

# **Sofala Community Carbon Project**

## **2009 Plan Vivo Annual Report**

**Submitted by Envirotrade**



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## 1 Key Events, Developments and Challenges

### 1.1 Events

- **Applied for registration under the Climate, Community and Biodiversity Standards ([CCBS](#))**

The CCB audit site visit took place in late November 2009. Documents for desk review submitted at the beginning of October. The Community consultation process began in mid September. The full [PDD](#) was produced in English and a summary was distributed to stakeholders in Portuguese. The PDD was [online](#) on the CCBA website for comments until the 27<sup>th</sup> of November. A draft validation opinion is expected in January 2010. The auditors also carried out Envirotrade's five year third party validation and verification of the implementation of the Plan Vivo standard.

- **Other Project Audits**

Zeromission (a Swedish company retailing Plan Vivo Certificates from the project) made a site visit in Autumn 2008 to assess the project's procedures were robust and transparent. The audit ended successfully in a pass released on in February 2009.

The European Commission final audit including site inspection took place during August 2009. The report is expected in the first quarter of 2010. The site team included Ana Monge (observer), Antonio Marzoli (team leader) and Piero del Lungo. Agro-forestry and forestry systems were inspected, as were the nurseries, saw mill, permanent sample plots, carpentry shop, database, bee keeping and demonstration farms. Project stakeholders were also interviewed.

- **Project visitors**

- Richard Girling, Environmental Journalist of the Year and Benedicte Kurzen, photographer visited the project in February 2009. Their article "[The green shoots of hope](#)"<sup>3</sup> was published in the Sunday Times on Easter Sunday, and describes the project as visibly contributing to poverty reduction and livelihood development in the project area.
- Meg Coates Palgrave April 2009. Meg is the author of "Trees of Southern Africa".
- Two students from the Joint European Masters in Environmental Studies, April 2009. Jovanka Spiric investigated the socio-economic impacts of REDD activities on the

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<sup>3</sup> <http://www.timesonline.co.uk/tol/news/environment/article6058900.ece>

community. Jelena Barbir researched adaptation to climate change through the employment of drip irrigation systems subsidised by the project in the community.

- Universidade Eduardo Mondlane – April 2009. Research team investigating how forest people adapt to climate change.
- Stellenbosch University masters student, Sasha Lagrange, introduced 20 [ProBec GreenFire one door efficient stoves](#)<sup>5</sup> into the community to assess their development potential and the feasibility of a fuel efficient stove carbon project – May 2009. The stoves were generously donated by ProBec.
- Gorongosa Administrator – July 18<sup>th</sup> 2009. The Administrator is working to resolve issues with charcoaling and machambas being opened in protected areas.
- A government representative on bee keeping visited the project at the end of July 2009. Bee keeping groups were called together to share their experiences with her (pictured right).
- Government forestry Department – end of August 2009. The representatives underlined the importance of community forestry.
- BBC World Service – end September 2009. A 30 minute documentary was filmed in and around Sofala project and was screened on the 22nd October. The video can be downloaded here: <http://www.rockhopper.tv/programmes/287>.
- Four Chiefs from the Democratic Republic of Congo (DRC) visited at the beginning of October to find out more about Reduced Emissions from Deforestation and Degradation (REDD) projects while considering 'REDD readiness' for their communities. Their Royal Highnesses Kafweku Henri Sabuni, Ndala Mulonga, Schadrack Mwandwe Musedi and Kashiki wa Bulongo Mwilu all of Katanga visited.
- The project was also visited at the same time by Chairman of the House of Chiefs of the Mumena Kingdom, Senior Chief Jonathan Mumena.
- Three representatives from mining houses also visited, Mr Bruno Mwanga Mongoli of Africa minerals (Zambia), Neala Gillespie from Equinox Mining (Zambia) and Mr Serge Kayembe – October 2009.
- UN Ambassador (Zambia) Macleod Nyirongo - October 2009



<sup>5</sup> <http://www.hedon.info/1428/news.htm>

- Markus Kappel (GIS Consultant) and Ngoni Mararieke of Black Crystal Consulting (Zimbabwe) visited the project.
- Frédéric Baudron of CIRAD - October 2009
- West Lunga Trust (Zambian Forest NGO) Mr Charles Rea and Ms Gladys Nyirenda - October 2009

## 1.2 Project developments

### **Gorongosa administrator supports project**

In July, at Muchinhawa Novo the community association and administrator (provincial government) met with the community. The administrator forbid the opening of new machambas in the old growth forest and will make the status of the community conservation areas which are part of the project enforceable by law (see Annex One for locations of community conservation areas). The administrator will work with the community to zone areas for agricultural use and areas for conservation. Once the areas are zoned the administrator said he would imprison those who opened machambas. Since this meeting Antonio Serra provided the administrator with a map of the conservation areas zoned with the community.

### **Sofala Forestry Department wants to use Sofala project as a demonstration site**

In their visit in late August the Forestry Department stated the President was pro-community forestry. They expressed wishes to expand community forestry and use the Sofala project as a demonstration site. They are investigating, on Envirotrade's behalf, the contested land in the Zambezi Delta which may ultimately become a community conservation area.

### **Envirotrade representative attended two conferences on REDD in Maputo**

Antonio Serra (Operations Manager, Gorongosa) presented at two REDD conferences in Maputo. During August Envirotrade became part of a stakeholder group for consultation formed at one of these meetings. The REDD group will be the first part of a Norwegian government funded strategy for REDD readiness before Copenhagen. The project remains one of the few tangible demonstration projects in Mozambique for REDD which was highlighted in the second conference.

### ***Faidherbia* system is rolled out with the planting of 170,000 trees this season**

Co-ordinating this was logistically difficult but has now been achieved. The significant increase in seedlings produced is a testimony to how the 5 nurseries have stepped up their activities.

### **Baseline biodiversity survey and Vernacular tree dictionary**



Meg Coates Palgrave carried out a baseline tree survey in the community conservation areas and created a vernacular dictionary between *Sena* and botanical tree names. A draft version of this has been made available to the Oxford University Herbarium. Meg continues to work with us on the dictionary which will be a very helpful resource in future biodiversity surveys. She has also signed a Memorandum of Understanding with the project to train the forestry technicians in botanising.

## **Zambezi Delta project land secured for new camp with water access 17th February 2009**

### What is a DUAT?

Dreito de Uso e Aproveitamento da Terra (DUAT) establishes single land tenure right by a person or community under Mozambique 1997 land law. It recognises traditional occupancy and customary law which may be proved through oral evidence by local community members. DUAT's can also be acquired on 50 year state leases to individuals and corporations but are subject to consultation with the surrounding community.

A final answer on this is awaited from the Sofala governor, but a DUAT has already been agreed with the community, and district administrator, Chef de Posto, Regulo, Sapanda and Mfumo Gorra and Director of Agriculture, Marromeu (see Annex Two for meeting minutes). Five hundred hectares has been granted 40km along the Caia-Marromeu road on the Southern side. The new campsite will have water, which will be a considerably improvement on the old one where the water has to be fetched daily from over 40 km away, using precious vehicle

resources.

### **DUAT progress in Zambezi Delta project for protected area.**

Zambezi Delta coordinators meet with ORAM to discuss acquiring a land DUAT for 10,000 ha of land for a community conservation area on the 4<sup>th</sup> of September. Present were Ms Edite Cunhete ORAM, Ms Elizabeth Roque ORAM, Alastair MacCrimmon (Project Manger, Zambezi Delta) and Aristides Muhate (Operations manager, Zambezi Delta). The contested forest area which would be ideal for the Forest Protection program lies north of the 18th parallel, up to the Inhamitanga/Caia railway line and eastwards from Caia on the old railway line to Marromeu.



### **A non timber forest product (NTFP) technician has been identified for the Zambezi Delta.**

Mr Avelino, a NTFP technician, will start work on bee keeping and sesame oil production in the Zambezi Delta subject to funding for a motorbike.

The first litre of sesame oil was produced August 2009 (pictured right), a collective will be formed to sell this into the local markets.

## **Nurseries were privatised in the Zambezi Delta**

Four nurseries have been privatised, Matondo, Ndaluzza, Mponda and Cherimadzi.

### **1.3 Challenges**

#### **Zambezi Delta Project needs more investment.**

Funds are limiting the development of:

- Farming extension activities (transport required)
- Micro businesses
- Bore hole at the new camp

The bore hole for the new camp remains a particular issue as the Inhamitanga (only 3.5 km from camp compared to 40km) bore hole is broken since February. The project offered to pay to fix it but was turned down.

#### **Mapping problems during first and second monitoring period at Zambezi Delta due to GPS and GPS training.**

Area sizes for 2008-2009 planting will not be elucidated until after second monitoring period (completion end of August). This was caused by two set backs. First the cable which was used to download data from the GPS broke and the operations manager was not able to download points until May 2009. Second once the points were downloaded it became apparent that the technicians were using their watches rather than the time on the GPS as the start and end time on completing a circuit of the system. This happened as when the GPS has its batteries removed and the time ceased to be the local one. Action points have been first to train the technicians to use the GPS not their watch when recording the time for mapping, second Map Source software has been acquired which will help with the projection and plotting of machamba areas and third area sizes are being recalculated during second monitoring which commenced on the 17th of August.

#### **Machambas and charcoaling in the community conservation areas.**

Machambas have been opened in some of the conservation areas. Those areas which have broken contract have not been paid for this season (see payments and monitoring section). We are now working with the administrator and forest department to resolve this problem and a further issue of charcoaling licenses being issued in protected areas. The participatory process is ongoing and some areas have had their protected status removed after some members of the community decided against conservation. These contracts have not been sold i.e. carbon finance has not been allocated to them.

Leadership issues continue and lack of social capital is particularly apparent in this area. However things are improving; a man found charcoaling in a protected area in Mbulawa was reported by the community forum and his licence was cancelled in Gorongosa.

The project continues to learn from these experiences and has written a manual for starting conservation areas in the future which will add to the long term learning derived from the Sofala project. It is expected that a full time environmental education officer, who Envirotrade plan to hire, will help in this important area of community consultation.

### **Mining activities disrupt agro-forestry contracts in Mucombeze.**

A mining company has opened a road up to Ernesto's Nursery in Matenga, blocking the river which supplied water to the nursery. The road may also have disrupted those machambas which held agro-forestry contracts in the area. The mining company's target is gravel from the sacred mountain to the East of EN 1 before the Pungue bridge. The gravel will be used for road building.

### **Negative publicity**

In January this year the project received negative publicity resulting from an article which appeared in the London Sunday Times. Despite attempts by Professor John Grace and the Envirotrade management to present an alternative perspective to the allegations contained in the article, publication went ahead. The article was based on elements of the ODI Desk Review commissioned by the EU and alleged that the project was failing in key areas as set out by the original terms of reference and suggested that the project management were acting in bad faith by continuing to trade the credits.

All of the project stakeholders sought legal redress against the Sunday Times and a settlement was reached out of court which led to the article being withdrawn by the newspaper and the editor commissioning another story which was written by award winning environmental journalists Richard Girling and Benedict Kurzen.

### **Financial crash negatively effected sales and investment, however the effect has stabilised.**

The financial crash affected sales as the CSR budgets of companies shrank dramatically. Despite this, our committed buyers have continued to support us in this difficult time, testimony to their belief in the project.

### **Unique machambas not identified in database, technician shortage reduces catch up work required.**

While the area of each system is known, which contracts (such as boundary planting and cashew) are signed on the same machamba is not. A number of technicians were laid off for not being efficient. This has reduced the capacity of the database manager to update the records to include a machamba ID, Muchihawa Antigo, Nhambita, Chiro, Ernesto, Muchurue and Mucombezi Ponte are all still in progress. New technicians were trained at the end of



August, which should assist in this project and bring it to its rapid completion. Until then however, the participation and recruitment section will only contain relative area sizes of systems rather than the absolute area of the project.

## 2 Activities

### Overview

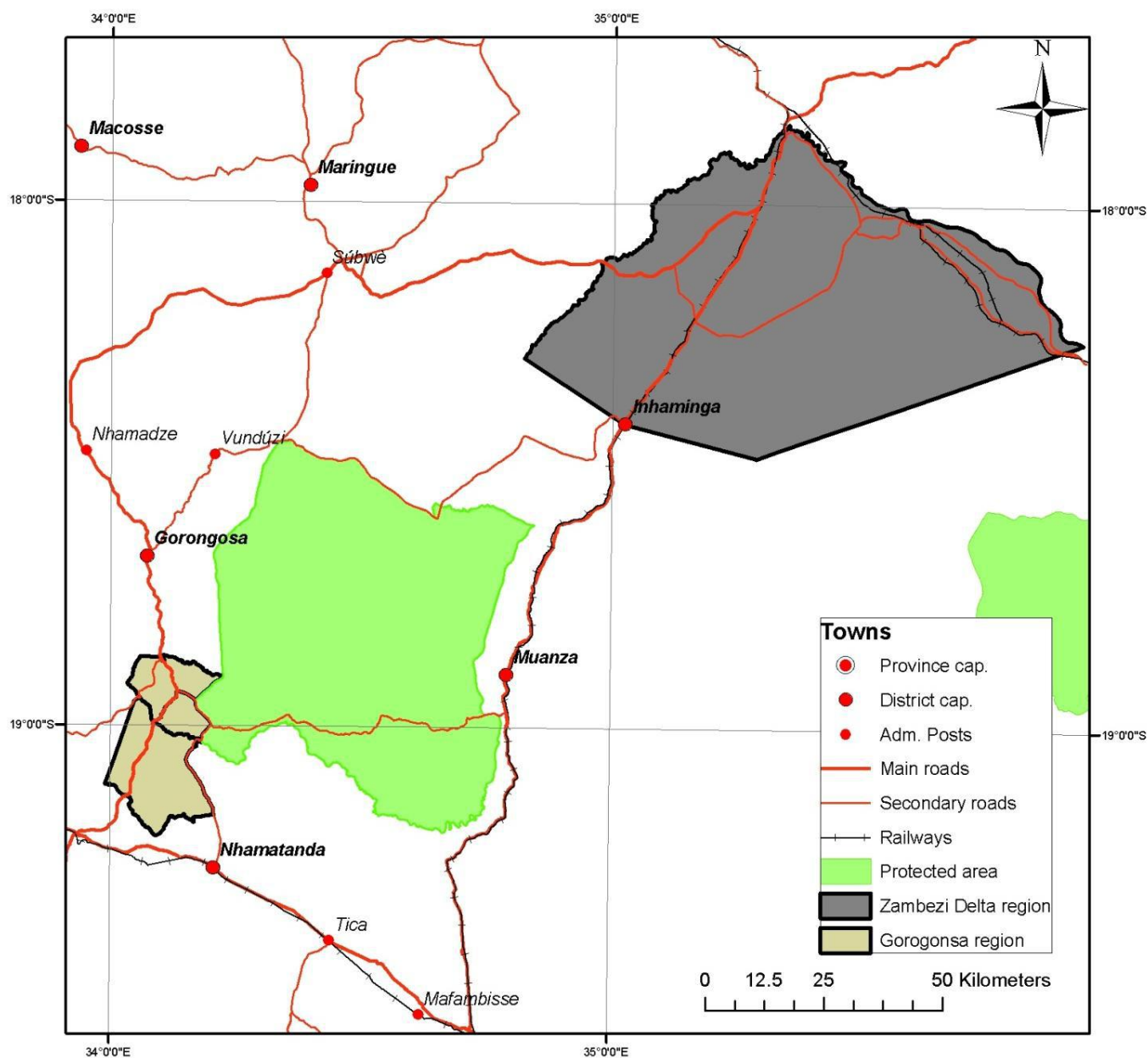
In order to give our activities more clarity for inspection, the following year plan was developed:

### Year Planner

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Forestry contracts signed															
Agro-forestry contracts signed															
Agro-forestry systems planted															
Agro-forestry trees grown in nurseries															
Agro-forestry monitoring															
Forestry monitoring ( Fire Guards / Early Burning )															
Forestry monitoring ( Patrolling )															
Agro-forestry payments															
Forestry payments															
First contact with the producer forestry															
First contact with the producer agro-forestry															

In accordance with the year planner, this report reflects a rolling cycle of activities and will not include the full cycle of reporting for the 2008-2009 season, as the third monitoring has not yet been completed. The 2007-2008 season is now complete, and so the third monitoring will be reported here. As a final explanation for the 2009-2010 season the seedlings are already in the nurseries, so a report will be included of their progress. The third monitoring is the most important of the three, mortality is best assessed after the rains, this year 2 rather than 3 monitoring stages will be carried out in Gorongosa.

The reporting shall be broken down into the Zambezi Delta and Gorongosa. This is because while they are geographically in similar positions there is sufficient travel distance that they have separate management teams (see map below).



## **Systems 2008-2009 employed by the Sofala project with reference to carbon stocks**

System Name	tCO <sub>2</sub> per hectare	Technical specification	Area managed under each system (ha)	Comments
Faidherbia	213	MOZ-TS-DIP var. Faidherbia albida	939	New technical specification will be applied 2009-2010 season. Updated with research from Malawi. Undergoing in house technical review.
Cashew	137	MOZ-TS-FO-cashew	63	Undergoing in house technical review.
Homestead	154	MOZ-TS-HP	60	Undergoing in house technical review.
Mango	115	MOZ-TS-FO-mango	59	Undergoing in house technical review.
Woodlot	184	MOZ-TS-WL	111	Undergoing in house technical review.
Boundary	12 tCO <sub>2</sub> /100m	MOZ-TS-BOU	1,702	Undergoing in house technical review.
Avoided deforestation	Dependant on stratification 39-158	Conservation of miombo woodland in Mozambique  Ver 2.2	9,405	In peer review

In addition to these systems there is a no burning payment incentive to farmers.

### **Seedlings produced and distributed 2009-2010 Zambezi Delta**

The total number of seedlings produced so far in 2009 for the 2009/2010 is 48,054.

In 2008/2009 season the number of trees delivered to farmers increased to 60,336 from 27,827 in 2007/2008 season.

### **Seedlings produced and distributed Gorongosa 2008-2009**

178,599 seedlings were produced with the most in Nhambita. The dominant species was *Faidherbia*. 195,579 seedlings were delivered to both the Chicare and Matenga.

### ***Glyricidia* was discontinued as a system.**

*Glyricidia*, previously part of the agro-forestry suit of systems, has been discontinued and will no longer be planted in the nurseries, as it is considered to have a low carbon payment by farmers relative to the amount of management it requires.

## **2.2. Forest and Fire Management**

Currently there are only forest management areas, also known as community carbon conservation areas, in the Gorongosa region, however fire management is used around the camp in Zambezi Delta to protect the offices and tents. In all community carbon conservation areas, individuals receive payments for patrolling (inspection for machambas being opened and trees felled) and making fire breaks.

Technical forestry activities have been dominated by three work-streams this year:

- Re-mapping, after GIS software was acquired.
- A new technical specification with a fieldwork based baseline.
- Stratification of vegetation covers.

### **Remapping**

The original mapping that was carried out was affected by the fact that neither MapSource (a GPS interface which projects points) or a GIS programme (such as ArcGIS) was available to the project at the time. A copy of MapSource has now been obtained and an ESRI conservation programme grant was awarded to Associacao Envirotrade Carbon Livelihoods (AECL) on the 29<sup>th</sup> June. AECL is the non profit association which is replacing Envirotrade Mozambique Limitada, the operations company in Sofala. ESRI's grant gives AECL a single seat licence for ArcGIS.

The outcome of the re-mapping exercise gives a total area size of 9,405 hectares for season 2008-2009 which can be broken down into the following area sizes which refer to contracts:



**Table 1, 2008-2009 forest management contracts area sizes.**

Name	Envirotrade's numeric ID	Area (ha)	Type of contract
Nhambita Boemaria	1	852	Public
Nhambita Mucinhoua	2	822	Public
Muncinuaua Munhanganha Nhambita	3	713	Public
Vunduze	5	928	Public
Mbulawa Mudoda	6	5249	Public
Cristiano Bechane Jose (Castiano)	9	22	Private
Antonio Ferreira Serra	10	555	Private**
Envirotrade camp	11	126	Public
Telix	12	5	Private
Gorongosa Aventuras (Sakki)	13	25	Private**
Paulo Sozinho Viagem	14	4	Private
Chico Joao	15	9	Private
Mario Chimuaza	16	7	Private
Luis Felix	17	5	Private
Raimundo Eduardo Ranguisse	18	9	Private
Costa Pereira	19	43	Private
Ernesto Seda Caropa	20	17	Private
Neto Chimuaza	21	14	Private

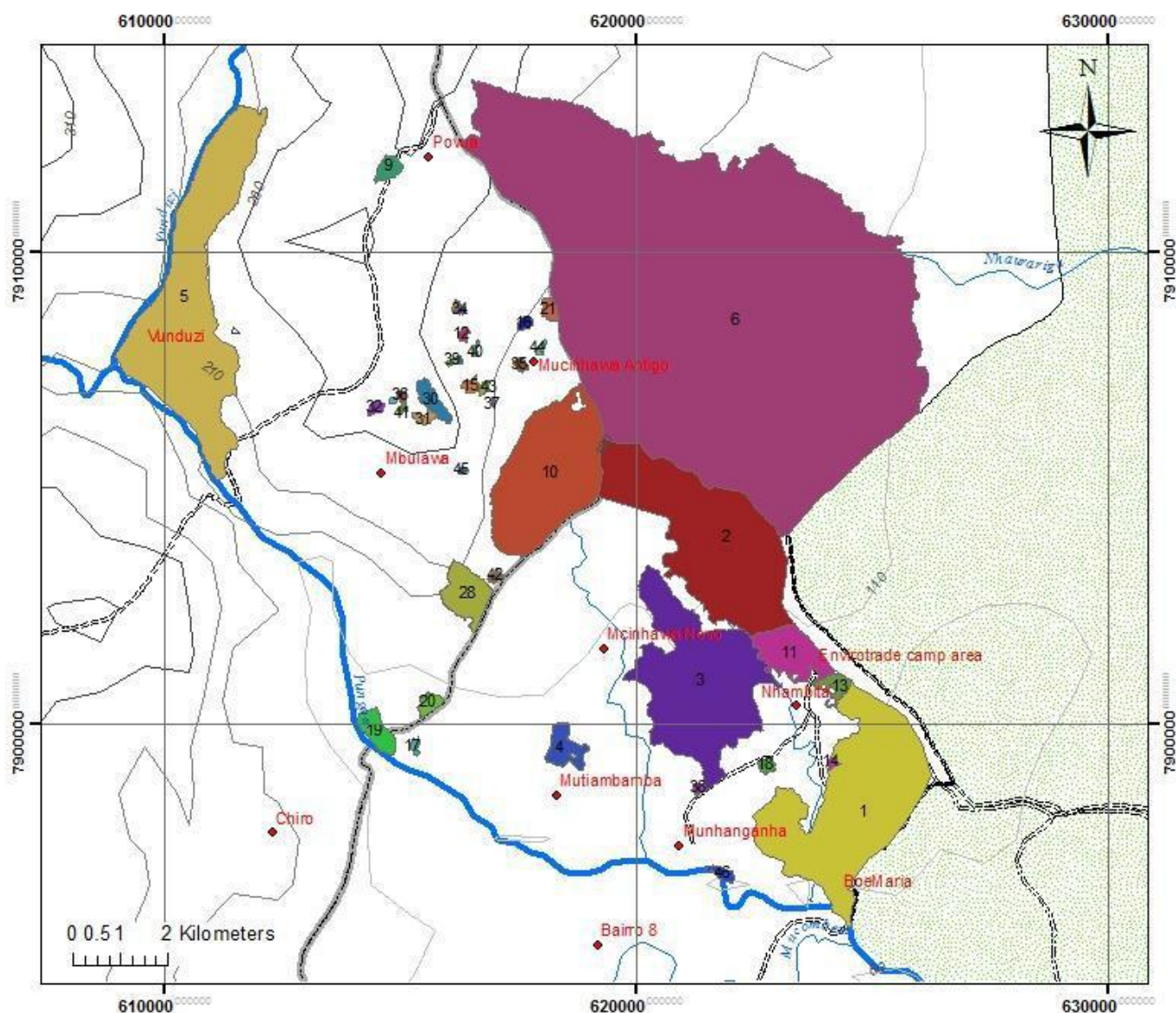
\*\* Private, but managed by Envirotrade or an associate so all carbon incentives go into the through community fund or in payments for fire breaks and patrolling following a code of practice.

In addition to the 2008-2009 contracts, new contracts will be signed for the 2009-2010 season for private areas. A list of these areas is in Table 2

**Table 2 contracts 2009-2010.**

Contract holder name	Envirotrade numeric ID	Area (ha)
Antonio Jairosse Raete	27	1
Augusta Lucas Joao	28	90
Eduardo Manuel Camujoma	29	2
"Camujoma brothers	30	29
Gaspar Manuel Camujoma	31	9
Jeremias Manuel Camujoma	32	7
Joao Miquissene Gil 1	33	2
Joao Miquissene Gil 2	34	3

Jovaldo Joaquim Sozinho	35	6
Manuel Camujoma	36	4
Manuel Dias Samacueza	37	1
Marcos Fazenda e Pedro Sevene	38	6
Pereira Jairosse Raete 1	39	3
Pereira Jairosse Raete 2	40	3
Ramos Manuel Camujoma	41	3
Soares Oliveira Gonza	42	5
Vicente Inacio Luis	43	4
Zito Floe Phuta	44	3
Zito Miquitaio Camujoma	45	2
Magaio Zebedia	46	11



**Figure 1. Numeric Identifiers match tables 1 and 2.**

The locations of all contracts, including 2009-2010 are in figure 1 above; each number refers to the Envirotrade numeric ID.

### **New technical specification**

A new version of the avoided deforestation technical specification has been written and is now in peer review. The main amendment made in this version was to include an evidenced based baseline.

The baseline is the 'business as usual' scenario or what would happen in absence of project activities. In this case the baseline is calculated based on historical change (1999-2007). In absence of the project, vegetation cover is anticipated to be lost within 42 years as shown from historical data in 1999-2007<sup>6</sup>. This is expected to happen in areas which are accessible, cultivatable, extractable and unprotected (ACEU). An ACEU document must be prepared to accompany every contract signed. To calculate the remaining carbon stocks on an area of land which has been cleared for cultivation a study was carried out on 36 machambas in the Nhambita region. Four outliers were removed from the analysis (they deviated by more than two standard deviations from the mean or they were from machambas which had been recently cleared).

The carbon on these machambas was calculated by measuring the diameter at breast height (DBH) of the remaining trees and using this to calculate the above and below ground dry biomass using a locally derived miombo allometric equation (Ryan 2009<sup>7</sup>). This was then corrected for growth rates of trees to establish the biomass of a machamba after it has been cleared for cultivation, the growth rates of trees in the area is 0.5 cm per year as recorded for 5 years on 15 permanent sample plots. The carbon stock of the business as usual scenario is  $2.8 \pm 0.6$  tCha-1.

### **Stratification**

Stratification of woodland into different vegetation covers within forest management areas increases precision of the carbon stock estimate. This is because different vegetation covers relate to different levels of carbon stocks. What these carbon stocks are in the Chicare Regulado was derived by Casey Ryan as part of his PhD studies.

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<sup>6</sup> Flaherty, S. (2008). Analysis of Land Use Change using SPOT images. Edinburgh, Institute of Geography, School of GeoSciences, University of Edinburgh.

<sup>7</sup> Ryan, C. (2009). Carbon Cycling, fire and phenology in a tropical savanna woodland in Nhambita, Mozambique. Earth Observation. Edinburgh, University of Edinburgh

The proportion of vegetation cover in each area was elucidated from point transect surveys after the optical satellite imagery was shown not to have sufficient ability to differentiate vegetative classes accurately. In remote sensing studies of the project area, the vegetation covers which derived were not relevant to the area (moist forest) and not accurate with respect to ground cover. Optical imagery is able to differentiate cultivated land from non cultivated land and thus has an application in monitoring. However, optical imagery is unlikely to be able to directly quantify biomass, and thus carbon, in the miombo ecosystem. This is due to cloud cover, heterogeneity of the area and grass underneath the canopy affecting the analyst's ability to differentiate reflectance from the grass (low carbon density) and the trees (comparatively high carbon density). RADAR imagery is being pursued as an option in the future for carbon quantification, as while it has its own limitations with respect to slope, it is less likely to be confounded by grass and cloud. The results are so far very exciting and we hope they will be ready for review in next year's annual report.

The vegetation covers surveyed by point transect were Savannah, miombo woodland, riverine forest, degraded woodland and machamba. The methodology was proposed by the University of Edinburgh.

### **Summary of forestry activities.**

The current amount of protected area under forest management is 9,405 ha. These areas have been stratified with respect to vegetation cover, which was then related to carbon stocks, using the project carbon calculator. The total carbon benefits across the project lifetime for these areas is expected to be 783,727 tCO<sub>2</sub>.

**Table 3 Breakdown of carbon benefits (of contracts signed before or during season 2008/2009) and vegetation cover within each community conservation area. Each row relates to a contract. Where machambas or recently abandoned machambas were found in a community conservation area, this area was excluded from the calculations.**

Area no <sup>o</sup>	Area name	Area size (ha)	Degraded Miombo	Machamba	Miombo	Riverine	Savannah	Average toc2/ha	Total generated over crediting period calculated ex ante (tCO <sub>2</sub> )
1	Nhambita Boemaria	852	0	20	533	122	178	87	73,823
2	Nhambita Mucinhaua	822	16	16	548	48	193	79	64,778
3	Muncinuaua Munhanganha Nhambita	713	0	32	357	49	276	71	50,822
5	Vunduze	928	0	0	903	24	0	90	83,475
6	Mbulawa Mudoda	5,249	189	0	4,019	331	709	85	444,041
9	Cristiano Bechane Jose (Castiano)	22	0	0	17	0	6	77	1,701
10	Antonio Ferreira Serra	555	0	0	525	15	15	89	49,303
11	Envirotrade camp	126	0	0	24	0	102	51	6,423
12	Telix	5	0	0	5	0	0	88	402
13	Gorongosa aventuras (was Sakki)	25	0	0	0	3	22	57	1,447
14	Paulo Sozinho Viagem	4	0	0	0	1	2	81	302
15	Chico Joao Luis	9	4	0	5	0	0	68	617
16	Mario Chimuaza	7	0	0	2	0	5	54	391
17	Luis Felix	5	0	0	0	5	0	158	781
18	Raimundo Eduardo Ranguisse	9	0	0	0	6	3	120	1,050
19	Costa Pereira	43	0	0	22	0	22	65	2,819
20	Ernesto Seda Caropa	17	0	0	0	3	14	62	1,020
21	Neto Chimuaza	14	14	0	0	0	0	39	533



### 3 Sales to date

Year	Client	tCO2e	project site
2004	Future Forests (Carbon Neutral Co)	9175	Gorongosa
2005	Creative Artist Agency	25000	Gorongosa
2006	IIED	744	Gorongosa
2006	Creative Artist Agency	30000	Gorongosa
2007	Individuals	112	Gorongosa
2007	MAN Group	7000	Gorongosa
2007	ZeroMission	13542	Gorongosa
2007	Live Earth	3000	Gorongosa
2008	Environmental Media Association	4500	Gorongosa
2008	MAN Group	8492	Gorongosa
2008	Global Cool	1000	Gorongosa
2008	ZeroMission	3940	Gorongosa
2008	Creative Artist Agency	8808	Gorongosa
2008	MAN Group	1033	Gorongosa
2008	University of Cape Town	11	Gorongosa
2008	ZeroMission	11266	Gorongosa
2008	E.Value	500	Gorongosa
2008	Portal Universe	500	Gorongosa
2009	Max Hamburger	20590	Gorongosa
2009	Small purchases (via ZeroMission)	136	Gorongosa
	57 . U&W		
	33 . PMC Hydraulic		
	11 . Event Less Talk		
	21 . Beyond the Line		
	12 . The Fair Tailor		
	2 . MPI		
2009	Arla Foods	12613	Zambezi Delta
2009	Man Group	6000	Gorongosa
2009	Creative Artists Agency	6658	Gorongosa
2009	Map Sverige	500	Gorongosa
2009	ZeroMission	808	Zambezi Delta
	<b>2009 total</b>	<b>47305</b>	

### Summary of sales and carbon produced for sale

		Allocated (tCO <sub>2</sub> )	Produced (tCO <sub>2</sub> )	Balance (tCO <sub>2</sub> )
Agro-forestry	<a href="#">Gorongosa</a>	63,908	300,721	236,813
	<a href="#">Zambezi Delta</a>	13,211	17,688	4,477
	<a href="#">Total</a>	77,119	318,409	241,290
Forestry	<a href="#">Gorongosa</a>	98,819	783,728	684,909
	<a href="#">Zambezi Delta</a>	0	0	0
	<a href="#">Total</a>	99,819	783,728	684,909
Gorongosa	<a href="#">Total</a>	162,727	1,084,449	921,722
Zambezi Delta	<a href="#">Total</a>	13,211	17,688	4,477

Total Credits Allocated	175,938
Total Credits remaining	926,199
Total Credits produced	1,102,137

### Gorongosa allocations – agro-forestry

At time of writing 627 producers have been allocated from the Gorongosa agro-forestry systems which amount to 63,908 tCO<sub>2</sub>. A breakdown of these allocations has been provided to the Plan Vivo Foundation.

### Gorongosa allocations – forestry

Fourteen out of 19 contracts have been allocated for forestry. 98,819 tCO<sub>2</sub> has been allocated out of a total 783,728 produced. A breakdown of these allocations has been provided to the Plan Vivo Foundation.

### Zambezi Delta Allocations.

293 producers have been allocated from the Zambezi Delta which amounts to 13,211 tCO<sub>2</sub>. A breakdown of these allocations has been provided to the Plan Vivo Foundation.

**Table 4 tCO<sub>2</sub> sold and produced from forestry contracts**

Contract	tCO <sub>2</sub> sold from contracts	tCO <sub>2</sub> produced from contracts
Cristiano Bechane Jose (Castiano)		
2008	170	170
Chico Joao		
2008	62	62
Costa Pereira		
2008	282	282
Envirotrade camp		
2006	642	642
2007	642	642

	2008	642	642
Ernesto Seda Caropa			
	2008	102	102
Luis Felix			
	2006	78	78
	2007	78	78
	2008	78	78
Mario Chimuaza			
	2008	39	39
Mbulawa Mudoda			
	2008	38,755	44,404
Muncinhaua Munhanganha Nhambita			
	2006	5,082	5,082
	2007	5,082	5,082
	2008	5,082	5,082
Nhambita Bue-Maria			
	2006	7,382	7,382
	2007	7,382	7,382
	2008	7,382	7,382
Nhambita Mucinhawa			
	2006	6,106	6,478
	2007	6,478	6,478
	2008	6,478	6,478
Paulo Sozinho Viagem			
	2006	30	30
	2007	30	30
	2008	30	30
Raimundo Eduardo Ranguisse			
	2006	105	105
	2007	105	105
	2008	105	105
Gorongosa Aventuras (Sakki)			
	2006	145	145
	2007	145	145
	2008	145	145
Grand Total		98,819	104,887

## Summary of allocated contracts

Buyer names	Allocations (tCO2)				Total Sales tCO2
	Gorongosa Agro-forestry	Gorongosa Forestry	Zambezi Delta Agro-forestry	Total Allocations	
A. Schurrenburger	5	3		8	
Amy Power	54	34		88	
David Michaelson	1	6		7	
John Greiner	2	1		3	
Graham Fraser	1	1		2	
Robert Harley	2	2		4	
Individuals				112	112
Creative Artist's Agency	28,143	42,323		70,466	70,466
E. Value	100	400		500	500
Environmental Media Association	740	3,760		4,500	4,500
Future Forest	9,183			9,183	9,175
Global Cool	200	800		1,000	1,000
IIED	301	443		744	744
Live Earth	1,830	1,170		3,000	3,000
Man Group	7,375	15,150		22,525	22,525
Map Sverige			100	100	100
Portal Universe	100	400		500	500
University of Cape Town	2	9		11	11
Zeromission (U&W)	15,520	34,318	13,111	62,949	62,947
Grand Total	63,908	98,819	13,211	175,938	175,928

## Allocations process.

Sales are allocated to contracts in accordance with age. The older contracts are allocated first. Then those that are successfully monitored are given preference. At this stage the producers understand how the allocations work and do not complain. They are paid the same amount even when their contracts have not been allocated.

## 5 Participation and Recruitment

### Gorongosa 2008-2009, first monitoring.

There are 393 new contracts signed in Gorongosa for 2008-2009 season covering 393 ha. These figures are expected to change during the second monitoring.

**Table 5 Number of new contracts in Gorongosa 2008-2009**

	Boundary	Cashew	Faidherbia	Homestead	Mango	No - Fire	Woodlot
Bue-Maria		1	4				
Mbulawa			26	3			
Mucinhawa Antigo			12				
Mucinhawa Novo	5		9				3
Munhanganha	2		15	3			
Mutiambamba	1		16				
Nhambita	1		8	2			
Pavua			42	3			
Pungue	3		7	1	1		
Vunduzi			14	1			
Chicare	12	1	153	13	1		3
Bairro 8	12	1	21				
Baptista	6	2	11	5			
Chiro	1		63				
Ernesto		7	14	1			
Muchurue		4	8		1		
Mucombezi Ponte	2	5	2	1	1		
Ziro	10		31	1			
Matenga	31	19	150	8	2		
Grand Total	43	20	303	21	3		3

**Table 6 Area size in hectares of new contracts**

	Boundary	Cashew	Faidherbia	Homestead	Mango	Woodlot
Bue-Maria		0.25	3.84			
Mbulawa			30.08	0.21		
Mucinhawa Antigo			9.91			
Mucinhawa Novo	3.56		6.38			3.22
Munhanganha	2.08		21.89	0.75		
Mutiambamba	1.22		12.01			
Nhambita	0.47		10.89	0.12		
Pavua			41.09	0.51		
Pungue	5.17		5.97	1.15	0.97	
Vunduzi			11.11	0.07		



Chicare	12.5	0.25	153.17	2.81	0.97	3.22
Bairro 8	11.38	0.15	17.83			
Baptista	8.94	0.36	15.26	0.46		
Chiro	0.92		74.35			
Ernesto		5.45	17.71	0.35		
Muchurue		0.34	9.7		0.25	
Mucombezi						
Ponte	1.03	1.85	3.69	0.06	0.12	
Ziro	8.58		41.45	0.3		
Matenga	30.85	8.15	179.99	1.17	0.37	
Grand Total	43.35	8.4	333.16	3.98	1.34	3.22

Monitoring will be greatly improved in this area after the machamba ID has been introduced (see section 11). This will also assist monitoring of no fire area sizes.

### Zambezi Delta 2008-2009, first monitoring

The Zambezi Delta project has had 648 new applicants for agro-forestry (Table 7). There has been an increase in female applicants since 2007-2008 where there were only 22% women producers, this year there are 36%. The Boundary and Homestead systems remain popular.

Table 7 People joining after first monitoring

Community	Gender			Grand Total
	Female	Group	Male	
Chirimadzi	89	3	148	240
Cine	5		2	7
Gombe-Gombe	2		10	12
Gorra	8		71	79
Guma	49	3	56	108
Mangaze	4		13	17
Matondo	38		48	86
Mponda	39		54	93
Nzou			6	6
Grand Total	234	6	408	648

Table 8 Systems number, after first monitoring.

Boundary	Fruit	Fruit	Homestead	Intercroppin	Woodlot	Grand Total
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	Orchard Cashew	Orchard Mango		g		
424	24	1	236	92	49	826

## **Zambezi Delta 2008-2009 - second monitoring**

Due the reasons mentioned in 1.3, Zambezi Delta second monitoring results are not yet available due to GPS failure. The area sizes given are therefore not reliable estimates.

## 6 Summary of Monitoring Results

### Gorongosa 2007-2008 – third monitoring

#### **Agro-forestry**

The following table summarises the number of contracts which were reported as requiring further attention during monitoring.

<b>Contract status</b>	<b>Number of contracts</b>	<b>Corrective action</b>
Contract Cancelled	1	No payment
Deceased	5	One of the members of the family must show interest – otherwise the contract will be void.
Remapping of area size	1	Payment subject to new area size
Monitoring not complete	21	Suspend payment
15% - 80% or more of trees died	223	Proportion of payment used to replace trees (4 Mt per tree)
Producer opened new fields	16	Suspension of payment
System or producer doesn't exist	3	No payment
Not Planted	104	Must pay for new plants if they can be persuaded to rejoin the project
Plants not received by producer	24	No payment
Calculations were previously incorrect and have now been reconciled	4	Payment
Verify Area	1	Payment subject to area size verification
Monitoring not complete and new fields opened	7	Suspend payment
More than 80% of trees died and new fields opened	5	Suspend payment

Producers who had between 15-80% mortality did not have their payments suspended but instead had the cost of replacement trees deducted from their payment and given to the nursery to produce the extra trees. The average mortality rate was forty six percent.

Of the contracts 641 had fire in their fields and were therefore not paid for not burning, 191 no burning contracts were successful at monitoring and therefore were paid.

#### **Forestry**

For the 2008-2009 season three contracts out of 20 had their payment withheld. Three did not have their patrolling contracts paid, Nhambita Muchinawa, Envirotrade camp area and

Pungue because of machambas being opened within the area. Pungue has now been removed as a conservation area, and the community have decided there is not consensus to protect this area. The carbon will not be sold from this area. One fire break team out of 20 was not paid out because of a run away fire Goronogosa aventuras (Sakki).

## **Zambezi Delta 2007-2008 – third monitoring**

The eligibility of farmers for payments was based in tree survival rate by system. 30% of the planting must be done in year 1 as a minimum. Those who did not achieve this were not paid successfully this year, but may make this up by extra planting the following year when 70% of the system must be planted to receive payment.

In a total of 305 systems were registered by the project, 236 (77.4%) achieved a survival rate of under 30%, while another 69 (22.6%) did not. Those contracts that had a survival of under 30% were not made available for allocation.

**Table 9 survival in Zambezi Delta by community.**

Community	>30%	<30%	Number of systems
Guma	65	28	93
Mponda	95	25	120
Chirimazi	58	13	71
Cine	18	3	21
Total	236	69	305

## **7 Payments to Producers**

### **Payments**

The total paid for 2007-2008 was 2,836,634 Mt (113,465 USD).

### **Agro-forestry**

The total due to Chicare Regulado was 1,254,468 Mt, of this 256,576 was held back due to monitoring failure. 1,087,335 was therefore paid.

The total due to Matenga was 1,039,145 Mt, of which 135,384 Mt was held back due to monitoring failure. In total 903,761 Mt was paid.

The paid to the Zambezi Delta was 461,827 Mt, 76,229 Mt were held back due to monitoring failure.

### **Forestry**

The total paid was 383,711 Mt (15,348 USD). Payments were withheld for 4 contracts due to monitoring failure.



## 8 Community Participation in Project Governance

### **Training community technicians – Zambezi Delta 2009**

Table 10 Technicians trained and their community

Community	Agro-forestry Technician Name
Guma	Alberto Thuboi Candema
	Manuel jose Maponge
Mponda	Elias Chano Samo
	Lucas Antonio
Chirimadzi	Manuel Armando Chibante
	Albeto Chibante
Matondo	Afonso Domingos Matimati
Gorra	Santos Vasco

There were three training days for these technicians; 22-25<sup>th</sup> October 2008. Topics covered were:

- Environmental problems (global warming and solutions)
- Introduction to Plan Vivo
- Agro-forestry systems
- Basic principles of tree planting
- Activities Cycle
- GPS training (exercise)
- Species identification
- Meeting plan

Of those trained Dona Maria de Fátima of Cine did not successfully pass the technician exam.

### **Training – Gorongosa**

New agro-forestry technicians were trained and old technicians were refreshed during a week's training at the beginning of September.

### **Involvement of local government**

An annual report in Portuguese of activities was sent to the provincial government and forestry department to update them of Envirotrade's activities in Sofala province. This has stimulated more interest in community forestry and a desire to use Gorongosa as a model for other projects in the province.

### **Community consultations**

Portuguese minutes of ongoing community consultations are kept on site. Meetings are always held on the formation of community conservation areas and pre monitoring and payments. There are scanned minutes available for the following village meetings in 2009:

- Goma
- Chirimadzi Payments of 2007-2008 Carbon credits, Lower performance and absentees of the community Technician.
- Cine

- Gorra
- Guma

## **Change in community structures**

There is a new Sapanda in the Chicare community, Mr Chiringa Ranguisse Chicare of Nhambita. Sapanda is the second highest title below Regulado.

## **Community association role**

The community association continue to play an active role in the project, in particular the president, Mr Francisco Dos Santos Samajo. He is assisted by the following members:

- Francisco Dos Santos Samajo - Presidente da Associacao
- Lucas Bonifacio - Vice Presidente da Associacao
- Luis Campila Tangué - Tesoureiro da Associacao
- Eduardo Chaibande Thole - Secretario da Associacao
- Eduardo Ranguisse - Presidente de Conselho Fiscal
- Isabel Juliasse - Vice Presidente de Conselho Fiscal
- Boneze Pedro Sevene - Vogal
- Ana Paula Fernando - Vogal
- Neto Chimuaza Meque - Chefe de Queimadas Descontroladas
- Celestina Saene Bouza - Adjunto Chefe das Queimadas Descontroladas
- Paulo Sozinho Viage – Antigo Presidente

They have had a particular role in addressing charcoaling in the community.

## **Workers syndicate**

There is a Gorongosa project workers union, which is involved in the workers disciplinary matters in accordance with Mozambique labour law. Members of the syndicate are:

- Jorge Chitambe Joao (Nhambita)
- Mouziho Francisco (Mutiambamba)
- Mario Samacho (Nhambita)

## **9 Social & Environmental Benefits**

### **Biodiversity surveying and training**

Meg Coates Palgrave<sup>13</sup> has entered into an agreement with the project to carry out botanical training of the community technicians. This is a lasting skill and will contribute to the ongoing employment of these community members. The botanical training will contribute to an annual biodiversity survey of the woodlands.

### **Second carbon school completed**

The second carbon school has now been completed in Munhanganha. Twenty percent of the funds came from the tourism in the Gorongosa national park, and the rest (178,029 Mt) came from carbon finance. Construction began in 2008.

### **Carpentry shop and Sawmill continue to be viable businesses.**

The income of the carpentry shop since 2006 has been 1,441,337 Mt (57,653 USD). Clients have included local schools, Envirotrade and the Gorongosa National Park. Four hundred and forty one individual pieces have been produced since the business started to enumerate in 2006. The sawmill income has been 237,360 Mt (9,494 USD) since 2006, selling planks to the carpentry shop.

In future the sawmill will try and extend its sales to other clients and start enumerating and selling offcuts, as these also have a value. Twenty eight m<sup>3</sup> of sawn planks were produced in the first half of 2009.

### **First litre of sesame oil produced.**

Sesame oil is now being produced in the Zambezi Delta using a press purchased by the project. This is expected to contribute to sustainability of conservation farming in the Zambezi Delta, as sesame seed was distributed in 2008 as part of project extension activities.

### **Micro-businesses**

Beekeeping, vegetable gardening, guinea fowl breeding and tree nurseries continue.

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<sup>13</sup> Author trees of South Africa

## 10 Breakdown of Operational Costs

Jan 09 - Oct 09

Expense	Cost (USD)
Administrative expenses	19,677.21
Motor vehicle expenses	60,188.71
General maintenance expenses	8,262.00
Site Utilities	17,733.91
Travel (domestic)	6,002.35
Legal expenses	229.80
Financial expenses	3,460.10
Project materials	46,478.41
Personnel	204,942.95
<b>Total</b>	<b>366,975.44</b>

## **11 Improvements and Future Development**

### **Fuel efficient stove trial**

Twenty fuel efficient stoves were introduced into the community as part of a feasibility study. These were introduced to 20 households all of whom have found them superior to open fires. The import cost per stoves was 200 Mt (8 dollars) and each household agreed to pay half. It is hoped that the stoves will reduce the amount of biomass needed from the forest for cooking and reduce the amount of smoke related respiratory problems.

### **Business plans**

Business plans were developed for both the saw mill and carpentry and bank accounts were opened. It is expected that this will improve the long term sustainability of these micro-businesses.

### **New CEO hired**

CJ Hall has been hired as Chief Executive of the Envirotrade group. CJ's career includes extensive diplomatic work in Africa for the US government, corporate finance and running his own food manufacturing business. CJ's presence has greatly increased the business capacity of the organisation. He has supervised the introduction of a new accounting system, Pastel, to the administration staff in Sofala. He has also overseen the technically challenging change of Envirotrade Mozambique Limitada, a not for profit company, into Associacao Envirotrade Carbon Livelihoods, a not for profit association. This will improve the legal status of the operations in Mozambique and better conform with local tax law. CJ is also searching for further investment in the organisation, leading to its long term sustainability and viability. He is currently working on strategy, the business model and transparency.

### **Fruit trees graft training**

Fruit tree graft training has been on going to nursery workers and this will now represent both a challenge and an opportunity for the project. It is expected that there will be a large emphasis on fruit trees.

### **Hiring of a full time environmental education officer**

It is expected that hiring a full time environmental education officer will improve the sustainability of the project and assist with issues such as the opening of machambas in conservation areas. This, combined with support from the administrator, is expected to also reduce charcoaling in the area.

### **Trial of a new satellite sensor for improvement of carbon stock estimate**

RADAR is a form of remote sensing which is not confounded by cloud or grass, two problems which the project faces when trying to estimate carbon stocks using optical satellite imagery. In collaboration with the University of Edinburgh, the project is trialling the development of rapid carbon stock estimation and comparing this to the existing work the project has carried out on remote sensing.

### **Machamba identification within contracts**

Unique machambas need to be identified in order to simplify reporting and improve monitoring. This task will be completed by the database manager and the community technicians by the end of the year.

## **Billboards erected in Johannesburg advertising Envirotrade**

Billboards have been erected in Johannesburg advertising Envirotrade on the main highways into the city.

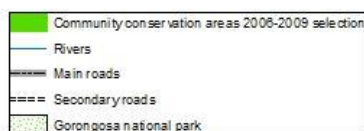
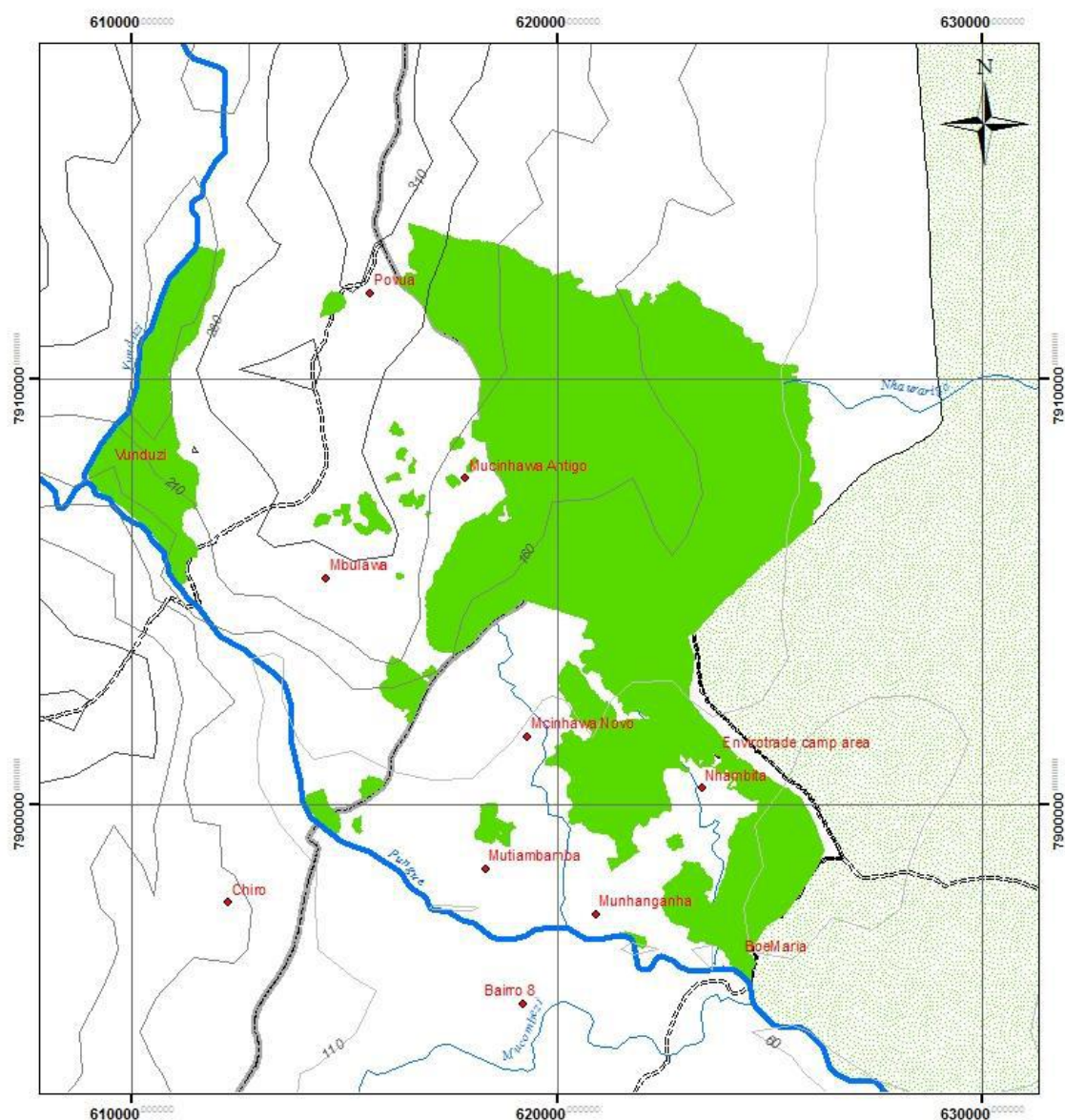
## **Envirotrade in the News**

[Are we on the brink of saving rainforests?](#)

[Carbon trading is key to Africa's economic future](#)

[How Africa can earn billions from carbon trading](#)

## Annex One: Community Conservation Areas (map)



0 0.5 1 2 Kilometers

## Annex Two: Meeting minutes for community consultation

### Meeting Minutes (Consultation Ceremony)

Venue: New Campsite

Date 17 February 2009

#### Present:

District Administrator - Marromeu  
Director of Agriculture – Marromeu  
Chefe de Posto de Chupanga  
Representative from Geografia e Cadastro  
Mr. A. MacCrimmon – Envirotrade  
Aristides Muhate - Envirotrade  
Jorge A. Gwenzi – Envirotrade  
Ernesto Tchume – Envirotrade  
Regulo - Gorra  
Sapanda - Gorra  
Mufumo – Gorra  
Members from the Gorra Community

#### Agenda: Ceremony for the New Campsite

- The introduction was done by the Chefe de Posto de Chupanga. He introduced the Marromeu District Administrator to the members of the Project and the community of Gorra.
- The District Director of Agriculture mentioned the main point of being gathered. That it was for a consultation ceremony, he also mentioned that they had already received a letter from the project and the community of Gorra in relation to the project's land requisition.
- The project Manager Mr. Alistair mentioned the main aim of land requisition, the functions of the project and how the project was going to work with the local communities.
- The community of Gorra was happy to receive the project, and they asked for employment and help from the project.
- The Regulo mentioned that there must be clear limits between the Project's land and the Community, so as to prevent conflicts in the future due the fact that the community gets most of needs from the surrounding area like honey, fuel wood and traditional medicine.
- The Administrator told the community that they must work together with the Project and cooperate with the Administration of Marromeu. He also asked the community not to cause fires. He then handed over the ceremony grocery to the Regulo and his community and the ceremony progressed well. The signing of documents was done.
- The Director of Agriculture closed the ceremony by thanked the Community members or being present.

Minutes taken by: Jorge A. Gwenzi