

PLAN VIVO

Nhambita Community Carbon Project



Emissions reductions through habitat restoration and sustainable development – a new way of doing business.



Nhambita Community Carbon Project

An exemplar of best social forestry practice

The Nhambita Community Carbon Project is an innovative sustainable-development project working with forest communities in the buffer zone of the Gorongosa National Park, Sofala Province, Mozambique, to design and implement forestry and agroforestry activities that enhance sustainable livelihoods, rehabilitate severely degraded forest environments, promote biodiversity and sequester carbon.

This unique groundbreaking pilot project has been set up in the Nhambita community in Central Mozambique, By Envirotrade Limited in collaboration with the Sofala Provincial Government, the Gorongosa National Park and the local Nhambita community.



The project follows the Plan Vivo system for community carbon sequestration that functions in Mexico, India and Uganda. The project, situated in the buffer zone surrounding the national park has received technical support from the Edinburgh Centre for Carbon Management, Edinburgh University and additional

funding from DFID and the EU. Expertise in agroforestry extension work is provided by ICRAF.

The Gorongosa National Park, established in 1921, was the former conservation jewel of colonial Mozambique. It was ravaged by years of civil war and many of the large bovine species have been pushed to near extinction. During the civil war, refugees invaded the park and the animals were shot to supply the bush-meat markets in the nearest city, Beira. Illegal logging also took place in the park and uncontrolled burning and fires hampered natural regeneration.

When peace returned to Mozambique the government appointed a dynamic young engineer, Roberto Zolho, to rebuild the shattered infrastructure and restore the areas once thriving tourism industry. The park has embarked on an ambitious scheme to draw the people out of the park into a controlled buffer zone of economic activity and development and take the pressure off resources inside the park – a “human fence” partnership.

The government's national reconstruction programme has de-mined forest areas, repaired roads and bridges but that in turn has opened up formerly inaccessible areas to illegal logging, extensive charcoal production and rapid deforestation. Local communities, anxious to plant and trade crops and generate income have added to the deforestation and degraded the natural bio-diversity. In the past four years, hundreds of hectares of land in this area have been reduced to an infertile wasteland due to the forest clearance and illegal charcoal production.

Gorongosa has the highest biodiversity in Mozambique because of its unique physical structure, relief and different vegetation types. It has some 74 different vegetation systems, 15 geological formations and 40 soil types. This has given rise to an extraordinarily rich flora with thousands of different species; a high species diversity of reptiles, frogs and fish, an avifauna of 500 or more species; 25 wild ungulate species including seven miniature antelope; six primates and three galagos.

The aim of the project: to work in partnership with 250 local householders who live within 31,000 hectares of land of the Nhambita Regulado (traditional authority) in the buffer zone of the Gorongosa National Park, and demonstrate the environmental, economic, social and benefits that can be delivered by implementing a 'best practice' business-enterprise. The project will be rolled out throughout the Park and other environmentally sensitive and degraded sites in Africa and the developing world.

The project involves reforesting degraded forest and altering land use patterns in *mashambas* (areas of land "slashed and burned" for crop planting and left in fallow due to soil degradation) with indigenous Miombo woodland trees, primarily local fruit and bee-fodder species, fruit trees and other selected species along watersheds to help stabilise the riverbanks.

The project is working with local people who contract with the project to plant and maintain trees amongst their crops and around their homesteads. Participants in the project are paid USD 7 per tonne of carbon stored by the trees they plant. Already the project has received an order for 2500 tonnes of carbon sequestration from Future Forests (a UK company) and project investment from private investors. Further sales are expected to follow.



Targeting deforested areas within the next five years with a programme of habitat-restoration re-establishing Miombo woodland, enhancing biodiversity and working with the National Park administration to restore the park to its former status as Mozambique's premier wild life park are key project objectives.

Mozambique has suffered enormously as a result of global climate change and environmental degradation with devastating floods exacerbated by the destruction of forest in the watershed areas of its major rivers. This project sets out to demonstrate that it is possible to address these issues in a sustainable manner.

The carbon offset generated by tree planting is sold on the international carbon trading market or to individual companies eager to neutralise their carbon emissions and comply with the requirements of the Kyoto protocol. The Plan Vivo system aims to achieve a strategic position in the future developing carbon emission market that is estimated to grow to £20 billion by 2025.

The first phase of the project involves a community "learning through doing" pilot exercise to raise awareness about carbon management and the conservation of trees. This phase, which is underway,

consists of planting of indigenous and fruit trees on forest land cleared for agricultural purposes to demonstrate that trees and agriculture can co-exist. Sixty two mashamba (slash and burn plots) owners have signed up for this phase of the project. Their *mashambas* have been mapped and a detailed profile developed of data relating to land use and other physical information. *Mashamaba* owners have participated in this process that includes consultation and planting of some 10 000 trees of appropriate and desired species.

The second, much larger phase of the project, involves the systematic rehabilitation of a 100 000 hectare area of community land bordering the National Park. This project is a partnership between the Nhambitha Community, the University of Edinburgh, the European Union and ICRAF, ECCM and Envirotrade Ltd as the implementing agencies. This phase of the project will focus on forest habitat restoration and deforested areas will be targeted for systematic replanting. The European Commission has committed 1.6 million euros to the project over a five year period to kick-start the production of carbon-offsets for sale.

Envirotrade will work closely with the Community Association to build representative and accountable structures in line with the Plan Vivo model and to commercialise the sustainable exploitation of non-timber forest products. Carbon sequestration will be achieved using the following techniques,

- Agroforestry, to improve the fertility of the soil and provide a range of products for domestic use such as fuel wood and fodder for livestock. Improving agricultural systems reduces the pressure for farmers to clear new areas of forest for crops.
- Live fences, (indigenous Miombo biome forest species) to provide shelter and shade along mashamba boundaries
- Planting of indigenous species fruit trees adjacent to dwellings to provide a fruit crop and shade.
- Riparian stabilization planting.
- Habitat restoration in severely degraded areas.

Mashambas will be planted with bee fodder, nitrogen fixing and fruit trees to provide long-term carbon storage. Estimated carbon storage is based on basic mensuration data from forest plots. Growth rates were extrapolated from information supplied by local agro-foresters, research data and from visual evidence of recently established trees in the Gorongosa National Park. After 25 years, the amount carbon sequestered by the project is projected (based on assumptions) to be 90 tC per hectare. Maximum carbon storage of 120 tC/ha is achieved between 70-80 years. This gives average carbon storage over 100 years of 92 tC/ha. The saleable carbon from the project is therefore assumed to be between 90 and 92tC/ha.

www.envirotrade.co.uk – a new way of doing business

investing in forest communities and bio-diversity to combat global warming

Envirotrade Limited, a UK based company, is developing a unique social forestry model that address the challenges of climate change, sustainable development and poverty in the developing world in conjunction with the Edinburgh Centre for Carbon Management (ECCM).

The business is commercially viable by selling carbon offsets generated by sequestration through a combination of reforestation, agro-forestry and forest management. A percentage of the revenues raised through carbon trading are paid back to farmers who plant trees on their land and the Plan Vivo carbon registry model successfully developed in Mexico by ECCM to ensure returns.



Plan Vivo enables communities to translate the value of natural resources into social and other capital to ensure food security and sustainable livelihoods. Plan Vivo is not a monoculture forestry initiative driven solely by carbon trading – it addresses the issues of social equity, poverty alleviation and biodiversity in equal measure.

Envirotrade works with small local farmers and forest product users to adopt new and sustainable methods of land-use; it works with these communities to grow and plant indigenous trees, nitrogen fixing species and fruit trees over the long-term (no less than 25 years), and aims to encourage bio-diversity through the restoration of forest habitats. Forest communities benefit on three fronts: from better and more varied food production; an enriched and bio-

diverse environment; and an additional reliable income from carbon sequestration.

Traditionally, economic development and environmental conservation and biodiversity have been in tense conflict. Envirotrade has set itself the task of shifting that destructive paradigm; reshaping the relationship between forest communities and their environment, and between the environment, economic development and business. The imperatives of economic development and biodiversity are no longer in competition. A new type of land use project, driven by livelihood creation in areas where unsustainable use of natural resources threatens biodiversity, brings two often conflicting currents together to mutual advantage.

Sustainable land-use projects and their ability to sequester or "recycle" carbon is the engine that drives Envirotrade.

Envirotrade's projects are a catalyst for better land-use, a social agent for alleviating poverty in the developing world and a champion for community empowerment. In the Plan Vivo, local farmers take ownership of the carbon assets so they become self-sustaining, and are able to break the cycle of dependence on external aid and NGO's to shape their own future.

Envirotrade works together with forest communities to grow trees that the community will nurture throughout the sequestration cycle small farmers are assisted to maximise food production paid a % of the carbon trading revenue. The farmers own the trees and land rights. Envirotrade owns neither the land nor the trees.

Envirotrade is not a charity. It ploughs investment into poor local communities and their degraded environments and brokers carbon sequestered by habitat rehabilitation on the international market to build livelihoods. Envirotrade aims to enrich the lives of small farmers, promote biodiversity and mitigate global warming while creating a healthy and sustainable business for the future. It is set to create a shift that will bring about enormous and positive social, economic and environmental change to the developing world.

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