using plots and transects within the forest; in general, the more measurements taken, the more accurate the estimates of carbon storage will be. This requires a fairly high sampling intensity in the methodology as it has been developed thus far. Importantly, this methodology has been developed in a **community-based system** for carrying out annual forest monitoring of forest growth and carbon storage. Employing community-based monitoring protocols results in greatly reduced transaction costs for carbon forestry projects through the reduction in external technical inputs.

Methodologies for measuring forest carbon storage have also been developed for estimating baselines, which is a critical step in any forestry carbon project as **the baseline is what enables a project to calculate additionality**, i.e. the amount of additional carbon emissions reductions resulting from a given project's interventions.

It is theoretically possible to pre-date the baseline calculation for a community forest (e.g. a village land forest reserve) which has already been recovering (adding carbon storage capacity) over a period of years. To do this, one must estimate what the trajectory of the forest was prior to the management interventions (e.g. declaration of a VLFR), and therefore what the condition of the forest would be at present had that intervention not occurred. The difference between that theoretical condition in the absence of the intervention that caused the forest recovery, and the actual present condition of the forest, could then be considered as additional carbon emissions reductions resulting from the community's management of the forest.

However, it is much more practicable for the **management intervention** and the **measurement of additionality** to start at the same point in time. This enables the baseline and calculations of additionality to be much more accurate and reliable. It is not clear if the market (e.g. certification standards and auditors) would accept baselines traced back to earlier management interventions.

Standards and Certification

The number of different standards for voluntary carbon market certification is expanding, as is the market's recognition of various leading standards. A critical issue that emerged, however, is the issue of auditing- i.e. finding organizations or individuals who can audit projects according to a given set of standards, within Tanzania. This will be an important practical matter going forward as auditing is one of the major start-up costs for these projects, which by their nature will face greater transaction costs than many other projects which do not have the same socioeconomic and conservation objectives.

Way Forward

The meeting served to improve the level of understanding of many aspects of the potential for using carbon markets to achieve rural development and forest conservation aims in a synergistic manner. However, the session also highlighted the numerous information gaps that exist, and the difficulty in clarifying many of the uncertainties at present because **there are no operational projects in Tanzania at present which are delivering the desired results on financial, biodiversity conservation, and community development grounds.**

As a result of this reality, the **main priority at present for taking advantage of the potential opportunity posed by carbon markets must be to develop pilot initiatives operating at the local level which aim to establish a comprehensive ‘triple bottom line’ in terms of being financially sustainable, creating conservation benefits, and creating local economic benefits.** Not all carbon projects will aim for all three of these outputs, and some initiatives will probably not achieve any of them.

The meeting recommended that TNRF establish a ‘Carbon & Forestry Working Group’ under the auspices of the TFWG in order to foster continued communication, information exchange, and another meeting to review progress of different initiatives later in 2008. It was emphasized that there is a strong potential to reduce transaction costs for these types of initiatives through collaboration and information sharing, and in some cases even cost-sharing for things like project audits. In the meantime, various groups and individuals will continue working to build knowledge on key information gaps, including the emerging regulatory environment for carbon trading in Tanzania, future REDD scenarios, and issues related to competitiveness and risk in terms of accessing voluntary carbon markets.

For Further Information

A wealth of information on the rapidly growing field of carbon markets and its links to conservation and development is available on the internet. The following documents and web sites are particularly useful for those seeking additional information:

- The Katoomba Group’s Ecosystem Marketplace (www.ecosystemmarketplace.com/) is one of the premier sites for information about voluntary carbon markets and recent developments in terms of market trends and innovative projects. Several e-mailed newsletters, including V-carbon updates, are available via this site.
- The International Institute for Environment and Development (www.iied.org) has produced a range of useful policy briefs and discussion papers on carbon markets and their developmental and conservation impacts. Interested parties should search their web site but two such documents can be linked to directly here:
 - www.iied.org/pubs/pdfs/15502IIED.pdf
 - www.wwf.org.uk/filelibrary/pdf/clim_carb_consv_comm.pdf
- Carbon project certification standards are all available online:
 - Climate, Community, and Biodiversity Alliance (www.climate-standards.org)
 - Voluntary Carbon Standards (www.v-c-s.org)

- The [Edinburgh Centre for Carbon Management](http://www.eccm.uk.com/httpdocs/index.htm) (<http://www.eccm.uk.com/httpdocs/index.htm>) is another excellent source of a range of useful information from one of the leading specialists in carbon markets and financing.
- For an overview of key concepts relating to payments for environmental services (PES), which includes the conceptual underpinnings of carbon markets, the Centre for International Forestry Research (www.cifor.cgiar.org) has a wealth of useful information. This paper by CIFOR's Sven Wunder is one of the most useful syntheses available: www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-42.pdf

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