



**Indufor** ...forest intelligence

Program on Forests (PROFOR)

## **Lessons from developing a REDD+ A/R project in Zambézia, Mozambique**

**Indufor Oy, Finland  
in cooperation with  
International Institute for Environment and Development, IIED, UK**



Helsinki  
November 2009





**Indufor**

**DISCLAIMER**

Indufor makes its best effort to provide accurate and complete information while executing the assignment. Indufor assumes no liability or responsibility for any outcome of the assignment.

Copyright © 2009 by Indufor Oy

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to, photocopying, recording or otherwise.



**Indufor**

## TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	ZAMBÉZIA COMMUNITY FOREST CLIMATE PROJECT	2
3.	LESSONS LEARNED	3
3.1	Land is not abundant and access to land must be secured	3
3.2	There are significant barriers to entry in the carbon market	4
3.3	Forest climate projects must be developed under an internationally recognized offset standard	5
3.4	There is very little capacity, at all levels, in Mozambique to develop forest climate projects	6
3.5	Carbon projects should be developed promoting also other activities simultaneously	7
3.6	Communicating the concept and the principles of a 'carbon project' to rural communities in Mozambique is extremely challenging	7
3.7	Regular and upfront payments are required to maintain interest and to show that the project is real	8
3.8	Carbon projects can take a long time to develop	8
3.9	Upfront external investment is a pre-requisite for the start-up phase of a community carbon project	9
3.10	A management organization that will coordinate and manage the activities is critical to the success of the project	10
4.	REFERENCES	11

## LIST OF FIGURES

Figure 2.1	Location of Zambézia community forest climate project in Mozambique	2
------------	---	---

## ABBREVIATIONS AND ACRONYMS

A/R	Afforestation and Reforestation
AFOLU	Agriculture, Forestry and Land Use
°C	Degrees Celsius
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBNRM	Community-based natural resource management
CCBS	Community, Climate, and Biodiversity Standard
CDM	Clean Development Mechanism
CFS	CarbonFix Standard
CO <sub>2</sub>	Carbon dioxide
DUAT	Right to Use and Exploite Land (Direito de Uso e Aproveitamento da Terra)
EB	Executive Board
EU ETS	European Union Emissions Trading Scheme
EUR	Euro
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse gas
GIS	Geographic Information System
ha	Hectare
IIED	International Institute on Environment and Development
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
km <sup>2</sup>	Square kilometer
m <sup>3</sup>	Cubic meter
N/A	Not available
NGO	Non-governmental Organization
ODA	Overseas Development Assistance/Aid
PES	Payment for Environmental Services
PROFOR	Program on Forests
REDD	Reducing Emissions from Deforestation and Degradation
SFM	Sustainable Forest Management
UK	United Kingdom
USD	United States Dollar
VCM	Voluntary Carbon Market
VCS	Voluntary Carbon Standard
WRI	World Resources Institute
WWF	World Wide Fund for Nature

## 1. INTRODUCTION

Global climate change due to the emission of green house gases (GHGs) is already occurring, and there is now substantive quantitative evidence of global warming. For example, in the 12-year period between 1995 and 2006, eleven of these years were the hottest yet recorded (IPCC, 2007). The very visible signs of climate change include rising sea levels, accelerated decline of the arctic ice shelf and of glaciers across all continents and an increase in the number of extreme climatic events (IPCC, 2007).

Even though climate change poses several major challenges to the world, it also brings new opportunities for sustainable development. To contribute to the efforts of addressing climate change, carbon markets have developed rapidly over the past years. These markets grew by 100% in value between 2007 and 2008, to more than USD 126 billion (Bayon et al. 2009). Among other activities, this market has been supporting projects that curb deforestation and promote reforestation in developing countries contributing to sustainable development, and providing rural communities with additional opportunities to increase income and diminish the poverty level.

In order to take advantage of these new opportunities, a framework for a community forest climate project was developed in Zambézia Province, Mozambique during 2008-2009. The aim was to draft a project concept and identify the loopholes and barriers that one faces in engaging communities in the efforts to address climate change. It was an effort to contribute to a bottom-up proposal on how to develop forest climate projects instead of relying solely on the commonly used top-down approach where national and international policies<sup>1</sup> dictate how rural communities should manage their lands in order to take advantage of the carbon markets.

This paper summarizes the 10 most important lessons learned while designing the Zambézia project framework. Even though the numerous documents published in the past years on how to integrate forests and communities into the international climate framework are excellent contributions, papers on the complexities of how to effectively develop community forest climate projects on the ground are still scarce. The paper aims to complement policy publications with practical lessons derived from field observations, and contribute to the REDD debate in Mozambique as well as to international policy discussions.



<sup>1</sup> For example the Clean Development Mechanism (CDM) A/R framework does not take into account that forest carbon projects, especially when developed with communities, are more than just emission reduction schemes, but about improving local governance. As a result, only eight A/R projects achieved registration out of more than 1800 currently on the UNFCCC CDM pipeline (as of November 1st, 2009).

## 2. ZAMBÉZIA COMMUNITY FOREST CLIMATE PROJECT

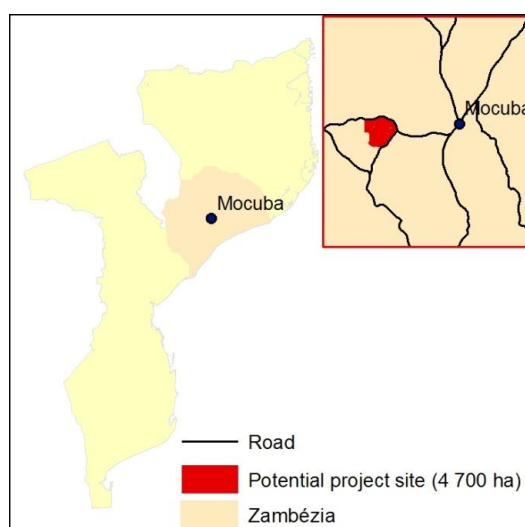
The Zambézia community forest climate project framework was designed during 2008-2009 as a result of desk and field studies in Mozambique. To generate clear and authentic lessons, several local stakeholders were consulted, including national and local government officials, international and local non-governmental organizations (NGOs), project developers, and community members located in the area screened and classified as eligible to develop a REDD+ A/R project. In addition, other similar community climate forestry initiatives were identified and studied. The most relevant for this specific case is the N'hambita initiative located in Sofala Province in Mozambique.

The project design included the following main steps:

- Analysis of the current state of the carbon markets and the different standards available to develop carbon forestry projects.
- Analysis of the Mozambican climate change profile, including climate change policies, national capacity and status of carbon forestry projects in the country.
- Available land identification including the potential to develop REDD projects, and further analysis of two areas which could potentially host pilot projects.
- Stakeholder consultation through interviews and workshops on national and community level.
- Design of a payment scheme.
- Identification of options to design a management organization for the potential project.
- Identification of the barriers related to implementing the project.
- Project framework drafting.

The screening study and field analysis identified a preliminary area of 4 700 ha in the Maungo community near Mocuba town with potential to host a REDD+A/R program (Figure 2.1). The community was consulted and is willing to host the project. Local NGOs and local government endorsed the idea and are available to provide technical assistance.

**Figure 2.1** Location of Zambézia community forest climate project in Mozambique



### **3. LESSONS LEARNED**

From developing the Zambézia project 10 main lessons were identified. These lessons can serve (i) Mozambique as a country when developing its national forest climate strategy and implementing its national forest program; (ii) project developers (private sector, NGOs, or local governments) planning to develop community carbon projects; (iv) International donors willing to promote opportunities for climate forest projects; and (v) international negotiators wishing to understand the complexities related to promoting forest climate projects with communities on the ground.

The lessons:

1. Land is not abundant and access to land must be secured
2. There are significant barriers to entry in the carbon market
3. Forest climate projects must be developed under an internationally recognized offset standard
4. There is very little capacity, at all levels, in Mozambique to develop forest climate projects
5. Carbon projects should be developed promoting also other activities simultaneously
6. Communicating the concept and the principles of a 'carbon project' to rural communities in Mozambique is extremely challenging
7. Regular and upfront payments are required to maintain interest and to show that the project is real
8. Carbon projects can take a long time to develop
9. Upfront external investment is a pre-requisite for the start-up phase of a community carbon project
10. A management organization that will coordinate and manage the activities is critical to the success of the project

#### **3.1 Land is not abundant and access to land must be secured**

This lesson deals with two principal issues related to land use: (i) land access, and (ii) land security (permanency of the project).

While Mozambique is a large country, much of the accessible land is being used and not lying idle available for carbon projects. The potential project sites visited in Zambézia were being used for different activities by communities, such as cattle grazing, charcoal making, small-scale cultivation etc. This means that there are opportunity costs because of these pre-existing uses, whether or not these activities are legal or illegal.

Due to the existing, often poorly documented or informal land uses, the detection of potential areas for carbon projects is difficult and should always involve thorough field checks, community consultations and verification of existing land titles through relevant government organizations.

While satellite imagery and maps may portray large blocks of potential land cover types, the land uses in these blocks are often discontinuous and in many cases crossing local administrative boundaries. In the Zambézian case, one of the potential project sites identified using satellite image/Geographic Information System (GIS) based screening had a total of 4 700 ha of land. This was split into a forested patch (1 000 ha), a partly deforested patch (750 ha), a patch with current high rates of deforestation (1 400 ha) and a deforested area under small scale cultivation (1 550 ha). So while the area of land suitable for carbon projects adds up to a large total, this is always interspaced by several other land areas that are not necessarily available. This is often the case for project areas that fall within communal areas with high population densities.



**Indufor**

Access to land is also affected by the expectations of the communities. For the rural communities in Mozambique the most common expectations are related to increased income or employment possibilities. Communities living in poverty may also lose their interest in a project if the benefits cannot be seen in relatively short time. Therefore securing the land access requires a project developer to actively engage in community consultations and to start the actual project implementation in reasonable time after raising the community expectations.

Securing the land title (DUAT) is among the principal measures to be implemented. The importance of property rights for poor communities has been widely discussed and there is evidence that formalization of land rights brings positive social and economic impacts to the communities. In Mozambique, acquisition of DUAT can be based on (i) customary occupation, (ii) good faith occupation, or (iii) concession based lease hold (50-years renewable).

In areas with good accessibility, infrastructure and good soils the competition for land has already begun, and due to the poor cadastral system in Mozambique private concession based leaseholds are often given out without sufficient knowledge on customary or good faith occupation based land use rights. Even though community consultation is required by law before granting leasehold, it is often done superficially and too hastily and the communities do not have enough knowledge on how to defend their right to land. Therefore it is important to formalize the community based DUAT and bring it to the cadastral system to avoid possible "capture" of the area.

It is foreseen that investments in agriculture and other intensive land uses are increasing in near future, especially in areas with good market access and productivity. Therefore a carbon project needs to be developed in a way that the community will maintain the interest to continue the project regardless of competing investments on land. This will require steady and sufficient income that outweighs the opportunity costs from other uses - otherwise the permanency of the project may be jeopardized. Sufficient income requires also easy and stable access to markets for the produced goods. Unless the market access is granted, land use for carbon projects cannot be secured.

After securing land title a comprehensive social study needs to be conducted to identify best possible uses for the land and to understand the community perceptions towards the proposed new land uses, which in fact means changing their source of livelihood. In planning new uses for the land, the areas outside of the production and afforested areas have to remain in balance with existing land uses so as not to threaten food and fuel production.

Another factor that may affect negatively the permanency of a carbon project is the unpredictable actions taken by the government officials. As an example, one can look at the Chipanje Chetu wildlife and natural resource management project in Northern Niassa Province, which was based on an agreement between local communities, a private hunting operation and the district administration. The project was stopped because the provincial government cancelled the hunting license of the private hunting operator in 2005. Certain powerful political figures and economic and political interests seem to have influenced the decision (Norfolk & Tanner, 2007).

### **3.2 There are significant barriers to entry in the carbon market**

As highlighted, investments in carbon markets have been growing rapidly. The World Bank (2009) reported that the market has reached USD 126 billion last year and has more growth prospects for the near future. Even though the opportunity exists, in reality, the market has not been able to effectively reach out to the poorest countries. To be able to elaborate and implement a project, a number of rules must be strictly followed, but they are rather technical and inaccessible to most stakeholders located in least developed countries (LDCs). To add to the problem, forests are not currently fully accounted for in the Kyoto Protocol or included in



the largest emissions trading mechanism, the European Union Emission Trading System (EU ETS), even though they are considered essential for combating climate change. Therefore, only specific types of forestry projects are eligible.

In the regulated market, the CDM mechanism was created to simultaneously generate emission reductions and promote sustainable development. In theory, it would have been a great mechanism to promote sustainable growth in Africa. However, this internationally acclaimed mechanism was not able to reach Africa because of the complexity of its rules and the time consuming and expensive process to register projects. As of 1<sup>st</sup> of November, 2009, Africa was hosting less than 3% of the projects currently listed in the CDM pipeline<sup>2</sup>.

In addition, CDM only allows for afforestation and reforestation projects to be promoted, leaving a number of other forest climate projects such as sustainable forest management (SFM) and avoided deforestation out of its scope. To date, only 8 forestry projects have been registered under the Kyoto Protocol CDM mechanism, accounting for less than 1% of the total number of projects

The voluntary market does not have as strict rules, but even in this market the share of community forest climate projects is not significant. One of the main barriers relates to the costs associated with setting up a community project. Several upfront investments<sup>3</sup> need to be done to prepare for the project. This market is considered more accessible, but there are still several technical issues that need to be addressed (e.g. leakage, permanence, additionality) that are not yet well understood.

Despite the challenges this market has been hosting a greater number of forest related projects compared to the regulated one. Recent estimations are that land-based credits' (reforestation, REDD, SFM) projects account for 11% of the market (Ecosystem Marketplace 2009). Therefore, for the time being, it is a safer bet to develop projects under the voluntary system. Also, even if REDD is included in the next international climate agreement, not all countries will be able to comply with upcoming rules under the regulatory market in the short term, so the voluntary carbon market will remain important.

Africa is home to a large percentage of highly vulnerable forest-dependent people, and ecosystems with high importance that are found nowhere else in the world. If rules to access the carbon markets are not made simpler, nor adapted to African conditions, the continent will never leave its high dependence on foreign aid.

### **3.3 Forest climate projects must be developed under an internationally recognized offset standard**

The compliance market (e.g. CDM) has strict rules on how an offset project must be developed, including methodologies that must be meticulously followed. This control aims, among other, to provide the international community with the assurance that the carbon credits generated are real. The voluntary market allows for more flexibility when it comes to types of projects that can be developed as well as the manner in which they are developed. Nonetheless, there are many critics to ventures developed under this market, given that it is not well regulated. Critics have raised concerns about the real additionality of projects as well as on issues related to fairness, equity, and the absence of proof that real reductions were achieved. In order to address these concerns and assure transparency and provide accountability to credit buyers, project developers have been increasingly implementing ventures following the guidelines of one of the several standards available in the market.

---

<sup>2</sup> <http://www.cdmpipeline.org/>

<sup>3</sup> Investments in activities such as: acquiring legal land title; raising awareness; and negotiating with the communities;

There are four main carbon offset standards that can be applied to forestry projects globally and that are currently active within the VCM: Community Carbon and Biodiversity Standard (CCBS); CarbonFix Standard (CFS); Plan Vivo Systems and Standard; and Agriculture, Forestry and Land Use Voluntary Carbon Standard (AFOLU VCS). Each of these standards has a different focus, and sometimes the standards can be combined<sup>4</sup>.

For this specific community project a combination between CCBS and CFS is the preferable option. CCBS was chosen as it is highly accepted in the market and assures that environmental and social benefits will also be delivered to the communities. However, given that Plan Vivo provides good guidelines and tools on how to work with communities and implement projects on the ground, it is suggested that lessons from this standard should also be taken into account when designing and implementing community forest climate projects.

Even though carbon credit buyers in the markets showed preference for the combination of VCS and CCBS, projects certified under the VCS AFOLU program can only provide ex-post certificates. There is a considerable debate around ex-ante credits versus ex-post credits. Ex-post systems only emit carbon certificates for the amount of carbon already stored, whereas ex-ante credits account for the future CO<sub>2</sub>-fixation of the trees. In an ex-ante system permanence is also monitored, verification is required, and only part of the carbon finance is paid upfront to project participants. However, given the higher risks, as the certificates are being issued before the actual emission reduction occurs, projects need to put mechanisms in place to ensure the delivery of the emissions reductions. Even though these types of credits carry higher risks they still seem more attractive to community projects as upfront finance is often crucial for the success of the project. The N'hambita community forest climate project, for instance, required external up-front finance to cover costs of the project implementation for 4 years. Only then income from carbon sale was able to cover the project expenses.

### **3.4 There is very little capacity, at all levels, in Mozambique to develop forest climate projects**

There is very little capacity in Mozambique on climate change issues, especially on forestry aspects related to climate change. Even though workshops have been promoted in the country to build capacity to establish CDM projects<sup>5</sup>, only one CDM project has been approved under the CDM EB on fuel switch. A handful of NGO's have been planning to support REDD+ activities, but so far only one community forest climate project has been fully implemented in the country (N'hambita).

The low capacity in the country has several repercussions. Only a handful of stakeholders are equipped to promote forest climate projects. It is often difficult to mobilize a team of capable national experts that is willing to move to the rural area. There are international experts available, but using them will increase the costs of project implementation. On the government side, it is important that civil servants support projects in their different phases as several activities such as DUAT and licensing process, require the cooperation of the government. In addition to project developers and governmental officials, civil society in general should also be aware of the elements and difficulties linked to developing community forest climate projects, otherwise projects will suffer from uninformed criticism.

The challenge of the limited capacity and skills in Mozambique is not new and is certainly not unique to REDD. Many of the Community-based natural resource management (CBNRM) programmes in the region have identified similar issues. As a result, many national and

---

<sup>4</sup> There have been several attempts to compare forest carbon standards. Some examples: Lopes, P. 2009. Review of Forestry Carbon Standards; Merger, E. 2008. Forestry Carbon Standards 2008

<sup>5</sup> E.g. a government initiative in 2003, Programme for Cooperation on Environment and Development of Dutch Ministry of Foreign Affairs, and an initiative from the Embassy of Norway in 2008.

regional CBNRM programmes in Africa included support to the education, training and curriculum development that has facilitated the emergence of a cadre of multi-disciplinary scholar-practioners (see Murphree & Taylor 2009; Child 2009). The Zambézia project recognizes that training and capacity building activities must be promoted towards all actors and are the key for efficient project development and to have the community members take over ownership of the process.

### **3.5 Carbon projects should be developed promoting also other activities simultaneously**

The Zambézia project was initially developed to host A/R activities. However, after the area was further studied, and available areas were assessed, the project decided to promote also REDD+, as avoiding deforestation and conserving forests might increase awareness on the potential carbon value of the native forest to the communities.

One of the problems that can arise if projects focus solely on promoting avoided deforestation and degradation is that communities will just receive the financial compensation from not deforesting and may shift their deforestation activities, to other locations. However, if communities are actively engaged in reforestation and such activity generates income, then it is possible that they will forgo those activities leading to deforestation.

In addition, to REDD+A/R, several other activities should be promoted simultaneously. This approach should be pursued mainly for three reasons. Firstly, the community members do not initially grasp the concept of generating and selling carbon credits, as such product does not have a physical shape or value according to their traditional way of conceiving a market. If the project is developed solely with this purpose, it will be more difficult to have the community take ownership of the process. If other goods are traded concurrently, the carbon aspects can be explained more carefully over time.

Secondly, one cannot assume that the communities will leave their current agricultural practices to pursue carbon credits. Food security and fuel production from forests are major concerns in countries like Mozambique and therefore must be integrated in any carbon related project. Thirdly, diversifying activities increases the range of options that build the adaptive capacity of communities. In the face of changing climates, they have a wider base of livelihood options that are less climate-sensitive.

### **3.6 Communicating the concept and the principles of a 'carbon project' to rural communities in Mozambique is extremely challenging**

Communities understand that climate change is happening as they have been witnessing and feeling the impacts of severe, drastic weather pattern changes over the last years. Discussing droughts and floods are their way to relate to and believe in climate change. However, it is a challenge to explain how planting trees or protecting existing ones can contribute to change this scenario and stabilize the climate. The concept of carbon and GHGs can be explained with pictures of pollution and fires and deforestation. However, because of the precarious nature of their livelihoods, the main concern of the community focuses on the levels of incentives that they could earn either through wage labour or on-farm activities.

It is important to discuss and emphasize the development of other tangible activities and products alongside carbon trading to assure community members that there will also be other benefits than just planting trees or maintaining forests. Toolkits and manuals designed for communities in other topics such as payments for environmental services (PES), community based natural resources etc. can be adapted and used to communicate with communities.

These again need to be simplified and communicate issues that communities can relate to rather than explaining things in abstract.

Making a parallel with CBNRM experience, it took a long time for people in many communities to see wildlife as a valuable asset. Even today there are people within CBNRM areas that reject wildlife as anything other than a problem. Similarly any other environmental service may be rejected for a variety of reasons. It will take a long time and many careful and innovative strategies to communicate that there is a 'market for carbon'. Over time, the communities' own experience and observation on how the area changed from degraded to forested, how micro-climates were improved as a result of reforestation, how there was an increase on biodiversity in the area, how the new forest is helping regulate water flow and improve quality, and how they are able to make a better living through SFM, will convince the community members that forests are not only an opportunity to make fast cash through deforestation, but a powerful tool to improve their well being in many different ways.

### **3.7 Regular and upfront payments are required to maintain interest and to show that the project is real**

Stakeholders in Zambézia (communities, government, NGOs) expressed the need to see real benefits from the proposed carbon project as a key condition for its success. Such claim comes from the various examples of projects that were proposed in the region, but did not result in benefits to the stakeholders involved. One of the many examples is the government's jatropha plantation. Government officials asked communities in the area to plant jatropha in their agricultural plots and in return promised to buy the seeds. Two years have passed and the seeds remain stacked in a community house, spoiling.

After so many promises that have led nowhere, the local communities have become doubtful about the ability of projects to deliver benefits. Therefore, it is even more important that carbon projects ensure that upfront and regular payments are delivered to community members to maintain their interest and to show that the project is real.

The timing of payments is critical for the success of carbon projects. These projects do not provide annual cash payments for the entire duration of the project. A balance however should be made between keeping the interests of communities alive throughout the project period, the significance of the payments to make material difference to communities as well as the risk of paying most of the revenues too early when the carbon credits have not yet been delivered. The community has to be fully aware of these considerations when the payment schedule is negotiated, as considering only one aspect at the expense of the others actually jeopardises the credibility of the project and the delivery of carbon credits. It should also be clear to communities that the expected benefit from the project is not only the carbon revenue. Rather, carbon revenues are quite limited. Other revenues will arise from additional activities or enterprises that the communities will develop using the available resource base (See lesson 3.5). These may not all necessarily deliver cash benefits, but may deliver benefits in kind as well.

### **3.8 Carbon projects can take a long time to develop**

For the project to be set up, made operational and generate carbon credits several activities need to be undertaken. A lot of biophysical and socioeconomic data and analyses are required in order to quantify carbon and address the key issues of additionality, leakage and permanence. These often take time, and require the technical support of experts who are not readily available in the project area (or even in the country). Conducting an analysis of the drivers of forest loss, and designing the activities that need to be put in place to reduce this loss, as well as the mechanisms for communities to participate in such activities, take a long

time. Some of the conditions that guarantee permanence, such as clarifying and ensuring tenure rights and effective enforcement of laws, are often outside the confines of the project boundary, and therefore require the support of other players such as the government. In the case of Zambézia, for communities to implement the project, they have to apply for land rights certificates (DUAT) from government, and this takes time, involving surveying the land as well as developing land use and management plans (see lesson 3.1). Methodologies for forest carbon projects are still evolving. Applying methodologies in a specific setting will involve a period of learning and adapting the standard steps of a methodology to local settings.

While projects developed for the voluntary market may take less time, the steps involved in the CDM project cycle demonstrate what a project has to go through before certified emission reductions are issued. These include project identification, project idea note, project concept, government endorsement, project development document, validation by the DOE, registration with the CDM Executive Board, monitoring, verification and certification. The speed at which these steps are undertaken will vary by project.

The N'hambita community carbon project has evolved over 4-5 years before it was able to finance its activities from carbon revenues (Envirotrade, 2007). In the Zambézia case, the process of consultations with all stakeholders, from communities to central government, was also a lengthy one, often involving several iterations. It has taken several field visits by experts in this project to figure out the possible nature of a management organization and a potential payment scheme. A much longer process will be required to fully implement the project.

The history of community based natural resources management projects and programmes in east and southern Africa demonstrate that long periods of time are needed for these to become fully functional, let alone sustainable. In many cases, projects start as pilots, requiring policy change before they can be scaled up. Getting stakeholder buy-in and building capacity (including putting in place the needed administrative and project management structures) will take time, involving carefully negotiated steps. Community forest carbon projects will not be exempted from these lengthy processes. The processes may be faster, however, where communities already have experience on running similar projects, and where the national policies and legislation are supportive.

These examples also imply that it may be necessary to start projects on a small scale. The N'hambita project in Mozambique and most CBNRM projects started with a few communities where the potential for success was high before expanding to other areas. Starting small enables projects to experiment and learn and define operational guidelines without taking too much risk. Subsequent participants will avoid the mistakes and problems encountered in the learning phase.

### **3.9 Upfront external investment is a pre-requisite for the start-up phase of a community carbon project**

As highlighted, several activities need to be undertaken before having a community based carbon project operational. These include fairly costly and technical processes, which the communities are unable to carry out or finance independently. Therefore substantial funding is necessary to come from ODA and/or other sources as grants during the inception phase. This is likely to last between three to four years. N'hambita received a EUR 2 million grant from the European Commission in 2003 to set up the necessary activities and structures. After four years, it no longer depended on external aid, as the project had become fully self-sufficient with the income from the carbon credits. By the end of 2008, the project had sold over USD 1 million worth of carbon credits generated on approximately 1 500 ha, and the project managers estimate that, in the next couple of years, this amount will increase substantially. These numbers show that the benefits of investing in a community carbon project have high potential to overcome the costs.

Some of the basic activities that require upfront grants include:

- Performing a socio-economic study to identify the project area baseline
- Composing an organized community association and establishing legal land rights to exploit the area
- Conducting an inventory of the current status of the area
- Identifying suitable management alternatives and species for the project
- Producing a master plan of activities to be implemented
- Training community members to perform project activities
- Developing a carbon trust fund
- Studying and developing methods to assess carbon density of the species to be used in the project
- Defining a project baseline
- Identifying deforestation activities and build a plan to address them
- Studying the risk of leakage and designing a plan to address it.

### **3.10 A management organization that will coordinate and manage the activities is critical to the success of the project**

Community forest carbon projects are very complex to develop. A large number of rather complex activities will be required, and many stakeholders need to be involved in the process. In addition, rural communities in Mozambique do not currently have the technical knowledge to propose and develop carbon projects by themselves. To assure that the project is formulated and implemented efficiently, an entity external to the community must take the leading role of the process; a management organisation, which is trusted by local communities, should be formally established.

This management organization has several roles:

- Coordinate all the different stakeholders that are involved in the process, such as the government; local NGOs that provide assistance on land tenure issues and building community capacity on diverse issues; academia; carbon credit verifiers; technical assistance providers to assure that the project is conducted efficiently and transaction costs are kept low
- Link communities with international carbon markets, as such communication requires international knowledge and contacts which the communities lack.
- Assure permanency to the project, as it will guarantee that the project activities are efficiently implemented and the project area will be permanently allocated for the activities designed.
- Manage the investments made in this venture, linking international carbon buyers and the community; and administer a carbon payment system, which can reach cost-effectively the numerous small-scale farmers involved.

The format of this management organization will vary depending on the individual case. An existing NGO in the area or a private forest company could assume these roles. Another option is to establish a new legal entity, a company or association that can have the community members as shareholders or members.

#### 4. REFERENCES

- Alvarodo L.X.R. and S. Wertz-Kanounnikoff (2007) *Why are we seeing REDD? An analysis of the international debate on reducing emissions from deforestation and degradation in developing countries*. IDDRI. Analysis No2 / 2007. Natural Resources.
- Angelsen, A. (ed.) (2008) *Moving Ahead with REDD: Issues, Options and Implications*. Center for International Forestry Research (CIFOR), Bogor, Indonesia.
- Balint P.J. and I. Bond (2008) *The Learning Curve for Southern African Community-Based Natural Resource Management: From CAMPFIRE in Zimbabwe to Conservancies in Namibia*. Society and Natural Resources.
- Balint P.J. and I. Bond (unpublished) *The Learning Curve for Southern African Community-Based Natural Resource Management: From CAMPFIRE in Zimbabwe to Conservancies in Namibia*.
- Bandyopadhyay, S., Guzman, J.C. and S. Lendelvo (2008) *Communal Conservancies and Household Gain in Namibia*. World Bank Report. Washington., USA.
- Barrow, E. and Murphree, M. (2001) 'Community conservation: from concept to practice' in Hulme, D. and Murphree, M. (eds.) 2001. *African Wildlife and Livelihoods – The Promise and Performance of Community Conservation*. James Curry. London.
- Bayon, R., Hawn., A., and K. Hamilton (2009) *Voluntary carbon markets: an international business guide to what they are and how they work*. Second Edition. Earthscan. U.K.
- Blomley, T. (2006) *Mainstreaming participatory forestry within local government reform processes in Tanzania*. Gatekeeper Series 128. IIED. London. UK
- Bond I. (1993) 'The Economics of wildlife and land-use in Zimbabwe: An examination of current knowledge and issues'. WWF (MAPS) Project Paper No. 36. Harare, Zimbabwe.
- Bond I. (1996). 'Employment, population growth and the demand for land in the communal areas' Box 4.4 In: *The Miombo in Transition: Woodlands and Welfare in Africa*. Editor: Bruce Campbell. For the Center for International Forestry Research, Bogor, Indonesia, pp 266.
- Bond I., Grieg-Gran, M., Wertz, Kanounnikoff, S., Hazlewood, P., Wunder, S. and A. Angelsen (2009). *Incentives to sustain forest ecosystem services: A review of current knowledge of payments for environmental services and implications for Norway's International Climate and Forest Initiative*. Natural Resource Issues No. 16. International Institute for Environment and Development, London, UK with CIFOR, Bogor, Indonesia and World Resources Institute, Washington D.C., USA.
- Bond, I. (2001). 'CAMPFIRE and the Incentives for Institutional Change' pp 227–243 in Hulme, D. and Murphree, M. (eds.). *African Wildlife and Livelihoods: The Promise and Practice of Community Conservation*. James Currey. Oxford.
- Bond, I., Child, B., de la Harpe, D., Jones, B., Barnes, J., and Anderson, H. (2004). 'Private Land Contribution to Conservation in Southern Africa' in Child, B. (ed.) *Parks in Transition: Biodiversity, rural development and the bottom line*. Earthscan/IUCN South Africa. London.
- Carbon emissions from forests? IN Angelesen, A. (Ed.) *Moving Ahead with REDD: Issues, CarbonFix 2009*. CarbonFix Standard, Version 3.0. Worldwide Climate Forestation Projects.
- Chambwera, M. (2004) *Economic analysis of urban fuelwood demand: The case of Harare in Zimbabwe*, PhD Thesis, Wageningen University, The Netherlands
- Chidamayo E., Gambiza, J., and I. Grundy (1996) *Managing Miombo woodland*. In: *The Miombo in Transition: Woodlands and Welfare in Africa*. Editor: B. Campbell. CIFOR. Bogor, Indonesia.

- Chidumayo, E.N. (2002) Changes in miombo woodland structure under different land tenure and use systems in central Zambia. *Journal of Biogeography* 29: 1619-1626
- Child B. and B. Jones (2006) Introduction: Practical tools for community conservation in southern Africa. In: PLA 55 'Practical tools for community conservation in southern Africa. IIED. London. U.K. Editors: B. Child and B. Jones. PLA. IIED. London.
- Child B.A. (2006) Revenue distribution for empowerment and democratisation. In: PLA 55 'Practical tools for community conservation in southern Africa. Editors: B. Child and B. Jones. Participatory Learning and Action (PLA). International Institute for Environment and Development. London.
- Child B.A. (2009) Conservation in Transition. In: Evolution and innovation in Wildlife Conservation. Parks and Game Ranches to Transfrontier Conservation Areas. Editors: H. Suich, B. Child and A. Spenceley. Earthscan 2009. U.K.
- Child, B and C. Weaver (2006) Marketing hunting and tourism joint ventures in community areas. In: Practical Tools for community conservation in southern Africa. Editors: B. Child and B. Jones. Participatory Learning and Action (PLA) No. 55. IIED. London. U.K.
- Child, B. (2004). 'Introduction' in Parks in Transition, Biodiversity, Rural Development and the Bottom Line. Earthscan. London.
- Child, B. Mupeta, P., Lubilo, R., and T. Diane (2007) Monitoring Conservancy Performance in CBNRM: Kwandu Conservancy, East Caprivi, Namibia 2007. Unpublished Report. University of Florida.
- Chundama, M. (2009) Preparing for REDD in dry-land forests: investigating the options and the potential synergy for REDD payments in the Miombo-Eco Region - Zambian Country Study. International Institute for Environment and Development. London
- Collective Action. Cambridge University Press. Cambridge, UK.
- Collier, P. (2007) The Bottom Billion: Why the Poorest Countries are Failing and What Can be Done About it: Why the Poorest Countries Are Failing and What Can Be Done About It.
- Cotula L. and J. Mayers (2009) Tenure in REDD. Start-point or afterthought? *Natural Resource Issues* No. 15. International Institute for Environment and Development. London.
- Cumming D.H.M. and I. Bond (1991) "Animal Production in Southern Africa: Present Practice and Opportunities for Peasant Farmers in Arid Lands." A report prepared for the IDRC Regional Office for Eastern and Southern Africa. Published by WWF (MAPS), Harare, Zimbabwe.
- Dalal-Clayton B. and B. Child (2003) Lessons from Luangwa: The story of the Luangwa Integrated Resource Development Project, Zambia. *Wildlife and Development Series* No. 13. International Institute for Environment and Development. London.
- Dilys R., Nelson F., Sandbrook C. and I Bond (2009) Community management of natural resources in Africa: Impacts, experiences and future direction. *Natural Resource Issues* No. XX. International Institute for Environment and Development. London. U.K.
- Dimbi L., Taylor R.D. and I. Bond (2006) Building capacity for local-level management through participatory technology development. In: Practical Tools for community conservation in southern Africa. Editors: B. Child and B. Jones. Participatory Learning and Action (PLA) No. 55. IIED. London. U.K.
- Drinkwater, M. (1991) *The State and Agrarian Change in Zimbabwe's Communal Areas*. St. Martins Press. New York. USA.
- Dunham, K. M., Davies, C. and Muhwandagara, K. (2003). Area and Quality of Wildlife Habitat in selected CAMPFIRE Districts, A Report prepared for WWF-SARPO, January. WWF. Harare, Zimbabwe





**Indufor**

- EIA (2008) Demanding deforestation: What else can illegal logging and international timber trade policy teach us for effectively reducing emissions from deforestation and forest degradation, Environmental Investigation Agency, London
- Eliamkimua Z., Skutsch M.M., Sosovele H. and R. E. Malimbwi (2007) Reduced emissions from deforestation and degradation. Policy Piece. African Journal of Ecology 45: 451-453. Blackwell Publishing, U.K.
- Engel, S., Pagiola, S. and Wunder, S. 2008. Designing payments for environmental services in theory and practice: An overview of the issues. In: Ecological Economics. 65 (4): 663-674. Elsevier, Amsterdam.
- Envirotrade (2007) <http://www.miombo.org.uk/Envirotradeedin.pdf>
- Ferraro, P. J. and Pattanayak, S. K. (2006). 'Money for nothing? A call for empirical evaluation of biodiversity conservation investments'. Public Library of Science Biology. April 2006. Volume 4. Issue 4.
- Forestry Department (2008) Integrated Land Use Assessment (ILUA) Zambia 2005-2008, Ministry of Tourism Environment and Natural Resources, Lusaka
- Frost, P. and Bond, I. (2008) The CAMPFIRE programme in Zimbabwe: Payments for wildlife services. In: Ecological Economics. 65 (4): 776-787. Elsevier, Amsterdam.
- Goredema, L., Taylor, R.D., Bond, I., and S. Vermeulen (2005) Empowering rural communities to manage wildlife: Lessons from WWF's Support to CAMPFIRE project 1993-2002. A report produced for IIED's POWER TOOLS Initiative. IIED. London
- Government of Mozambique (2007) National Adaptation Plan of Action, Ministry for the Coordination of Environmental Affairs, Maputo
- Government of Zambia (2007) Formulation of the National Adaptation Plan of Action, Ministry of Tourism, Environment and Natural Resources, Lusaka
- Grace, J., Jose J.S., Meir P., Miranda H.S., and R.A. Montes (2006) Productivity and carbon fluxes of tropical savannas. Journal of Biogeography 33 387-400. Blackwell.
- Grieg-Gran, M. (2006) The cost of avoiding deforestation: report prepared for the Stern Review of the Economics of Climate Change. International Institute for Environment and Development (IIED), London, UK.
- GRN (1998) Republic of Namibia, National Land Policy. Ministry of Lands, Resettlement and Rehabilitation, Windhoek
- Hoare et al. (2008) Estimating the costs of building capacity in rainforest nationals to allow them to participate in a global REDD mechanism. Chatham House. ProForest, Overseas Development Institute (ODI), Eco-Securities.
- Hutton, J., Adams, W. M. and Murombedzi, J. C. (2005). 'Back to the barriers?: Changing narratives in biodiversity conservation'. *Forum for Development Studies* 32, 2: 341-370.
- INGC. 2009. Main report. INGC Climate Change Report: Study on the impact of climate change on disaster risk in Mozambique. [Asante, K., Brito, R., Brundrit, G., Epstein, P., Fernandes, A., Marques, M. R., Mavume, A., Metzger, M., Patt, A., Queface, A., Sanchez del Valle, R., Tadross, M., Brito, R. (eds.)]. INGC, Mozambique.
- IPCC, 2000 quoted in Alvarado, 2007
- IPCC. 2007. Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability. Summary for Policymakers. Working Group II Contribution to the Intergovernmental Panel on Climate Change, Fourth Assessment Report, Intergovernmental Panel on Climate Change, Geneva, Switzerland.
- IUCN Status Report (2006)



**Indufor**

- Jansen D.J., I. Bond and B. Child (1992) "Cattle, Wildlife, Both or Neither. Results of a Financial and Economic Survey of Commercial Ranches in Southern Zimbabwe." WWF (MAPS) Project Paper, Harare, Zimbabwe.
- Jindal, R. (2008) Impact assessment of the Nhambita Community Carbon project, Mozambique, Unpublished report.
- Jones, B. (2009) Preparing for REDD in dry-land forests: investigating the options and the potential synergy for REDD payments in the Miombo-Eco Region. Namibian Country Study. International Institute for Environment and Development. London.
- Jones, B. T. B. and Mazambani, D. 2007. Managing Growth and Sustainability: Mid-term Evaluation of IRDNC's Community-based Natural Resource Management Programme in Kunene Region and Caprivi Region, Namibia. WWF Programme Number NA000404/NA0001500. Final Report. Integrated Rural Development and Nature Conservation. Windhoek.
- Lopes, P. 2009. Review of Forestry Carbon Standards – Development of a tool for organizations to identify the most appropriate forestry carbon credit. Imperial College London, Faculty of Natural Sciences, Centre for Environmental Policy.
- Lund J.F. and T. Treue (2008) Are we getting there? Evidence of decentralized forest management from Tanzanian miombo Woodlands. [www.nfp.co.tz/participatory\\_forest\\_management.html](http://www.nfp.co.tz/participatory_forest_management.html)
- Makumba, I. (2002) Tropical Secondary Forests Management in Africa: Reality and Perspectives- Zambia Country Paper, FAO Workshop on Tropical Secondary Forests Management in Africa, Nairobi Kenya December 2002.
- Mapedza E. and I. Bond (2006) Political Deadlock and Devolved Wildlife Management in Zimbabwe: The Case of Nenyunga Ward. *The Journal of Environment & Development* 2006 15: 407-427.
- Mati, A. (2008) Managing surging oil prices in the Developing World. IMF Survey Magazine. March 2008. IMF, USA.
- Mayers, J. (2007) Report of a scoping exercise to help develop a research programme for the UK Department for International Development on Water ecosystem services and poverty reduction under climate change. Second Draft. IIED. London
- Mayers, J. and D. Macqueen (2006) Environmental governance: Implications for donors from the practice of governance in agriculture, forestry and urban development. Draft Report for the Ministry of Foreign Affairs. Norway, Oslo.
- Merger, E. 2008. Forestry Carbon Standards 2008. A Comparison of the leading Standards in the Voluntary Carbon Market – Climate, Community and Biodiversity Standard (CCBS), CarbonFix Standard (CFS), Plan Vivo Systems and Standard, Voluntary Carbon Standard AFOLU (VCS) and the State Climate Forestation Projects
- Muir-Leresche K., and C. Sukume, (2006) Agricultural policies in a global environment. In: Zimbabwe's Agricultural Revolution Revisited. Editors: M. Rukuni; P. Tawonezvi, C. Eicher. University of Zimbabwe Publications. Harare. Zimbabwe.
- Murombedzi J, (2001) Committees, Rights, Costs & Benefits. Natural Resource Stewardship and Community Benefits in Zimbabwe's CAMPFIRE Programme. In: African Wildlife and Livelihoods: The promise and performance of community conservation. Hulme, D. and Murphree, M. (eds). James Currey, Oxford.
- Murphree M.W and R.D Taylor (2009) Community based natural resource management in sub-Saharan Africa – opportunities and challenges. In: Community management of natural resources in Africa. Impacts, experiences and future directions. Editors: Dr. Toe, F. Nelson, C. Sandbrook and I. Bond. *Natural Resource Issues*. No. 18. IIED. London



**Indufor**

- Murphree M.W. (1997) Congruent objectives, Competing Interests and Strategic Compromise: Concepts and process in the Evolution of Zimbabwe's CAMPFIRE Programme. Community Conservation in Africa. Working Paper No. 2 IDPM. University of Manchester.
- NACSO (2008) Mamibia's communal conservancies: A review of progress and challenges in 2007. NACSO. Wndhoek
- Nhantumbo I. And S. Anstey (2009) CBNRM in Mozambique. The challenges of sustainability. In: Evolution and innovation in Wildlife Conservation. Parks and Game Ranches to Transfrontier Conservation Areas. Editors: H. Suich, B. Child and A. Spenceley. Earthscan 2009. U.K.
- Nhantumbo, I., Norfolk, S. and J. Pereira (2003) Community based natural resource management in Mozambique: A theoretical or practical strategy for local sustainable development? The Case of the Derre Forest Reserve. IDS Research Paper #10 of the Sustainable livelihoods in Southern Africa Series. IDS. U.K.
- Norfolk, S. & Tanner, C. (2007) Improving tenure security for the rural poor. Mozambique – country case study (2007)  
*Options and Implications*. Bogor, Indonesia, CIFOR.
- Orrego, J. (2005). The Plan Vivo experience with carbon service provision and the potential lessons for watershed service projects. Edinburgh Centre for Carbon Management Ltd. Edinburgh.
- Pagiaola S. and B. Bosquet (2009) Estimating the costs of REDD at the country level. Forest Carbon Partnership Facility. World Bank. Washington. U.S.A
- Peskett L. Huberman, D., Bowen-Jones, Edwards, G. and J. Brown (2008) Making REDD work for the poor. A Poverty Environment Partnership (PEP) Policy Brief.
- Rigava, N. Taylor R. and L. Goredema (2006) Participatory wildlife quota setting. In: PLA 55 'Practical tools for community conservation in southern Africa. Editors: B. Child and B. Jones. Participatory Learning and Action (PLA). International Institute for Environment and Development. London.
- Roe D., Nelson, F., Sandbrook, C. (eds.) 2009. Community management of natural resources in Africa: Impacts, experiences and future directions, Natural Resource Issues No. 18, International Institute for Environment and Development, London, UK.
- Roe, D., Jones, B., Bond, I. and Bhatt, S. (2006) Local action, global aspirations: The role of community conservation in achieving international goals for environment and development. Natural Resources Issues No. 4. International Institute for Environment and Development, London.
- Rogner, H-H., D. Zhou, R. Bradley. P. Crabbé, O. Edenhofer, B. Hare (Australia), L. Kuijpers and M. Yamaguchi (2007) 'Introduction' in Metz, B., O.R. Davidson, P.R. Bosch, R. Dave and L.A. Meyer (eds) Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Salamao and Matose, (2007) Towards community-based forest management of miombo woodlands in Mozambique. <http://www.cifor.cgiar.org/miombo/#>
- Shackleton S. ( 2000) Generic criteria and indicators for assessing the sustainability of common property / Community based natural Resource Management Systems. Report ENV-P-2000-042, CSIR. Pretoria. South Africa.
- Simpson, R. and Sedjo, R. 1996. Paying for the conservation of endangered ecosystems: a comparison of direct and indirect approaches. In: Environment and Development Economics. 1: 241-257.



**Indufor**

- Stern, N. (2006) *The Stern Review: The Economics of Climate Change*. Cambridge University Press. Cambridge, UK.
- Stuart-Hill, G. Diggle, R., Munali B., Tagg, J. and D. Ward (2006) *The event book system: community based monitoring in Namibia*. In: *Practical Tools for community conservation in southern Africa*. Editors: B. Child and B. Jones. *Participatory Learning and Action (PLA)* No. 55. IIED. London. U.K.
- Taylor, R.D. and M.W. Murphree (2007) [www.framework.org/iucn\\_frame\\_cbnrmsudies](http://www.framework.org/iucn_frame_cbnrmsudies)
- United Republic of Tanzania [URT] (2006) *Participatory Forest Management Facts and Figures*. Ministry of Natural Resources and Tourism. Forestry and beekeeping Division. [www.nfp.co.tz/participatory\\_forest\\_management.html](http://www.nfp.co.tz/participatory_forest_management.html)
- Viana, V. (2009) *Seeng REDD in the Amazon: a win for people, trees and climate*. Sustainable Development Opinion. International Institute for Environment and Development, London, UK.
- Wertz-Kanounnikoff and L. V. Verchot (2008). *How do we monitor, report and verify carbon emissions from forests?* In: Angelsen, A. (ed.) *Moving Ahead with REDD: Issues, Options and Implications*. Center for International Forestry Research (CIFOR), Bogor, Indonesia.
- Wertz-Kanounnikoff, S. and Verchot, L. (2008) *How do we monitor, report and verify*
- Williams M., Ryane C.M. Rees, R.M., Sambane, E., Fernando, J., and J Grace (2008) *carbon sequestration and bio-diversity if re-growing miombo woodlands in Mozambique*. *Journal of Forest Ecology and Management* 254 145-155. Elsevier.
- WRI (2008) *Roots of Resilience. Growing the wealth of the poor. Ownership. Capacity. Connection*. WRI in collaboration with United Nations Environment Programme and the World Bank. Washington.
- Wunder, S. (2005) *Payments for environmental services: Some nuts and bolts*. Center for International Forestry Research Occasional Paper No. 42. Center for International Forestry Research, Bogor.
- Wunder, S., Engel, S. and Pagiola, S. (2008) *Taking stock: A comparative analysis of payments for environmental services programs in developed and developing countries*. In: *Ecological Economics*. 65 (4): 834-852. Elsevier, Amsterdam.
- Zahabu, E., Skutsch, M.M., Sosovele H., and R.E. Malimbwi (2007) *Reduced emissions from deforestation and degradation*. *African Journal of Ecology*. Volume 45, Issue 4.

#### **Webpages visited:**

<http://www.miombo.org/documents.html>  
<http://web.worldbank.org/website/external/datastatistics>  
<http://www.cifor.cgiar.org/miomo/projects.docs.html>  
[http://www.eia-global.org/PDF/EIA\\_REDDPoznanBriefing.pdf](http://www.eia-global.org/PDF/EIA_REDDPoznanBriefing.pdf)  
<http://www.forestcarbonpartnership.org>  
<http://www.miombo.org.uk/Envirotradeedin.pdf>  
<http://www.scribd.com/doc/328232/United-Nations-Gini-Coefficient>  
<http://www.southsouthnorth.org>  
<http://www.undp.org>  
<http://www.un.org/apps/news/story.asp?NewsID=32959&Cr=hunger&Cr1=>



**Indufor** ...forest intelligence

**Indufor Oy**  
Töölönkatu 11 A  
FI-00100 Helsinki  
Finland

Tel. +358 9 684 0110  
Fax +358 9 135 2552  
indufor@indufor.fi  
www.indufor.fi

