



Annual Report

01 FEB 2014 – 31 JAN 2015

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

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Our Vision

Carbon Tanzania's vision is that forest communities value their environment because of the direct and global benefits they derive from it. The global community invests in intact tropical ecosystems that are a cornerstone of global ecological health.

Who we are

Carbon Tanzania is an innovative conservation organisation, registered as a Tanzanian not-for-profit company based in Arusha, northern Tanzania. Founded by three dedicated conservation biologists, *Njano Mbilinyi, Marc Baker and St. John Anderson*, Carbon Tanzania's primary business focus is to provide unique skills, knowledge and experience-based services and interventions that lead to the production and delivery to market of forest-based carbon offsets. These offsets are generated through the actions of local Tanzanian communities conserving and managing their indigenous trees and forests.

Central to Carbon Tanzania's innovative conservation approach is a fundamental respect for local community land rights; this approach generates significant and sustained local economic benefits that incentivize and enable communities to conserve their immediate environment on which their way of life depends. It simultaneously contributes to preserving their traditional way of life and affords local communities increased options for how they manage their land.

Carbon Tanzania is a market leader in providing forest-based offsets to the Tanzanian tourism sector, as well as supplying an increasing number of offsets to the global voluntary carbon market. It provides a unique, tailored service to its clients including product support, institutional education and corporate social responsibility advice.

Our track record

Carbon Tanzania has proven its concept through successfully developing its flagship community project in the Yaeda Valley in northern Tanzania with a managed area of 20,790 hectares, which is now in its third year of generating internationally verified carbon offsets, represented by 16,011 PVC (tCO₂e) per year in avoided emissions. To date Carbon Tanzania has succeeded in selling the community-generated offsets at above average market price to both local and international buyers. This has resulted in over US\$60,000 being channelled to communities in the area, with yearly income to communities from this single project set to exceed US\$60,000 per year going forward. Validated through the Plan Vivo Standard, this project is particularly noteworthy in that it is reinforcing the land and natural resource rights of the Hadza people, a unique hunter-gatherer community that has lived in the Yaeda Valley for some 40,000 years.

Our Theory of Change

We view our role as linking global environmental concerns with local economic and livelihood needs. It is now widely accepted that we need to better manage the impact of greenhouse gas emissions on the global ecosystem in order to maintain and promote a healthy environment for human populations. Equally, rural communities in developing nations face daily challenges around managing their immediate environment that have wider consequences in the global context. Growing awareness of the critical role of tropical terrestrial ecosystems in regulating global climate systems means that there is a self-serving interest for actors in more developed countries (particularly in North America and Europe) to invest in the conservation of forest habitats in the tropics, predominantly located in developing nations. Local communities often keenly appreciate the benefits that they can derive from their natural resources, but these benefits are often intangible, non-fungible and are realised over the long-term. Immediate economic needs can lead communities to accept short-term economic benefits

that are too often realised through resource exploitation or donor funded initiatives, neither of which guarantee long-term sustainable returns or safeguards for traditional livelihoods.

Carbon Tanzania seeks to combine elements of conventional integrated conservation and development projects (ICDP) with a “payments for ecosystem services” (PES) approach. In some quarters, REDD+ has been conceived more narrowly as simply a system of conditional performance-based payments (PES)¹. Projects developed by Carbon Tanzania are similarly premised on performance based payments, but we have gone further in developing an approach to project implementation that recognizes the part that can be played by tried and tested interventions. These include participatory land use mapping, boundary determination, development of village land use plans, clarification of tenure, and introduction of alternatives to, or improved technology for, firewood and charcoal (e.g. energy efficient stoves).

Carbon Tanzania is the only private sector initiative in Tanzania that has successfully partnered with forest-adjacent communities to develop and implement an internationally accredited avoided deforestation project in natural forest, resulting in payments to communities from the voluntary carbon marketplace. In this regard, Carbon Tanzania has developed a clear understanding, well-regarded track record and proof of concept of how avoided deforestation projects can be successfully developed and implemented in Tanzania, despite the complexity of the operating environment. We have pioneered a business approach to meeting biodiversity conservation goals that simultaneously delivers reduced GHG emissions, improved livelihoods, localised economic development and support for traditional cultural values

¹ Sills *et al.* (2009), The evolving landscape of REDD+ projects.

Summary of Yaeda Valley REDD project for 2014

In 2014, Carbon Tanzania has focused on improving community monitoring protocols, sales and marketing and preparing the way for a project extension in the Yaeda valley. The new activity based monitoring system forms the basis for annual ex-post issuance of Plan Vivo Credits (see appendix), and incorporates community monitoring data, whilst also tracking institutional arrangements and finance which is key for supporting this unique REDD+² project.

Figure 1. Project summary and request for issuance for period 1st February 2014 – 31st January 2015.

Project overview	
Reporting period	1st February 2014 – 31st January 2015
Geographical area	Yaeda Valley, Mbulu Distict. 34.3E/03.30S
Technical specifications in use	Reducing Emissions from Deforestation and Forest Degradation in the Yaeda Valley. V2. January 2015.
Area under management (ha) Areas put under management since last report (ha)	20,790ha Project area <i>no new areas added in this reporting period</i>
Project indicators to date	
Community groups with plan vivos and PES agreements (total)	Two communities, Mongo Wa Mono and Domanga (approx. 1200 people) following the CCRO / land use plan outlined in the Technical specifications.
Total PES payments made to communities to date (USD)	61,173USD (Tshs 104,000,000 @ 1700 tshs/usd)
Total PES to be paid in May 2015	15,290USD
Plan Vivo Certificates issued to date	32,022
Project activity this reporting period	
Community groups with PES agreements signed	Two communities, Mongo Wa Mono and Domanga (approx.1200 people) following the CCRO / land use plan outlined in the Technical specifications.
Approximate number of people	1,200 with seasonal variation
Submission for PVC Issuance (tCO2)	16,011 PVCs

² Reduced emissions from deforestation and degradation (REDD) + relates to the co-benefits.

A. Project updates

Key Events, Developments and Challenges

A.1 Key Events in chronological order from 27rd February 2014 to 27th January 2015

27 February: Completion of business canvas and updated business plan following a week planning exercise with external consultant. This is in preparation for CT to attract external investment in both company operational capacity and project expansion (Yaeda phase II).

10 – 14 March: Market survey completed to enable accurate data for business development plan.

15 March: Signed agreement forming the Northern Tanzania Rangelands Initiative (NTRI) of which Carbon Tanzania is a core partner (<http://www.nature.org/ourinitiatives/regions/africa/wherewework/northern-tanzania.xml>). NTRI has been created to allow a multi organisational (skills) approach to land management with Carbon Tanzania providing for value added innovation to pastoralist and hunter-gatherer lands. With NTRI Carbon Tanzania is applying for USAID funding for project development outside of the Yaeda Valley.

20 – 27 March: Redesign of activity monitoring data to allow the project management to more easily retrieve, analyse and present data on specific issues relating to poaching, governance and land incursion. The redesign of the monitoring allows us to be more thorough and accurate in identifying possible threats to project success and operation. (<http://www.carbontanzania.com/news-from-the-field-may-to-sept-2014/>)

27 – 29 April: Financial planning exercise conducted in Domanga and Mongo Wa Mono with the aim of teaching the participating communities to improve decision making by better understanding what are firm time sensitive financial priorities such as the Haydom Hospital Fund and school fees.

30 April: Carbon Tanzania held its first offsetter event, an evening where companies working with Carbon Tanzania are given certificates showing the amount of CO₂e offset and what that relates to in terms of hectares of forest in Yaeda. This is also a chance for companies to meet each other and chat with people working on project operations and development.

1 May: Completion of the Haidom Hospital Fund. The Haidom Hospital is the closest medical facility for the Hadzabe, Carbon Tanzania and Dorobo Safaris wanted to ensure there was always enough in the fund to allow Hadzabe to get free medical treatment. Haidom are also willing to allow the fund to go into negative balance knowing that funds will be paid subsequently. (<http://www.carbontanzania.com/hadza-medical-fund-established-using-carbon-revenues/>).

5 June: Completion of the new Carbon Tanzania website.

July - MSc student from Edinburgh University spends a month with Carbon Tanzania gaining experience and develops a balanced scorecard as a tool for improved monitoring.

2 – 4 August: Training in Yaeda with use of data-loggers and new GPS camera units to communities to improve monitoring.

20 August: Initial discussions with HRSV – a Dutch social impact fund on possible synergies with Carbon Tanzania and potential investments in both company operations and project expansion.

22 October: CT attends Code REDD talks in London.

11 November: CT attends REDD learning event in Jakarta, Indonesia. Organised by The Nature Conservancy, this meeting focused on how REDD+ can expand from projects to a jurisdictional approach.

2 December: Finalise details for HRSV investment in Carbon Tanzania. This 80,000 Euro investment will allow Carbon Tanzania to increase focus on sales and marketing, as well as supporting project expansion in the Yaeda Valley.

14 January: Business Development Manager (BDM) position identified within Carbon Tanzania with the aim of having this person in position by 1st May 2015. The BDM will have full responsibility for increasing and diversifying Carbon Tanzania's client base whilst also ensuring current clients CSR needs are fully met. The BDM will be based in Arusha.

17 January: Revised technical specifications, with additional activity based monitoring assessed by the Plan Vivo Technical Advisory Committee. REDD in the Yaeda Valley v.2 accepted and added to project page; <http://www.planvivo.org/projects/registeredprojects/yaeda-valley-redd-project/>

A.2. Key Challenges

Project operations

Land use and rights are secure. However, ensuring by-laws are followed is dependent on ongoing project operations and revenue generated for communities and local governance structures. Carbon Tanzania fully understands that this essentially means being able to continue sales so we can meet financial expectations and commitments. Whilst the walinzi wajadi (community scouts) are arresting small scale meat poachers, greater effort is required to ensure these issues are taken seriously by authorities and the judicial system.

Sales

Bringing credits to market at a value that reflects expectations and project operations means Carbon Tanzania must diversify and increase its sales of PVCs. With this in mind we have employed a BDM (see above) to refine social media marketing and increase both Tanzanian and overseas based markets for PVCs at 10usd/t. Whilst our international agreements with Native Energy in the USA for 2,500tCO₂e at 7usd/tCO₂e reflects a more realistic price through brokers so Carbon Tanzania feels development and diversification of sales as the more robust business model.

A.3. Key Developments

Project operations

REDD in the Yaeda Valley Phase I

In 2014, Carbon Tanzania focused on improving the monitoring protocols and developed a new activity monitoring system for its annual ex-post issuance. This activity based monitoring system (see appendix) incorporates not only the collated on site monitoring data, but also allows for tracking institutional arrangements and finance supporting this unique REDD+ project. The activity based monitoring also allows for a more intuitive way of presenting monitoring data.

REDD in the Yaeda Valley Phase II – Project Extension

The technical specifications for the Yaeda extension (Yaeda II) are in process. This extension of the current REDD+ project will double the area land certified under Plan Vivo in 2014, specifically CT is aiming to have this project on line by the end of 2015. This land area is under the same type of management as the current project and is adjacent to the current project area (See fig 2.). The Above Ground Biomass study is now complete (see figure 3. tC/ha) and we are now compiling the CCRO maps and change detection. We expect to have the technical specification ready for peer review by the Plan Vivo technical committee in May 2015.

Figure 2. 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).

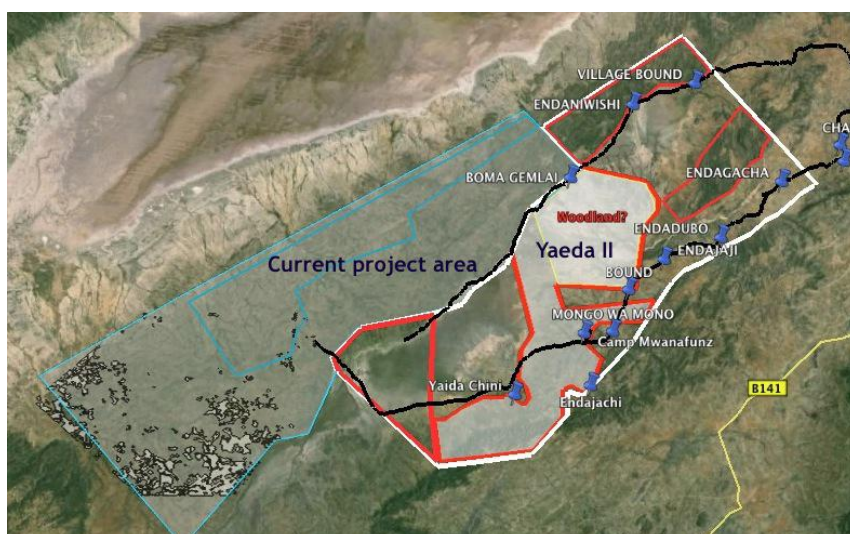
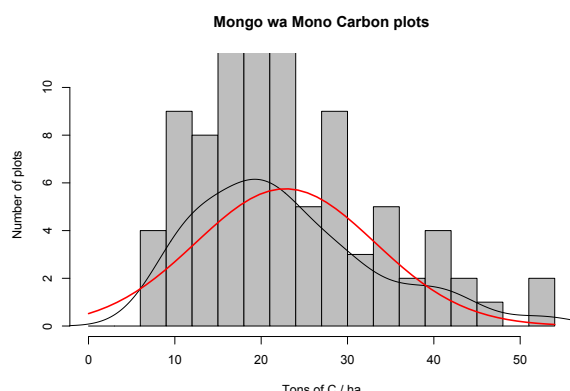


Figure 3. Analysis of above ground biomass for Yaeda II using R³.



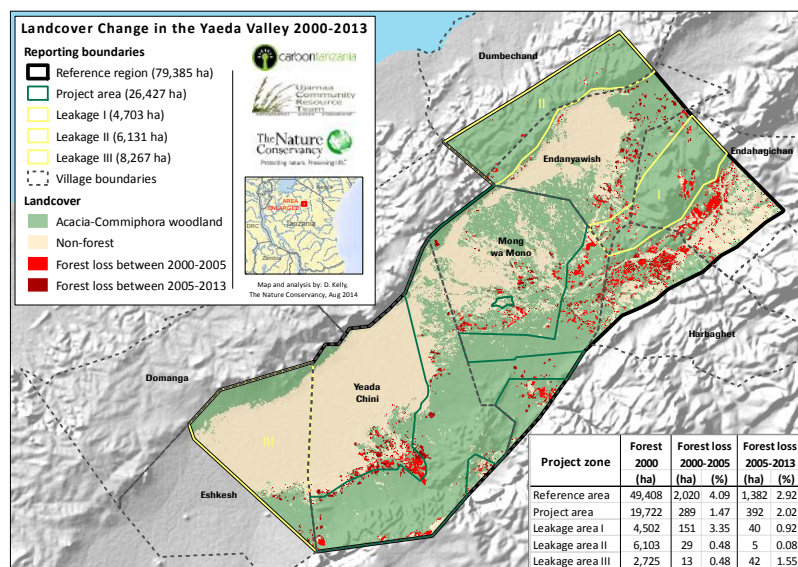
Plots	tC/ha	tCO ₂ e/ha
92	22.81	83.64
s.d.	10.40387369	
var.	108.2405877	

With 92 plots conducted to reach 95% CI the result is 22.8 tC/ha (83.6tCO₂e/ha).

This project extension is an important part of Carbon Tanzania's current project and outcomes. Incorporating adjacent communities within the land use planning, land utilisation and payments mechanism both reduces the risk within the current project area, and brings separate villages and communities into a positive land use planning process. Figure 3 below is an outline of current deforestation levels and areas within the land use plan, and gives a clear indication of the current rate of deforestation.

³ R is a statistical package that allows the user to develop their own script. In this case with species specific biometric equations.

Figure 4. Land cover change in the Yaeda Valley 2000-2013.



Operational management and planning

Carbon Tanzania has continued its operational management and training exercises to clearly identify gaps and needs within the organisation. Two positions have been identified which will be advertised with the aim of these key people being in position by May 2015.

1. Business Development Manager – This individual will be required to develop, implement and achieve, in line with agreed plans and budgets, a range of proactive activities in order to maximise income generation through both corporate and major donor lines of business engagement

- To maintain a portfolio of existing supporter relationships and donors;
- To research and develop relationships with potential new clients / off-setters;
- To actively participate in Carbon Tanzania's networks with businesses and major donors
- To complete tailored fundraising proposals and applications to funding bodies and potential off-setters
- To meet with and present to potential off-setters as appropriate
- To maintain all appropriate client records and returns
- To undertake ad hoc special projects
- To manage a business relationship management system
- To assist with the analysis of increasing clients against targets.
- To undertake general web maintenance and liaise with our communications support team to develop, and manage new revenue generating online marketing opportunities.
- To assist with events (which will involve some out of hours work)
- To assist with mailings of promotional material to members, clients, funders and key stakeholders

2. Yaeda Valley Coordinator – It is Carbon Tanzania's policy that whenever possible we employ from within the project area. We have identified someone who has recently completed a university degree in Biology and wants to return home to Yaeda Chini. Mr Issac Bryceson will be the coordinator for the Yaeda Phase II area starting in May 2015. His role will initially be like that of other coordinators with the hope of expanding this role to project development within the wider Yaeda valley to Ngorongoro area in the next 5 years.

Sales and Marketing

As a business primarily dependent on revenue generated from the sale of PVCs and other verified offsets, Carbon Tanzania sees the marketing of its current inventory of PVCs as critical to project operations. Carbon Tanzania has developed its own market in Tanzania with tourism companies and will be developing both national and international sales further in the coming year with the employment of a dedicated business development manager. Sales also link to project operations as Carbon Tanzania has incorporated payments to communities (see monitoring in appendix and results in section 5) as part of activity based monitoring. During 2014 CT has again increased its sales of REDD PVCs due to an increase in marketing efforts.

B. Project 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 has established a system of results-based payments for ecosystem services 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.

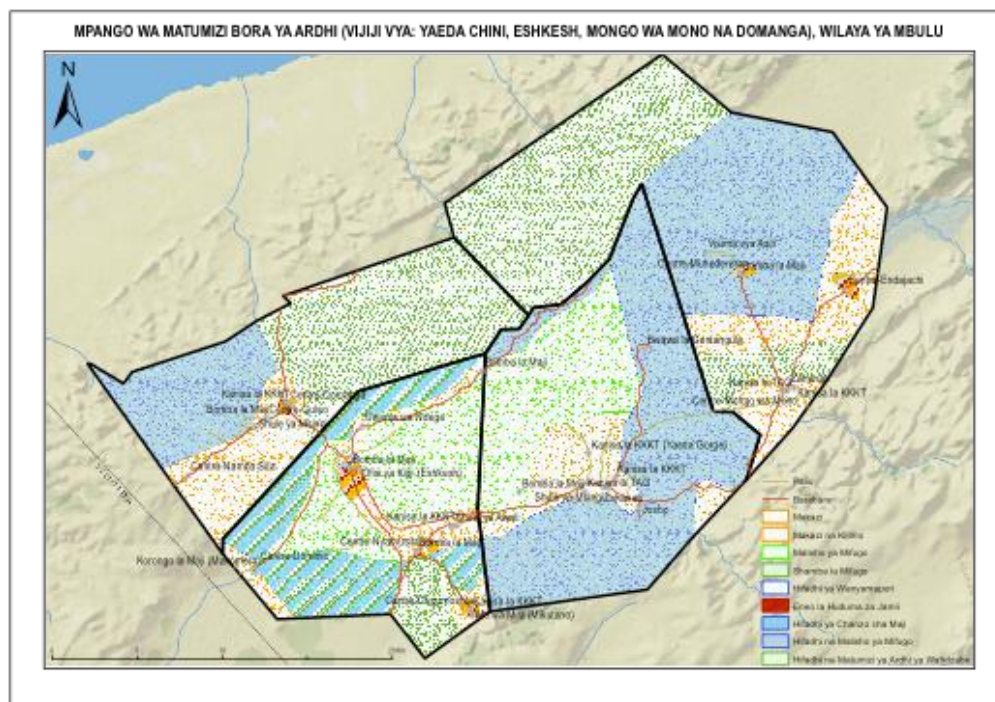
B.1 Project Activity Summary

Name of Technical specification	Area (ha)	No households	No communities
REDD in Yaeda Valley v.2	20,790	n/a	2

Successful avoided deforestation is being 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 occurring illegally within the designated project area. This data, with support from external government agencies, is being used to tackle illegal land intrusion and resulting land conversion at both local and district level. Farmers are supported through designated areas within the villages that have been identified based on best fit for agriculture; analysis of aspect and soil type allow for improved agricultural conversion but are external to the project area and any carbon calculations (fig 4.)

There are currently two communities engaged in this project with a plan to increase the project area by a further 15,000ha in 2015, which will include a further community, Yaeda Chini Village. The total area covered by the current project is 20,790ha of protected area shown in green (Figure 5).

Figure 5. Land use plan for Mongo Wa Mono, Domanga and Yaeda Chini villages



C. Plan Vivo Certificate Issuance Submission

Carbon Tanzania is applying for issuance of 16,011 PVC based on contractual agreements with the two Hadzabe communities, Mongo Wa Mono and Domanga, who have successfully carried out their obligations stated in the contractual agreements, which is reflected in the activity based monitoring results.

Table C.1 Statement of tCO₂e reductions available for issuance as PVCs, based on activity for reporting period February 2014 – January 2015 (see appendix for Markit retirements and issuances).

Area ID	tCO ₂ e issued from previous periods	Total tCO ₂ e achieved this period	Non permanence Risk % buffer	No of PVCs allocated to buffer account	Total No of PVCs allocated to buffer account (to date, including this issuance)	No of PVCs requested from saleable carbon	tCO ₂ e available for future issuances	Registry ID (Markit)
Yaeda I	32,022	20,013	20%	4,002	12,008	16,011	272,183	1010017222

C.2 Leakage

Carbon Tanzania has set a 10% non-recoverable leakage buffer. The project's primary leakage strategy is focused on two interventions. Participatory land use planning, the resulting land use plans and village by laws allow for planned agriculture in specific areas. These areas are not included in any carbon accounting and are adjacent to the project area. Scaling up of project activities such as the Yaeda II extension increases revenue to neighbouring communities, mitigating the need for ad-hoc farming. Training has been provided to the community which includes alternative methods of farming

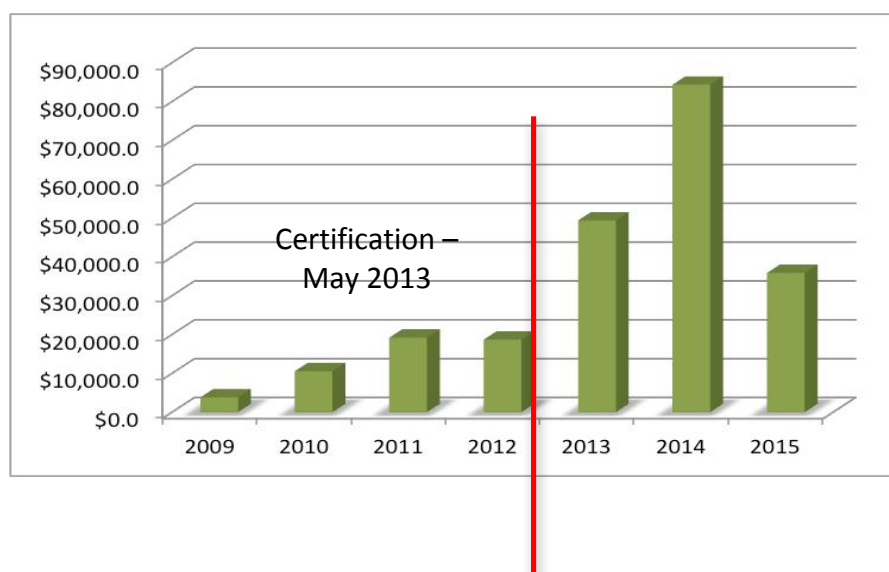
which are expected to improve their yields per acre through conservation agriculture (also known as zero tillage), not the use of fertilizers, which are often beyond the economic constraints of most migratory agriculturalists. This will, in turn, improve their livelihoods and minimize the potential for conflict with the Hadza who have begun to enforce their land use plan. Potential leakage is monitored monthly by the *Walinzi Wajadi* in the leakage area which is adjacent to the project area.

It is expected that potential leakage will reduce over time as a result of successful interventions and by engaging a greater number of villages in PES for avoided deforestation. In many cases the carbon value per hectare exceeds that obtained from poor agricultural techniques and as a result, it is likely that leakage will be positive rather than negative in the medium to long-term

D. Sales of Plan Vivo Certificates

Sales of PVC have increased in 2014 to 9,471 tCO₂e (PVC) (see figure 6 below). Whilst this is encouraging and reflects a diversification of sales, Carbon Tanzania wants to be selling or have signed agreements to sell its 16,011 annual PVC issuance by June every year, the Yaeda phase II issuance will complement this and Carbon Tanzania estimates it will be selling approximately 30,000 PVCs per year based on project developments and sales projections. With this end in mind Carbon Tanzania is employing a business development manager with strong sales and marketing expertise to expand and diversify our offsets by the end of 2015 and beyond.

Figure 6. Offset sales 2009 – 1st quarter 2015



Carbon Tanzania is committed to a responsible business approach to forest conservation, one that is grounded in practical and financial reality, that focuses on clear outcomes designed to deliver value to all participants in the project cycle, from our producer communities to our local and international offset purchasers, while creating revenues and cash flow for the company. It is self-evident that conservation outcomes cannot be delivered without economic incentives that adequately support project activities and align with community priorities, incentives that consistently outweigh alternative choices in the long run.

Currently Carbon Tanzania has three sales channels for its offsets: *direct sales, re-sellers and channel providers.*

Direct Clients:

Direct sales are the primary means of distribution making up 59% of aggregated sales volume and achieving the highest retail price at \$10 per PVC. Carbon Tanzania has developed a unique customer base in the Tanzanian tour operator sector that initially relied on the personal relationships of its founders with the target customers, and has subsequently evolved to include tourist outfitters and lodge and hotel owners seeking to enhance their eco-travel credentials. The local credibility of Carbon Tanzania combined with the relevance of the project activities to customer priorities means that new customers are being added in this segment monthly.

International Resellers:

In 2014 two resellers have continued to offset with Carbon Tanzania and driven significant sales growth making up 39% of the sales volume during the year. Due to the large volumes requested by this individual reseller, a lower \$7.5 per unit selling price has been achieved on these sales. However this pattern was not followed in 2014 when a smaller bulk sale was transacted with a European based re-seller where a price of US\$9.5 was obtained. This re-seller was similarly engaged directly by one of the founders of Carbon Tanzania, again emphasising the importance of personal contact with both customers and re-selling organisations. Re-sellers are set to become a cornerstone of Carbon Tanzania's sales and marketing strategy.

Channel Providers:

Only 2% of sales are currently distributed through a single channel provider (Sustainable Travel International) although the low cost of distribution, higher margins and long- term growth potential make this a key channel in line with the long- term growth strategy. This US based web portal provides Carbon Tanzania with a means to attract individuals who wish to offset their carbon-related impacts (primarily travel) and defrays the risks associated with dealing with the US tax system.



D.1 Buyers and transaction volumes in 2014 (see annex 3 for details on Markit retirement)

Buyer	Tonnes offset	Price /PVC (USD)	Vintage	Total sales (USD)
Abercrombie and Kent	1127		Yaeda1 2013	
African Environments	57		Yaeda1 2012	
Asilia Camps, Lodges and Safaris	779		Yaeda1 2013	
Dorobo Tours and Safaris	18.7		Yaeda1 2012	
Dorobo Tours and Safaris	11.2		Yaeda1 2012	
Dorobo Tours and Safaris	26.9		Yaeda1 2012	
Fair Travel Tanzania	79.9		Yaeda1 2012	
Guiding Principles	68.3		Yaeda1 2012	
Guiding Principles	134.6		Yaeda1 2012	
Kisima Ngeda Tented Camp	43		Yaeda1 2012	
The Map's Edge	94.4		Yaeda1 2012	
The Map's Edge	26.1		Yaeda1 2012	
The Map's Edge	134.1		Yaeda1 2012	
The Map's Edge	44.3		Yaeda1 2012	
The Map's Edge	216		Yaeda1 2012	
The Map's Edge	97.5		Yaeda1 2012	
Native Energy	4572		Yaeda1 2012	
Sustainable Travel International	512		Yaeda1 2012	
Sustainable Travel International	489.2		Yaeda1 2012	
Summits Africa	195.3		Yaeda1 2012	
Tarangire Safari Lodge	116.6		Yaeda1 2012	
Wildlife Explorer East Africa	128.7		Yaeda1 2013	
Zero Mission	500		Yaeda1 2012	

E. Summary of Monitoring Results

Activity based monitoring

Monthly community based monitoring of the project area targets three main threats, land incursion which results in habitat loss, thus loss of above ground biomass (this is within the project area and leakage area), 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. Importantly, the monthly community based monitoring also outlines how these issues were dealt with by local authorities so that UCRT and Carbon Tanzania can follow up in village and district meetings with recommendations of how potential issues can be resolved. In 2014 the Mbulu District Council ordered the police to station one officer in Yaeda Chini which has greatly increased the response and viability of enforcement.

E.1 Activity based monitoring results refer to the activity based monitoring schedule in the appendix.

Green: Indicates that the project is on track to achieve the expected climate benefits and issuance continues as per the performance targets 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 may be withheld from Carbon Tanzania and revenue may be withheld from communities depending on the indicator or the performance

Red: Indicates that project activities are not on track to deliver the expected climate benefits. If the project has one or more red indicators, 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

Figure 9. Activity based monitoring results.

Indicator	Thresholds			Means of verification / comment on threshold
	Green	Orange	Red	
Community user rights over forest-based resources				Land use plans are in place, no changes made to law or policy on user rights
Community tenure, ownership and rights over land				CCROs are in place, no changes made to law or policy on ownership
Management Institutions				All functioning
Effort spent on conflict resolution by UCRT				<7 days have been spent by UCRT in Yaeda in 2014
Coverage by community guards				Data loggers and monthly reports indicate approx 35% of project area was covered during January 2015 in Mongo wa Mono. This was due to heavy rains / no habitat impacts have been recorded post January 2015.
Land use change				No land use change reported or observed
Payments to the community guards, communities and local government				All payment schedules have been met due to positive sales of PVCs in 2014 period

E.2 Land use monitoring

Figure 10. Results of land use monitoring.

Threat	Occurrence	Reporting and action by community	Reporting and action by village / district
Unplanned agriculture	None	-	-
Illegal hunting (poaching)	12 hunting incidents were recorded in the project area. None of these incidents involved Elephant poaching, all were reserved to illegal meat poaching. Two of these involved firearms.	All incidents are reported to village and district government. A well known poacher was apprehended by the community scouts and taken to police.	Arrests are now frequent as Mbulu district have posted a policeman to Yaeda Chini village to deal with poaching and land use incidents. Revenue to allow them to operate, such as fuel for the police motorbike comes from carbon revenues.
Non-agricultural land conversion	The construction of bomas during the dry season (cattle corals measuring 25m in diameter) by Taatoga pastoralists continues to be recorded on the edge of the project area. Whilst some scrub is cut to manufacture the boma, it is a minor issue relating to biomass. However, our zero tolerance policy means all incidents must be recorded and dealt with.	Community scouts ask the Taatoga not to clear land within the project and report to the village chairman. Several Taatoga are unsure of the boundary.	Reported to village chairman who orders the boma to leave and refrain from any habitat clearance in the project area. The village chairman has ordered community members to walk the boundary with Taatoga to clarify.
Cattle incursion	Cattle incursions during the end of the dry season continue to be an issue, whilst this has no impact on above ground biomass, cattle herds displace wildlife so is a socio-economic issue for the Hadzabe.	The community and UCRT continue communicate the land use plan. In most cases the cattle are coming from outside of the area and people are simply unaware that land use planning is in place. In some cases pastoralists are simply desperate for land.	The opening of a police post in Yaeda Chini reflects a response by district government and greatly increases the response to illegal activity and reduces costs associated with taking people into custody. UCRT and Carbon Tanzania will continue to educate about land use planning and have now incorporated pastoralist areas, designated by signposts, into land use plans.

E.3. Biodiversity monitoring

The Hadza are one of Tanzania's most unique and threatened human cultures, with a deep reservoir of indigenous knowledge pertaining to natural resource use. The Hadza are strictly hunter-gatherers and do not raise any livestock, although some do keep fields of domestic crops. Whilst famine might be part of the cultural history of neighbouring pastoralists or agriculturalists, this is not the case for the Hadza as they can survive on a rich diversity of foods. As the Hadza are able to exploit a wide range of seasonally available birds, mammals and plant species our biodiversity monitoring program is interested on what types of mammals are consumed (Figure 11.) on an annual basis.



Avifauna

Avifauna are good long-term indicators of ecosystem health. Monitoring is conducted by the external Carbon Tanzania team in conjunction with the walinzi wajadi due to the skills required to identify specific species. Timed Species Counts (TSCs) were completed in two locations set in the baseline, inside the project area (within undisturbed Acacia – Commiphora woodland) and outside the project area (within mixed woodland and agriculture). The use of TSC counts allows for comparative analysis of the frequency of specific bird species between the two areas.

Mammals

Mammals were monitored by the community teams as an indication of presence (*observed: Obs*) as well as consumption by Hadza (*eaten: eat*). Larger mammal species can be split into two classes, resident and migratory, in 2014 the following mammal species were observed within the project area.

It should be noted than many of these large mammals range over large areas and knowledge of migration routes is still very basic.

Figure 11. Mammal records for 2014, Obs: observed, Eat: eaten. R: known resident, M: Possibly migratory, R/M?: Unknown.

		Observed: Obs, Eaten: Eat												Notes	
Species	Resident?	Jan	Feb	Mar	Apr	Ma	Jun	July	Aug	Sep	Oct	Nov	Dec		
Giraffe	R	Obs /eat	Obs	Obs	Obs		Obs					Obs		Resident populations with some migrants	
Elephant	M/R		Obs		Obs		Obs	Obs				Obs		Resident populations with some migrants	
Zebra	R	Obs	Obs /eat	Obs	Obs	Obs /eat	eat	Obs	eat	eat		eat		common	
Impala	R	Obs		Obs	Obs			Obs /eat	Obs /eat	Obs /eat		Obs /eat	Obs /eat	common	
Kudu	R	Obs	Obs	Obs /eat			Obs /eat				eat	eat	eat	Common and highly prized by Hadza	
Dikdik	R	Obs	Obs /eat	Obs	Obs /eat	Obs	Obs	Obs	Obs	Obs	Obs	Obs /eat	Obs	common	
Eland	R/M?	Obs	Obs /eat								eat			Known to range over large areas	
Heartebeest	R							Obs						Yaeda valley plains	
Buffalo	R/M?										Obs			Single animal found dead	
Warthog	R	Obs /eat	Obs /eat			Obs /eat		Obs /eat		Obs /eat	Obs	Obs /eat	Obs	common	
Bushbuck	R	Obs												Only recorded in certain habitats, secretive and possibly common	
Leopard	R		Obs						Obs		Obs	Obs		Resident and often heard	
Lion	R/M?		Obs	Obs										Almost certainly not resident	
Babbon	R	Obs	Obs	Obs	Obs /eat	Obs	Obs	Obs	Obs	Obs	Obs	Obs	Obs	Common	
Wild Dog	M			Obs										Radio collared individual recorded in Mongo wa Mono	

F. Impacts

Carbon Tanzania has proven its concept through successfully developing its flagship community project in the Yaeda Valley with a managed area of 20,790 hectares, which is now in its third year of generating PVCs, represented by 16,011 tCO₂e per year in avoided emissions. One of the impacts Carbon Tanzania is starting to acheive is a *transformative change* in the way communities govern and manage their land. This impact, whilst difficult to measure, is outlined in the monitoring data E.2., where reported incidents are now seeing greater action from authorities. This is partly driven by the actions of UCRT and Carbon Tanzania at a district level, but mainly by the communities feeling that they have a *element of expectation as the communities have decided to pay a percentage of their revenue to the district government*. One of the measured results has been the establishment of a police post in Yaeda Chini to ensure land use incursions and poaching incidents that are beyond the village by laws can be dealt with directly on site.

The Haydom Medical Fund has been an extremely positive impact, this rolling fund means that instead of the Hadzabe having to ensure the fund has money in it, the hospital has agreed that the fund can temporarily dip into negative territory with the knowledge that both Dorobo Safaris and Carbon Tanzania have committed to pay money directly into the fund on behalf of the communities.

G. Payment for Ecosystem Service update

All payments made to producers in May and November 2014 are based on contractual agreements and communities meeting their monitoring targets. Revenue dispersal is based on scheduled community meetings - these payment structures are outlined in detail in Annex 2.

Reporting year	Total first year payment (USD)	Total ongoing payments (USD)	Total payments made USD	Total payments held in trust	Total payments withheld
2011-2013	29,675	-	29,675	0	0
2014	31,503	Est. 15,000 in May 2015	31,503	Est. 15,000 in May 2015	0

H. On-going Community Participation

Community participation has been on-going throughout the 2014 - 2015 project period. Carbon Tanzania has bi-annual financial planning and conflict resolution meetings with the community in May and October every year (see figure 9). In addition to these meetings, quality assurance visits are made every trimester to collect monitoring data and carry out specific tasks such as TSCs. The dates of the financial planning meetings are chosen to coincide with project issuance, contractual agreements and peak needs of the community (see figure 9 below), which are usually related to seasonal conditions. Carbon Tanzania schedules payments to the communities to coincide with the annual meeting in the first week of May, which allows for a delivery of the annual report and monitoring data to the communities and the payments which reflects the results based payment plan.

Figure 12. Time frame – meetings, data, seasonality and community needs.
Green: Rains & Brown: Dry

Month & Season	Operational activities		Community revenue incoming / outgoing
	Carbon Tanzania	Community	
January		Monthly patrols and reporting to project coordinator	Schools fees paid to government
February	TSC / Visit to project site to collate monthly data, Quality Assurance trimester 1	Monthly patrols and reporting to project coordinator	<i>Availability of tubers and fruiting plants provides indigenous food.</i>
March		Monthly patrols and reporting to project coordinator	<i>Availability of tubers and fruiting plants provides indigenous food</i>
April		Monthly patrols and reporting to project coordinator	<i>Availability of tubers and fruiting plants provides indigenous food</i>
May	Bi-annual community/village government meetings Quality assurance trimester 2	Bi-annual community/village government meetings Monthly patrols and reporting to project coordinator	Revenue use is planned for the coming dry season (see section 8) -Haydom Medical Fund paid -allocation of revenue towards food purchase
June		Monthly patrols and reporting to project coordinator	Maize crop becomes available at low cost so food can be bought in bulk and stored
July		Monthly patrols and	

		reporting to project coordinator	
August		Monthly patrols and reporting to project coordinator	Food scarcity begins, greater nomadic movement by communities – increased dependency on use of <i>maize</i> and agricultural output
September	Quality assurance trimester 3.	Monthly patrols and reporting to project coordinator	Food scarcity - dependency on use of <i>maize</i> and agricultural output
October		Monthly patrols and reporting to project coordinator	<i>Undushibi berries become available – indigenous food begins end dry season (NB. This can vary)</i>
November	Bi-annual community/village government meetings	Bi-annual community/village government meetings	<i>Indigenous foods become more widely available reducing stress and increasing community cohesiveness. Revenue use is planned for the coming wet season (see section 8)</i>
December		Monthly patrols and reporting to project coordinator	

The main aim of these meetings is to discuss carbon sales and to inform the community as to how much money will be transferred into their accounts. 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 (see section 5). 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 that feeds into this report (section 5) and 2 Mlezi (literally a counsellor), community elders who advise, coordinate and represent the walinzi wajadi.

I. Project operating costs

Figure 13. Breakdown of Operational Costs (inclusive of 2013-2014)

Expense	Narrative	Cost (US\$)	Contribution from sales of Plan Vivo Certificates
Personnel	Project Co-ordinator		No
Personnel	Sales and Finance Manager		No
Village/community payments	Scouts/field assistants / village	32,679	100%
	Scouts	8,169	100%
	Community Contribution	22,494	100%
	Others Payment	1,515	100%
Office/admin	Supplies, printing	7,509	100%
	Printing and communication	2,035	100%
	Rent and utilities	4,880	100%
	Other office costs	102	100%
	Fuel and vehicle expenses	194	100%
	Travel and accommodation	298	100%
Equipment	GPS units, cameras, tents, survey tools (Motorbike-purchase)	2,938	0%: Donation from Idea Wild
Travel / field work	Vehicle hire, food and supplies in the field	6,580	100%

Consultancy	Financial / technical	4,468	100%
	Consultancy fees	928	100%
	Accounting Fees	3,540	100%
Extra activities	Government payments, contract development, support to villages / volunteers	1,105	100%
	Business License	416	100%
	Corporation tax payments	689	100%
Audits	Validation costs		
	PIN		
	PDD		
	Tech Spec		
	Issuance (2013)	7,205 (100%)	
	Project visit		
Marketing	Consultant fees / website development / conferences	9,513	100%
Total project costs		71,996	

Annexes

Annex 1. Activity monitoring indicators for issuance of annual ex-post credits

Green: Indicates that the project is on track to achieve the expected climate benefits and issuance continues as per the performance targets 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 may be withheld from Carbon Tanzania and revenue may be withheld from communities, depending on the indicator or the performance.

Red: Indicates that project activities are not 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 Occupancy (CCRO).	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 potential land use conflicts
Management Institutions	UCRT, CT, village government and tribal leaders continue to work towards the common goal of improved land	Either UCRT, CT, village government or tribal leaders decide to opt out of the goals of	Management institutions collapse leading to lack of cohesion within local government or tribal	1. Reports from village government and tribal leadership. 2. Monthly monitoring indicates discourse

	management.	improved land management resulting in are structuring of contractual agreements.	leadership. CT or UCRT cease to operate resulting in a failure of project operations.	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 <= 14 days a year dedicated to land conflict in the project area.	UCRT spend <= 1 months a year dedicated to land conflict in project area.	UCRT spend >=2months 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 >=50% of project area and leakage area that month.	Community guards fail to cover or report on >=30% of project or leakage area that month.	Community guards fail to patrol, collect data or report on project or leakage area.	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 >=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 >=10%. Village government fails to act on information and report to CT and UCRT.	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 our 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.	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. 2. CT pays the patrol teams directly using M-Pesa ensuring payments are always made

Annex 2. Payment structure to communities

Carbon Tanzania					
Community Payments		Total funds available, (based on Sales, Nov 2013 to May 2014)			
May 2014		Tsh 32,000,000			
<i>Domanga</i>	%	<u>16,000,000</u>	<i>Mongo wa Mono</i>	%	<u>16,000,000</u>
Jamii	78	12,480,000	Jamii	65	10,400,000
less WwJ payments		3,660,000	less WwJ payments		3,660,000
less Haydom fungo		1,000,000	less Haydom fungo		1,000,000
Total to Jamii Domanga		7,820,000	Total to Jamii Mongo		5,740,000
Kijiji	12	1,920,000	Kijiji	20	3,200,000
Wilaya	10	1,600,000	Wilaya	10	1,600,000
Kata Eshkesh	0	0	Kata Yaeda Chini	5	800,000
total		16,000,000	total		16,000,000

Carbon Tanzania					
Community Payments		Total funds available, (based on Sales, May to Oct 2014)			
Nov 2014		Tsh 21,550,000			
<i>Domanga</i>	%	<u>10,775,000</u>	<i>Mongo wa Mono</i>	%	<u>10,775,000</u>
Jamii	78	8,404,500	Jamii	65	7,003,750
less WwJ payments		3,660,000	less WwJ payments		3,660,000
less Haydom fungo		1,000,000	less Haydom fungo		1,000,000
Total to Jamii Domanga		3,744,500	Total to Jamii Mongo		2,343,750
Kijiji	10	1,077,500	Kijiji	20	2,155,000
Wilaya	10	1,077,500	Wilaya	10	1,077,500
Kata Eshkesh	2	215,500	Kata Yaeda Chini	5	538,750
total		10,775,000	total		10,775,000

Annex 3. Retirements Markit registry 2014

Year of Sale	Invoice	Purchaser	Vintage Credits	Certificates	Markit Serial Number (s)	Total	Block
2014	STI/2/14	STI	2012	489	PV-PVC-TZ-103000000004180-01012012-31122012-2656043-2656531-MER-O-P	489	489
2014	STI/1/14	STI	2012	512	PV-PVC-TZ-103000000004180-01012012-31122012-2655531-2656042-MER-O-P	512	512
2013	FTI/2012	Fair Travel Tanzania	2012	41	PV-PVC-TZ-103000000004180-01012012-31122012-2655490-2655530-MER-O-P	41	41
2013	Sanjan/combined/2011-2012	Sanjan Ltd	2012	126	PV-PVC-TZ-103000000004180-01012012-31122012-2655364-2655489-MER-O-P	126	126
2013	KN/1/2013	Kisima Ngeda Tented Camp	2012	35	PV-PVC-TZ-103000000004180-01012012-31122012-2655329-2655363-MER-O-P	35	35
2013	ND/ combined/2010-2013	Nature Discovery	2012	705	PV-PVC-TZ-103000000004180-01012012-31122012-2654624-2655328-MER-O-P	705	705
2013	Asilia/combined/2012-2013	Asilia Camps and Lodges	2012	1510	PV-PVC-TZ-103000000004180-01012012-31122012-2653114-2654623-MER-O-P	1510	1510
2012	SA/combined/2011-2012	Summits Africa	2012	447	PV-PVC-TZ-103000000004180-01012012-31122012-2652667-2653113-MER-O-P	447	447
2013	AK/2013	A&K (Tanzania) Ltd and Sanctuary Lodges	2012	1200	PV-PVC-TZ-103000000004180-01012012-31122012-2651467-2652666-MER-O-P	1200	1200
2013	Combined invoices to end 2013	Braeburn School Arusha	2012	519	PV-PVC-TZ-103000000004180-01012012-31122012-2650948-2651466-MER-O-P	519	519
2013	GP/combined/2010-2013	Guiding Principles	2012	719	PV-PVC-TZ-103000000004180-01012012-31122012-2650229-2650947-MER-O-P	719	719
2013	ME/combined/2014	The Map's Edge	2012	1493	PV-PVC-TZ-103000000004180-01012012-31122012-2648736-2650228-MER-O-P	1493	1493
2013	WE/1/2013	Wildlife Explorer (UK)	2012	150	PV-PVC-TZ-103000000004180-01012012-31122012-2648586-2648735-MER-O-P	150	150
2014	NE/1/2014	NativeEnergy Inc.	2012	4572	PV-PVC-TZ-103000000004180-01012012-31122012-2644014-2648585-MER-O-P	4572	4572
2011	CESD/1/2009	Traveller's Philanthropy Conference	2012	81	PV-PVC-TZ-103000000004180-01012012-31122012-2643433-2643513-MER-O-P	81	81
2010	MB/01/2009	Marc Baker Safaris	2012	52	PV-PVC-TZ-103000000004180-01012012-31122012-2643381-2643432-MER-O-P	52	52
2010	JA/01/2009	Jo Anderson Safaris	2012	35	PV-PVC-TZ-103000000004180-01012012-31122012-2643346-2643380-MER-O-P	35	35
2010	RA/01/2010	Regional Air Services	2012	376	PV-PVC-TZ-103000000004180-01012012-31122012-2642970-2643345-MER-O-P	376	376
2013	NE/1/13	Native Energy Inc	2012	2500	PV-PVC-TZ-103000000004180-01012012-31122012-2640470-2642969-MER-O-P	2500	2500
2014	ZM/01/2014	ZeroMission	2012	500	PV-PVC-TZ-103000000004180-01012012-31122012-2643514-2644013-MER-O-P	500	500
n/a	n/a	Carbon Tanzania operational emissions	2012	23	PV-PVC-TZ-103000000004180-01012012-31122012-2658364-2658386-MER-O-P	23	23
2014	ND/2/2014	Nature Discovery	2012	124	PV-PVC-TZ-103000000004180-01012012-31122012-2658240-2658363-MER-O-P	124	124
2014	BS/1/2014	Braeburn School Arusha	2012	77	PV-PVC-TZ-103000000004180-01012012-31122012-2658163-2658239-MER-O-P	77	77
2012	CC/1/2012	Cap Conseil	2012	54	PV-PVC-TZ-103000000004180-01012012-31122012-2658109-2658162-MER-O-P	54	54
2012	PAOC/1/2012	Honeyguide Foundation	2012	56	PV-PVC-TZ-103000000004180-01012012-31122012-2658053-2658108-MER-O-P	56	56
2012	TB/1/2012	Theobald Barber Travel	2012	147	PV-PVC-TZ-103000000004180-01012012-31122012-2657906-2658052-MER-O-P	147	147
2014	AE/1/2014	African Environments	2012	57	PV-PVC-TZ-103000000004180-01012012-31122012-2657849-2657905-MER-O-P	57	57
2014	SA/2/2012	Summits Africa	2012	195	PV-PVC-TZ-103000000004180-01012012-31122012-2657654-2657848-MER-O-P	195	195
2014	Combined 2014 invoices	Guiding Principles	2012	203	PV-PVC-TZ-103000000004180-01012012-31122012-2657451-2657653-MER-O-P	203	203
2014	KM/1/2014	Kate McAlpine	2012	10	PV-PVC-TZ-103000000004180-01012012-31122012-2657441-2657450-MER-O-P	10	10
2014	TSL/1/2014	Tarangire Safari Lodge	2012	117	PV-PVC-TZ-103000000004180-01012012-31122012-2657324-2657440-MER-O-P	117	117
2014	DS/1/14	Dorobo Tours and Safaris	2012	57	PV-PVC-TZ-103000000004180-01012012-31122012-2657267-2657323-MER-O-P	57	57
2014	KN/1/2014	Kisima Ngeda Tented Camp	2012	43	PV-PVC-TZ-103000000004180-01012012-31122012-2657224-2657266-MER-O-P	43	43
2014	ME/Combined/2014	The Map's Edge	2012	612	PV-PVC-TZ-103000000004180-01012012-31122012-2656612-2657223-MER-O-P	612	612
2014	FTI/1/2014	Fair Travel Tanzania	2012	80	PV-PVC-TZ-103000000004180-01012012-31122012-2656532-2656611-MER-O-P	80	80
2013	AS/1/2011	Asilia Camps and Lodges	2013	342	PV-PVC-TZ-103000000004180-01012013-31122013-2945137-2945478-MER-O-P	342	342
2014	AK/2014	A&K (Tanzania) Ltd and Sanctuary Lodges	2013	1127	PV-PVC-TZ-103000000004180-01012013-31122013-2943881-2945007-MER-O-P	1127	1127
2014	WE/1/2014	Wildlife Explorer (UK)	2013	129	PV-PVC-TZ-103000000004180-01012013-31122013-2945008-2945136-MER-O-P	129	129
2014	AS/1/2014	Asilia Camps and Lodges	2013	779	PV-PVC-TZ-103000000004180-01012013-31122013-2943102-2943880-MER-O-P	779	779

Total sales	20294
2012 Vintage issued to Carbon Tanzania	18012
2012 Vintage sold by Carbon Tanzania	17917
Unsold Stock Vintage 2012 held by Carbon Tanzania	95
2013 Vintage issued to Carbon Tanzania	14010
2013 Vintage sold by Carbon Tanzania	2377
Unsold Stock Vintage 2013 held by Carbon Tanzania	11633
Total PVCs issued to date	32022

All figures to end of calendar year 2014