

## **Independent Project Report on N'hambita project in Mozambique.**

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### **Summary**

The N'hambita forestry project The CarbonNeutral Company purchased credits from, run by EnviroTrade in Mozambique is exceptional. The project, which occurs throughout several towns in the Chicare district of Mozambique, has two successful project components: fire-control and reforestation. The credits are clearly additional; without carbon finance the project activities and associated community benefits would not have been possible. Operationally, the project is run by highly-competent management. The operations team has a core mission to use carbon finance and project activities to fundamentally rebuild a sustainable local economy once ravaged by civil war. Every community member I spoke with, without exception, had only positive things to say about the project.

The credits The CarbonNeutral Company purchased from the project are all from reforestation activities, whereas the bulk (80%) of the overall project's credits are from avoided deforestation. Currently, reforestation activities are going well, with hundreds of thousands of seedlings given to farmers each year. The farmers and community groups overall appear to be having success not just planting native trees and fruit trees but also in maintaining and growing them. Avoided deforestation activities are also succeeding, with the community actively engaged in forest fire management, prevention and control. The project has done a good job using the Plan Vivo system and meeting the appropriate benchmarks of that system.

The challenges the project face include ensuring permanence, solidifying medium-term cash flows for the project and farmers, navigating the emerging methodological landscape for forestry projects, and potentially overwhelming land use trends outside the project area.

The CarbonNeutral Company level of engagement with the project is minimal. Apart from a contract and mid-term report and a reference to the project's Plan Vivo website, The CarbonNeutral Company did not have any obvious relationship with the project. There did not appear to be any significant communication between the project and The CarbonNeutral Company once the contract was signed. This lack of a relationship and communication was most apparent in the fact that The CarbonNeutral Company did not even maintain an updated file on the project nor did it have a project design document or other key papers produced for or by the project since the contract signing. I had to request many of the key documents to understand the project from the project developer, EnviroTrade. However, as noted above, The Company through its relationship with the Plan Vivo system, did have some updated materials accessible and linked to its website.

It is critical to note that the contract for these credits was signed in 2002. At the time, there was no common standard or set of methodologies to underpin forest sector credits. The level of sophistication for forestry credits was much lower than it is today. Thus, the criticisms aimed in this report at The CarbonNeutral Company should be seen in that light. It is also

important to note that since 2002, The CarbonNeutral Company significantly reduced the amount and the profile of its forest sector credits. This may have contributed to a lack of vigorous project follow-up, engagement or and supervision. The practice of ex-ante selling of credits from the project (a practice that has since been stopped by The Company) also probably contributed to the lack of sustained follow-up engagement. And despite the concerns and issues noted, I believe that the Company's early purchase of credits from the project, fundamentally helped support a robust project with compelling climate and co-benefits. By doing this, The Company helped develop the nascent demand for forest credits in developing countries. In this light, The Company's involvement probably helped catalyze today's excitement around forestry and the concurrent development of global standards and methodologies.

## Scope and Project Review

The purpose of the review was to understand and visit the N'hambita project, assess its contribution to climate change mitigation, assess co-benefits, and look into and corporate and project risks. The purpose was also to generate suggestions and advice for The CarbonNeutral Company and EnviroTrade.

The visit was conducted by John O Niles, Tropical Forest Group's Director and member of the The CarbonNeutral Company's Independent Advisory Group (IAG). My visit involved four days of intensive on-site review, meetings, and exchange from October 22 to 26, 2008. Additional information was exchanged in the weeks preceding and following the visit. The methods used were background research, project visitation, interviews (see list below), and follow-up questions with both the project and The CarbonNeutral Company.

This year the IAG decided to focus on forestry projects, one in a developed country and one in a developing country. Several developing country projects were suggested and approved by the IAG. Initially, I was going to visit a project in Uganda. However, due to scheduling conflicts in Uganda and a willingness from EnviroTrade to host a visit, Mozambique was selected. The review process and logistics was coordinated jointly by Dominic Stichbury (The CarbonNeutral Company), Philip Hall (EnviroTrade).

I believe there was sufficient information and exchange to make an informed review and conclusions about the overall quality of the N'hambita project. However see my disclaimer at the end of this report about the limitations of my audit. It is important to note here that initially, the documents provided to me by The CarbonNeutral Company, were not sufficient to make an informed review. Before my visit, I was given a copy of the contract and directed to the project's Plan Vivo website, which has some good information, but which does not contain such items as the project design document (PDD). The CarbonNeutral Company also provided me with a mid-term review conducted in 2006 by Professor John Grace.

The main project documents I primarily obtained from EnviroTrade and reviewed include:

- Project Design Document: Nhambita Community Carbon Project. EnviroTrade/ECCM. Data Unknown.
- An Inventory of tree species and carbon stocks for the N'hambita Pilot Project, Sofala Province, Mozambique. John Grace et al. 2007.
- Carbon and Communities in Tropical Woodlands. Philip Powell. 2008.
- Fire and Biospheric Carbon Management. Casey Ryan. Date unknown.
- Carbon Change Rate and Assessment of its Drivers in Nhambita, Mozambique. Gudrun Wallentin. 2006.
- Synthesis of Remote Sensing Products and a GIS Database to Estimate Landuse Change: An Analysis of the Nhambita Community Forest, Mozambique. 2004.
- Progress Report: Miombo Project. Data and Author Unknown.
- Technical Specifications for various Plan Vivo Mozambique Project Activities (five in all).
- Contract between (then) Future Forests and EnviroTrade (confidential). 2002.

The people with whom I met include:

- Philip Powell, EnviroTrade Director
- Antonio Serra, Operations Manager
- Lee Magochi, Senior Consultant
- Mapera, Senior Technical Advisor

- Piet van Zyl, Project Manager
- Alex Tendai Chipepera, Database Administrator
- Jonwe, head of vegetable garden mini-industry
- Sidique, head of carpentry mini-industry
- Sidenta, head of sawmill mini-industry
- Sra Isabella, head of project-operated Health Clinic
- Marcos, head of one of several nursery mini-industries
- Francisco, President of Chicare Community Association
- Name unknown, Headmaster at elementary school being rebuilt by project
- Alan Schwarze, a local expatriate doing similar work in the project area.
- Multiple carbon farmers, including Antonio, George Baulos, Luis Capira, “papaya man’s family”, Dona Juliana, and Jaolino.

## **Project Particulars**

In 2002, Future Forest (now The CarbonNeutral Company) contracted for 9,175 tons of CO<sub>2</sub>e in carbon credits, from reforestation activities carried out in N'hambita, Mozambique. N'hambita is a town in the Chicare district, which is located in the Gorongosa national park and the surrounding buffer zone. The project uses a combination of reforestation (via boundary plantings, orchards, "homestead planting" and woodlots) and avoided deforestation activities and hopes to generate slightly more than 500,000 tons of CO<sub>2</sub>e credits over 50 years. The vast majority of the project's anticipated credits (476,000) are projected to come from avoided deforestation. Avoided deforestation activities are primarily fire prevention, fire brigades that put out unwanted fires, and early season burning (fire management) which generates lower intensity and easier to control fires. These activities occur on communal lands that are under a community Plan Vivo contract. This means it is the community at large that is responsible for controlling unwanted and large fires. In this way, the avoided deforestation credits differ significantly from reforestation activities which are contracted to individual farmers and farmer families. All locations for reforestation and fire prevention are demarcated with contracts, which EnviroTrade signs with farmers or communities according to Plan Vivo specifications.

The Plan Vivo system primarily works by having technical specifications for the various activities mentioned (avoided deforestation, orchard planting, boundary planting, etc). Individual farmers decide for themselves which reforestation "plans" they will do on lands they control. The technical specifications provide guidance on species to use as well as forestry and agro-forestry techniques. The specifications also produce estimates of additional carbon sequestered/conserved and are therefore an integral part of the project's methodologies and technical foundation. Once a farmer agrees to a contract, some technical assistance is provided in the form of seedlings and specialists who visit with farmers and check on their progress. There are also semi-regular monitoring events to ensure that farmers are sticking with their plan and succeeding. Reforestation payments are made to farmers according to the following schedule: 30% after the initial planting, 12% for five years after that, and a final 10% payment in the 7<sup>th</sup> year. This schedule was decided on based on discussions between community members and EnviroTrade. The project is assuming that after 7 years, once trees are providing fruit and other sources of livelihood, that the trees will remain in perpetuity. The reasoning is that after the opportunity costs of reforestation are compensated and once new trees are productive, the trees after 7 years will "prove their own value", and farmers will not cut or burn them.

The project has met most, if not all of the core benchmarks it set for itself. These benchmarks include signing up reforestation/fire prevention contracts, creating nurseries, monitoring, and carbon measurements. In addition, the project has established several micro-enterprises that support the project and provide local employment and project support. These mini-industries include private tree nurseries, a health clinic, a carpenter's collective and sustainable timber harvesting and a sawmill.

## **Status of the Project**

### ***Carbon***

The basis of carbon credit calculations is sound. The project follows the technical review specifications of Plan Vivo to estimate the additional carbon sequestration and storage by project activities. There are currently 15 permanent sample plots in the project area. The project is measuring aboveground biomass in the plots working with numerous respected academics and publishing results in peer-reviewed publications. The carbon sequestration rate, as determined by a chrono-sequence of abandoned farms, is 0.79 tons of biomass per hectare per year. This is lower than other estimates for similar Miombo forests and the project attributes this to very low nitrogen and rainfall, the presence of destructive fires and generally poor soils.

The overall additionality argument for the project is compelling. Other sources of finance have helped fund the project (including ODA contributions and others) but Future Forests' early investment is likely to have helped fund portions of the project in the difficult start-up phase.

The underlining method for calculating carbon credits is the average stock approach, which underestimates (by approximately 50%) the potential amount of carbon that could be stored by the project in year 99. This approach is considered sound as it is likely to be conservative as long as the project reaches the majority of its goals, which it is on-track to do.

In conclusion, I believe the project will meet its goal of sequestering 7,175 tons of CO<sub>2</sub>e as long as the areas reforested with Future Forest fund continues to mature and persists.

### ***Biodiversity***

From a biodiversity perspective, there are clear benefits to the project. It is helping establish hundreds of thousands of native trees and fruit trees. It is having a measurable impact by lowering the frequency and severity of fires in the area. Some of the fire-fighting techniques, primarily early burning, are now being adopted by the Gorongosa National park. The Park and its surroundings have exceptional biodiversity levels and the project is likely to be instrumental in helping maintain habitat. In addition to helping restore native vegetation, the project is also helping alleviate pressure on existing forests.

### ***Community/Stakeholders***

The project is truly integrated into its surrounding communities. This largely is due to the sound management approach and emphasis on generating compelling collateral benefits. It works closely on a daily basis with farmers, civic leaders, teachers, and businesses. Project activities have been informed by a socio-economic survey of 245 homes, completed in 2004. On average, farmers that plant 1 hectare of trees receive around \$100 and another \$25 is paid into a community fund. As of 2006, more than 400 families have adopted various "Plan Vivos" and as of 2006 the project was directly or indirectly employing dozens of people. EnviroTrade's project has helped create employment and income for local farmers and communities through direct carbon payments. In addition, several mini-industries associated with the project (such as a wood shop, tourism, nurseries, and a mill) are helping local people rebuild their lives following 17 years of civil conflict.

I saw a project management team that was committed to aggressively filling of positions by qualified people from Mozambique and surrounding countries. Unlike many other projects I have visited, where token promotion is probably a more accurate description, the N'hambita project takes pride in identifying, recruiting, training and giving responsibility to Africans.

Mozambique has lots of people from Zimbabwe and other nearby countries that pass through or have family in Mozambique. So in addition to hiring some of Mozambique's best and brightest, the project has been able to recruit other regional talent. This has contributed greatly to its current successes and is I believe, likely to help the project continue to grow and succeed.

From a social perspective, the project is a clear success. The project does more than work closely and cooperate with key constituents in the project area. The project is a driving force for many of the positive developments occurring in the area at the farmer and community level.

### ***Risks***

The trees planted are still susceptible to fire, browsing, insect and disease. Many of the trees planted are still young and do not yet have tall crowns to escape low-intensity fires. Obviously, high intensity fires can always lead to individual tree, plot or larger failures.

Political instability is always a possibility, although clearly outside the realm of project influence. It could also be argued that by providing stability to an area once ravaged by war, the project is fundamentally helping in its own small way to enable peace to persist.

A final key concern is the charcoal industry which has rapidly razed thousands of hectares of Miombo forests around the project and the park. The project is aware of this, and although there are some measures being discussed to curtail the industry, it is an un-escapable observation that rates of deforestation in the region, although not in the project area, are accelerating. The deforestation caused by the charcoal industry is one of the unfortunate peace dividends. Stable government, new roads, and the removal of land mines and general violence all helped to create an environment that led to rapid forest loss.

### **Issues Raised**

#### *Issues for the Project*

One key challenge the project faces in its uncertainty of avoided deforestation credits. These credits have less market certainty than reforestation credits. This is an issue that has plagued the forestry sector for a long time and is not unique to this project. So while the project is doing a good job preventing damaging fires, it remains a core challenge for the project to nest these successes in a robust methodology that has broad market support.

A related, although larger question for the project, is how to deal with permanence. Payments to farmers for reforestation only last 7 years. After that, the project's philosophy is that the trees will provide enough income and other benefits that they will be sustainably cared for many decades to follow. Although I can understand and emphasize with this approach, it is unlikely to stand up to the rigor of emerging methodologies.

Another issue that all similar projects will have to address is how to integrate the project (sub-national) activities and successes into any emergent national framework for reducing emissions from deforestation and degradation (REDD) credits. This is likely to be a political decision at the international and national levels.

## **Conclusions and Recommendations**

### *Suggestions for the Project*

The project should continue to independently verify its work against rigorous and peer-reviewed international standards. EnviroTrade is following the emerging marketplace of standards and methodologies and are planning to make one or more applications to different schemes. This should be pursued and sustained

Initially, and in the project's early years, the Plan Vivo system formed the primary basis for additionality and credit estimation and generation. I believe Plan Vivo fundamentally helped drive the project to work successfully at the grassroots, farmer-by-farmer. The downside to Plan Vivo is that it is relatively insular and does not enjoy widespread market recognition. Plan Vivo methodologies are difficult to follow, and I say that as someone who has looked at numerous projects. From my understanding, the core additionality argument is not clearly defended nor as it been subject to outside review. I believe today's more demanding forest credit consumers will expect more robust methods. Clearly, this is also an issue for permanence and replacement of credits that fail to be realized or once realized, fail to endure an appropriate time frame.

### **Limits of Endorsement**

The purpose, while in-depth, can not be construed as a proper audit. A proper audit would require randomized sampling of farmer payments and visits, in-depth accounting review, review of Landsat and carbon inventories and other methods. However, despite these limitations, all available evidence supports the conclusions contained herein. Anecdotally and visibly, both reforestation and fire management activities are working well. By anecdotally, I mean that even though I did not actually check different land use maps/satellite images, everything I saw leads me to believe what the project is telling me about project activities and their impacts on land use change in the project area.

Some things I did not do, just for the record. I did not run models or check carbon storage and sequestration models, either for a baseline or for the "with-project" scenario. I did not insure that the credits are where they were supposed to be on the ground. I did not geolocate specific trees and then and cross reference these with the original contract. I did, however, see many trees that were planted as part of The CarbonNeutral Company's purchase and these all appeared to be doing well. I did not look into registries or carbon accounting from the project or from the seller, beyond cursory investigations. From what I saw, there are robust monitoring activities and these appear to be in full compliance with Plan Vivo requirements. I did not make sure there was no double counting, although EnviroTrade has had independent audits by a globally-recognized firm for its accounts.