

Accounting period 2013 v.2.

**Reducing Emissions from Deforestation and
Forest Degradation in the Yaeda Valley, Northern Tanzania**

Marc Baker – Carbon Tanzania

23rd October 2014



1. Summary

Reporting period		February 2013 – January 2014
Technical specifications in use		Reducing Emissions from Deforestation and Forest Degradation in the Yaeda Valley – January 2013
Area under management (ha) i.e. implemented <i>plan vivos</i>	Areas put under management since last report (ha)	20, 790ha Project area
Smallholders with <i>plan vivos</i> and PES agreements (total for project)	New smallholders with PES agreements since last report	Two communities, Mongo Wa Mono and Domanga following the land deed / land use plan outlined in the Technical specifications.
Community groups with <i>plan vivos</i> and PES agreements (total)	New groups with PES agreements since last report	Two communities, Mongo Wa Mono and Domanga following the land deed / land use plan outlined in the Technical specifications.
Plan Vivo Certificates issued to date		18,012
Submission for new Certificate Issuance for areas under management (tCO2)		14,010



2. Key Events, Developments and Challenges

2.1. Key Events in chronological order from 23rd February 2013 to 27th March 2014

- 23th – 30th February 2013: Field work in Yaeda valley for satellite mapping of the project extension (Yaeda II) in Domanga, Mongo Wa Mono and Yaeda Chini villages. This field visit included the satellite mapping technician (Mr. Dan Kelly, The Nature Conservancy) and was aimed at planning the location of leakage areas, geo referenced image collection for pixel analysis and checking the boundaries of the land use plans (see map 1 below under key developments).
- 6th – 8th May 2013: Contract learning event in Mongo Wa Mono and Domanga with all community members and Ujamaa Community Resource Trust (UCRT). The aim of this 4-day meeting was to revisit the contract one year on from signing and to announce sales of credits and to clarify shares of revenue to be paid to community, village, ward and district accounts.
- May 2013 - Issuance: Carbon Tanzania submitted its first annual report (covering activities from project inception to February 2013) to Plan Vivo in April 2013 and received formal acceptance from The Foundation in May 2013, thereby allowing the first tranche of PV Credits to be listed on the Markit Registry. Many buyers of credits are only willing to transact once issuance has been authorised by the certifying body, so this immediately allowed Carbon Tanzania to contract with larger international resellers and corporate clients.
- 18th - 21st June 2013: Field visit to Domanga with a team from our project partners, The Nature Conservancy (TNC) looking at story telling, marketing and starting the storyboard for a video about this REDD project, how it functions and how it has strengthened indigenous rights over land, improved local governance and added to the communities economic opportunities.
- July 2013 – Markit Registry listing: While issuance had been authorised by Plan Vivo in May 2013 (see above) the credits generated by the Yaeda Valley REDD Project did not appear on the Markit Registry until mid-July 2013 due to technical and communication issues between Plan Vivo and Markit. This delayed the first large sale of PVCs from the project to an international reseller and highlighted the challenges of dealing with a global market registry system.



- July 2013 – first international sale of ex-post credits: Once the PVCs were listed on the Markit Registry Carbon Tanzania completed its first international sale of 2500 PVCs of ex-post credits with Native Energy, a US-Based reseller.
- 20th August 2013: Carbon Tanzania signed a MoU with Sustainable Travel International (STI), this relationship allows CT to sell VERs (PVCs) online through a web portal. These online sales are tax deductible in Europe and in the USA. STI also connects CT with sales opportunities through its own client base.
- 17th – 20th September 2013: Quality assurance visit by directors to Domanga and Mongo wa mono. The purpose of this visit was to collect and collate monitoring data, spend time in the field with the Walinzi Wajadi (Carbon Tanzania's monitoring team) and allow for discussion surrounding project operations and any potential conflicts both within the communities and externally driven.
- 7th – 11th October 2013: Financial planning meeting prior to second biannual payments into community accounts. This is a standard bi-annual meeting to allow for the communities to come together and discuss financial planning based on funds available from carbon payments received in the preceding six month period (May to October). Funds are paid into accounts in November and May.
- 12th November 2013 – 11th December 2013: Carbon Tanzania engaged an outside provider to conduct a market research exercise with companies currently offsetting with Carbon Tanzania. The main aim of this was to better understand the companies CSR needs to allow CT to better meet its clients needs. The outputs from this are outlined below (key developments).
- 14th December 2013: Carbon Tanzania visited and delivered a talk to Zero Mission and its clients in Stockholm, Sweden. The aim of this visit was to reaffirm CT MoU with Zero Mission and fully explain the triple bottom line value of this REDD project to Zero Missions client base.
- 5th January 2014: Athelia Ecosphere Capital contacts Carbon Tanzania to discuss investment in expanding projects within Tanzania. CT will meet and discuss investment in June 2014.
- 10th January 2014 – Ongoing: Carbon Tanzania engages an Independent Professional (Mrs Kate McAlpine) to set up and facilitate operational systems to improve and streamline Carbon Tanzania business operations. This includes an operation road for 2014 – 2015 aimed at creating workflows that meet specific milestones. This ongoing process has seen CT team increase its efficiency by 20% over the last two months.



- 21st -24th January 2014 – Biodiversity monitoring visit: Carbon Tanzania conducted its annual biodiversity monitoring exercise, as well as conducting quality assurance meetings with each target community to review current progress and issues.
- 2 February 2014 – Development of a new Business plan for Carbon Tanzania in readiness for approaches to increase investment and expand projects within Tanzania.

2.2. Key Developments

Project operations

Monitoring

Carbon Tanzania has made changes to the monitoring protocols for triggering issuance. This activity based monitoring protocol (see figure 10.3. in annex) builds on recommendations made by the Plan Vivo Technical Advisory Committee and takes a much broader approach to monitoring results. This activity-based monitoring uses indicators, thresholds and means of verification to ensure both operational, legal and organisational elements of the project and included within the monitoring. This change to activity-based monitoring requires a resubmission of the technical specifications to the Plan Vivo TAC. As Carbon Tanzania has made changes to its monitoring system, we have also increased our risk buffer from 10% to 20% over the project lifetime, this change means that annual issuance will now be 16,011tCO₂e PVC per year. As this 20% is made to the entire project lifetime, Carbon Tanzania must account for the initial issuance (2012) of 18,012tCO₂e by removing 10% from the first issuance taking a discounted issuance of 14,410tCO₂e PVCs for 2012, we will then revert to 16,011 tCO₂e PVC for 2013.



Yaeda phase II.

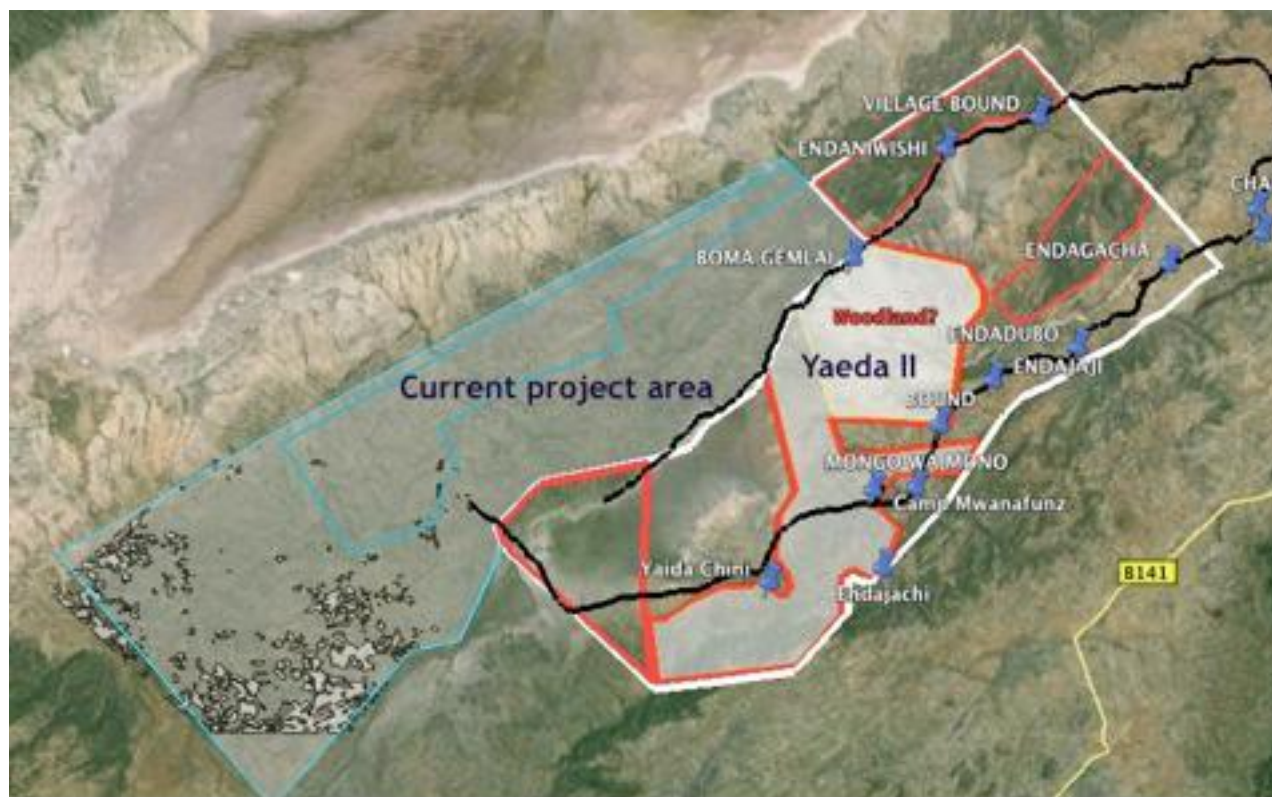
The technical specifications for the Yaeda extension (Yaeda II) are in press, this extension of our current REDD project will double the area land under PVC in 2014, specifically CT is aiming to have this project on line by the end of 2014. This land area is under the same type of management as the current project and is adjacent to the current project area (See map 2.1. below).

The objectives needed to complete the Yaeda extension in 2014 are the above ground biomass survey within Mongo Wa Mono and Yaeda Chini villages and completion of a new contract for these areas. CT also intends to include soil carbon for this area. The satellite analysis has recently been completed by TNC, (we waited until new maps from Landsat 8 launched in January 2014) showing the rate of deforestation within the reference region and helping us identify the leakage and project areas.

This project extension is written into the PDD for Yaeda I, therefore a new technical specification document for Yaeda II will be presented to Plan Vivo in the third trimester 2014.



Map 2.1. Current project area (projected on google earth) (Yaeda I: blue: reference region, leakage area, project area) and Yaeda II (project area shaded white, three leakage areas outlined in red and reference region delineated by a white line).





2.3. Operational management and planning

Carbon Tanzania has engaged in a series of operational and management planning exercises with outside providers to prepare the organisation for expansion. This has allowed CT to complete an operational roadmap identifying focal areas and begin developing an updated business plan.

2.4. Corrective actions

Table 2.4.1. Outstanding corrective actions and responses.

Open Corrective Actions from previous annual report	From PV	From CT
Itemise any corrective actions which were applied to the project from the previous annual report and whether these have been met.		
REC 01/12, 12/12, 15/12 - Mechanisms for participants to discuss issues associated with the design and running of the project.	Closed	Done
CAR 01/12 – Appointment of technical expert to advise on leakage outside of the project area.	Open	Ongoing – Having considered other REDD methodologies for comparison, it would seem the size, aspect and topography within the leakage area are well designed. I do appreciate how variable a leakage area might be as there is no one size fits all approach. CT is open to external advice on this issue.
Minor CAR 02/12 - Clarify whether the village land use plan has been approved by the district or not and if not, the project should work to facilitate its review by the district before the end of the first 5 year verification period.	Open	Complete, the final LUP map is shown in the annex. (Fig 10.1.) No changes to project area or planning are required.
Minor CAR 02/12 - Present statistics for slope, elevation, precipitation, and accessibility (distance from roads) of the project area and reference region.	Open	The area is virtually flat, a variation of less than 150m in altitude. This is reflected in the single habitat group used to establish biomass.



2.5. Key Challenges

The key challenge is bringing credits to market, Carbon Tanzania recognises that in order for the project to work the entire value chain has to be addressed, from branding to marketing and selling of credits. CT sees the marketability and sales of PVCs (or indeed any VERs) as the main challenge facing payments for ecosystem services. Plan Vivo should take the marketing and selling of its own credits as a KEY part of its operation, however CT realises that there may be a conflict of interest for the foundation to push the sale of PVCs from projects that it has certified.

Carbon sales are essential to ensure our commitments to communities are met. With this in mind we have employed a marketing consultant to refine social media marketing and increase Tanzanian based markets for PVCs at 10usd/t. Whilst our second international agreement with Native Energy in the USA for 4572tCO₂ reflects a more realistic price through resellers (see section 4). Carbon Tanzania recognises that it has to continue to focus on developing its own market within the East African region to increase sales at a target price of 10usd/tCO₂e to ensure both the continued success of this project and further projects already in the pipeline.

3. Activities, total project size and participation

This project works with hunter-gatherer Hadza (or *Hadzabe*) and pastoralist communities in Mongo Wa Mono and Domanga villages. By working in conjunction with traditional leaders, the elected village governments and a team of community members, Carbon Tanzania (CT) has established a system of results-based payments for ecosystem services (PES) through the sale of *ex-post plan vivo certificates (PVCs)*. This REDD project strengthens land tenure, management capacity and local natural resource management, enhances and diversifies local incomes, and contributes to local, national and global environmental conservation aims. Successful avoided deforestation will be achieved through a series of interventions including reinforcing the implementation of the approved village land use plan and associated village by-laws, improving forest conservation and management activities and addressing the primary driver of deforestation, slash and burn agriculture.



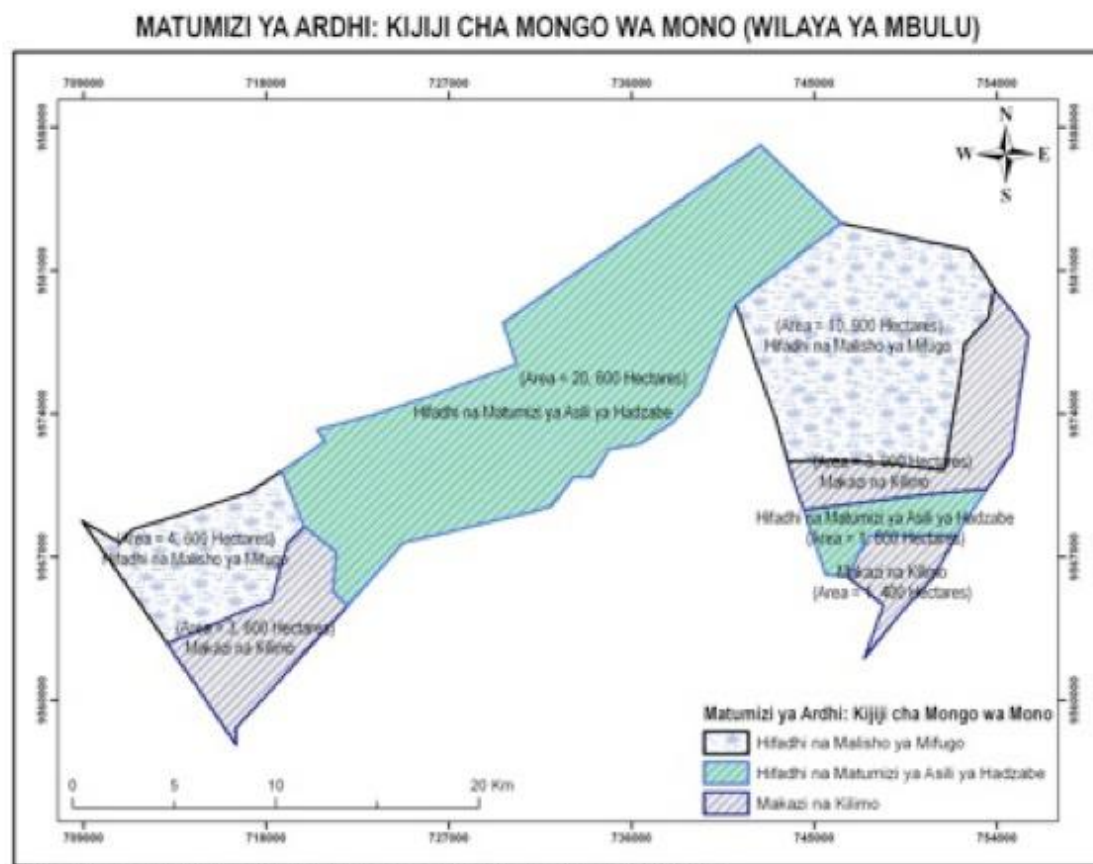
The community members are achieving these aims by patrolling and reporting any land use change and / or poaching activities which are happening illegally within the designated project area. This data with support by external government agencies is being used to tackle illegal land intrusion and resulting land conversion at both local and district level.

Famers are supported through designated areas within the villages that allow for agricultural conversion but are external to the project area and any carbon calculations (fig 1 below)

- There are currently two communities engaged in this project with a plan to increase the project area by a further 15,000ha in 2013 which will include a further community, Yaeda Chini Village.
- The **total area covered** by the project is 27,790ha of protected area within the Land Use Plan (LUP shown below in fig 3.1. below).



Figure 3.1. Land use plan for Mongo Wa Mono and Domanga villages





Submission for Plan Vivo Certificate Issuance

Buyer/PES funder	Volume (tCO ₂)	Total Price (\$/tCO ₂) ²	Producers & PV numbers				Price to producer/ group (\$/tCO ₂) ⁴	Monitored? (Y/N)
			Location	Producer/ Producer Group name or ID number ³	Description			
					System (name of tech spec)	Area (ha)		
Carbon Tanzania	7,005	5 -10	Domanga	Domanga	REDD	9,446	3 - 6	Y
Carbon Tanzania	7,005	5 -10	Mongo Mono	Mongo Mono	REDD	11,344	3 - 6	Y

² Carbon Tanzania is continuing to sell in Tanzania directly at 10usd/tCO₂e however external agreements vary between 5-8usd/tCO₂e depending on volume. With our contractual agreements we guarantee to the communities we can sell at 5usd/tCO₂e thus 60% is 3usd/tCO₂e. If we sell at 10usd/tCO₂e the community still receive 60%.

³ Producer Domanga Gerson Malle Zugika (on behalf of Hadza community) / producer Mongo Wa Mono Gidabude Gidahonda (on behalf of Hadza community)



4. Sales of Plan Vivo Certificates

Voluntary demand for carbon offsetting grew 4% in 2012 when buyers committed more than \$523 million to offset 101 million metric tonnes of carbon dioxide (MtCO₂e) (average \$5usd / tCO₂e). Within this global market, the demand for *forest based offsets* grew at 9% to \$216 million offsetting 28 MtCO₂e (average price 8usd / tCO₂e). The private sector remains the main source of demand for offsets with a growing interest in projects with strong co-benefits like those associated with preventing deforestation in tropical forests (Reduced emissions from deforestation and degradation (REDD)), or distributing clean cookstoves in the developing world¹.

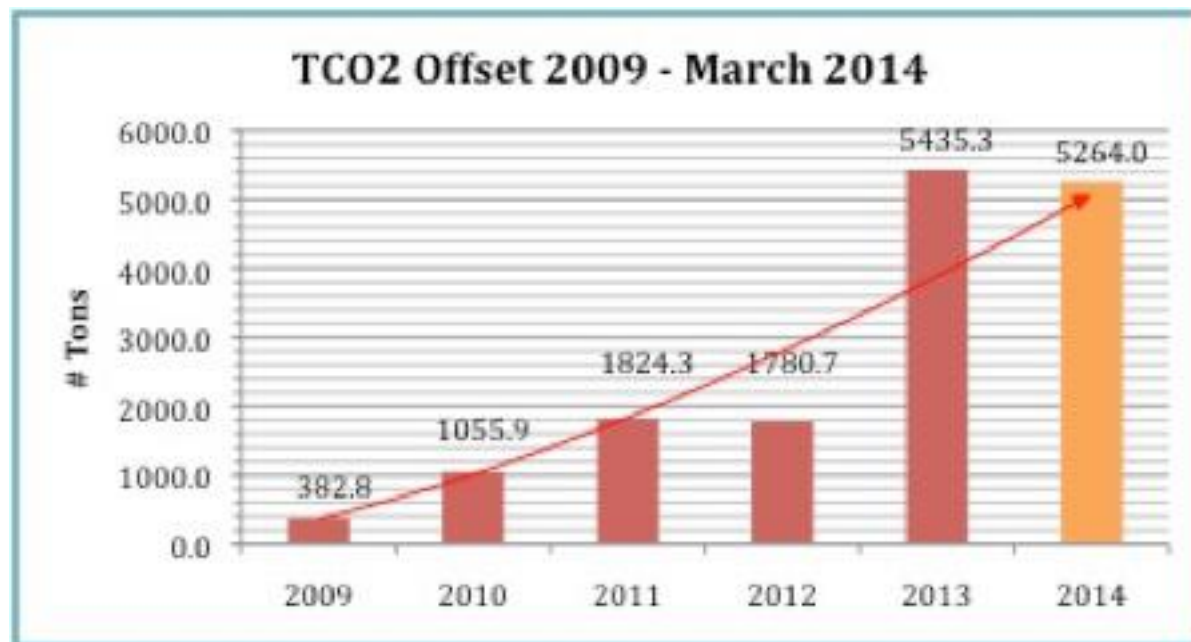
Carbon Tanzania developed an internal market in Tanzania for forestry based offsets (VERs) generated from its own project, this market is predominantly linked to the tourist industry in Tanzania and has continued to expand since our first sale in 2007 (figure 4.1. below) Between 2009 and 2012 Carbon Tanzania sold 5,044 tCO₂e (\$50,440, 10usd / t CO₂e) into this emerging market by innovating a market creation for CSR.

Carbon Tanzania has continued to increase sales of PVCs both within Tanzania and through resellers in the US and Sweden. Forward sold sales (see table 4.1 below) until mid 2013 were all within the Tanzania tourism market, following validation in early 2013 Carbon Tanzania was able to greatly increase sales through international resellers (Zero Mission and Native Energy). Of the 2012 vintage issuance of 18,012 tCO₂e, CT has sold 15,751 tCO₂e (see Figure 4.1. below).

¹ Forest Trends Ecosystem Marketplace Report: *State of the voluntary carbon market 2013*.



Table 4.1. TCO2e sold between 2009 to March (shown in yellow) 2014.



Since validation by the Plan Vivo Foundation, CT has been able to greatly increase its sales and therefore payments to the communities.



Fig 4.1. Total sales of 2012 vintage PVCs (01/02/2012 – 07/03/2014).

Client	Date Invoiced	Date Paid	# Offset	Tons	Sight and Vintage	Total Sale	Issue Date
Sanjan	01/04/2012	01/04/2012	18.9				01/06/2013
Maps Edge	01/05/2012	01/05/2012	88.47				01/06/2013
Nature Discovery	01/06/2012	01/06/2012	54.1				01/06/2013
Maps Edge	27/07/2012	27/07/2012	67.03				01/06/2013
Maps edge	30/08/2012	30/08/2012	40				01/06/2013
Summits Africa	05/09/2012	05/09/2012	180				01/06/2013
Guiding Principles	05/09/2012	05/09/2012	109.32				01/06/2013
Braeburn School	26/09/2012	26/09/2012	126.5				01/06/2013
Sanjan	30/10/2012	30/10/2012	10.3				01/06/2013
Asilia	30/11/2012	30/11/2012	602.7				01/06/2013
Nature Discovery	28/12/2012	28/12/2012	180.9				01/06/2013
Guiding Principles	04/02/2013	04/02/2013	65				01/06/2013
Maps Edge	06/02/2013	06/02/2013	89.23				01/06/2013
Abercrombie & Kent	20/02/2013	20/02/2013	856.3				01/06/2013
Maps Edge	03/04/2013	03/04/2013	123.3				01/06/2013
Kisima Ngeda	16/04/2013	16/04/2013	35.1				01/06/2013
Wildlife Explorer	01/05/2013	01/05/2013	150				01/06/2013



Maps Edge	01/05/2013	01/05/2013	48.3	01/06/2013
Guiding Principles	10/05/2013	10/05/2013	117.88	01/06/2013
Nature Discovery	24/05/2013	24/05/2013	120.8	01/06/2013
Maps Edge	31/07/2013	31/07/2013	57.62	01/06/2013
Native Energy	28/07/2013	20/08/2013	2500	01/06/2013
Fair Travel TZ	08/08/2013	08/08/2013	41	01/06/2013
Guiding Principles	30/08/2013	30/08/2013	31.94	01/06/2013
Maps Edge	11/09/2013	11/09/2013	83.98	01/06/2013
Asilia	15/11/2013	15/11/2013	719.7	01/06/2013
Braeburn School	27/11/2013	27/11/2013	129.5	01/06/2013
Nature Discovery	06/12/2013	06/12/2013	169.8	01/06/2013
Maps Edge	06/12/2013	12/12/2013	95.8	01/06/2013
Maps Edge	12/01/2014	27/01/2014	94.4	01/06/2013
Dorobo	15/02/2014	04/03/2014	18.7	01/06/2013
Zero Mission	15/02/2014	06/03/2014	500	01/06/2013
Native Energy	07/03/2014	31/03/2014	4572	01/06/2013
TOTAL			12098.57	

5. Summary of Monitoring Results



Land Use Monitoring

5.1. Background

Monitoring of the project area targets three main threats, land incursion that results in habitat loss (this is within the project area and leakage area (see Annex, Figure 10.3), overgrazing or illegal cattle incursion, and illegal hunting, the latter being a socio-economic issue for the Hadzabe. The community based monitoring aims to record events systematically to allow for *presentation and discussion with the communities, village, project partners and district government*. The monitoring forms also allow the community coordinator to record what action was taken by the relevant authorities so that Carbon Tanzania and Partners can identify areas to improve both the monitoring and response. For the purposes of monitoring we report on 5 different land use classifications on a monthly basis, all of which were perceived as threats to the communities well being and carbon storage; Unplanned agriculture, illegal hunting, non-agricultural land conversion, cattle incursion and fire.

Carbon Tanzania is currently working with York University to develop an app, which can be used by our teams in the field. This app allows for the recording of all the monitoring parameters (in Swahili) to be sent immediately by the GPRS network. This is especially the case for poaching incidents where CT can engage with district government as incidents occur, increasing response time.

5.2. Results

5.2.1. Land use change

There ***was no reported land incursions*** within the project area or leakage area involving land use change that might impact the above ground biomass, this includes agriculture activity within the project area and leakage area during the 2012 - 2013 period.

5.2.1. Cattle incursions

Cattle incursions were reported on 9 separate incidents, where these incidents occurred along with non agricultural land conversion (2 incidents) (see Figure 5.1. below) the incidents where reported to the village government and acted upon at a



local level, of 9 reported cattle incursions all were reported to local government and action was taken to remove the cattle through a procedural non-conflict manner involving relevant authorities. Of these 6 incidents, the pastoralists were asked to leave the area by the village executive officer. In October 2013 a large meeting was held by UCRT to address the issues of cattle within the project area, in response to this UCRT have designated areas outside of the project area (shown in the land use plan Figure 3.1) in Eastern Mungo Wa Mono with sign posts which clearly state that the areas are for pastoralist use.

These areas are within the existing village land use plan are within the area in which Carbon Tanzania plans to extend the Yaeda REDD project (Yaeda II)(see map 2.1. section 2). The project extension will aim to increase revenue for pastoralist communities having a two fold impact, firstly relieving pressure on Yaeda I whilst at the same time distributing revenue to communities not within the catchment of the current REDD project. Carbon Tanzania has been approached by all of the surrounding communities and villages asking to extend the project, however we can only work within areas where land use plans are completed and there is clear and designated rights over land use and ownership. It is likely that further extensions from Yaeda II may become possible as these land use plans and ownership rights are completed.

5.2.2. Poaching incidents

Carbon Tanzania and partners have focused efforts addressing the poaching incidents recorded during the 2012-2013 period. Especially the 8 incidents involving guns. This is a particularly relevant issue as guns are needed to hunt larger mammals, mammals that provide food for the Hadzabe. Operationally this has meant increasing the involvement of pastoralists surrounding the project area, engaging with police, district government and the wildlife department. This action coincided with a larger anti-poaching effort within Tanzania, operation Tokomeza. This larger operation was put in place to address alarming levels of Elephant poaching and has had a national impact on poaching cases. In 2012-2013 period there has been no records of hunting with guns within the project area. This result is properly a combination of our efforts with a heightened response from the district government and wildlife division. Poaching incidents without guns has remained the same, this is mainly for smaller mammals and birds by non-hadzabe subsistence hunting, this is seen as less of a threat to the Hadzabe lifestyle and livelihood.

Figure 5.1. Comparison of reported incidents between the reporting period 2012-2013 / 2013 – 2014.



Year	Poaching with guns	Poaching without guns	Cattle incursion	Non-agricultural land incursion (cattle enclosure)	Agricultural land conversion
2012 - 2013	8	7	7	2	0
2013 - 2014	0	7	9	2	0

The 2013 – 2014 period saw the same amount of poaching incidents recorded (n=7) however the number of incidents involving firearms dropped from 8 to 0. This is largely due to increasing awareness of this area being under increased protection and management. Poaching with guns was seen as a threat to the Hadzabe and has been a focus for this project.

*When cattle are moved into the area, enclosures are created using of *Acacia* and *Commiphora* thorn trees, this involves cutting small amounts of branches from trees, not the removal of trees.

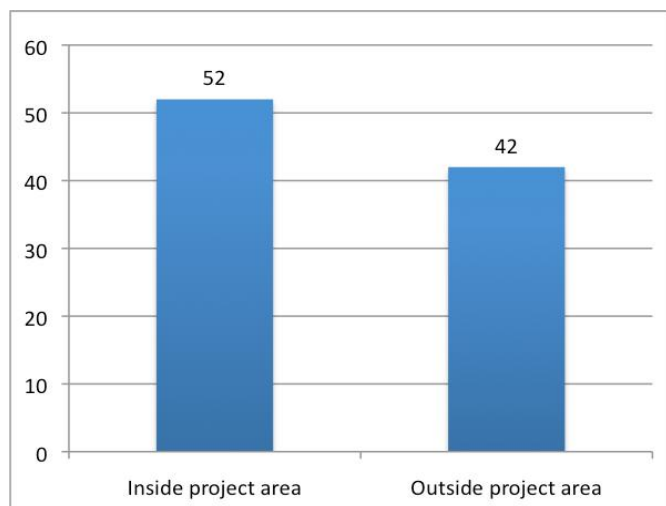
5.2.3. Biodiversity monitoring

Birds

Biodiversity monitoring aims to set a baseline for future change detection, in February 2014 Carbon Tanzania conducted its second avifauna timed species count (TSC) in the same area and at the same date of the previous survey, as before all bird monitoring and analysis was conducted by the Carbon Tanzania team due to the skills required to identify specific species. Timed Species Counts (TSCs) were recorded to two locations, inside the project area (within undisturbed *Acacia* – *Commiphora* woodland) and outside the project area (within mixed woodland and agriculture), the results of the species diversity are shown in fig 5.2. As expected species diversity is greater within the project area, this is baseline data and the annual counts may indicate variation in the future, if so this would be further analysed to understand the change.



Fig 5.2. Species diversity within and outside the project area, 2014.



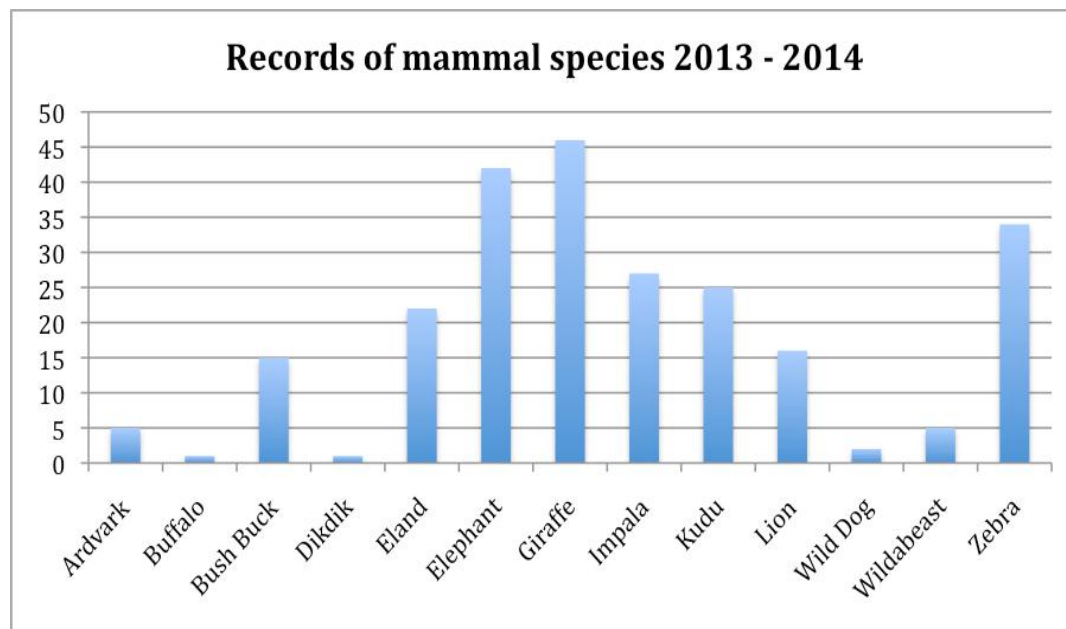
The TSC data indicates no change, a results expected as there has been no land use change within the project area. All data is added to the national Tanzania Bird Atlas as part of Carbon Tanzania commitment to interaction with national level organisations.

Mammal monitoring

Mammals are monitored by the community teams as an indication of presence and absence only. Figure 5.3. below indicates the number of times each of the large mammal species were observed during the 2012 - 2013 monitoring cycle. It should be noted than many of these large mammals range over large areas and knowledge of migration routes is still basic.



Fig 5.3. Record of mammal species



6. PES update

Payments to date

Payments made to producers, Figure 6.1. (as of February 2014), figures are in Tshs with exchange rate of Tshs1600 / 1usd. A community payment is due for May 2014, which will incorporate sales from end of last year. This will be 10,800 usd



(Tshs17,200,000/-) per community (\$21,600 usd). All payments to communities are based on the results based payment plan (see Annex Figure 10.2.).

Figure 6.1. Payments to communities.

Community / village	(Tshs / Usd)	Direct payments to Walinzi Wajadi	
Mongo Wa Mono	14,993,000/- 9,670usd	3,995,000/- 2,575usd	
Domanga	14,217,000/- 9,170usd	3,995,000/- 2,575usd	
Total	18,840usd	5,150usd	23,990usd

For details of total income / outcome see section 8.



7. Ongoing Community Participation

Community participation has been ongoing throughout the 2013 - 2014 project period (see section 2). The CAR (01/12) identified by Plan Vivo has been enacted and Carbon Tanzania now has bi-annual meetings with the community, in addition to the quality assurance visits made every trimester to collect monitoring data and carry out specific tasks such as TSC (see section 5.2.3.). These meetings are scheduled within the first week of May and in the first week of October every year. This date was chosen to coincide with project issuance and contractual agreements, annual reports aim to be completed by the first week of March, Plan Vivo then have 30 days to reply and issue credits to the Markit registry. Carbon Tanzania then have time to prepare payments to the communities to allow for payments to coincide with the annual meeting in the first week of May, which allows for a delivery of the annual report, monitoring etc to the communities and payment which reflects the results based payment plan.

The aim of these meetings is two fold, firstly to discuss carbon sales and to inform the community as to how much money will be transferred into their accounts. Secondly to review the monitoring data indicating that carbon payments are based on the results-based payments plan in the contract (shown in annex). This forum involves all community members and village government and allows for discussion on what money should be spent on and any problems arising from within the community. These meetings are attended by Carbon Tanzania and UCRT.

There are now 24 individuals within the community directly employed, 2 project coordinators (one per village) who report directly to Carbon Tanzania. 20 Walinzi Wajadi (village scouts) who patrol the project area and collect data which feeds into this report (section 5) and 2 Mlezi (literally a counsellor), community elders who work with, coordinate and represent the walinzi wajadi (see picture below).



Figure 7.1. Walinzi Wajadi, Domanga.





8. Breakdown of Operational Costs

Expense	Description	Cost (US\$)	Contribution from sales of Plan Vivo Certificates	Contribution from other income (e.g. grants)
<i>Personnel*</i>	<i>Project Co-ordinator</i>	<i>\$36,000</i>	<i>0</i>	<i>Pro bono</i>
<i>Personnel</i>	<i>Sales and Finance Manager</i>	<i>\$36,000</i>	<i>0</i>	<i>Pro bono</i>
Payments to community	2 x 6 month payments 12 x 1 month payments	\$14,990 \$9,000	\$23,990	0
Office / admin	Supplies, printing etc...	\$350	\$350	0
Equipment	GPS units, cameras, tents, survey tools etc...	\$250	\$250	0
Travel / field work	Vehicle hire, food and supplies in the field	\$6,870	\$6,870	0
Consultancy (outside provider)	Financial / technical	\$9,200	\$9,200	0
Extra activities	Government payments**, contract development, support to villages /	\$1900	\$1900	0



	volunteers			
Audits	Validation costs PIN PDD Tech Spec Plan Vivo Desk Review Project visit	n/a	n/a	0
Marketing	Consultant fees / website development / conferences	\$2,500	\$2,500	0
Total project costs 2013*			\$45,060	0

*The company owners and project developers have invested time into project administration pro-bono, so whilst the cost is shown to provide a financial baseline project development the revenue is not taken out of the sale of PVC's.

** Government payments are based on per diems or sitting allowances, it is law in Tanzania to pay any government official a sitting allowance for them to attend a meeting.

9. Future Development

9.1. Project expansion (see section 2 for details)

In 2014 Carbon Tanzania will be aiming to increase the area under this REDD project by a further 15-20,000ha in Mongo Wa Mono and Yaeda Chini. This project expansion is adjacent to the current project area and has been defined in the PDD. The project expansion will require a further technical specification as the drivers of deforestation, whilst still mainly agriculture are geographically different from the current project, Carbon Tanzania aims to have these technical specifications ready for



submission to the foundation by the third trimester of 2014 with the aim of issuance being ready for the next annual report in March-May 2015.

In addition to the expansion of the REDD project, Carbon Tanzania aims to include soil carbon in it's baseline calculations for the entire project area, preliminary samples (below fig 9.1.) indicate this may be viable however the Carbon Tanzania team are still investigating methodologies and want to ensure that any methodology meets that required by the Plan Vivo technical standards prior to investing in the field operations.

Fig 9.1. Preliminary Soil Samples for Domanga village area.

Sample no	Dry soil weight (gm)	Organic carbon (OC) as percentage of dry weight	Organic carbon (OC) as proportion of dry weight	total C in gm	Organic matter OM
1	246.8	4.5	0.05	11.11	7.33%
2	311.9	0.93	0.01	2.90	1.60%
3	191.7	2.13	0.02	4.08	3.68%
4	115.1	2.55	0.03	2.94	4.40%
5	150	1.32	0.01	1.98	2.28%
6	311.9	1.77	0.02	5.52	3.05%
7	231.3	2.21	0.02	5.11	3.81%
8	221.1	2	0.02	4.42	3.45%
9	241.4	2.95	0.03	7.12	5.08%
10	125.6	2.45	0.02	3.08	4.18%



11	256.3	4.12	0.04	10.56	7.11%
Total	2403.1	26.93			
Mean	218.5	2.4			

9.2. Monitoring updates

9.2.1. Monitoring Megafauna

Carbon Tanzania recognises that the monitoring of megafauna is complex, whilst the community monitoring teams are able to show presence and absence of species, CT wants to refine the monitoring data to link mammal consumption by the hadzabe to establish if protein consumption increases over time. The availability of protein through hunting which is likely to be improved due to the reduction of poaching incidents (see section 5) is an important socio-economic indicator for the Hadzabe and thus a focus for CT and partners.

9.2.2. Balanced scorecard

Carbon Tanzania are working with a masters student from Edinburgh University to develop a balanced scorecard to increase the quality and usability of monitoring data throughout the organisation. This will in time include our field monitoring data and help to further quantify the socio – economic aspects of the project from the Hadza perspective. We expect this to be completed in mid 2014.

9.2.3. Aerial images using drone

Carbon Tanzania is experimenting with using a drone helicopter to conduct aerial imagery as a cost effective way of monitoring land use change in target areas.



Figure 10.2 Results-based payment plan

Deforestation Indicator	Payment Response/ Adjustment	Avoided deforestation targets and Payment amounts based on lower sale price of 5usd / tCO ₂ e and structured upwards to ensure 60% of sale price is transferred to the community
Annual Monitoring shows that deforestation within the project area and leakage belt is prevented through project interventions equalling a reduced rate of deforestation >90% of baseline conditions calculated from the reference region.	Payments continues as per schedule	<u>Payment for Avoided Deforestation</u> <ul style="list-style-type: none"> - 138+ ha conserved per year - 138 ha eligible for crediting per year - 116tCO₂ stored in each ha - 16,011tCO₂ eligible to sell per year - Target price 7usd / tonne - Target payment to community: \$67,245 (60%)
Deforestation reduced by 40% - 90% of baseline	Payments reduced until corrective measures are taken and evidenced as effective in next annual	<u>Payment for Avoided Deforestation</u> <ul style="list-style-type: none"> - 69 – 138 ha conserved per year - 69 – 138 ha eligible for crediting per year - 116tCO₂ stored in each ha - 8,005 – 16,011tCO₂ eligible to sell per year



	assessment	<ul style="list-style-type: none"> - Target price 7usd / tonne - Target payment to community:\$33,623/\$67,245(60%)
		<u>Payment to Walinzi Wajadi and Community Coordinator</u> <ul style="list-style-type: none"> - 45.75 – 155.55 ha conserved per year - Payments outlined in 1.2d of contract reduced by 50% until corrective measures are taken and evidenced as effective in next annual assessment
Deforestation reduced by <40% of baseline	Payments suspended until corrective measures are taken and evidenced as effective in next annual assessment	<u>Payment for Avoided Deforestation</u> <ul style="list-style-type: none"> - 0 – 45.75 ha conserved per year - No credits purchased and US\$0 paid to Villages/ Jamii Fund until corrective measures are taken and evidenced in next annual assessment.
		<u>Payment to Walinzi Wajadi and Community Coordinator</u> <ul style="list-style-type: none"> - 0 – 45.75 ha conserved - Payments outlined in 1.2d of contract suspended until corrective measures are taken and evidenced as effective in next annual assessment.



Figure 10.3. Updated activity-based monitoring protocol (Technical Specifications v.2.)

Green: Indicates that the project is on track to achieve the expected climate benefits and issuance continues as per the performance targets in Table 11 and contractual agreements with the communities.

Orange: Indicates some project activities are not on track to deliver the expected climate benefits. If one or more of these indicators are orange then corrective actions are needed and are to be reported in the annual report to Plan Vivo. Issuance maybe withheld from Carbon Tanzania and revenue maybe withheld from communities depending on the indicator or the performance targets in Table 11. (Deforestation reduced by 40% - 90% of baseline) until evidence is shown of a corrective action being taken and having an impact.

Red: Indicates that project activities have are on track to deliver the expected climate benefits. If the project has one or more red indicator, corrective actions are required and issuance is withheld from Carbon Tanzania and payments are withheld from communities until evidence is shown of corrective action being taken.

Indicator	Thresholds			Means of verification
	Green	Orange	Red	
Community user rights over forest based resources	User rights over forest based resources are enacted through national laws and acts governing natural resource use. Knowledge of these laws and acts is understood by participating communities.	User rights over forest based resources are enacted through national laws and acts governing natural resource use. These laws and acts are poorly understood by participating communities.	New acts governing resource use are proposed by the government removing ownership rights from participating communities that directly impact the legal basis of this project.	1. CT and UCRT and closely engaged in policy development with local and national government. 2. Training is continually being conducted on user rights with participating communities.
Community tenure and ownership over land	Land use plan and associated by laws are documented and implemented. Boundaries are clear and well understood. Community rights over land is secure through Community Customary Rights of	Conflict over land use zones, the land use plan or changes to village land planning laws create unplanned changes to the current land use plan and associated Community Customary Rights of Occupancy (CCRO).	Conflict over land use zones, the land use plan or changes to village land planning laws create unplanned changes resulting in voiding of current land use plan, management regime and CCRO.	1. CT and UCRT and closely engaged in policy development with local and national government. 2. Concrete boundary markers are in place and accompanied by clearly marked signs. 3. UCRT work to manage any



	Occupancy (CCRO).			potential land use conflicts
Management Institutions	UCRT, CT, village government and tribal leaders continue to work towards the common goal of improved land management.	Either UCRT, CT, village government or tribal leaders decide to opt out of the goals of improved land management resulting in a restructuring of contractual agreements.	Management institutions collapse leading to lack of cohesion within local government or tribal leadership. CT or UCRT cease to operate resulting in a failure of project operations.	<ol style="list-style-type: none"> 1. Reports from village government and tribal leadership. 2. Monthly monitoring indicates discourse between parties. 3. CT and UCRT work closely with local, regional and national government agencies. 4. Scheduled bi-annual village, community, UCRT and CT meetings provide clear means of communication.
Effort spent on conflict resolution by UCRT	UCRT spend \leq 14 days a year dedicated to land conflict in the project area.	UCRT spend \leq 1 months a year dedicated to land conflict in project area.	UCRT spend \geq 2 months a year dedicated to land use conflict in the project area	UCRT report activities to Carbon Tanzania through scheduled trimester meetings.
Coverage by community guards	Community guards have covered and reported on \geq 50% of project area and leakage area that month.	Community guards fail to cover or report on \geq 30% of project or leakage area that month.	Community guards fail to patrol, collect data or report on project or leakage area.	<ol style="list-style-type: none"> 1. Data loggers and GPS provide quantitative data on movement by community guards. 2. Monthly monitoring forms are collated and collected by CT and indicate activity.
Land use change	Community guards reporting through the monthly monitoring system indicate no land use change occurred within the project area.	Community guards reporting through the monthly monitoring system indicate farming or land clearance within the leakage area or project area \geq 10% buffer. Village government immediately acts on information and reports to CT and UCRT.	Community guards reporting through the monthly monitoring system indicate farming or land clearance within the leakage area or project area \geq 10%. Village government fails to act on information and report to CT and UCRT.	<ol style="list-style-type: none"> 1. Monitoring reports collated monthly by the local project coordinators are sent to CT and UCRT, these document and geo-reference all land use change and the response by village district government. 2. By-laws enacted through the land use plan make it illegal to farm or clear land in the project



				area.
Payments to the community guards , communities and local government	Monthly payments to the community guards provide the incentive to carry out project activities and community payments are realized to ensure all community members and local government parties benefit from carbon revenue.	Monthly payments to the patrol teams provide the incentive to carry out project activities however revenue to communities and local government parties is not paid so limited benefits may in result discontent in the project.	No payments are made to patrol teams, communities, or local government and no benefits are realized from carbon revenue.	<p>1. CT conducts its own sales and marketing to ensure revenue is available from sales of carbon offsets and is able to predict and manage payments to communities, village and district government.</p> <p>2. CT pays the patrol teams directly using M-Pesa ensuring payments are always made.</p>