

Implementation of REDD in Sofala Project.

Introduction

Within the Sofala community carbon project there have been a number of historical changes which have affected today's project reporting. These relate to both the name of the project regions, phases of the project and the implementation of REDD (reducing emissions from deforestation and degradation). This document attempts to outline all the changes which may affect current interpretation of literature relating to the project and our current status with respect to reducing emissions from deforestation and degradation.

Key facts this will document:

- The name of the project - The Sofala Community Carbon Project
- The three phases of the project pilot, research and development and operational
- The expansion of the project in different phases. phase 1 - Nhambita, Boe-Maria and Munhanganga, phase 2 - Chicale Regulado, phase 3 - Matenga Regulado and Zambezi Delta
- The implementation of a REDD technical specification in 2009, replacing a conservative default value
- The mapping issues and resolution using ArcGIS.

Phase 1 - Pilot to the EU phase. Project known as the Nhambita community project.

2000 – Initial visit and contact with Roberto Zolho (Director) and Gorongosa National Park by the directors of the yet to be formed Envirotrade, Robin Birley and Philip Powell. Discussions about the reconstruction of the park and possible assistance and involvement in economic development of the communities in this area. Encroachment and resettlement of people had taken place during the Civil War with the collapse of infrastructure and management of the park and the fighting that took place in and around the GNP. Deforestation and unsustainable use of natural resources was threatening the natural resources. Illegal logging had already taken place in the Chicale *Regulado* where high value species had been “high graded”.

2001 – Joint ECCM/”Envirotrade” scoping study travelled to the GNP and buffer Zone Community and held consultations with stakeholders – this process was facilitated by the GNP. GNP management identified the Chicale *Regulado*. Chicale has been consistently referred to as Nhambita in much of the documentation in the region, however this is a misnomer, Nhambita is one ward

within the greater Chicale *Regulado* (see Figure 1).

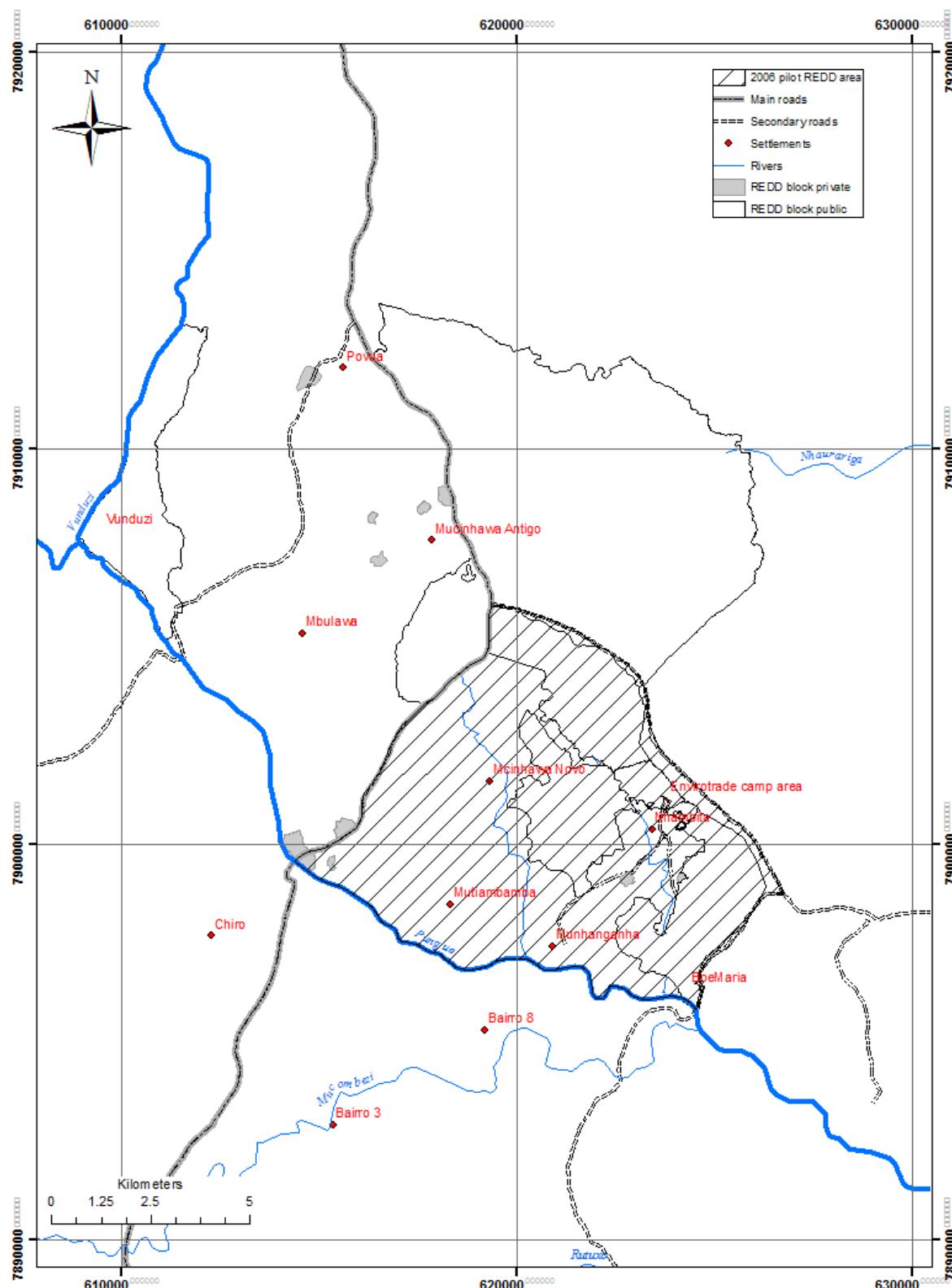


Figure 1. Private and public REDD contract areas. Filled in grey are private areas, hollow are public. The hashed area is the area originally selected in 2006.

Geographically Chicale covers areas 1 and 2 in Figure 2.

Stakeholder consultations continued at various levels and community signed a letter of intent with us to develop a project proposal. The idea was to roll out the DFID funded Plan Vivo methodology

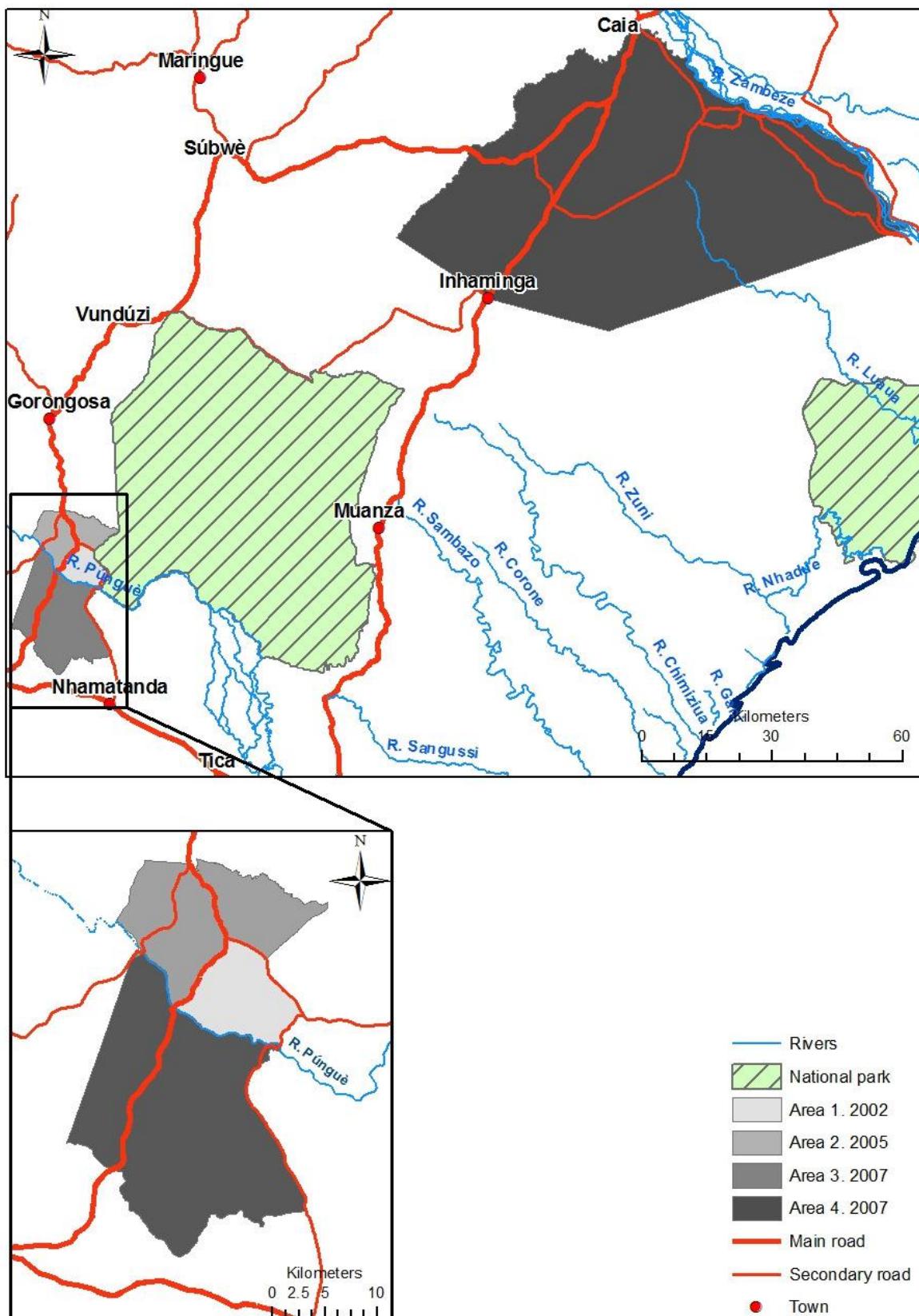


Figure 2. Phases of implementation of the Sofala community carbon project.

that was successfully working in Mexico to other countries including Uganda and India. The project design process was commenced in earnest in the third quarter of 2002.

2002 – Envirotrade registered as a UK based company. Envirotrade funded some trial activities in the community in Area 1 (Figure 2). Worked with a consultant and local stakeholders to start some demonstration and trial activities in the community. Envirotrade registered the first 60 farmers and mapped their *machambas* to set up Plan Vivo's (producer land use contracts) in Nhambita and surrounding wards in the Chicale *Regulado*. Seed collection programme began. GTZ and ORAM involved in the process of obtaining the DUAT (a document critical for land tenure rights in Mozambique) and establishing the community association Community Association elected for Chicale *Regulado*. First tree nursery and planting begun. Register Envirotrade Lda. in Mozambique as local Mozambique project partner – non-profit operational entity for Mozambique. First sale of Carbon from the proto – Mozambique Plan Vivo project to Future Forests (UK based carbon retailer) in August 2002. ECCM contracted by Envirotrade to do technical work for this transaction.

Phase 2 - EU research and development phase. Project known as Miombo Community Land Use & Carbon Management: Nhambita Pilot Project. Contract B7-6200/2002/063-241/MZ.

2003 - EU project application by University of Edinburgh successful. Research and development ran for five years. Research included but was not limited to research on the dynamics of carbon stocks in miombo woodlands, remote sensing work to determine vegetation cover and modelling of tree growth in the local area. In 2005 the project expanded to area 2 (Figure 2). During ongoing research and development the social elements of the project were evolving. Initially REDD was going to be carried out in the whole of area 1 after consultation with the community association (Figure 1). Here is an extract from the 2006 annual report submitted to the Plan Vivo foundation:

"Fire management was initiated this year in order to prevent the rampant bush fires that devastated the forest. A pilot block of 8,000 hectare has been selected to start the program; eventually the whole area will be divided into wards and protected. Encircling the selected area and dividing it into blocks, 120 Kilometres of firebreaks, 30 meters in width, were prepared this year to work off during a fire. Motorized equipment and hand tools have been obtained to do this work while training of a suitably equipped and protected fire fighting team was undertaken."

A Memorandum of Understanding between Envirotrade and the community association was signed to sell the resulting carbon offsets from the Chicale *Regulado* (Figure 7). At this time a default value of 73.3 tCO₂ha⁻¹ was used across the whole area for VER credit calculation, this was considered a conservative value in discussions between the University of Edinburgh and ECCM until the technical specification had been developed. A further restriction of only selling 10% of the REDD credits generated per year prevented the project from over selling credits while there was still uncertainty over the final calculations.

In 2008 further discussion between Envirotrade and the community members divided the area into management blocks. Two distinct types of blocks were identified: private and public. Private blocks were carried out on land that was acknowledged as belonging to one family by the *Regulo* and could otherwise be converted to farmland in accordance with land law in Mozambique (see Appendix 1). Public blocks were community forests which were set aside for avoided deforestation. There was a more developed project presence and therefore confidence in area 2 (see Figure 1) and it was decided blocks within this area should be managed as well.

Contracts were signed with groups within the community to carry out patrolling and fire breaks in these areas in 2008 (see appendix 2).

To avoid double counting of carbon from the original area in 2006, those areas which overlapped between 2008 and 2006 are recorded as having started in 2006 (see Figure 1). In 2009 these annual activity contracts were signed by the community association rather than Envirotrade in recognition of their increased role in Environmental management and the running of the project.

In 2007 the project expanded to one new *Regulado*, Matenga (area 3, Figure 2) and a new site Zambezi Delta (area 4, Figure 2). Management for REDD is currently been considered in both areas, and has undergone community consultation.

Towards the end of the EU phase in 2008 (phase 2) a technical specification was drafted by ECCM. Some technical data, including in the baseline calculations had to be made before it could be finalised and submitted for peer review in September 2009.

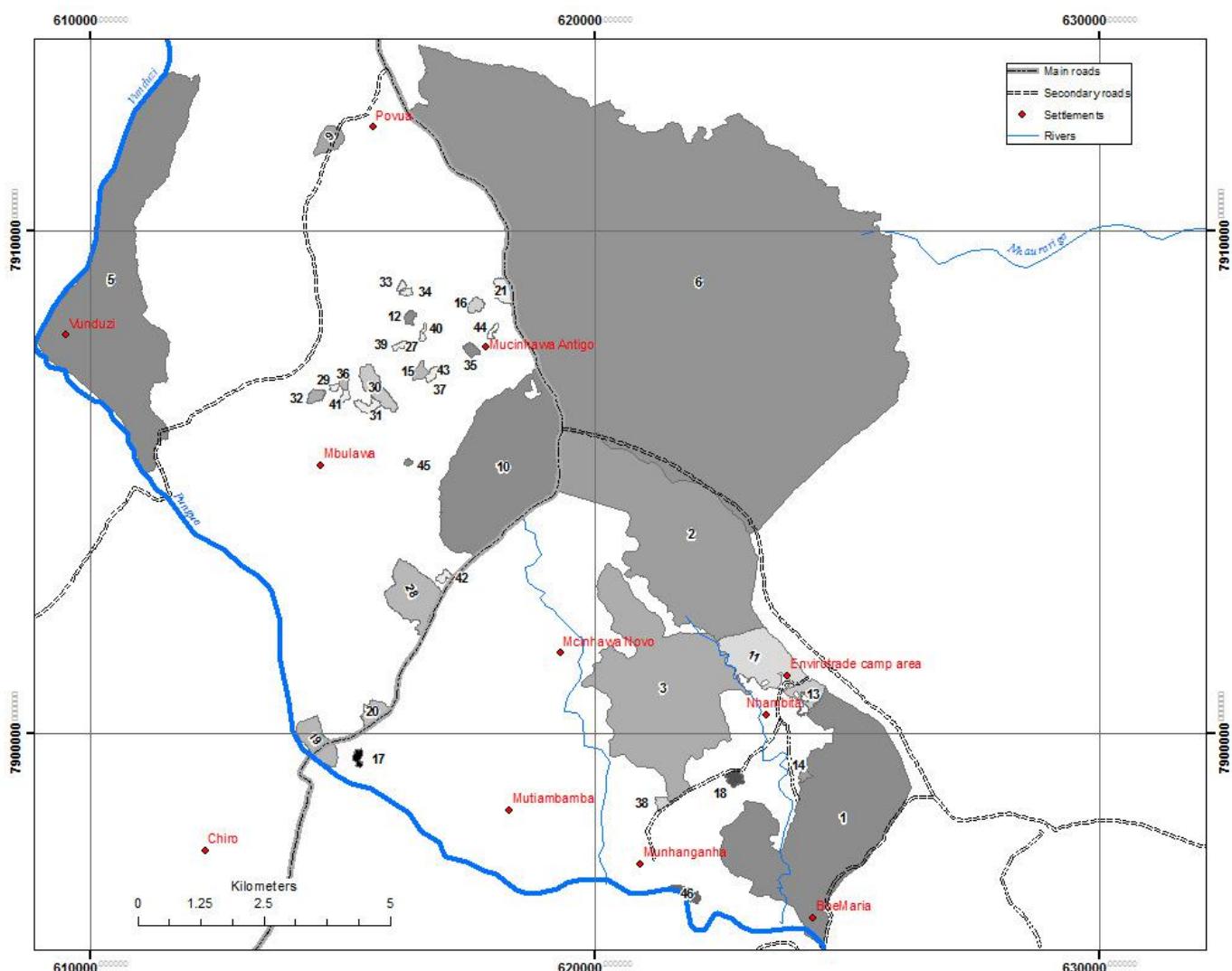


Figure 3. Darker grey indicates a greater carbon density. UTM 36S. Numeric identifiers refer to area number in Table 1.

start year	area number	area name	area size (ha)	total tCO2e over 100 years
2006	1	Nhambita BoeMaria	852	73,823
2006	2	Nhambita Mucinhausa	822	64,778
2006	3	Muncinuaua Munhanganha Nhambita	713	50,822
2008	5	Vunduze	928	83,475
2008	6	Mbulawa Mudoda	5,249	444,041
2008	9	Cristiano	22	1,701
2008	10	Serra	555	49,303
2006	11	Envirotrade camp	126	6,423
2008	12	Telix	5	402
2006	13	Gorongosa adventuras (was Sakki)	25	1,447
2006	14	Paulo Sozinho	4	302
2008	15	Chico Joao	9	617
2008	16	Mario Chimuaza	7	391
2006	17	Luis Felix	5	781
2006	18	Raimundo	9	1,050
2008	19	Costa Pereira	43	2,819
2008	20	Ernesto Seda	17	1,020
2008	21	Neto Chimuaza	14	533
2009	27	Antonio Jairosse Raete	1	31
2009	28	Augusta Lucas Joao	90	6,126
2009	29	Eduardo Manuel Camujoma	2	82
2009	30	Gaspar M. Camujoma, Zito M. Camujoma e Manuel Camujoma (Camujoma brothers)	29	1,678
2009	31	Gaspar Manuel Camujoma	9	375
2009	32	Jeremias Manuel Camujoma	7	495
2009	33	Joao Miquissene Gil 1	2	99
2009	34	Joao Miquissene Gil 2	3	112
2009	35	Jovaldo Joaquim Sozinho	6	519
2009	36	Manuel Camujoma	4	240
2009	37	Manuel Dias Samacueza	1	34
2009	38	Marcos Fazenda e Pedro Sevane	6	311
2009	39	Pereira Jairosse Raete 1	3	131
2009	40	Pereira Jairosse Raete 2	3	116
2009	41	Ramos Manuel Camujoma	3	128
2009	42	Soares Oliveira Gonza	5	211
2009	43	Vicente Inacio Luis	4	180
2009	44	Zito Floe Phuta	3	100
2009	45	Zito Miquitaio Camujoma	2	141
2009	46	Magaio Zebedia	11	1,169

Table 1. Ex ante carbon stock estimates for the different REDD areas, based on stratification carried out in 2009.

area type	public	Private	commercial ¹
paid to community members	hectares x 32.4	hectares x 0	hectares x 32.4
paid to trust fund	hectares x 10.25	hectares x 0.31	hectares x 10.25
paid to private land owner	hectares x 0	hectares x 42.34	hectares x 0
paid to grass cutters	perimeter in m/200 x 67	perimeter in m/200 x 67	perimeter in m/200 x 67
paid to fire breakers	perimeter in m/400 x 67	perimeter in m/400 x 67	perimeter in m/400 x 67
paid to early burners	perimeter in m/200 x 100.5	perimeter in m/200 x 100.5	perimeter in m/200 x 100.5
paid to patrollers	hectares x 14.88	hectares x 14.88	hectares x 14.88

Table 2 Remuneration in meticals in different types of community conservation areas.

Phase 3 Envirotrade Operational phase October 2008 - onwards

As the project reached the operational phase, funded by investment from Envirotrade and carbon offset sales, the REDD technical specification not yet finalised. However early on in 2009 the stratification required by the technical specification was carried out (Figure 3) and the baseline was finalised in July 2009 by Envirotrade staff (see carbon calculator Table 3). The addition of an ESRI conservation grant allowed Envirotrade the capacity to spatially visualise the REDD blocks through GIS correcting any errors in mapping (see Appendix 3).

Once the technical specification was submitted to peer review, the project was then applied it to the existing REDD areas replacing the default of $73.3 \text{ tCO}_2\text{e ha}^{-1}$ which was found to be conservative as expected. In 2009 sales to date of REDD credits had been 113,238 tCO₂e, ex ante calculation of carbon offset potential of REDD areas is 783,727 tCO₂e.

Further to the success of empowering farmers with their own private conservation areas, in 2009 twenty extra private areas were added and stratified. The ex ante calculated VERs for sale are in Table 3, these exclude a risk and non compliance buffer.

Current REDD status

As of the time of writing the REDD contracts are in the process of undergoing reform. The voluntary liquidation of Envirotrade Mozambique Limitada and its replacement with Associacao Envirotrade

¹ What is a commercial area type? A public area such as the Envirotrade camp area, where the incentive is not used to motivate any group of people as that group is associated or part of Envirotrade. See Code of practice for use of carbon finance from Forest Areas managed by Envirotrade, Envirotrade Employees or Envirotrade Associates.

Carbon Livelihoods has provided an opportunity and a stimulus to resign the contracts. For agro-forestry a contract will need to be signed with each farmer to acknowledge the change of contract holder. For forestry the contracts themselves will be updated to strengthen the deforestation clauses and have embedded within them more information about remuneration (see Table 2) to reduce any uncertainty over payment. A map will be included in

Assumptions		Carbon stocks	
Project effectiveness	75.00%	Miombo woodland	38 tC/ha
Risk buffer	10.00%	Savannah	20 tC/ha
Price per tCO ₂ e	6	Riverine forest	67 tC/ha
Payment period	10 years	Secondary woodland	18 tC/ha
		Machambas	3 tC/ha

Carbon calculations							
	STEPS 1-3	STEP 4	STEP 5		STEP 6	STEP 7	
	Initial area of ACEU woodland in project area	Initial C stock of ACEU woodland in project area	Carbon stock under deforestation scenario	Change in carbon stock under deforestation scenario	Carbon benefit of project	Carbon benefits eligible for crediting	
	(ha)	(tC)	(tC)	(tC)	(tC)	(tC)	(tCO ₂ e)
Miombo woodland	73	2,804	203	-2,602	1,951	1,756	6,445
Savannah	68	1,342	187	-1,155	866	780	2,862
Riverine forest	11	738	31	-708	531	478	1,753
Secondary woodland	31	578	87	-491	368	332	1,217
Total	183	5,463	507	-4,956	3,717	3,345	12,277

Table 3 Carbon calculator from technical specification. Macamba is considered the baseline. Stratification results are entered into steps 1-5.

every contract and all contracts relating to one area will be within the same document irrespective of if they are different activities.

The management is considering linking carbon density to payments. This would incentivise the community to project those areas with the highest carbon density, typically the biodiversity rich riverine areas. However in advance of this there must be community consultation, as we do not want to cause perverse affects by creating jealousy of those who have the best forest.

At this stage (first quarter of 2010) the technical specification is still in peer review.

2010 monitoring via remote sensing

In the technical specification it is required that the project carry out monitoring via remote sensing, and MODIS is suggested. However MODIS is very coarse over a small area like Chicale and the

project has instead opted to use the more technological advanced and appropriate radar imagery². The preliminary results for Radar are in Figure 4.

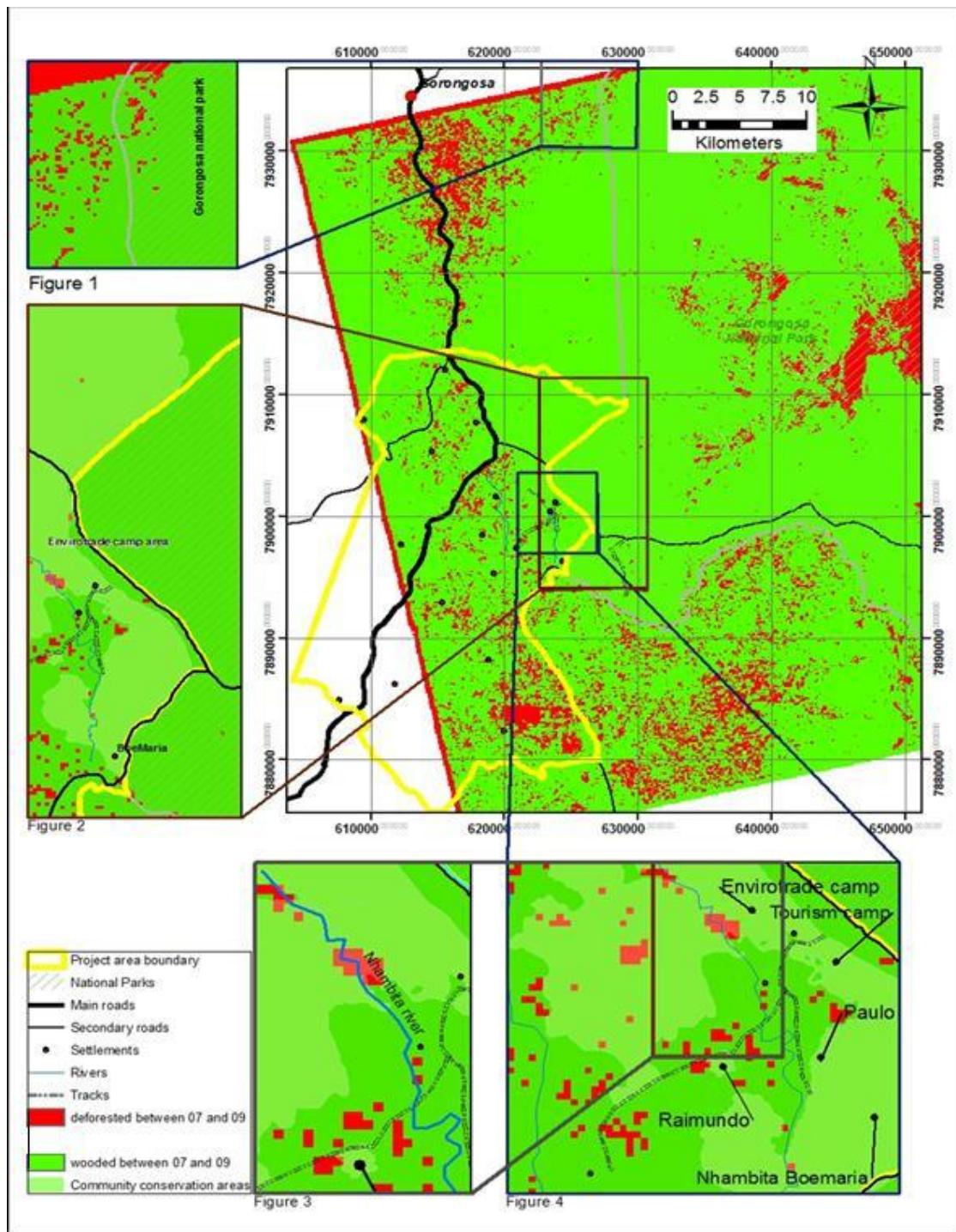


Figure 4. Monitoring Chiclae Regulado using radar imagery. Red is areas which have been deforested between 2007 and 2009. This can be used for monitoring of non compliance and deduction of carbon payments.. Figure also shows the lack of machambas within the park in the project region which is different as you get further away from the project.

² Mitchard, E. T. A., S. S. Saatchi, I. H. Woodhouse, G. Nangendo, N. S. Ribeiro, M. Williams, C. M. Ryan, S. L. Lewis, T. R. Feldpausch, & P. Meir (2009), Using satellite radar backscatter to predict above-ground woody biomass: A consistent relationship across four different African landscapes, *Geophysical Research Letters*, 36, L23401, doi:10.1029/2009GL040692

Google earth images in 2010 have a much higher resolution, 2.5m, than previously available images using this software over the project area, Landsat has been superseded by SPOT. By loading the REDD area shape files and projecting them in Google earth this will allow monitoring of areas for the future (see Figure 5).



Figure 5 Google earth imagery of the project area, including protected areas in yellow.

We hope to include a new fire product in our monitoring suite derived from MODIS, MCD45A1, analysis of this product will help us monitor the success or otherwise of our fire management regime. An example of what is possible with MCD45A1 is in Figure 6. When the last quarter of 2009 MCD45A1 data are available they will be analysed, they are not currently online.

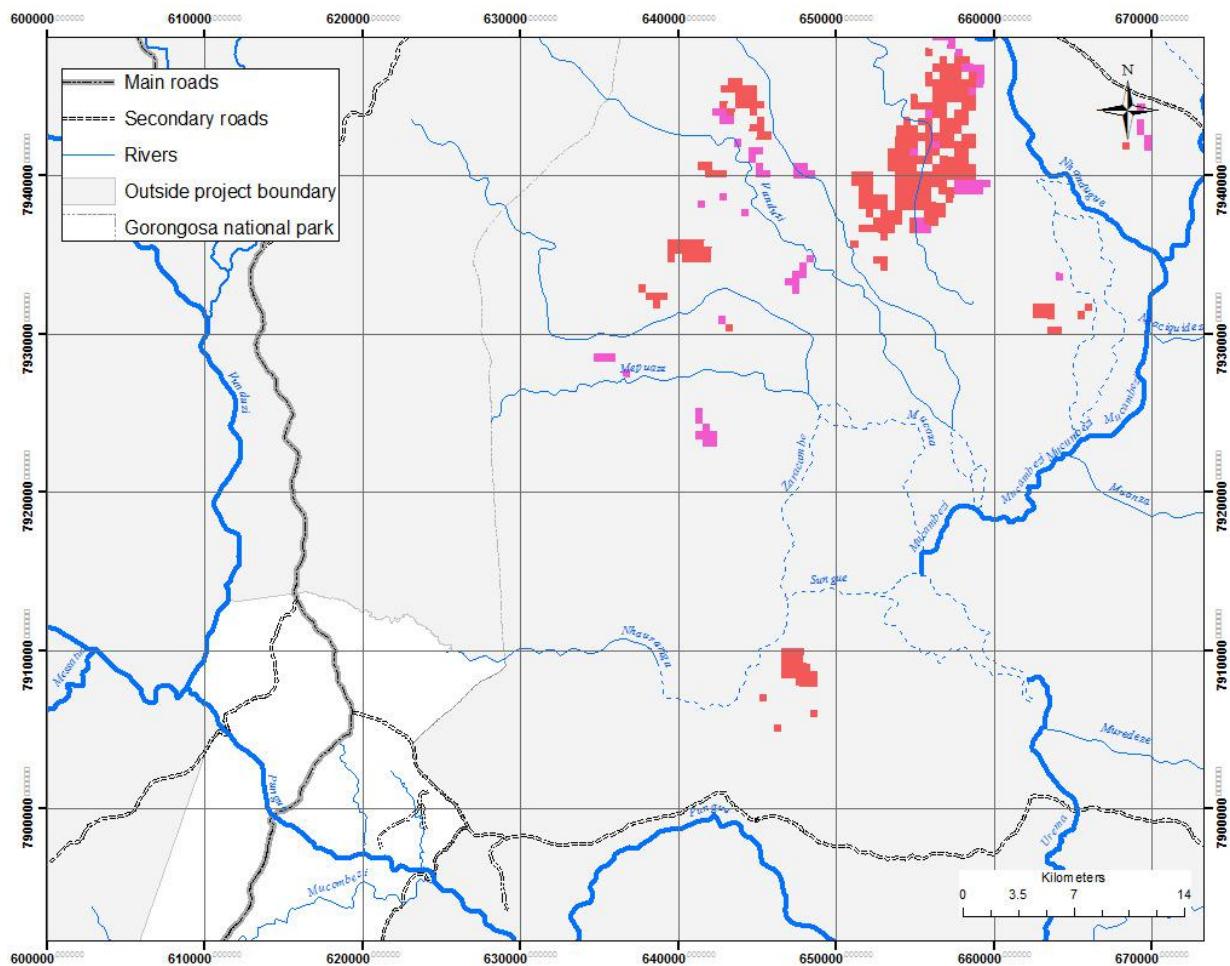


Figure 6. MCD45A1 fire scars over the Gorongosa project site 2009. The fires in the park in June (red) and July (pink) are not found in the Gorongosa project site where forest management occurs.

MEMORANDUM DE ENTENDIMENTO

Entre a comunidade de Chicale/Nhambita, Localidade de Pungue, Posto Administrativo de Gorongosa Sede, Distrito de Gorongosa, Província de Sofala legalmente reconhecida e com o Título de Uso e Aproveitamento de Terra desde o ano de 2001, representada pelo respectivo Comité de Gestão e a Envirotrade, com sede em Nhambita, Distrito de Gorongosa, em Sofala, representada pelo Sr. Petrus Van Zyl, Director da Envirotrade Moçambique é celebrado e reciprocamente aceite o presente Memorandum.

Baseado neste Memorandum a comunidade se propõe a acolher e em colaboração com a Envirotrade implementar o projecto comunitário de sequestro de carbono baseado no modelo do Plano Vivo. Segundo este modelo a comunidade se propõe a sequestrar o carbono através do seu envolvimento activo em actividades de reflorestamento, gestão da floresta nativa incluindo outros recursos naturais e outros programas afins e a Envirotrade se propõe a comercializar o carbono, promover outras actividades baseadas no uso sustentável dos recursos naturais e a capacitar os membros da comunidade e grupos de negociação.



Figure 7 Memorandum of understanding between the community association of Chicale and Envirotrade. Overseen by the traditional leader, the Regulo.

Appendix 1 Legal position regarding property and land-use rights and traditional communities in Sofala Province, Mozambique with specific reference to the communities participating in the Sofala Carbon Livelihoods Project in the districts of Sofala and Cheringoma.

This document seeks to clarify the current status under Mozambique constitutional and statutory law of contracts and legal relationships relating to land and land related issues with particular reference to community control in traditional communities constituted under law. It should be viewed against the backdrop of the relevant clauses in the Mozambique Constitution, the Land and Natural Resource Management laws and regulations. The particular application of laws with regard to the sale and ownership of carbon sequestration products is still subject to further legal development in the courts and legislative process.

The Chicare Community in the Pungue Locality, Gorongosa District of Sofala Province in Mozambique has hosted the Nhambita Community Carbon Project since 2003. The project brings together livelihood creation, biodiversity conservation and greenhouse gas mitigation activities in an innovative combination that is driven by an active partnership between the community and an environmental services company, Envirotrade. Central to the project are contracts³ between both individual farmers, groups of individuals in the community, the collective traditional community (producers) and Envirotrade. The contracts are to ensure long term land-use change that addresses unsustainable land use practices including deforestation, illegal charcoal production and unsustainable shifting agriculture and produce verifiable carbon offsets. These individual and collective interventions are monitored against scientifically established baselines that measure existing carbon stocks, potential losses of carbon stock and carbon sequestered by project activities that sees carbon locked in trees and Miombo woodland. Individuals and corporate institutions, which manage their carbon emissions and have initiated carbon reduction and management measures, offset their remaining residual emissions and purchase Voluntary Emissions Reductions (VER) certificates that reflect the carbon sequestered. An important pre-requisite for the credibility of these contracts is a clear legal position regarding the legal rights of the producers to own and sell their carbon product in terms of the legal and constitutional framework of the host country, in this case Mozambique.

For these contracts to comply with the international standards that regulate the production and sales of VER's it must be clear that the individuals or groups that

³ Example copy attached plus English translation.

are the producers are (a) entitled to legally use the land and retain use of the land for the duration of the contract and (b) that they are entitled to sell the produce of this land that they have title to. Each contract is based on a detailed, GPS referenced map that delineates the exact surface area and location of the parcel of land on which land-use change is being affected and tied to an individual or a representative of a community or group within that community. These individual contracts are all referenced to the surveyed and gazetted community area of the Chicare *Regulado*.

Since 2007 the project has expanded into the neighbouring Matenga *Regulado* (Mucombeze) and subsequently into other traditional communities in Sofala Province, (Chirimadzi, Cine, Guma, Mociambuze, Matondo, Tsotse, Gora and Mponda) using identical procedures and contracts to engage producers in the transformation of their land and create additional livelihood co-benefits. These communities are engaged in formalising their access to land and are at different stages in the statutory process of delimitation and registration. Communities include those who have formally registered land titles (Chicare, Matenga and Matondo) and those who hold land titles by default and are in the process of formalisation. Rural communities rights to land are enshrined in the country's constitution and the land law which offers strong protection to rural communities under traditional leadership, including those who do not have registered title.

Land Ownership in Mozambique⁴

Mozambique's constitution vests custodianship of all land in the state with ownership, administration and management devolved to stakeholders including agencies of the state, the private sector and significantly local communities under customary authority. State ownership of land is enshrined in the 2004 constitution which is a revision of the 1990 constitution. It states that:

"natural resources in the soil, sub-soil, internal waters, the territorial sea, the continental shelf and the exclusive economic zone, are state property, with the state determining the conditions for their use by the citizens".

However the constitution recognizes and protects community land rights acquired by inheritance and by virtue of community tradition and peaceful occupancy for rural communities. The only exception to this principle applies in relation to areas legally reserved for public interest purposes, as is the case of nature conservation areas, or areas already legally given to another person or entity. This powerful underlying principle in land law in Mozambique affords the traditional communities a high degree of constitutional protection. The constitutional recognition of community land rights in Mozambique law independently from formal titles has provided a high sense of protection to the

⁴ Towards community-based forest management of miombo woodlands in Mozambique. Salomão, A1. and Matose,

majority of the rural people for whom land continues to be the only source of subsistence and income. Community land rights do not automatically imply rights for commercial use of land and other natural resources, these are obtained through licence and devolution of state authority, but the recognition of customary rights reflects security of community tenure rights for communities such as those involved in the Carbon Livelihood Programme in Mozambique.

Legislation for Management of Land (Land Law of 1997)⁵

In 1995 a National Land Policy (NLP) based on the 1990 Constitution was adopted by Mozambique establishing a clear rights-based approach to guaranteeing land for the poor, as well as a strong development instrument designed to promote new investment in the country. These aspects are summarized in the NLP central mission statement that envisions:

"safeguarding the diverse rights of the Mozambican people over land and other natural resources, while promoting new investment and the sustainable and equitable use of the resources".

The enabling effects of the NLP include:

- Guaranteed access to land for the population as well as for investors;
- Guaranteed rights of access to land by women;
- Promotion of national and foreign private investment;
- The active participation of nationals as partners in private enterprises;
- The definition and regulation of basic guidelines for transferring State-allocated land use rights;
- The sustainable use of natural resources that guarantees the quality of life for present and future generations;

The 1995 National Land Policy assures the rights of the Mozambican people over land and natural resources and promotes new investment through a mix of post-independence socialist ideology, market principles and concerns for social equity and sustainable use. One of its central elements, which was later incorporated into the 1997 Land Law, was recognizing the legitimacy of customary land management systems whereby all local or customarily acquired land rights are equivalent to the state DUAT. The policy underlines the need to provide investors with guaranteed secure rights. The investment process is not without conditions however: it must be sustainable and equitable. Furthermore, the land rights of men and women are equal. The subsequent legal framework provided by the Constitution and 1997 Land Law contains several innovative approaches to securing property rights. These include:

⁵ ibid

- establishing a single land tenure right, the *direito de uso e aproveitamento da terra* (DUAT - see text box), which applies to both customary and newly requested land occupation and use;
- recognizing DUATs obtained through customary and good faith land occupation (thus formalizing customary rights by law) and providing secure rights for investors through a renewable 50-year state leasehold;
- requiring investors to consult with local people to determine if the land they want is occupied and, if so, establishing through the consultation (consulta) the conditions for the investor to take over the community's DUAT;
- formalizing participation of local people in land and natural resources management (as in the consultation process above) as well as maintaining a flexible approach to approving and spatially defining DUATs acquired through customary and good faith occupation.

The DUAT

The *direito de uso e aproveitamento da terra* (state-granted land right) is currently Mozambique's single form of land tenure right. It is exclusive, inheritable and transmittable (subject to state approval). Irrespective of the means through which it is acquired, the resulting DUAT right is exactly the same.

DUAT's can be acquired by:

1. Recognition of long-standing occupancy

- a) customary (traditional) occupation:* the occupation of land by individual persons and by local communities, in accordance with customary norms and practices, so long as these do not contradict the Constitution;
- b) good faith occupation:* the occupation of land by individual national persons who have been using the land in good faith for at least ten years;

2. Award on a concessionary basis

- c) award:* new rights to land, awarded with the authorization of an application submitted by an individual or corporate person (renewable 50-year state leasehold).

From - IMPROVING TENURE SECURITY FOR THE RURAL POOR : MOZAMBIQUE – COUNTRY CASE STUDY; Simon Norfolk and Christopher Tanner ; LEP Working Paper # 5 Workshop for Sub-Saharan Africa; 2007

It is critical to note here that DUATs obtained through customary and good faith land occupation are recognized and protected by Mozambique law – they do not have to be registered. The drafters recognized that local people had neither

know-how nor resources to handle a registration process. They also knew that public land services in Mozambique were (and still are) unable to manage the workload of registering thousands of newly recognized customary land rights. Mandatory registration would simply cause most holders of customary DUATs to lose their newly legalized rights.

The state land use and benefit right

The DUAT under the 1997 Land Law differs markedly from earlier Mozambique legislation, insofar as it provides a private and exclusive right, inheritable and, subject to state approval, transmittable between third parties. However, it always remains subsidiary to the state's ownership of land. The right of the state remains paramount, manifest through its control and regulation of rights acquisition by non-occupants, transmission and other forms of rights alienation. The DUAT is therefore a form of state leasehold, subject to conditions based upon how it is acquired. If these conditions are met, the DUAT provides tenure security and enough time for an investor to expect a good return on capital. It also provides local people such as the communities engaged with the Carbon Livelihoods Programme with the legal security they need to participate in the carbon market.

Although they cannot be bought, sold or mortgaged, DUATs can be transferred between third parties. The Constitution recognizes private property and that improvements and constructions on land are the private assets of the person or firm holding the DUAT. These include agricultural improvements and crops such as trees. These assets can be bought and sold with the original DUAT transferred by the state to the new asset owner, at his or her request. While selling land is technically illegal, placing a value on a rudimentary hut or trees provides a fungible legal backdrop to an unregulated but increasingly vigorous land market.

The law provides three ways to prove the existence of a DUAT:

- presentation of the title document that is received when a DUAT is registered;
- oral evidence provided by local community members (a major achievement of the 1997 law, as most local rights have no accompanying documents); or
- other technical means permitted by law (peritagem).

The acquisition and transfer of use rights are addressed in the 1998 Rural Land Law Regulations. The 2000 Technical Annex to the Land Law Regulations deals with identifying and recording the rights of local communities and good faith occupants.

Acquiring land use rights

Through Article 12, the Land Law recognizes the *de facto* occupation of land by two categories of people: those occupying land according to customary norms and practices (either as individuals or as part of a group of people and in this

instance members of a traditional communities) and those who occupy land in good faith for at least 10 years. These rights are recognized as formal, legal rights and, in most respects, are the same as awarded rights.

In order to identify rights acquired through customary occupation without having to codify them, policy-makers developed the “local community” concept. The “local community” holds a single state DUAT in its own name (thus in the case of the Chicare and Matondo *Regulado*’s also acquiring legal personality), and is responsible for the internal allocation and management of land rights through its own customary system. Lower order rights acquired by families and individuals in this way are also equivalent to a state DUAT and do not need to be registered.

The legislation defines a local community in the following manner: a grouping of families and individuals, living in a circumscribed territorial area at the level of a locality or below, which has as its objective the safeguarding of common interests through the protection of areas of habitation, agricultural areas, whether cultivated or in fallow, forests, sites of socio-cultural importance, grazing lands, water sources and areas of expansion.

The enabling effect of the law is also seen to extend down to the grassroots level, privileging communities over land rights and administration. In terms of land rights, the Mozambique land law introduced important provisions to secure such rights to the smallholder sector, by recognizing customary rights of access and management as being equivalent to the state-allocated land use and benefit rights (DUATs). In terms of land administration, the law confers legal validity to the various indigenous systems of transferring and inheriting rights, and recognizing the role of local communities in the prevention and resolution of conflicts.

The law furthermore recognizes the “local community”, as the main entry point to integrating various interests on communal land, recognizing them as constituting “extensive land holding and resource management units reflecting local production and social systems involving a wide range of resources and dynamic patterns of land use”. Through the local community, local people were given the right and duty to participate in the legalization (demarcation and registration) of new DUATs allocated to investors.

This is important in ensuring that once a consensus has been reached in a community about land use practices and a natural resources use plan has been formalised, that any attempt to obtain a DUAT by an individual or organisation that violates the conditions of the community agreement can be rejected during the mandatory consultation process. Communities that are properly organised and have representative structures, which are recognised in statute such as Community Associations or through participation in the Comitede Gestao Participativa at district level or the Comite de Gestao Comunitaria at local level, can speak out against proposed allocation of DUAT’s. These bodies are intended to facilitate :

- Negotiation
- Representation
- Co-ordination
- Planning
- Management of natural resources.

This is an important provision that is often not fully exercised because of lack of capacity. Envirotrade's role as a partner with these customary bodies is facilitated by Article 3 of the law on Principles for Wildlife and Forestry Management, which encourages private sector involvement to "add value to and promote development of local communities". The clear intention of the legislation is for communities to contract, but detail is not forthcoming on the exact framework for such contracts.

The registration of property rights

Full registration of DUATs in Mozambique requires both cadastral title registry, through the Ministry of Agriculture, and property registration, through the Ministry of Justice. The law states that the constitution, extension, modification, transfers and termination of the DUAT are subject to legal registration. Regulation 13 relates to the function of the Public Property Registry (Conservatórias do Registo Predial) and its function in formalising DUAT's.

The Registo Predial essentially guarantees land rights by making them public, i.e. recognized by the state, and protects land rights holders against claims by third parties. In essence, this registration guarantees the i) authenticity, ii) security and iii) efficacy of all legal acts related to a piece of land, including willing transactions between parties (inter vivos) or those resulting from death and inheritance (causa mortis).

Although this registration is available, it remains voluntary, i.e. it is not compulsory under the amended regulations. In the case of DUATs held by occupation, the lack of legal registration does not affect the enforceability of the occupancy right.

Although the DUAT holder cannot own the land, because he or she can own any fixed assets on that land such as houses, buildings, infrastructure, trees or other improvements registration is a significant measure. No matter how they are acquired, DUATs are recognized by Mozambican law as real rights to a plot of land, urban or rural, and they are transmissible as part of transactions involving the fixed assets upon the land in question. However, for these real rights to be recognized, and thus able to be transacted, they must be registered in the Registo Predial. This has important implications from the perspective of the formalization of rights.

There are good reasons why communities with customary DUAT's should avail themselves of the process and formally register through the delimitation process

as permitted in the Regulations. It is for this reason that Envirotrade is working closely with those communities who have not completed the formal process of registration. In the past Envirotrade has worked closely with the national NGO, ORAM to facilitate this process.

- DUATs by award – cadastral registration and mapping are not sufficient evidence of state lease rights if someone else goes to court with a title for the same land that has been legally registered in the Registo.
- DUATS by occupation – a registered customary right is not any stronger legally than an unregistered one.
- Any DUAT – cadastral registration does not provide sufficient documentary evidence to allow these rights to be able to be transacted. Legally, transactions require a notarized process (*escritura publica*) which is only possible in respect of registered legal instruments.

Formal registration is advantageous for some of the following reasons:

- Since the Land Law places such a strong emphasis on community consultation in the approval of land concessions, the process of delimitation would ensure that there was clarity on who needed to be consulted (which community) and who the legitimate representatives were;
- In light of the policy objective of establishing partnerships between communities and investors, the delimitation process would establish the framework within which a partnership could be negotiated and, at the same time, award legal standing to the community, enabling it to enter into such a partnership arrangement; and,
- Registration of the rights would increase the level of security of tenure and strengthen the local community management role in the care and control over natural resources, as envisaged by the general policy of the Government of Mozambique.

In addition to this, the position adopted by the Land Campaign and contained within a document produced by this body on the 25th November 1999 contained a particular view of "land occupied by local communities":

- With a few exceptions, all land in Mozambique falls under the customary occupation of at least one community
- There are common boundaries between community lands
- There is no 'free' land between the community areas

The nature of the right acquired by community and good faith occupants (through their occupation of land) and the right that can be applied for by private investors is the same in both instances: that is, through the DUAT. As such, it is only possible for one legal entity (a community, a company, a private individual) to possess the legal right to a single piece of land at any one time.

It is important to note, as mentioned earlier, that the community through the delimitation process acquire legal personality, and that agreements made

between them and investors are therefore enforceable under Mozambique law. The community land delimitations currently underway as part of the Carbon Livelihoods Program is defined on the basis of historical traditional boundaries, rather than by the formal government administrative definitions.

The Land Law recognition of representative and adjudicatory bodies at community level does ensure the reinforcement of existing local practice and institutions. Thus:

- the local community functions as a community in terms of the use and management of land and natural resources,
- the local community has its own customary institutions and rules that regulate access to land,
- the management institutions and their representatives are those the community recognizes as existing and functioning.

In other words the basis for the evolution of land management institutions has been grounded in what exists presently, rather than in something new and unfamiliar.

Land rights delimitation vests ownership in the “community”, which is governed internally through the principles of co-title, specified explicitly in the Land Law and with reference to relevant sections of the Civil Code. Opting out of community jurisdiction and leaving the “common hold” also provides a new alternative route away from the constraints of both local and state power. These provisions underline the importance of project governance issues relating to the contracts and agreements reached with the community regarding the management of natural resources and the formalisation of these through consultation and resolution.

The framework for formalization

The official framework for formalisation of these rights in this context then takes various forms, including:

- formal recognition in law of a range of informally acquired rights (customary and good faith occupation),
- formal recognition of the role played by a “local community” in administering land and use rights within its own area, as well as its right to participate in land management and decision processes regarding the allocation of new rights awarded by the state,
- formal recording and registration of land rights – obligatory for awarded rights, not obligatory for those acquired through customary and good faith occupation formally recognized in law but still administered informally and largely invisible to the formal systems of rights registration.

Clearly the latter two processes are crucial to the Carbon Livelihood Program and are being or have been secured in all participating communities.

The national cadastre

Overall responsibility for land administration lies with the National Directorate of Land and Forests of the Ministry of Agriculture, working through a range of provincial and district services. The Land Law also establishes that the constitution, extension, modification, transfer and termination of the DUAT are subject to registration within the Public Property Registry of the Ministry of Justice. Legal registration is essential if land rights holders – private or local by occupation – are to secure bank credit and enter into contracts where their security of land access is a major issue.

Formalizing local DUATs by occupation

The Land Law allows for verbal testimony and other technical means to prove existing DUATs and to establish their borders. The principal technical instrument for doing this is “delimitation”, through which a community DUAT is proven and its limits recorded on official cadastral maps. (See attached examples for the Chicare (Nhambita) and Matondo communities). Delimitation as envisaged in Mozambique law is a powerful participatory instrument that can raise local awareness of rights in law and build community-level capacity to manage their affairs and engage with the outside world. It also results in a more effective protection of rights through formal registration in official maps and databases.

This self-definition approach is also well suited to a country such as Mozambique, where numerous cultural and geographical contexts determine how land occupation and use happens in any given place. Indeed, many different community or group forms are possible under the local community formulation. They can be traditional units based on clans or chieftainships, extended families or simply a group of neighbours.

The consultation instrument provided in the Land Law also seeks to ensure that local rights are not ignored and “captured” by investors and others seeking to use local resources without community consent. In practice this is an imperfect solution as communities are vulnerable to the subversion of the process for political or other reasons. This process is also a form of formalization, as it recognizes the existence of local rights through meetings and documents that record the outcome of the consulta. The consultation process requires the following:

- Defining occupation – the consultation must establish where communities have legal rights acquired through occupation even if the land is not currently used (this can often be over large areas, if the legal local community definition is fully understood by all concerned).

- Setting the partnership discussion – the consulta must be seen as a negotiation over how one party can gain access to land legally occupied by another. It is not simply a “no objection” hurdle to be jumped by the new land claimant on his or her road to gaining a new land right.
- Giving credence to community opinion – the law requires that all community members participate in the *consulta*, and while it does not say the community opinion is binding, in a *de facto* sense it is, if local people understand their real rights and how to exercise them.

A well implemented consultation process can ensure that local DUATs are not ignored and can result in local people getting real economic benefits from the deals struck with investors over ceding land rights. Local communities are also legally empowered to participate in natural resource management (including defining their own borders) and the allocation of new DUATs, as well as in conflict resolution. This participation is another form of *de facto* formalization that is distinct from the registration of DUATs by occupation. This empowerment of communities to take control of the management of natural resources is of crucial importance to the success of the land use change programme at the heart of the Carbon Livelihoods concept.

The manner in which local community interests are defined and represented to the state become critical, Article 30 of the Land Law calls for further legislation to clarify who represents the local communities. Recent decrees approved in the context of the decentralization programme such as Decree 15/2000 which recognizes community authorities who are defined as “people who exercise a specific form of authority over a specific community or social group” appear to address this issue. These “authorities” may have some role in land use issues, but do not necessarily represent the group of private individuals who collectively hold local community land rights in co-title. This relates to the importance of governance and transparency issues central to the Plan Vivo carbon management system employed by Envirotrade in its Carbon Livelihood Projects.

The rules and procedures for process of delimitation, essentially a form of participatory rural assessment designed to catalyse and facilitate a local community’s self-definition, are the following.

- A series of meetings is held with the community to explain the law and the processes involved, culminating in the election by the community of its representatives for the legal process of delimitation.
- The district administrator is informed by interested parties and given background information on the reasons for the delimitation. An agreement is reached on division of the costs of the process, that is signed off by at least the administrator (or representative) and the community representatives.

- A participatory planning exercise compiles at least two maps of community land use and occupation and identifies limits with neighbouring communities. The community is broken down into subgroups, with men and women in separate groups. The maps they produce are combined into a single cartograma of the community land area and produced as official 1:50 000 topographic maps. A report containing the completed work is sent to the SPGC.
- A sketch map and a descriptive memorandum³⁰ of the community-delimited land are prepared during fieldwork involving the community, neighbouring communities and a team that must contain a technician with basic knowledge of surveying.
- Results of the delimitation process are presented at an obligatory meeting involving the community, district administrator or representative and neighbouring communities. This must include presentation of the sketch map and the descriptive memorandum. A meeting report is prepared and must be signed by representatives of those present.

After the meeting, the SPGC receives the documentation and verifies if the process is complete and within terms of the law. If so, it records the delimited land area in the Atlas and the Register, assigns a parcel number and, within 60 days, issues the certificate.

The delimitation process is also open to individuals, either those from the customary realm who want to separate (desmembramento) their individual rights from a community-held DUAT or those who have acquired rights as a result of their good faith occupation of land.

Opting out by local individuals

The Land Law Regulations contain explicit provisions for the subdivision of land held under community titles, which means opting out of community control and securing an individual title in the cadastral service. This is important because it provides a way for individual members of groups to define where they have individual tenure rights, and a legal route to formalize these rights. In this way individual investment and capital accumulation can occur at local level.

Land rights for women

The Land Law has mixed implications for women. Most rural women obtain their rights through customary norms and practices defined by their relationships to men i.e. through marriage. These rights are less secure than those of men and are particularly at risk when discriminatory traditional practices prevail in the unhappy context of the HIV/AIDS pandemic. The 1997 law does offer women new forms of protection by explicitly making customary norms and practices subject to higher constitutional principles, and by giving women full rights to

participate in all land related decisions, including the right to opt out and register their title individually.

Together these provisions offer considerable protection for women with regard to the often discriminatory aspects of customary land administration. To date however, there is no known case of a woman or women using these provisions to defend their rights, in spite of the growing evidence of abuse and injustice as HIV/AIDS impacts ever more deeply on rural social and economic relationships. This remains a difficult area and one in which significant consultation and collaboration is required to transform rights and practices relating to the Carbon Livelihoods Projects.

Conclusion

Mozambique has responded to the challenges of land ownership and use by ensuring that DUAT's can be administered asymmetrically. This means in practice that a collective entity that could include a large number of small, often shifting, customarily acquired DUATs as well as common resources comes into being. This collective entity manages these small local DUATs according to their own norms and practices (i.e. traditional land management system) and would, itself, be the title holder of a single, collectively managed state DUAT. The result would be a defined "local community" incorporating all of these elements in a wide-ranging although quite clear definition:

... a grouping of families and individuals, living in a circumscribed territorial area at the level of a locality or below, which has as its objective the safeguarding of common interests through the protection of areas of habitation, agricultural areas, whether cultivated or in fallow, forests, sites of socio-cultural importance, grazing lands, water sources and areas of expansion.

The Land Commission also accepted that the country simply did not have the resources to administer all land rights directly and that communities were unaware of their rights and did not have the resources to respond to any legal obligation to register within a set period of time. For these reasons, the new law did not impose an obligation to register rights acquired by occupation of the land in question. A map of the community DUAT with any other information, such as rights-of-way, is then registered in the Cadastral Atlas and a Certificate of Delimitation is issued in the name of the community.

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2. Land Dispute Resolution in Mozambique : Evidence and Intuitions of Agro-forestry Technology Adoption, JON D. UNRUH, Paper presented at the 9th Biennial Conference of the International Association for the Study of Common Property Victoria Falls, Zimbabwe – 17 – 21 June 2002.
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4. Women's Property Rights and Inheritance in Mozambique: Report of Research and Fieldwork Economic Development Unit, Learning Series No. 1, By Lauren Hendricks, CARE USA and Patrick Meagher, IRIS
5. Towards community-based forest management of Miombo Woodlands in Mozambique, Salomão, A. and Matose, F.
6. DUAT – Chicare (Nhambita) *Regulado*
7. DUAT – Matondo *Regulado*.

Community ward	Land status
Chirimadzi	No DUAT
Cine	No DUAT
Guma	No DUAT
Mociambuze	No DUAT
Matondo	DUAT ⁶ held by <i>Regulado</i> ...Matondo?
Tsotse	No DUAT
Gora	No DUAT
Mponda	No DUAT
Bairro 8	Covered by Matenga DUAT
Baptista	Covered by Matenga DUAT

⁶ Attached under “....”

Chiro	Covered by Matenga DUAT
Ernesto	Covered by Matenga DUAT
Muchurue	Covered by Matenga DUAT
Mucombezi Ponte	Covered by Matenga DUAT
Ziro	Covered by Matenga DUAT
Bue-Maria	Covered by Chicare DUAT
Mbulawa	Covered by Chicare DUAT
Mucinhawa Antigo	Covered by Chicare DUAT
Mucinhawa Nova	Covered by Chicare DUAT
Munhanganha	Covered by Chicare DUAT
Mutiambamba	Covered by Chicare DUAT
Nhambita	Covered by Chicare DUAT
Pavua	Covered by Chicare DUAT
Pungue	Covered by Chicare DUAT
Vunduze	Covered by Chicare DUAT

Event which conflicts with communities ability to own and sell carbon rights	Legal available defence	Course of action and contact for instigation
Logging concession sold in community carbon conservation area.	Law requires full community consultation in the event of non DUAT and approval in DUAT areas	Community Association have legal recourse against authority that bypassed them in granting concession.
Commercial farming concession sold on top of agro-forestry contract	Law requires full community consultation in the event of non DUAT and approval in DUAT areas	Community Association have legal recourse against authority that bypassed them in granting concession.
Illegal logging in community carbon	Punishable under law.	Community Association report to Chef de Post

conservation area.		and Administrator for action.
Land dispute between two relations over one <i>machamba</i> with a plan vivo contract.	First level of dispute resolution through traditional leaders, second level through Chef de Post.	Trigger dispute resolution procedures.
Death of a contract holder.	Mozambique Laws of Inheritance	Inheritance
Government intervention programme which collectivises and agriculture across <i>machamba</i> boundaries.	DUAT and traditional land rights which amount to a DUAT give community legal protection but issue would be a political one.	Legal challenge through courts
Legal charcoaling in community conservation areas in buffer zone/outside buffer zone	Commercial extractive practices not legal in the buffer zone, licences to be issued by Forestry Department subject to approval by Community Association	Licensing procedures under Forestry Regulations
Illegal charcoaling (without a licence) in community carbon conservation areas, in buffer zone/outside buffer zone.	Commercial extractive practices not legal in the buffer zone, licences to be issued by Forestry Department subject to approval by Community Association	Prosecution by Forestry Department
Shifting agricultural incursion into community carbon conservation area.	Legally constituted Community Association would have authority if land use plan registered with the government to prevent access supported by the law.	Criminal prosecution by authorities.
Death of the community association leader.	The authority of the person rests not in his or her legal persona but in the office held	New election

Death of the Regulo	Succession	n/a
Purchase of the land DUAT by a third party	Sub-DUAT's must be granted by DUAT holders	Legal recourse
Nationalisation of carbon sales	Contracts enforceable by law.	Legal challenge in court

Appendix 2 Contracts 2007 example.



CONTRATO

A Envirotrade está a implementar um projecto de desenvolvimento comunitário no âmbito do programa de sequestro de carbono na comunidade de Nhambita, zona tampão do Parque Nacional da Gorongosa. Uma das actividades que está a ser implementada em colaboração com a comunidade e respectivo Comité de Gestão é a gestão da floresta nativa incluindo a gestão do fogo e protecção do potencial existente. Para tal foram definidas "áreas de conservação comunitárias" que serão geridas pela comunidades. Neste âmbito membros das comunidades estão sendo envolvidos na abertura de açeiros, queimadas frias e patrulhamento das respectivas áreas. Pretende-se deste modo contribuir para a gestão sustentável dos recursos naturais.

É assim que entre a Envirotrade representada pelo **Sr. Petrus Johannes Van Zyl**, como Primeiro Outorgante e o Grupo de Aceiro de Mbulaua representado pelo **Sr. Pedro Mateus**, residente em Mbulaua como segundo outorgante é celebrado e reciprocamente aceite o presente contrato que se regerá pelas seguintes cláusulas:

CLÁUSULA PRIMEIRA (Objecto)

As partes convencionaram por acordo que se vai abrir um acordo de protecção contra queimadas descontroladas em que o primeiro outorgante vai fornecer, a crédito, capinadeiras manuais (bembas) ao segundo outorgante para que este desenvolva a actividade.

CLÁUSULA SEGUNDA (Obrigações das partes)

1. São obrigações do Primeiro Outorgante

- i) Fornecer capinadeiras manuais (bembas) a credito.
- ii) Providenciar treinamento e assistência técnica relevante com a actividade apícola sempre que necessário;
- iii) Remunerar pelo trabalho realizado e acordado nos termos deste contrato

2. São obrigações do Segundo Outorgante:

- i) Abrir o aceiro no perimetro da area.
- ii) Respeitar as dimensões acordadas a luz deste contrato.

CLÁUSULA TERCEIRA (Jorna e natureza do aceiro)

Para efeitos do presente contrato foi acordado que cada jornal ou meta diária por pessoa é corresponde a uma faixa de 5m de largura e 200 m de comprimento.

O aceiro a volta do perimetro da area corresponde a uma faixa total de 30 m de largura da qual o Segundo outorgante deverá abrir duas faixas de 5 m de largura cada deixando entre estas duas faixas um faixa de 20 m de largura com capim a ser queimada posteriormente.

A area de Mbulaua a que o Segundo Outorgante deverá abrir o aceiro tem um perimetro de 23,002.80m (ver mapa 1 em anexo) corresponde a 57.5 jornas sendo 28.75 jornas para a abertura de cada uma das duas faixas e um perimetro de 37,364.36m (ver mapa 2 em anexo) corresponde a 186.82 jornas sendo para **Queima**.

CLÁUSULA SEGUNDA (Obrigações das partes)

1. São obrigações do Primeiro Outorgante

- i) Fornecer capinadeiras manuais (bembas) a credito.
- ii) Providenciar treinamento e assistencia técnica relevante com a actividade apicola sempre que necessario;
- iii) Remunerar pelo trabalho realizado e acordado nos termos deste contrato

2. São obrigações do Segundo Outorgante:

- i) Abrir o aceiro no perimetro da area.
- ii) Respeitar as dimensões acordadas a luz deste contrato.

CLÁUSULA TERCEIRA (Jorna e natureza do aceiro)

Para efeitos do presente contrato foi acordado que cada jornal ou metade diária por pessoa é corresponde a uma faixa de 5m de largura e 200 m de comprimento.

O aceiro a volta do perimetro da area corresponde a uma faixa total de 30 m de largura da qual o Segundo outorgante deverá abrir duas faixas de 5 m de largura cada deixando entre estas duas faixas um faixa de 20 m de largura com capim a ser queimada posteriormente.

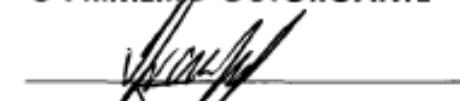
A area de Mbulaua a que o Segundo Outorgante deverá abrir o aceiro tem um perimetro de 23.002.80m (ver mapa 1 em anexo) corresponde a 57.5 jornas sendo 28.75 jornas para a abertura de cada uma das duas faixas e um perimetro de 37.364.36m (ver mapa 2 em anexo) corresponde a 186.82 jornas sendo para **Queima**.

CLÁUSULA QUARTA (Remuneração)

Foi acordado entre as partes que cada jornal (5x200m) sera remunerada a 51,15 Mt dos quais 3,00 Mt serão descontados para o fundo da comunidade. Assim sendo o Segundo Outorgante recebera pelas 57.50 jornas um valor de 2.768,65 e pela 186,82 jornas para **Queima** o Segundo Outorgante recebera um valor de 8.995,47 que correspondente a um valor total de **11.764,09 Mt.**

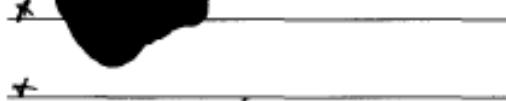
Nhambita, aos 02 de Julho de 2008

O PRIMEIRO OUTORGANTE

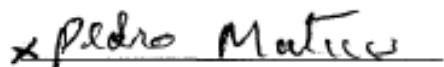
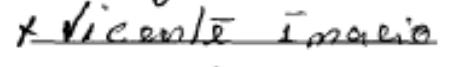


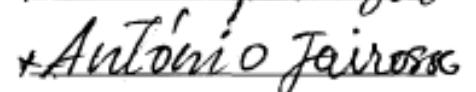
TESTEMUNHAS:



O SEGUNDO OUTORGANTE


ENVIROTRADE
ENVIROTRADE MOÇAMBIQUE

Estrada Nacional No.1
Parque Nacional Gorongosa
C/o WWF
Edificio Da Manica Freight Services
Tel/Fax 23320346
Beira

Nhambita, 7/08/08

Declaração

Para os devidos efeitos e fins julgados convenientes declara-se que o grupo de acceiros de Mbulaua recebeu o montante de 11,764.09 Mts (Onze mil setecentos sessenta e quatro meticais e nove centavos) refente ao contrato em anexo.

Entreguei

Sebastian Filipe William

Recebemos

Pedro Mateus

+ Pedro Mateus

Vicente Inacio

+ Vicente Inacio

Jovaldo joaquim

+ Jovaldo Joaquim

Manuel Silva

+ Pedro Mateus João Eduardo

Antonio Jairosse

+ António Jairosse

Chico Paulino

+ Chico Paulino

Inacio Mateus

+ Inacio Mateus

Antonio Joao

+ Antonio Joao

Domingos Mateus

+ Domingos Mateus

Zito Mapingue

+ Zito Mapingue

A confirmação do Técnico

Joao Eduardo Ranguisse

+ João Eduardo Ranguisse

Appendix 3 Mapping corrections.

Two areas were mis-mapped as they were not projected onto a map allowing errors to be made in their shape. Three further areas had small areas removed which were forested but also the location of tented camps. Two areas were remapped after requests from contract holders.

Table 4 Difference between area sizes before and after mapping software introduction. Blue is areas which have reduced due to camp areas being removed. Yellow is areas which were originally mis-mapped due to lack of projection. Green are areas which were remapped after a request from the original contract holders. Any other changes are due to either areas having been overlapping.

Area name	True area size (ha)	Original area size (ha)
Castiano	22	22
Chico Joao	9	2
Costa Pereira	43	43
Envirotrade camp	126	133
Ernesto Seda	17	17
Gorongosa adventuras (was Sakki)	25	31
Luis Felix	5	5
Mario Chimuaza	7	2
Mbulawa Mudoda	5,249	6,202
Muncinuaua Munhanganga Nhambita	713	713
Neto Chimuaza	14	9
Nhambita Boe-Maria	852	850
Nhambita Mucinhaua	822	733
Paulo Sozinho	4	4
Raimundo	9	9
Serra	555	494
Telex	5	5
Vunduze	928	1,197
Total	9,405	10,471