

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

*Improving the livelihoods of indigenous hunter-gatherer and pastoralist communities by protecting land from conversion while delivering substantial social and biological co-benefits.*

**Project Design Document, Plan Vivo Foundation  
Carbon Tanzania, June 2016**



carbond**tanzania**

## Executive summary

Carbon Tanzania is the leading Reduced Emissions from Deforestation and Degradation (REDD+) project developer and sales conduit for offsets in Tanzania. Our innovative approach ensures sound land management that reduces deforestation and is based on community land and ownership rights. Carbon Tanzania manages the value chain ensuring the sales of verified emission reductions result in long-term revenue flow into villages and households within Yaeda Valley in a participatory and equitable manner.

This project and its associated carbon revenues support anti poaching, monitoring, education and medical provision ensuring all members of the villages, hunter-gatherer Hadzabe and pastoralist Barabaig communities in Mongo Wa Mono, Domanga and Yaeda Chini villages receive benefits. By working in conjunction with traditional leaders, the elected village, ward and district governments and community members, Carbon Tanzania (CT) and Ujamaa Community Resource Team (UCRT) have created a unique community planned and operated Reduced Emissions from Deforestation and Degradation (REDD+) project in the Yaeda Valley. 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 which address the primary driver of deforestation, shifting agriculture.

Participating communities will benefit from increased income stemming from the PES element of the project. Beyond the surplus revenue from the project's generation and sale of carbon offsets, there are significant, additional livelihood impacts. *Unique to the Hadza is the very real and substantial overlap between environmental and socioeconomic impacts.* As a population whose livelihood depends on the land, the Hadza will benefit from the improved habitat resulting from project activities. Preventing deforestation, thereby preserving the natural habitat on which the Hadza and Barabaig communities depend, will result in a sustained supply of food, grazing and other essential items. Additionally, project activities related to enforcing the land use plan will serve the purpose of protecting the watershed within the project area for the benefit of the people and wildlife.

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## Abbreviations and Acronyms

AGB	Aboveground Biomass
AMSL	Above Mean Sea Level
CBNRM	Community-Based Natural Resource Management
CCRO	Community Customary Right of Occupancy
CITIES	Convention on the International Trade in Endangered Species
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CSO	Civil Society Organization
CT	Carbon Tanzania
FPIC	Free, Prior and Informed Consent
GCA	Game Controlled Area
GPS	Global Positioning System
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
MoU	Memorandum of Understanding
NCCSC	National Climate Change Steering Committee
NEMC	National Environment Management Council
NGO	Non-Governmental Organization
NWFP	Non-Wood Forest Products
OTC	Over-the-Counter
PDD	Project Design Document
PES	Payment for Ecosystem Services
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SDGs	Sustainable Development Goals
tC/ha	Tonnes Carbon per Hectare
tCO <sub>2</sub> e/ha	Tonnes Carbon Dioxide Equivalent per Hectare
TSC	Timed Species Count
UCRT	Ujamaa Community Resource Team
UNDP-GEF	United Nations Development Programme's Global Environment Facility
UNESCO	United Nations Educational, Scientific and Cultural Organization
VLFR	Village Land Forest Reserve



## Part A: Aims and Objectives

This project works with hunter-gatherer Hadzabe<sup>1</sup> and pastoralist Barabaig<sup>2</sup> communities in Mongo Wa Mono, Domanga and Yaeda Chini villages, Mbulu District, Northern Tanzania. By working in conjunction with traditional leaders, the elected village governments and community members, Carbon Tanzania (CT) and Ujamaa Community Resource Team (UCRT) have created a unique community planned and operated Reduced Emissions from Deforestation and Degradation (REDD+) project in the Yaeda Valley and adjacent Gideru ridge. This REDD+ project strengthens land tenure, management capacity and local natural resource management, enhances and diversifies local incomes, and contributes to local and national environmental conservation aims and the Sustainable Development Goals (SDGs)<sup>3</sup>. 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, shifting agriculture.

Reducing Emissions from Deforestation and Forest Degradation (REDD+) means different things to different people. In the context of this project, REDD+ refers to avoiding deforestation and forest degradation while promoting sustainable natural resource use on the part of land users and managers. This REDD+ project, planned with the participating community members, delivers significant socioeconomic co-benefits to the participants and surrounding populations as well as positive biodiversity impacts to the larger ecosystem that the project area helps to support.

This project development document (PDD) is submitted to the Plan Vivo Foundation as an updated version of the “REDD+ in the Yaeda Valley” PDD (validated in 2012) to the 2013 version of the Plan Vivo Standard. This updated version of the PDD also includes the technical specifications (Part GII) for an extension to the REDD+ in Yaeda Valley project, which includes a neighboring village, Yaeda Chini. This village has been included within the project and follows the same governance and land ownership structures, baseline methodology for carbon accounting, interventions and activity based monitoring approaches as the current project.

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<sup>1</sup> [https://en.wikipedia.org/wiki/Hadza\\_people](https://en.wikipedia.org/wiki/Hadza_people)

<sup>2</sup> [https://en.wikipedia.org/wiki/Barabaig\\_people](https://en.wikipedia.org/wiki/Barabaig_people)

<sup>3</sup> <https://sustainabledevelopment.un.org/?menu=1300>

## Part B: Site Information

### B1. Project location and boundaries

The East African country of Tanzania covers 970,000 km<sup>2</sup> of land, of which approximately 38%<sup>4</sup> is forested<sup>5</sup>. The villages of Mongo Wa Mono, Domanga and Yaeda Chini are situated at 34°30'E/03°30'S in the Central Rift Valley, at an altitude of 1200-1400 MASL, in the southwest of Mbulu District, Manyara Region, Northern Tanzania (see map, Figure B1a).

#### Figure B1a. Map of Northern Tanzania

The red circle indicates the project area situated on the southwest corner of Lake Eyasi.



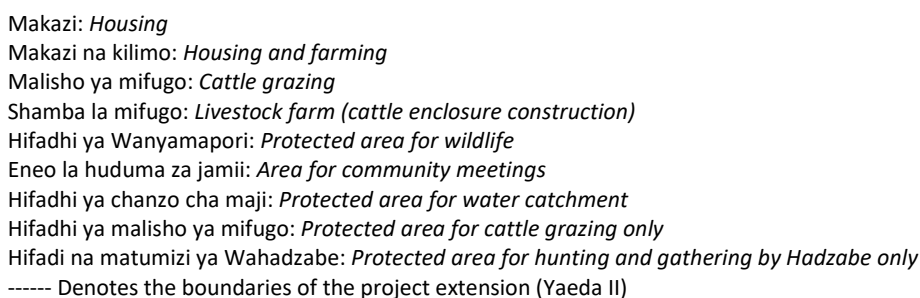
The adjacent villages of Domanga, Mongo Wa Mono and Yaeda Chini cover a total area of 49,000 ha. A land use plan, developed by the villages in conjunction with district government, divides the entire Yaeda valley and adjacent Gideru Hills into nine land use zones, each designated as one of three land use types: housing and farming, grazing, and protected areas<sup>6</sup> (see land use plan, Figure B1b).

<sup>4</sup> FAO, 2011, State of the World's Forests

<sup>5</sup> The Forest Act (2002) defines forest as any area of land with at least 10% tree crown cover and includes all forest reserves regardless of tree cover or vegetation. In reality much of Tanzania's 'forest' is woodland ranging from dry *Acacia-Commiphora* in the North of the country to *Brachystegia* woodland in the South and West of Tanzania.

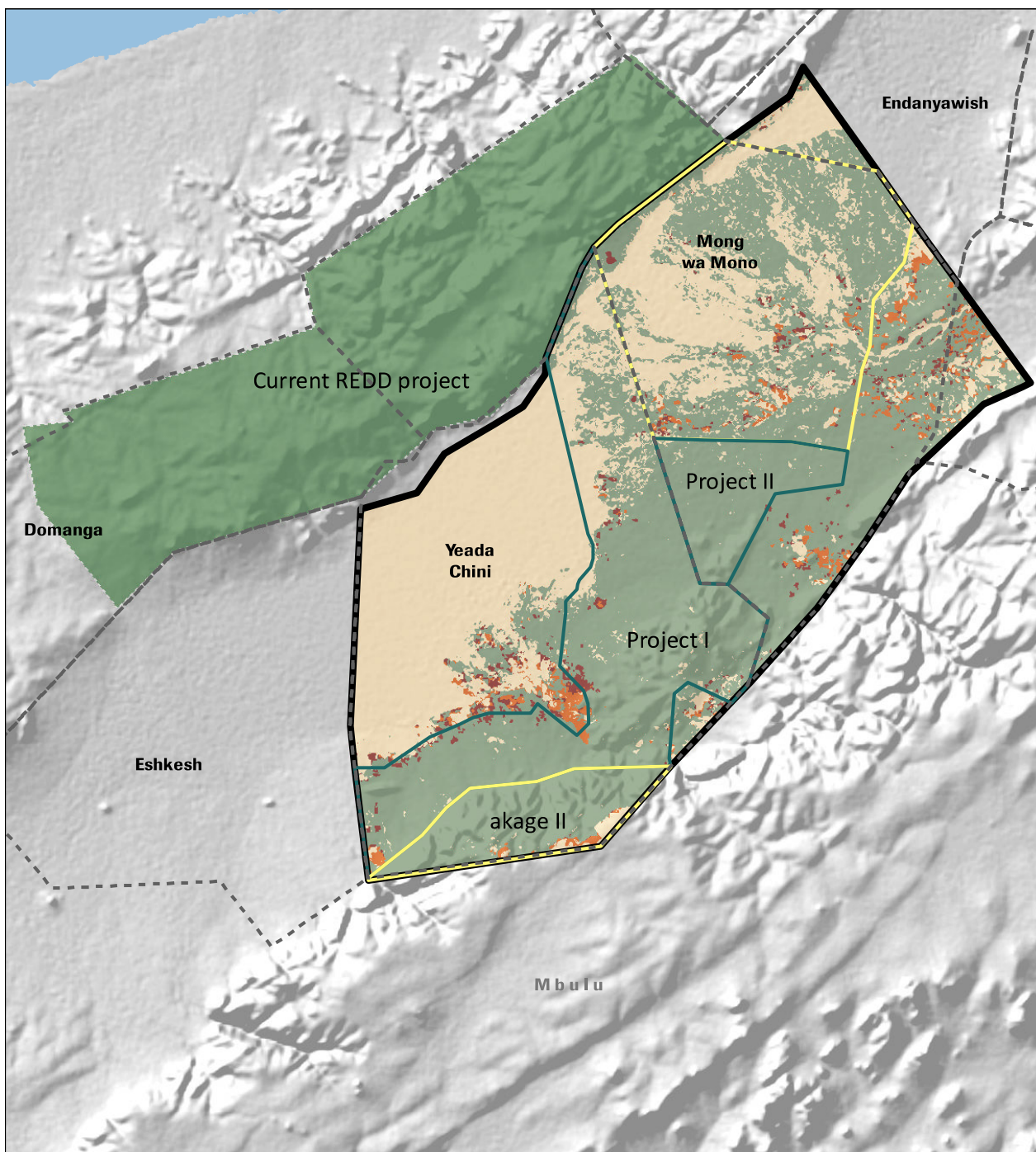
<sup>6</sup> These areas are designated as protected for the utilization by Hadzabe at a village level and should not be confused with any nationally designated protected areas such as national parks or game reserves, which are under central government authority.

**Title reads; “Land use plan (the villages of: Yaeda Chini, Eshkesh [not included in this project], Mongo Wa Mono and Domanga), Mbulu District”**

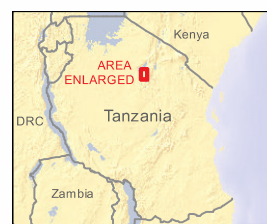


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Figure B1c. Current REDD+ project, Yaeda I and project extension, Yaeda II (shown as project I and II in this map).



Land Cover Change in the Yaeda Valley 2000-2013



## B2. Description of the project area

Mbulu District contains areas with semi-arid and sub-humid climates that receive annual rainfall of <400 mm and >1200 mm, respectively. The long rainy season occurs from March to mid-May and the short rainy period occurs from November to December. Relative humidity ranges from 55% to 75% and mean annual temperature ranges from 15 to 24°C. The project area is predominantly *Acacia-Commiphora* woodland interspersed with inselbergs and bordered to the south by a steep wooded escarpment (see images in Annex 8). Vehicle access to Yaeda Chini is possible most months, however rainfall from January - May makes accessing Domanga challenging.

The project area includes the Kidero (also spelt *Gideru*) hills, an area of woodland and granite outcrops which is the core land use zone for Hadzabe hunting and gathering activities, medicinal plant collection and also contains a wide range of important cultural and religious sites. The natural habitat within Yaeda Chini, Mongo Wa Mono and Domanga is dominated by *Acacia-Commiphora* woodland, specifically *Acacia tortillis*, *Acacia kirkii* (lower areas), *Acacia mellifera*, *Commiphora* Spp, *Grewia* species and *Combretum* species, interspersed with areas of savanna grasslands, seasonally flooded *Themeda* grasslands and *Adansonia digitata* (Baobab) woodland (see photos, Annex 8).

## B3. Endangered species and wildlife

Several rare and threatened large mammal species have been recorded within the project area. Wild Dog *Lycaeon pictus* (IUCN<sup>7</sup> Endangered) are regular visitors. This species is known to have a large home range and may be part of the same population that is found within the Maswa Game Reserve (GCA) and Ngorongoro Conservation Area to the northwest of the Yaeda Valley. Leopard *Panthera pardus* (IUCN Near Threatened) are resident to the area, and both African Lion *Panthera leo* (IUCN Vulnerable) and Cheetah *Acinonyx jubatus* (IUCN Endangered) have been recorded but there is no data to support the presence of resident populations. All these large mammals are listed by CITES<sup>8</sup> and protected under national and international laws. The project area supports seasonal populations of ungulates, including Thomson's Gazelle, White-bearded Gnu (Wildebeest), Impala, Zebra, Giraffe, Cape Eland, Savannah Elephant (IUCN Vulnerable), and Cape Buffalo. Coke's Hartebeest are also found in the area, but at very low numbers and are close to extirpation due to illegal hunting.

A total of 433 species of birds have been recorded within the reference area and adjacent wetlands, two of these species of birds are endemic to Tanzania; Ashy Starling *Cosmopsarus unicolor*, which is restricted to central Tanzania and north thereof and Grey-breasted Spurfowl *Francolinus rufopictu*, which is restricted to *Acacia-Commiphora* woodland in northern Tanzania (see avifauna species list, Annex 9). The project area encompasses the Yaeda Chini seasonal wetland, which is designated as an Important Bird Area (IBA) (IBA 79) by BirdLife International due to the presence of resident globally threatened species<sup>9</sup>. North of the project area is Lake Eyasi. With an area of 116,000 ha, this is one of the largest soda lakes in the Rift Valley complex and an important area for palearctic migrants. Lake Eyasi is also designated as an IBA (IBA 23) due to the presence of Lesser Flamingo (IUCN: Near threatened) and has 1% biogeographical population

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<sup>7</sup> IUCN (International Union for the Conservation of Nature) Red list of threatened species [www.iucnredlist.org](http://www.iucnredlist.org)

<sup>8</sup> CITES – Convention on the International Trade in Endangered Species. Species are listed according to population status, rate of decline and ability of range state to manage the population.

<sup>9</sup> Baker N.E. and Baker E.M. (2002) Important Bird Areas in Tanzania: A First Inventory. Wildlife Conservation Society of Tanzania.

levels of eight resident and migratory wetland bird species, a criterion for designation as a Ramsar<sup>10</sup> site. Above the rift, 35 km to the north/northwest is the Ngorongoro Conservation Area, a UNESCO World Heritage Site and world famous tourist destination. Bordering this is the Serengeti National Park, a 14,700 km<sup>2</sup> fully protected area and also a UNESCO World Heritage Site.

This project will promote the protection of indigenous species of various taxa according to the national laws of Tanzania and international conventions to which Tanzania is a signatory. The strengthening of local boundaries, according to the land use plan and village by-laws, creates an enabling environment for local enforcement and protection of indigenous and endangered species from poachers. By preventing animal poaching, this project and the Hadzabe are helping to promote and conserve the natural ecosystems and mammal populations on which their way of life depends

#### **B4. Recent changes in land use and environmental conditions**

Recent land use change (year 2000 onwards, see technical specifications in Part GI/GII) within the project area consists predominantly of conversion from *Acacia-Commiphora* woodland to a form of shifting agriculture (see photos, Annex 8). This land intrusion, conversion and resulting deforestation are contrary to the Community Customary Rights of Occupancy (CCRO) governing land ownership, village by-laws, the village land use plan, Village Land Act and national laws governing land acquisition and utilization within Tanzania (see Part GI.2).

The encroachment originates from both inside and outside the villages of Mongo Wa Mono, Domanga and Yaeda Chini. External land use change predominates from the neighboring villages of Eshkesh, Endayawish and Endagunda, but mostly from more densely populated areas to the west (Meatu District), south (Mbulu District) and north (Karatu District). It is these external and internal factors that have led to the development of the land use plans, which ensure that each land use requirement has a designated zone and reflects the needs of the different communities living in this landscape.

#### **B5. Drivers of deforestation and degradation**

The low hills, valley edges and rocky ridges that characterise the *Acacia / Commiphora* woodlands that dominate this landscape, are comprised of shallow quartzite sandy soils. These soils are attractive to shifting agriculturalists that seek to cultivate maize, sunflower and foodbeans. ***This form of shifting agriculture is the primary driver of deforestation in the region (Fig B4)***<sup>11</sup>. The native vegetation, dominated by *Acacia / Commiphora* woodland and baobab trees is cleared as crops are tried year-on-year. With adequate rainfall yields on these soils can be relatively good, approximately 1 metric tonne / hectare (beans), but the soil is quickly exhausted and after 4-5 years yields decline and in many cases the farmers move on to other areas of unconverted woodland. Even where potential yields are poorer (such as shallow soiled well-drained areas), cultivators can obtain a short-term return.

The threat posed by this pattern of shifting agriculture is a symptom of both national and local drivers of deforestation (see B4 below). These include some policy developments in the agricultural sector that favor agricultural societies who are often migrating as a result of both poor

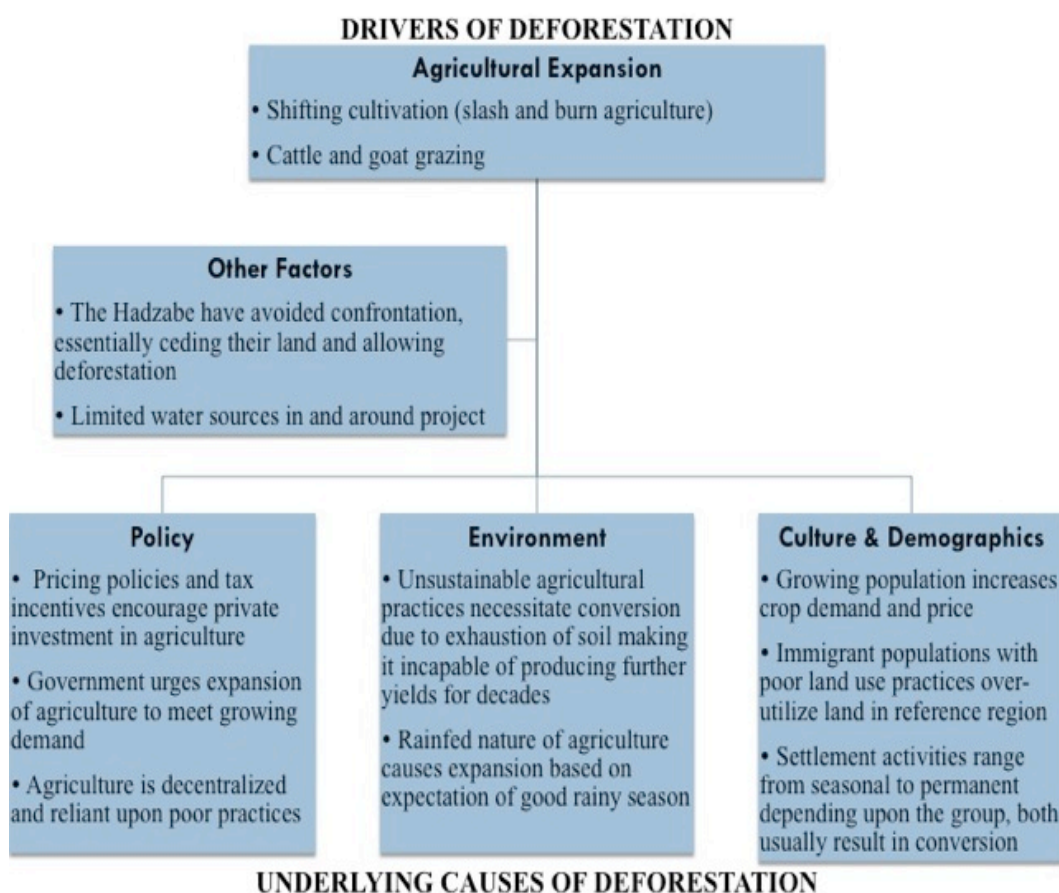
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<sup>10</sup> Ramsar is an internationally recognized designation for wetlands of global importance named after Ramsar, Iran where the Convention on Wetlands of International Importance was signed in 1971.

<sup>11</sup> Salerno (2016) Migrant decision making in a frontier landscape. Environmental Research Letters.

agricultural methods and unsuitable environmental conditions<sup>12</sup>. Migratory populations are also likely to try unsustainable agriculture due to the lack of local livelihood options, something this project addresses through payments for ecosystem services. Overgrazing does represent a secondary driver of deforestation (Figure B4), however this form of land use is restricted to the end of the dry season, can vary from year to year and degrades grassland. Whilst over-grazing rarely has an impact on mature trees, it can impact seedlings and regrowth and is considered negative to ecosystem health by participating communities.

**Figure B5. Drivers of Deforestation – Policy, Environmental and Cultural.**



An understanding of these drivers of deforestation have been incorporated into the development of the land use plans to ensure that each land use requirement, often tribally defined, is designated based on soil quality, grassland quality and specific uses by both the Hadzabe hunter-gatherers and Barabaig pastoralists.

<sup>12</sup> Ibid

## Part C: Community and Livelihood Information

### C1. Target communities/groups

The Hadzabe are one of Tanzania's most distinctive and threatened human cultures, with a deep reservoir of indigenous knowledge pertaining to natural resource use, which has enabled them to survive in a challenging environment. The Hadzabe are strictly hunter-gatherers and do not raise any livestock, although some do keep fields of domestic crops, mainly in Domanga village. As a group, the Hadzabe have been gradually displaced to remote and relatively inhospitable semi-arid areas, as other groups (or tribes) of people have taken over more productive lands and converted them to agriculture<sup>13</sup>; this displacement and conversion has been most pronounced over the last century. Currently a total of approximately 1,000 Hadzabe survive in fragmented areas of Northern Tanzania. Mongo Wa Mono (meaning 'the mother of all villages') is the core of the Hadzabe lands and population. The Barabaig are predominantly pastoralists who engage in some subsistence agriculture and hunting. In times of hardship hunting is used to supplement their diet of milk and grains and trading occurs with the Hadzabe for honey. The Barabaig are limited to northern Tanzania where their historical range is buffered by the pastoralist Maasai to the north.

According to the most recent Tanzanian Census of 2012, the average growth rate in Mbulu District is 3.1%, which is on par with the national average of 2.9%. The villages of Mongo Wa Mono and Domanga are mostly populated by people identifying themselves as Hadzabe and Sukuma, the latter of which are predominantly agro-pastoralists. The surrounding villages of Eshkesh and Yaeda Chini are populated by multiple tribal groups: Barabaig, Iraqw and Hadzabe. These different groups live together without conflict and their differing ecological approach to resource utilisation is reflected in the designated use zones in the land use plan (see Part B1.). The population of the area is listed by the census (2012)<sup>14</sup> as Yaeda Chini: 2663 (Female: 1422 / Male: 1241) Mongo Wa Mono: 2630 (no data for F/M split is given) Domanga (no data given however village has a record of 121 households which is approximately 726 people based on an average of 6 persons per household<sup>15</sup>).

### C2. Socio-economic context

Accurate demographic information on the Barabaig and Hadzabe is scarce and notoriously difficult to obtain. Socio-economic data is equally sparse, however Carbon Tanzania has begun to assess this context with academic assistance by partnering with Uppsala University in Sweden and University of Dar-es-salaam on the REAL project<sup>16</sup> (Survey details are shown in Annex 10.).

In general, the Barabaig will sell cattle to meet occasional 'needs' for money such as meeting hospital bills or paying school fees. Adults, usually male, who have been forced to leave the area to earn money in towns, provide cash incomes. Due to the transient nature of many pastoralists this is difficult to quantify. Both the Barabaig and Hadzabe are living at the extreme end of the poverty scale within Tanzania with no form of stable economic activities or income (significantly less than 1 USD/day)<sup>17</sup>. As communities, they are reliant on stable environment conditions for the majority of their daily needs, in the context of the Hadzabe this is gathering honey and hunting for

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<sup>13</sup> In this context, the Hadzabe have been influenced by bantu agriculturalists and pastoralists over the last 3000 years.

<sup>14</sup> <http://www.nbs.go.tz>

<sup>15</sup> Village Government Office, Domanga.

<sup>16</sup> Resilience in East Africa Landscapes. <http://www.real-project.eu>

<sup>17</sup> Mardsen, A. (2000) The Hadzabe of Tanzania. Land and human rights of a hunter-gatherer community. IWGIA.

meat for subsistence. Both the Hadzabe and Barabaig way of life only minimally impacts the environment that they occupy as they today continue their historical practices of sustainable natural resource use. The Hadzabe follow a spiritually based, animist religion that involves and relies on environmental connectivity. Whilst Christianity is the dominant monotheistic choice there is little adherence to religious doctrine due to its irrelevance in the daily lives of these cultural groups.

The only notable communal income currently captured by the Hadzabe in Mongo Wa Mono and Domanga is through the sale of PVCs sold by Carbon Tanzania (Yaeda I), averaging Tshs 59,000,000 per year (34,000 USD) and through Dorobo Safaris Ltd., a specialist ecotourism company based in Arusha, which focuses on low-impact walking and camping safaris. Dorobo Safaris established the Dorobo Fund<sup>18</sup>, which manages the benefit sharing process set up in collaboration with UCRT. The community shares a percentage of this revenue with the ward and district governments. The amount received by the communities prior to the revenue from Yaeda I varies according to tourism numbers. Income in 2011 was estimated at Tshs 6–7 million (3,500–4,100 USD) to each of the villages and Tshs 14–16 million (8,200–9,400 USD) to the Hadzabe (D. Petersen *pers comm.*).

The project activities include, but are not limited to, the provision of financial support for land use planning and the employment of walinzi wajadi, or “community guards”<sup>19</sup> as they are referred to hereafter. The community guards are critical to the preservation of the protected area designated in the land use plan. Without the ability to generate revenue through the sale of Plan Vivo Certificates, the communities would be unable to secure and protect the forested project area, neither legally nor practically at the community level. This in turn would likely lead to the end of these ancient societies.

This project, like most community-based natural resource management (CBNRM) initiatives, necessarily involves maintaining the project area boundaries and restricting access to neighboring populations that have been responsible for the unsustainable natural resource use, in this case deforestation. The Hadzabe, Barabaig and other minority groups in the project area are legally empowered to impose such restrictions through the land use plans and Customary Rights of Occupancy (CCRO) certificates (see Part C3 & Annex 6) and must begin to protect their land if they are to survive. The project developers understand the potential hardship that this enforcement may cause for the neighboring villages and are therefore taking additional measures to mitigate the impact. The key amongst these strategies is the working partnership with UCRT that engages neighboring communities to develop land use plans and CCROs within their own villages thus mitigating the cycle of unsustainable land use. Additional measures include training affected communities on improved/intensified agricultural practices to ensure that farming is not conducted on unsuitable land help to reduce the key driver of the deforestation in and around the project area. The project will provide, as is evidenced in this document, further opportunities for participation in this REDD+ project as land use planning in neighboring communities is completed.

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<sup>18</sup> [www.dorobofund.org](http://www.dorobofund.org), dorobo is a Maa (Maasai) word used to describe hunter-gathers or ‘people without cattle’ and literally translates as impoverished. This definition would apply to the vast majority of people in developed nations and is interesting in that it redefines the definitions of poverty in these cultures.

<sup>19</sup> Walinzi wajadi, or community guards, are local private citizens and should not be mistaken for employees of the wildlife division or other government entities.

### C3. Ownership of carbon benefits and land-tenure

There is currently no law or policy that specifically mentions the ownership of carbon rights within Tanzania. The new draft forest policy, yet to be enacted, does mention non-wood forest products (NWFP) and their potential; *“Payments for ecosystem services through carbon or watershed protection (PES) will be promoted to strengthen private sector and community investments” (draft National Forest Policy, 2011 which as of 2016 this has not been enacted by parliament)*. The current Forest Act (2002), which is the act governing forest utilization in Tanzania, clearly states that; *“village or community forest reserves confer all ownership and user rights to the village or designated community”*.

The Tanzanian government, with technical and financial assistance from the Royal Government of Norway, has developed a National Framework and Strategy for REDD+. This process incorporates a National Climate Change Steering Committee (NCCSC), a National Climate Change Technical Group and a National REDD+ Taskforce to ‘guide the implementation of climate change activities’. A number of Non-Governmental Organizations (NGOs), including Carbon Tanzania, are currently engaged with the government on issues related to carbon rights, MRV and how REDD+ might be implemented in Tanzania to meet the countries INDC commitments to the UNFCCC.

Land tenure in Tanzania is governed by the Land Act No. 4 of 1999, and the Village Land Act No. 5 of 1999. These laws classify all land within the boundaries of registered villages as ‘village land,’ which is held by the resident communities under customary rights of occupancy in perpetuity. The Village Land Act designates the village councils and village assemblies as the statutory management authorities over these village lands. This land tenure framework, in combination with Tanzania’s local government structures, provides for the rights and responsibilities of the village councils and village assemblies and provides a strong foundation for participatory management of communal land and resources such as forests.

In 2012 the government recognized the Hadzabe as having special status and has granted them ownership of village lands (CCRO) (see Annex 6), including the project area, within Mongo Wa Mono and Domanga. This has since been followed by CCROs being issued across the Yeada Valley area. This land tenure allows the Hadzabe, Barabaig and their village institutions to enter into legal agreements pertaining to the land such as that required for this REDD+ project. The communal nature of this land tenure is reflected in the supporting documents in which the central government deeded the land to four individual Hadzabe community members, two from each village (see land tenure and ownership documentation, Annex 6). These four people are recognized to represent the Hadzabe community as a whole and are the same four signatories to the contract with Carbon Tanzania, again reflecting community-wide agreement to the partnership.

Disputes most likely to arise relating to land tenure in this area will originate from members of neighboring villages. While ownership of the project area is not disputed, its status is often ignored by outsiders. In order to mitigate and combat potential land use conflicts, project activities involve the surrounding areas including training on land use planning and the implementation of CCROs as well as improved/intensified agricultural land management in order to address the primary driver of deforestation. Carbon Tanzania and UCRT engage with members of the surrounding communities and plan to include the neighboring villages as part of the efforts to further scale-up this project in the future.

The pastoralist communities within these surrounding villages are often dependent on water resources within the project area, especially during the months of October and November prior to the beginning of the rainy season. The borders drawn into the land use plan purposefully allow for the largest source, Kukumako spring (see photos, Annex 8) to be utilised in a sustainable fashion by both hunter-gatherers and pastoralists, particularly in dry years when alternative sources are lacking. These years may become more frequent as climate change has a greater impact in the region making the protection of the project area and its resources all the more important. Protecting the project area as a refuge in difficult times increases the adaptive capacity of the larger community. Other water sources exist in the project area and are shown clearly in the Land Use Plan (Part B1, Annex 5 - *Hifhadi ya chanzo cha maji*), these are reserved for human and wildlife use upon which the Hadzabe and Barabaig are dependent. The water available at other interior springs is minimal and the springs themselves are vulnerable to overuse and would likely disappear as a result of deforestation.

Should it be necessary, the process for conflict resolution within and between villages is outlined below and follows the Village Land Act and thus national land laws. Training on conflict resolution mechanisms has been an important part of UCRTs engagement with Yaeda Chini, Mongo Wa Mono and Domanga as well as neighboring villages, with a focus on how the judicial system works and responsibilities within that system.

1. **Village Land Tribunal (Baraza la ardhi la kijiji)**<sup>20</sup> is the first step to resolve conflict of any type. This process includes members of the village government and is applicable to any activity contrary to local or national laws. Most conflicts between individuals are resolved at this level.
2. **Ward Land Tribunal (Baraza la ardhi la Kata)** is the second step for conflicts not settled by the village land tribunal, resolving a number of disputes between individuals from different communities.
3. **District Land and Housing Tribunal (Baraza la ardhi na nyumba la wilaya)** occurs when steps one and two have failed or when village and ward government representatives or communities feel that external mediation is required.
4. **High Court – Land Division (Mahakama kuu Kitengo cha Ardhi)** is for serious cases of land loss or misappropriation by internal or external sources.
5. **Court of Appeal (Mahakama ya Rufaa)** is for appealing decisions made in the high court or decisions that have been referred by the district to the high court.

The community PES agreements (Annex 3) also include a structured system for conflict resolution between the signatories that mirrors step 1 of this procedure.

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<sup>20</sup> This is the primary point of engagement for participating villages, there has not yet been a case beyond this level of jurisdiction.

## Part D: Project interventions and activities

### D1. Summary of project interventions

Reducing Emissions from Deforestation and Forest Degradation (REDD+) means different things to different people. In the context of this project, REDD+ refers to avoiding deforestation and forest degradation while promoting sustainable natural resource use on the part of land users and managers. This REDD+ project, planned with the participating community members, involves the improvement of land use planning and management to reduce and eventually eliminate the degradation and conversion of Acacia-Commiphora woodland through a process of payments for ecosystem services (PES). Specifically the project interventions can be summarized thus;

- Apply for approval of land use plan and by-laws from district officials and secure title deed recognizing Hadzabe / Barabaig as owners through CCROs
- Develop educational materials for use in schools and community meetings that promote the ecological and livelihood benefits of conservation
- Employ and train community guards to monitor forest disruption, land conversion and illegal poaching activities in project area
- Report instances of incursion or other disturbances
- Communicate with neighbouring villages about prohibited land use and associated penalties
- Enforce land use plan and by-laws through customary and legal dispute resolution mechanisms as necessary.
- Support UCRT to conduct training on legal rights and process of creating CCROs
- Contract with local agricultural specialists to facilitate training
- Track results of farmers employing new techniques to serve as a model for farmers more resistant to change
- Track monitoring results, carry out reflective participatory community meetings and add to training as necessary.

### D2. Summary of Project activities for REDD+

D.2: Summary of Project activities for REDD+			
Intervention type	Project activity	Description	Target groups
Reducing Emissions from Deforestation and Forest Degradation in the Yaeda Valley, Northern Tanzania (REDD+)	Improved Land Use Planning and Management through education and empowerment	<ul style="list-style-type: none"><li>- To protect traditional Hadzabe / Barabaig lifestyles by specifying areas for conservation, agriculture and pastoralist activities</li><li>- To secure recognition of land rights and land tenure from the central government</li><li>- To educate communities on the ecological and livelihood benefits of conservation</li></ul>	<ul style="list-style-type: none"><li>- Hadzabe population</li><li>- Villages of Mongo Wa Mono and Domanga</li><li>- Barabaig in Yaeda Chini</li><li>-Surrounding villages</li></ul>

D.2: Summary of Project activities for REDD+			
	Avoided Deforestation through the enforcement of district approved village land use plan and by-laws in accordance with national land laws	<ul style="list-style-type: none"> <li>- To ensure the indigenous <i>Acacia-Commiphora</i> woodland remains owned and managed by Hadzabe / Barabaig and protected for traditional and cultural utilization</li> <li>- To ensure land use plans and CCRO are adhered to</li> <li>- To ensure national laws governing land management are implemented.</li> </ul>	<ul style="list-style-type: none"> <li>- Hadzabe population</li> <li>- Villages of Mongo Wa Mono and Domanga</li> <li>- Barabaig in Yaeda Chini</li> <li>- Surrounding villages</li> </ul>
	Training in land use planning and implementation of CCROs and improved agricultural techniques suitable to the conditions found in reference regions to combat the primary driver of deforestation	<ul style="list-style-type: none"> <li>- To ensure communities are aware of their rights to manage their land</li> <li>- Improve the capacity and technical know-how of farmers around project area</li> <li>- To mitigate leakage by tackling the key underlying cause behind deforestation in and around the project area</li> <li>- To improve the crop yields and livelihoods of communities in surrounding project area by improved land use planning and utilisation</li> </ul>	<ul style="list-style-type: none"> <li>- Agriculturalists in surrounding villages and within project villages with designated areas for agricultural activity</li> </ul>

Project activities have been developed based on the current drivers and underlying causes of deforestation in the reference region depicted in Part B4.

### D3. Effects of activities on biodiversity and the environment

This project area contains high biodiversity (see Part B2) and by protecting the traditional land of the Hadzabe and Barabaig through activities described in Part D2, this project simultaneously improves the habitat of the wildlife species native to the project area and by reducing impacts of illegal poaching protects enigmatic megafauna present in the area. Protection of the woodland area will also maintain biodiversity by preserving habitat for less well-known native taxa including endemic birds. Adherence to the village land use plan will result in protection of the interior springs in the protected area. Additional activities with agriculturalists will prevent incursion and limit the loss of topsoil that is endemic to the shifting agriculture currently practiced (see Table summary D2).

## Part E: Community participation

### E1. Participatory project design

This project is a community-based initiative and as such the relevant skills and experience not only come from the individuals working directly with Carbon Tanzania and UCRT, but also the Hadzabe and Barabaig who hold indigenous knowledge about the project's forested area and biodiversity, reflected by the fact they have been using the area sustainably for >500 years<sup>21</sup>. Domanga, Mongo Wa Mono Domanga and Yaeda Chini village members have been involved in the planning of the project since its start and have agreed to carry out the activities necessary to ensure the preservation of the designated area (see Annexes 6&7). In line with the local nature of this project, the existing village structures serve as a forum for representation of project participants and the community-at-large. The village assembly is a decentralized, democratic institution consisting of all male and female village members above the age of eighteen (see image Annex 7). This assembly meets on a bi-monthly basis and anyone is welcome to place an item on the agenda, including concerns relevant to this project. The ward, comprised of elected village leaders, will attend to issues that transcend the village. Village governance of this kind is ingrained in Tanzanian culture and embedded in law through the Local Government Act No 7 of 1982.

The Village Land Act and CCRO. Extract from CCRO Brief in annex 7.

Tanzania has relatively favorable laws that recognize the rights of communities to own or control their customary land. Yet in practice, communities still struggle to gain secure rights over their land and remain at risk of losing it. This is particularly true for hunter-gatherer and pastoralist communities in northern Tanzania, who are vulnerable to land loss and expropriation due to the high value of their land for tourism, agriculture and other purposes. Hunter-gatherer groups such as the Hadzabe, and pastoralists such as the Barabaig (Datoga) have progressively been pushed out of their customary lands and territories into increasingly marginal lands.

Tanzania's Village Land Act recognizes customary lands ('village lands') and the rights of communities to manage those through locally elected Village Councils and Village Assemblies. It also provides a mechanism, known as a 'Certificate of Customary Right of Occupancy' (CCRO), which is an even stronger legal tool for strengthening community land rights and collective lands. The CCRO formalizes and documents customary rights within village land, and can be used to strengthen the external legal recognition and boundaries of communal areas such as grazing land or forests. It is based on a village-wide land use plan, and is governed by village-enforced by-laws. *A CCRO is a particularly useful tool for women and other minority groups, such as pastoralists and hunter-gatherers, because it can be*

### E2. Community led implementation

This REDD+ project was first introduced in October 2010 and, as is customary, required a two-day meeting with a quorum of the Hadzabe community (270 people). The project coordinator

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<sup>21</sup> The Hadzabe ancestry can be traced back 40,000 years, as bantu pastoralists the Barabaig have been utilizing the area at least 500 years and since 1970 have been dependent on the area following eviction from the Basoto Plateau.

explained the concepts and benefits of the project to the community (in Swahili which was then translated into Hadzane<sup>22</sup>). At all stages of project development the project's aims have been directly communicated to the Hadzabe community through informal training practices and through Richard Baalow, a community spokesmen who represents the Hadzabe community, as well as being the Secretary of the Yaeda Ward Development Committee. Project activities related to patrolling the project area and resolving conflicts with those who do not adhere to the land use plan as well as proposals for mitigating leakage were developed in a participatory fashion.

### **Land use planning and issuance of land ownership**

The Hadzabe and Barabaig communities and village governments in Mongo Wa Mono, Domanga and Yaeda Chini have been sensitized to the importance of understanding the land law and rights in relation to the Village Land Act. This process of information dissemination and training over the last 10 years has led to the understanding of 'how' these communities can protect their land. There has been no need to address the issue of 'why' the land has to be protected due to the connectivity and dependence that these communities have to their land, both culturally and ecologically. UCRT started working with Yaeda Chini (as the ward government centre), Mongo Wa Mono and Domanga in 2002 with the aim of securing land tenure for the Hadzabe, a process that included the following legal steps:

1. The village council applied for and was granted a CCRO by the district council<sup>23</sup>.
2. The villages created a land use plan with assistance from UCRT.
3. The village council wrote by-laws on land protection and enforcement.
4. The district council approved the land use plan (see Annex 5) and by-laws<sup>24</sup> (see Annex 6) thereby permitting enforcement.

October 2011, the Hadzabe communities of Domanga and Mongo Wa Mono were issued a Community Customary Right of Occupancy (CCRO) (a title for the lands on which this project is based, see Annex 6), giving the communities ownership of the land. This land deed states in section (ii) that the land is protected for use by Hadzabe to conduct their 'natural way of life' (Annex 6). In July 2012, the village government of Yaeda Chini was issued with a CCRO giving the elected village government ownership of the land (Annex 6). This land deed states in section (ii) that the land is protected for pastoralists (in this context predominantly Barabaig) to use the land for grazing only. Respective village governments store all land use plans and the corresponding CCROs, and the originals are held at the national land office in Moshi, Kilimanjaro Region.

### **E3. Community level project governance**

Community consultations will continue to take place throughout the lifetime of the project between all key stakeholders and target groups, including the district, ward and village governments, Carbon Tanzania, UCRT, the Hadzabe and the surrounding communities. To ensure an ongoing iterative process throughout the implementation of the project, the contract stipulates

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<sup>22</sup> Hadzane is not a written language but spoken vigorously – communicating project objectives is vocal only and discussed at great detail with a quorum of acceptance being the norm.

<sup>23</sup> The district council is a decision making body consisting of the *Madiwani* (elected and appointed councilors of each of the wards, which can number 15), head of district departments for land, resource management and law, *Mkuragenzi* (district executive officer), the council is chaired by a councilor elected within the council.

<sup>24</sup> By-laws (*Sharia Ndogo* – literally meaning the small laws) are all written in Swahili, the national and government language.

that all community members are to be provided with the opportunity to participate in the project and that Carbon Tanzania must provide reports every six months on the development of the project through the relevant committees and meetings.

This contract serves as the community sale (PES) agreement for this project and includes additional stipulations that the parties have agreed to (Annex 3). The signing of the contract represents the free, prior and informed consent (FPIC) by the communities who have the opportunity to review, discuss and revise its contents with legal guidance from UCRT.

For further information on organizational structure, see organizational diagram (Section I, MoU between CT and UCRT (Annex 6) and list of key people involved (Annex 1). Table E.3 below further outlines the roles and activities of the participant groups.

<b>Table E.3: Project participants</b>			
<b>Key Function</b>	<b>Organization / group(s) involved</b>	<b>Type of group / organization and legal status</b>	<b>Brief description of activities</b>
Project administration	Carbon Tanzania	Project Developer	<ul style="list-style-type: none"> <li>- Administrative overheads</li> <li>- Reinvestment</li> <li>- Financial planning</li> <li>- Engagement with government of Tanzania</li> <li>- Market research</li> <li>- Project prospecting</li> <li>- Administer PES funds</li> </ul>
Project technical operations	Carbon Tanzania	Project Coordinator	<ul style="list-style-type: none"> <li>- Ensure project implementation in accordance with Plan Vivo, community sale agreements and PDD</li> <li>- Enter into PES agreements</li> <li>- Enter into sales contracts for Plan Vivo Certificates</li> <li>- Review field data, track project developments</li> <li>- Plan scaling-up of project in partnership with other stakeholders and report to the Plan Vivo Foundation</li> <li>- Serve as key actor in dispute resolution</li> <li>- Develop and monitor project cycle to ensure that it is in accordance with approved methodologies</li> <li>- Manage and support technical demands of project</li> <li>- Increase local capacity where possible</li> </ul>
Community engagement / participation	Ujamaa Community Resource Team	Community Partner	<ul style="list-style-type: none"> <li>- Provide legal counsel to communities for the purpose of securing land tenure and entering into PES agreements</li> <li>- Provide knowledge of local context to ensure CT is able to carry out the necessary field operations</li> <li>- Organize meetings with ward and district officials</li> <li>- Engage with communities where project is expected to scale-up</li> <li>- Serve as key actor in dispute resolution</li> </ul>

Table E.3: Project participants			
Forest management / monitoring	Communities of Mongo Wa Mono Domanga and Yaeda Chini	Communities recognized by central government as holding land tenure rights in project area	<ul style="list-style-type: none"> <li>- Develop land use plan and village by-laws</li> <li>- Serve as community guards and patrol, monitor and report (using activity based monitoring template) on natural resource use in violation of the land use plan</li> <li>- Take action against violators in accordance with village by-laws and Village Land Act</li> <li>- Monitor biodiversity impacts</li> <li>- Provide information on socioeconomic impacts</li> </ul>

## Part F: Ecosystem services and other project benefits

### F1. Carbon benefits of project activities

Table F.1 summarises the projected net carbon benefit attributable to this REDD project and the carbon eligible for crediting. The projected carbon benefits are based on a conservative estimate that the project will be successful in reducing deforestation in the project areas by 90% compared to the baseline scenario, thus accounting for leakage. The non-permanence buffer has been set at 20%, as shown below and discussed in detail in Part G of the PDD.

<b>Table F.1. Projected net carbon benefit</b>					
Project	Project start date	Baseline Carbon emissions (without project scenario) over 20 year crediting period	Carbon benefit eligible for crediting deducting 10% leakage buffer	Carbon benefit attributable to project with 20% risk buffer deducted	Annual carbon benefits of project eligible for crediting
		(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)
Yaeda I	2012	444,744	400,270	320,216	16,011
Yaeda II	2015	127,764	114,987	91,990	4,600
<b>Total</b>					<b>20,611</b>

See Part G for data sources.

Annual ex-post issuance of PVCs is based on annual activity-based monitoring results and validated at the start of the project and verified every 5 years.

### F2. Livelihood and other socioeconomic impacts

#### Socioeconomic Impacts

Participating communities will benefit from increased income stemming from the PES element of the project. Beyond the surplus revenue from the project's generation and sale of forest carbon offsets, there are significant, additional livelihood impacts. *Unique to the Hadza is the very real and substantial overlap between environmental and socioeconomic impacts.* As a population whose livelihood depends on the land, the Hadza will benefit from the improved habitat resulting from project activities. Preventing deforestation, thereby preserving the natural habitat on which the Hadza depend, will result in a sustained supply of food and other essential items. Additionally, project activities related to enforcing the land use plan will serve the purpose of protecting the watershed within the project area for the benefit of the Barabaig, Hadza and wildlife.

Surrounding the project area are several communities who employ unsustainable land use practices such as shifting agriculture driven by migration<sup>25</sup>. These practices, which are taking place on poor soils, have produced a cycle of low crop yields, necessitating increased land incursion resulting in mosaic deforestation. The project will address the root causes of the problem by working in partnership with Farm Africa providing training on intensified/improved agricultural techniques. This process has begun through agricultural land designation and a shift from maize (corn) to indigenous finger millet (*Eleusine coracana*) in Domanga but there is a need to partnership for a more extensive program with Tanzania based organizations work Farm Africa

<sup>25</sup> Op.cit Salerno (2016)

have been working on in neighbouring villages<sup>26</sup> that have experience in conservation agricultural techniques such as no till, and share common goals with Carbon Tanzania in the region. These activities are intended to ensure that agricultural yields are not negatively impacted and neighboring communities are not impacted by the project. Scaling-up of the project will continue based on UCRTs ongoing land use planning work. Villages where the project is suitable will be included more extensively in both project activities and benefit sharing in the future.

By preserving the area defined as protected area for utilization for cultural livelihoods by Hadzabe, this project enables them to maintain their unique lifestyle. As previously mentioned, a locally based ecotourism company has, for the last fifteen years, operated low impact safaris that highlight the Hadzabe culture and way of life. The community benefits from revenue sharing as a result of this tourism but without protection of their land, this revenue stream would reduce and eventually disappear.

<b>Table F.2. Livelihood benefits</b>						
<b>Cultural group</b>	<b>Financial assets and income</b>	<b>Energy</b>	<b>Forest products</b>	<b>Land tenure</b>	<b>User rights</b>	<b>Social and cultural assets</b>
Hadzabe	Sale of PVCs is complementary to income received from tourism	Fuel wood for cooking is minor and not included in carbon pool	Hadzabe are highly dependent on forest foods and forest dependent wildlife	Land tenure is legally binding through village by-laws and implementation of CCROs	User rights for hunting and gathering are legally binding through village by-laws and implementation of CCROs	Protection of ancestral lands  Likelihood of land disputes arising from protection of project area reduces
Barabaig	No income is currently received however cattle health from improved grazing does represent a financial asset	Fuel wood for cooking is minor and not included in carbon pool	Barabaig are highly dependent on grazing resources especially from September to the beginning of the rains in December	Land tenure is legally binding through village by-laws and implementation of CCROs	User rights for grazing are legally binding through village by-laws and implementation of CCROs	Protection of ancestral land  Likelihood of land disputes arising from protection of project area reduces

### **F3. Ecosystem impacts**

This project will promote the protection of indigenous species according to the national laws of Tanzania and international conventions (Ramsar, CITES, UNESCO, see Part B2) to which Tanzania is a signatory. The strengthening of local boundaries, according to the land use plan and village by-laws, creates an enabling environment for local enforcement and protection of indigenous and endangered species from poachers. By preventing animal poaching, this project and the Hadza are helping to promote and conserve the natural ecosystems and mammal populations on which their way of life depends.

By protecting the traditional land of the Hadza and Barabaig through patrolling, the project simultaneously improves the habitat of the wildlife species native to the project area by

<sup>26</sup> <http://allafrica.com/stories/201311250499.html>

preventing poaching and improving grazing. Protection of the woodland area will also maintain biodiversity by preserving habitat for the diverse native fauna and flora species typical Acacia-Commiphora woodland. Adherence to the village land use plan will result in protection of the interior springs in the protected area improving water resources for both wildlife and people. Additional activities with agriculturalists will prevent incursion and limit the loss of topsoil that is characteristic of the shifting agriculture currently practiced

Table F.3. Ecosystem Impacts				
Intervention type	Biodiversity Impacts	Water availability impacts	Soil conservation impacts	Other (Cultural)
Improved land use planning which includes areas for wildlife protection, water conservation and sustainable grazing	Anti-poaching protects large mammal species a critical resource for Hadzabe	Land use planning protects water sources specifically for hunter-gatherers and pastoralists, interior springs protected for wildlife and hunter-gatherers	Improved grazing is beneficial for wildlife and pastoralist communities	Anti-poaching and protection of water sources increase availability of medium/large mammals for hunter-gatherers. Protection of water sources is essential to
	Preservation of habitat for wildlife and fauna	Preservation of catchment system in project area	Soil fertility preserved	Availability of food for hunter-gatherers preserved and grazing for pastoralists
	Diverse fauna are essential seed disperses and pollinators in these environments	Preservation of catchment system in project area	Top soil is not lost due to shifting agriculture	Likelihood of land disputes arising from protection of project area reduces

## Part GI: Technical Specifications - Yaeda I (verified in 2012, 2017)

### GI.1. Project interventions and activities

This project supports three main interventions; the facilitation of participatory land use planning to ensure communities own their land and resources through CCROs; the support of village governments and communities to enforce their associated village by-laws and to enforce the land use plan; and finally to train agriculturists in improved techniques and management to reduce the need to migrate to new land. The specific objectives to achieve each intervention are outlined below in Table G1.

Table GI.1. Improved land use planning and management activities			
Type of intervention	Objectives	Brief Description	Target Groups
<b>Participatory land use planning and management of natural resources</b>	<ul style="list-style-type: none"> <li>- To protect traditional Hadza lifestyle by specifying areas for conservation, agricultural and pastoralist activities</li> <li>- To secure recognition of land rights and land tenure from the central government</li> <li>- To educate communities on the ecological and livelihood benefits of conservation</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitate community-led planning process to develop land use plan and by-laws that supports sustainable and diverse land uses</li> <li>- Apply for approval of land use plan and by-laws from district officials and secure title deed recognizing Hadza as owners</li> <li>- Develop educational materials for use in schools and community meetings that promote the ecological and livelihood benefits of conservation</li> </ul>	<ul style="list-style-type: none"> <li>- Hadza community</li> <li>- Villages of Mongo Wa Mono and Domanga</li> <li>- Surrounding villages</li> </ul>
<b>Enforcement of district approved village land use plan and by-laws in accordance with national land laws</b>	<ul style="list-style-type: none"> <li>- To ensure the indigenous Acacia-Commiphora woodland remains owned and managed by Hadza and protected for traditional and cultural utilization</li> <li>- To reduce emissions in relation to the BAU scenario</li> <li>- To generate certified carbon credits to be sold and revenues realized by target population in the form of PES</li> </ul>	<ul style="list-style-type: none"> <li>- Employ and train community guards to monitor forest disruption, land conversion and illegal poaching activities in project area</li> <li>- Report instances of incursion or other disturbances</li> <li>- Communicate with neighboring villages about prohibited land use and associated penalties</li> <li>- Enforce land use plan and by-laws through customary and legal dispute resolution mechanisms as necessary</li> </ul>	<ul style="list-style-type: none"> <li>- Hadza community</li> <li>- Villages of Mongo Wa Mono and Domanga</li> <li>- Surrounding villages</li> </ul>
<b>Training in improved agricultural techniques suitable to the conditions found in reference region to combat primary driver of deforestation.</b>	<ul style="list-style-type: none"> <li>- To improve the capacity and technical know-how of farmers within and surrounding the project area</li> <li>- To mitigate leakage by tackling the key underlying cause behind deforestation in and around the project area</li> <li>- To improve the crop yields and livelihoods of communities surrounding project area</li> </ul>	<ul style="list-style-type: none"> <li>- Contract with local agricultural specialist to facilitate training</li> <li>- Track results of farmers employing new techniques to serve as a model for farmers more resistant to change</li> <li>- Repeat and add to training as necessary</li> </ul>	<ul style="list-style-type: none"> <li>- Agriculturists in participating and surrounding villages</li> </ul>

## **GI.2. Additionality and environmental integrity**

**The following natural resource management laws apply to the project activities:**

### ***The Forest Act of 2002***

At present the Forest Act (2002) does not mention the terms “Carbon Rights” or “Carbon Trading”, or indeed any other phrase concerning the leveraging of finance through non-extractive forest management activities. Tanzania’s National Forest Policy is currently being revised and any subsequent legislation that either amends or repeals the Forest Act 2002 may affect the management of the forest area within the project area. However the following policy statements illustrate that future developments in respect to carbon rights are clearly integrated into the government’s policy on forest management.

***Policy statement (5): To enable sustainable management of forests on village lands, those forests that communities wish to retain will be reserved and accorded clear ownership, user rights and incentives under REDD+.***

***Policy statement (7): Private and community forestry including management of existing natural forests, afforestation and reforestation initiatives with carbon trade opportunities and other benefits will be promoted and supported.***

### ***The Village Land Act 1999***

The legal tenure over the project area will be conferred on the target community through the Village Land Act, which allows traditional communities to apply for Customary Rights of Occupancy over areas used to support their traditional lifestyles. In this way the area under protection will be defined by this land deed, and the obligations of land and resource management outlined under this same law<sup>27</sup>.

### ***The Environmental Management Act 2004***

This law governs and regulates all activities that may have significant impacts on the environment. It requires any project that will impact the environment to be subject to an environmental impact assessment process, and further defines the kinds of projects that qualify for this scrutiny. The management and protection of natural habitat by local communities is not subject to these regulations, but the Act does give the national regulatory body (in this case The National Environment Management Council (NEMC)) powers to monitor the impact of any intervention that may affect the environment.

### ***The Local Government Authorities Act 1982***

This law governs the way that local government interacts with outside bodies, such as investors and not-for-profit organizations. It outlines codes of practice for administering and implementing projects within villages and governs the way that responsibilities and revenue are shared in accordance with the project activities. Any habitat protection activities tied to payments for ecosystem services (i.e., a carbon finance project for woodland conservation such as this) are governed by this law with respect to village participation. This ensures the mechanisms that are put in place are in agreement with Tanzanian law at both a national and local level, rather than

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<sup>27</sup> You will note that the CCROs clearly designate the land use type; i.e. protected for the use of Hadzabe or protected for pastoralist use.

imposed by an outside body. It is recognized that sustainability is greatly increased in the scenario where local government is the main stakeholder in the implementing and governing of project activities.

### **Additionality**

The project does not owe its existence to legislative decrees or economically viable land use initiatives. Though the project area was set aside in the Mongo Wa Mono and Domanga land use plan for the traditional land use of the Hadzabe people prior to any discussion of REDD+, the land use plan alone is not sufficient to prevent deforestation in the area. This is demonstrated by the fact that an area initially set aside in the land use plan for use only by Hadzabe was then removed in 2010 prior to the inception of the Yaeda I project.

In the absence of carbon finance, the project area would not be adequately protected due to both cultural and financial factors. The Hadzabe life style, which involves moving frequently, leaves agriculturalists with the impression that land is open and available for general use, an impression that is reinforced by the Hadzabe peoples' traditional passivity when their lands were encroached. Thanks to these factors it is likely that the project area would be poorly defended by the Hadzabe without the efforts of the REDD+ project to organize and pay Hadzabe community members to patrol and enforce the land use plan. Additionally, the project will provide funds from carbon finance to support the village and district government's efforts to better implement the land use plan.

There is no evidence that the project area has been negatively altered prior to the start of the project for the purpose of claiming payments for ecosystem services, drivers of deforestation are based on poor land use planning both locally and regionally, there are no land use schemes or activities in place that are negatively impacting the ecological integrity of the area outside of the aims and objectives of this project. Carbon Tanzania's project partners have been working in the Yaeda Valley on land use planning prior to the beginning of this project and continue to work within the area and beyond as part of a joint strategy to improve and increase land use planning and resource management in neighboring villages. There are no PES based projects in the area or the region, and Tanzania does not have a national GHG emission scheme or formal nested agreement on REDD+.

### **GI.3. Project period**

The crediting period for this project is 20 years (2012-2032). Payments for ecosystem services to participating communities will be structured over the 20-year crediting period as per the community sale agreement. The rationale for this length of time is twofold. First, since land use change takes place over many years, and the risk of reversal is a real threat for biological sequestration, this project chose an extended period so as to be accountable to the threat of non-permanence. Additionally, the project is introducing novel concepts to participants, which will require time to be adopted as the new norm. Specifically, it is understood that convincing people to accept agricultural practices based on conservation will be a slow process and requires evidence of success be shown to individual farmers until the more sustainable approach becomes the new conventional wisdom.

## GI.4. Baseline scenario

The baseline or without project scenario, was established from the historical deforestation rate determined through analysis of ground-truthed Landsat data, with technical assistance from The Nature Conservancy<sup>28</sup>, and calculation of the carbon content from aboveground biomass (AGB) surveys following the Winrock methodology. Monitoring of carbon stocks will be carried out through a system of *continuous activity-based monitoring* conducted by Carbon Tanzania, its partners and the community guards (*Walinzi Wajadi*) who are required to collect and report information directly relevant to the land use plans and subsequent village by-laws (see Part K). Change detection and leakage will be established by satellite monitoring on a 5-year basis (following VCS VM15) using the same methodology that was used to establish the baseline and will be conducted by The Nature Conservancy. The project applied species and genus specific allometric equations to the AGB data and determined the belowground biomass (BGB) from a root-to-shoot ratio for woodland provided in the IPCC Good Practices Guidance for Land Use Land Use Change and Forestry document.

Recent land use change within the project area consists predominantly of conversion from *Acacia-Commiphora* woodland to a form of shifting agriculture. This land intrusion, conversion and resulting deforestation are contrary to the village by-laws, the village land use plan and national laws governing land acquisition and utilization within Tanzania<sup>293031</sup>. The encroachment originates from both inside village designated agricultural areas and outside the villages of Mongo Wa Mono, Domanga from the neighboring villages of Eshkesh but mostly from more densely populated areas to the west (Meatu District), south (Mbulu District) and north (Karatu District)<sup>32</sup>.

### Carbon Pools

**Aboveground biomass and belowground biomass were the only carbon pools** considered at this stage when calculating the likely carbon benefits resulting from project interventions. Due to the difficulty of measuring additional carbon pools in the context of community based monitoring, the project has opted to exclude soil carbon, leaf litter, deadwood, and grass biomass. By not including these carbon pools in the calculations, **the projected carbon benefits are assuredly conservative**. Whilst soil carbon was not included, 11 soil samples were taken and analyzed, based on the fact that deforestation results in complete removal of both above and below ground biomass, soil carbon might be introduced as a carbon pool at a later date.

### Baseline methodology

The project has used the Winrock aboveground biomass (AGB) methodology<sup>33</sup> to calculate the existing carbon stocks in the project areas utilizing plot sampling. In preparation for carrying out the surveys, the project consulted with statistician Dr. Colin Beale, affiliated with the University of York. The statistical analysis tool R was used to randomize plot selection and calculate carbon

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<sup>28</sup> Annex 5. Memorandum of understanding for scope of work – CT / TNC.

<sup>29</sup> Madsen, A (2000). The Hadzabe of Tanzania – Land and Human Rights for a Hunter-Gatherer Community. Centraltrykkeriet Skive A/S

<sup>30</sup> Peterson, D (2013) Hadzabe: By the light of a million fires. *Mkuki na Nyota Press, DSM*.

<sup>31</sup> Deforestation in Tanzania - A Development Crisis, CICG Library

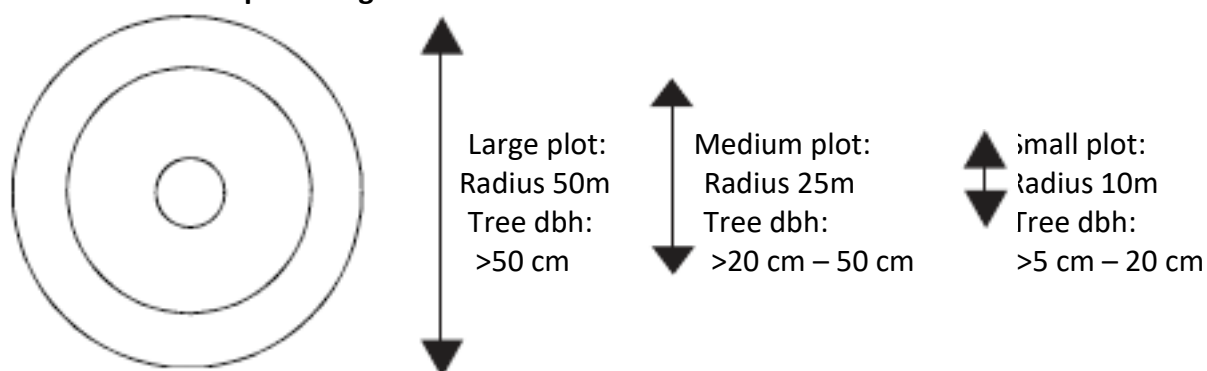
<sup>32</sup> UCRT (2007). The Hadza Cultural Mapping Project.

<sup>33</sup> [http://planvivo.org/docs/LULUCF\\_Sourcebook\\_compressed11.pdf](http://planvivo.org/docs/LULUCF_Sourcebook_compressed11.pdf)

content from the survey results. The track in the project area was mapped using a Garmin GPS and downloaded using Mapsource<sup>34</sup>. The transect lines and plots were randomly generated using the following criteria: more than 300m away from each other, more than 200m away from the track and no more than 1000m away from the track.

A three-nest circular plot design was chosen. Different sized trees, determined by diameter at breast height (dbh), were measured in each concentric circle as depicted below.

### Three-nest circular plot design



A preliminary survey using temporary plots was carried out to determine how many plots should be sampled in a full survey and whether stratification was necessary. The results of this initial survey determined that 62 plots should be sampled and that stratification was not applicable to the project area due to the relative homogeneity of the species and carbon stocks within it.

Allometric equations, obtained from the Kasigau Corridor REDD project<sup>35</sup> (due mainly to the similarity in species composition between the two areas) in Kenya, were used to calculate the tonnes of carbon per tree based on its dbh. Species specific equations were used when available, if no species specific equation was available, a genus specific equation was used. These equations are listed in Table 1, where y = tonnes carbon and x = dbh.

### Species and Genus Specific Allometric Equations

Tree Species or Genus	Allometric Equation
Acacia bussei	$y = 3.054x^{1.6692}$
Acacia hockii	$y = 1.7392x^{1.8478}$
Acacia nilotica	$y = 0.7075x^{2.1742}$
Acacia tortilis	$y = 3.6225x^{1.4924}$
Acacia	$y = 2.0276x^{1.761}$
Boscia coriacea	$y = 0.3641x^{2.1587}$
Boswellia neglecta	$y = 0.1521x^{2.526}$
Commiphora africana	$y = 0.5533x^{1.978}$
Commiphora campestris	$y = 0.0792x^{2.7284}$
Commiphora confusa	$y = 0.1987x^{2.461}$

<sup>34</sup> Mapsource – Garmin specific software for downloading GPS data

<sup>35</sup> Annex 3 of Kasigau Corridor REDD+ Project PDD accessible at <http://www.climate-standards.org/category/projects/>

Commiphora	$y = 0.1661x^{2.4862}$
Lannea alata	$y = 0.6561x^{2.0275}$
Lannea rivaie	$y = 0.5053x^{2.1106}$
Lannea	$y = 0.5898x^{2.0566}$

In cases where neither species nor genus specific equations were available, one of two generic functions was used depending on the dbh. These equations obtained from the Kasigau Corridor REDD project<sup>36</sup> in Kenya are listed in Table 2, where y = tonnes carbon and x = dbh.

#### Generic Allometric Equations

Tree Size	Allometric Equation
dbh <35 cm	$y = 0.5217x^{2.1393}$
dbh >35 cm	$y = 0.574x^2 + 9.8184x - 73.186$

#### Analysis of Deforestation Rate & Baseline Scenario

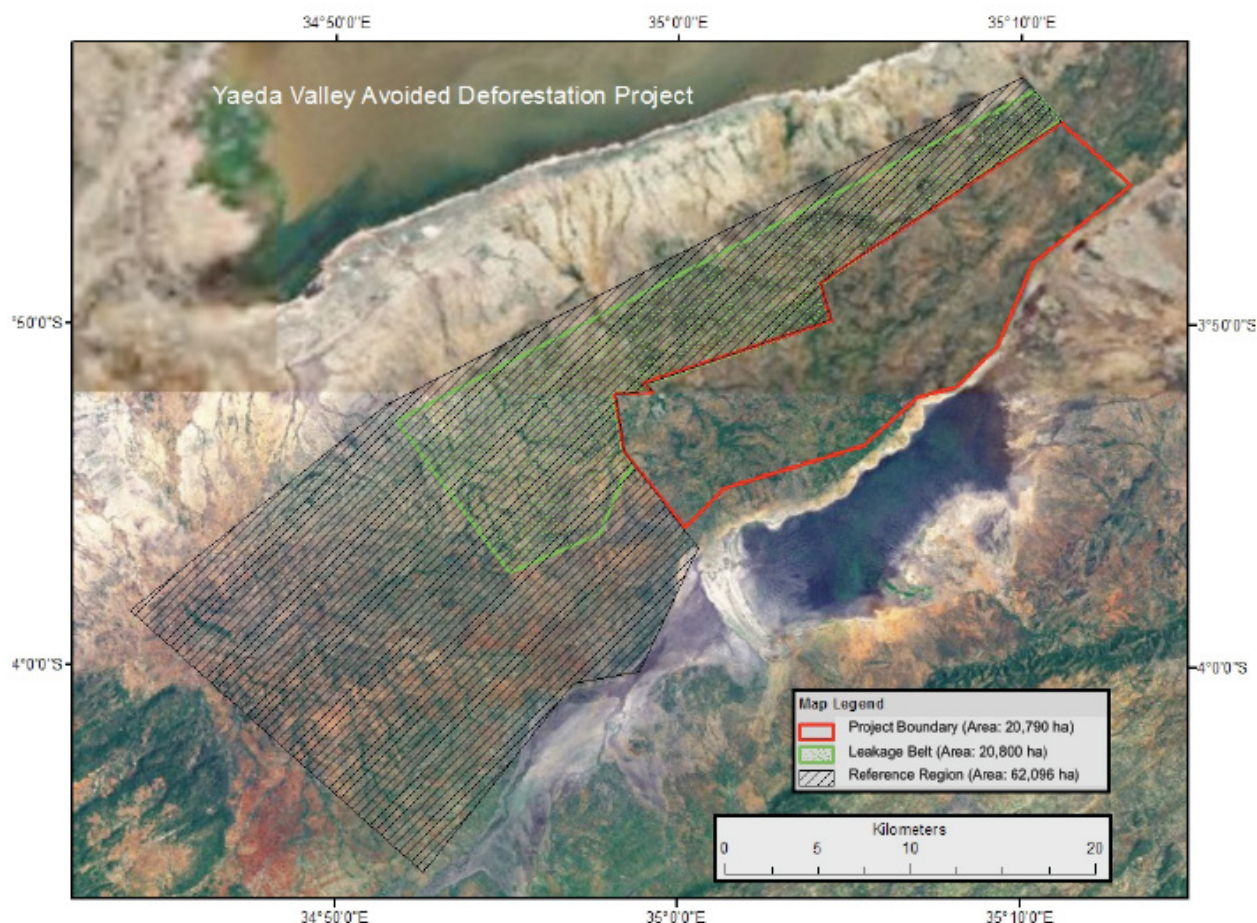
The deforestation rate in the reference region, which includes the leakage belt, was determined through analysis of ground-truthed Landsat data with technical assistance from The Nature Conservancy<sup>37</sup>. The total land area of the reference region is 62,096 ha, of this area, 58,838.4 ha of *Acacia-Commiphora* woodland existed in 2000 which was then reduced to 53,380.8 ha by 2010 (see analyzed satellite imagery, Map G1.4.2) due to increasing conversion and expansion of agriculture.

The rate of deforestation has increased from 4.2% in the period 2000 – 2005 to 4.6% in the period 2005-2010. In order to ensure a conservative baseline we propose implementing the use of a constant annual rate of deforestation of 0.93% per year, which is the average taken over both time periods. This annual loss of 545.8 ha in the reference region when applied to the forested habitat within the project area, equates to 191.7ha of forest loss per year.

<sup>36</sup> Annex 3 of Kasigau Corridor REDD+ Project PDD accessible at <http://www.climate-standards.org/category/projects/>

<sup>37</sup> The Nature Conservancy is a U.S. based not-for-profit organization operating in more than 30 countries around the globe. The Tanzanian division of TNC provides technical support to a variety of community-based conservation efforts.

#### Map G1.4.1. Project area, reference region and leakage belt



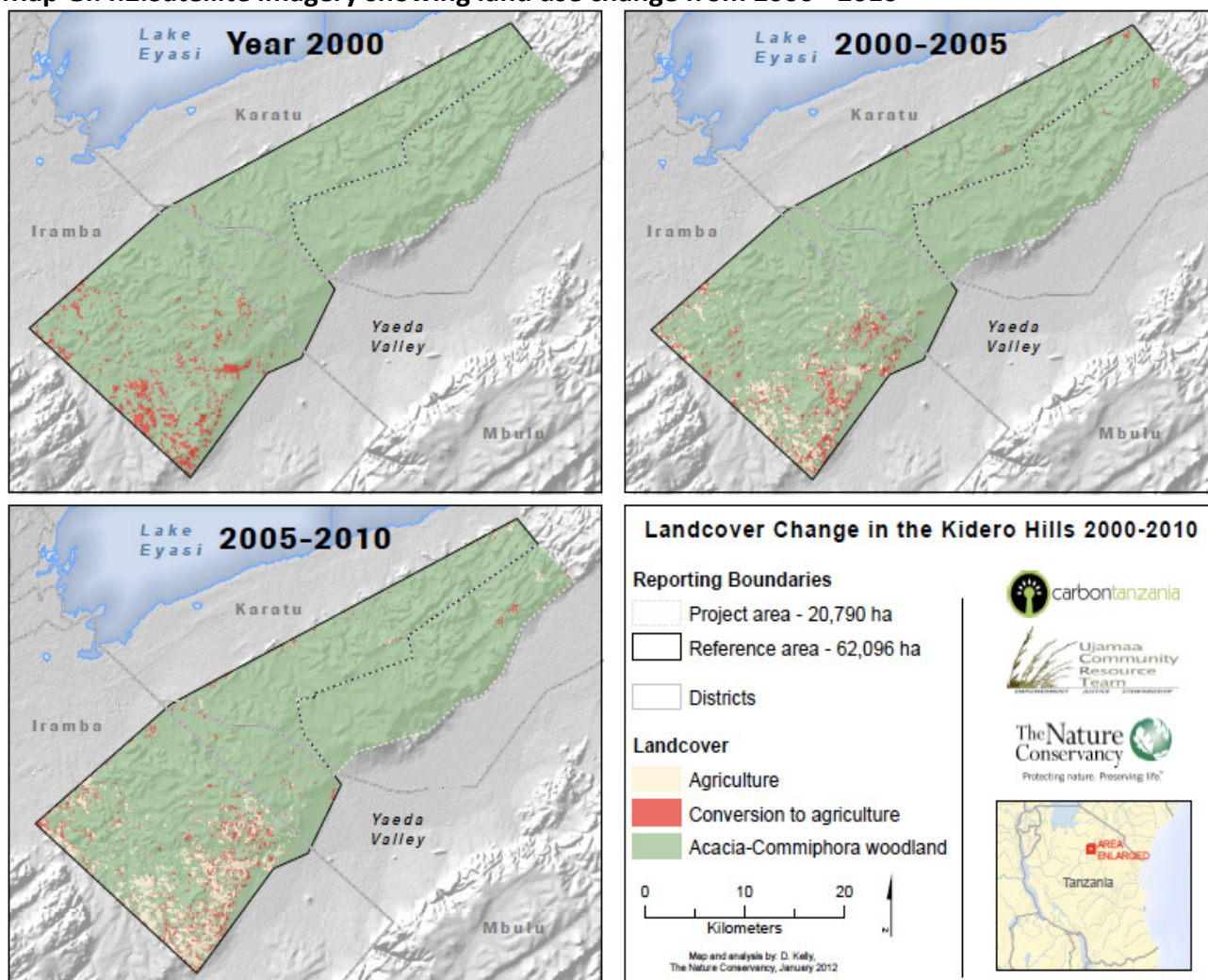
The map above shows the project area (red boundary 20,611ha), leakage area (green boundary 20,800ha) and reference region (shaded area 62,096ha), the entire area is on a ridge between the Lake Eyasi basin and the Yaeda wetlands, both areas unsuitable for the type of agriculture found in the reference region. For this reason the leakage belt and reference region are located along the ridge that has the same soil type, aspect and topography as the deforestation threat.

The reference region (shown in map G1.4.1) is outside of the villages of Mongo Wa Mono and Domanga and was until 20 years ago used by the Hadzabe as a hunting area<sup>38</sup>, the reference region has no land use plans, or legal designation, partly due to the presence of a largely immigrant population that has gradually displaced the Hadzabe over the last 10-20 years<sup>39</sup> (see Part B3).

<sup>38</sup> UCRT (2007). The Hadza Cultural Mapping Project

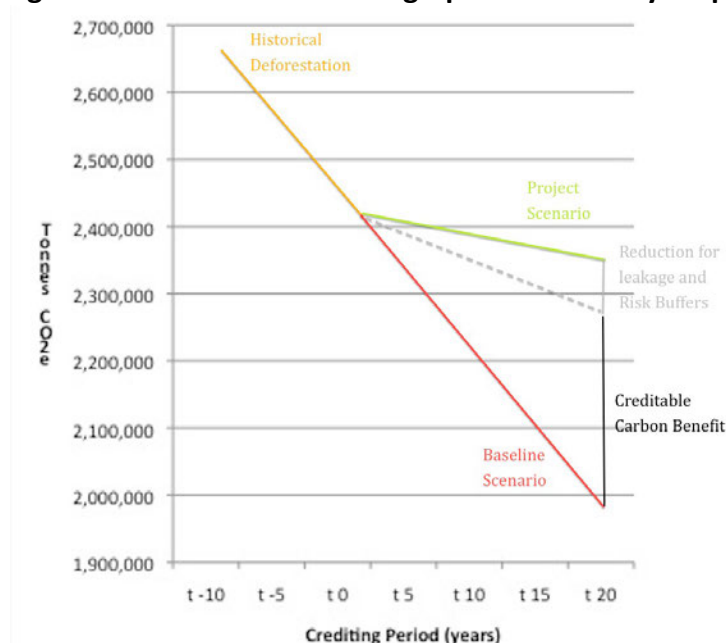
<sup>39</sup> Opcit (UCRT, Peterson)

**Map GI.4.2. Satellite imagery showing land use change from 2000 - 2010**



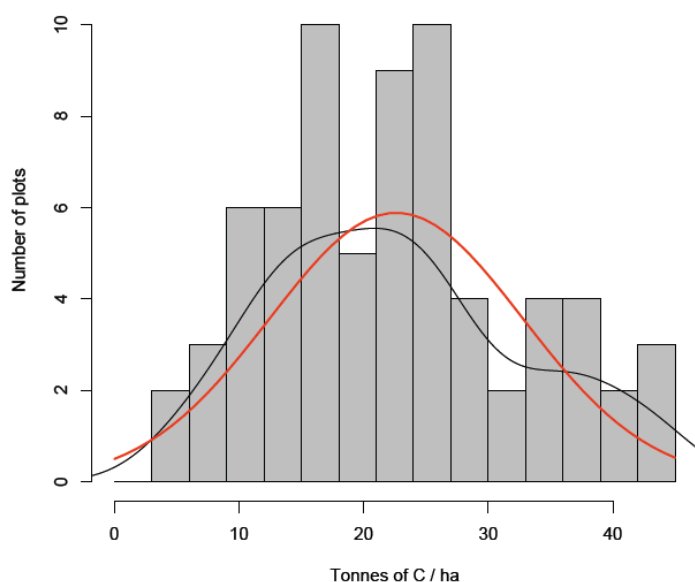
The baseline, or 'without project' scenario, was determined by applying the historical rate of deforestation in the reference area to the land within the project area that is likely to be cleared without the intervention of this project. The assumption that the deforestation rate going forward would remain at least as high as the historical rate is justified by the continued land conversion in the reference region and the documented population growth (see Part C.1) in the area which points strongly to land hunger being a constant and increasing pressure.

**Figure. GI.4.3. Carbon benefit graph over the 20 year project period**



The project has set a 20% risk buffer as a protective measure in the case of non-permanence and another 10% to be held as a leakage buffer that will be monitored annually. Creditable carbon benefits over the project lifetime are therefore 320,216 tCO<sub>2</sub>e (Figure GI.4.5.)

**Figure GI.4.4. Histogram chart of sampled carbon stocks**



Model-based clustering revealed that there *are no distinct habitat groups*, confirming the preliminary survey results that stratification is not applicable. Applying a 95% confidence interval, the field samples determined the existing carbon content of AGB in the project area to be  $22.6 \pm 2.8 \text{ tC/ha}$ .

Belowground biomass (BGB) was calculated based on the root-to-shoot, also known as root to stem, ratio for woodland provided in the IPCC Good Practice Guidance on Land Use, Land Use Change and Forestry<sup>40</sup> of 0.40. This ratio, applied to the results of the AGB survey, produced a BGB carbon content of 9.04 tC/ha.

<sup>40</sup> IPCC (2006) Guidelines for National Greenhouse Gas Inventories. Table 4.4. value for tropical shrubland

**Figure Gl.4.5. Baseline emission calculations Yaeda I**

1. Area of woodland under threat in project area	20,611	ha	Project area of 20,790 minus the area already deforested between 2000-2010 (179ha)
2. Ha of woodland at end of 20-year crediting period without project	16,777	ha	Application of 0.93% deforestation rate, with annual loss of 191 ha
3. Loss of habitat without project over 20-year crediting period	3,834	ha	= Row 1 – Row 2
4. Total tCO <sub>2</sub> e avoided during project lifetime	444,744	tCO <sub>2</sub> e	= Row 3 x 116tCO <sub>2</sub> e
5. Leakage 10% removed	400,270	tCO <sub>2</sub> e	= Row 4 x 0.9
6. Risk buffer 20% removed	320,216	tCO <sub>2</sub> e	= Row 5 x 0.8
7. Annual carbon benefits of project eligible for crediting	16,011	tCO <sub>2</sub> e	= Row 6 / 20 years

### Data sources and assumptions

The following steps were taken to determine the carbon benefits attributable to the project:

#### Define the land area within the project boundary that is under threat of deforestation

The project area is the 20,611 ha of land designated in the CCRO<sup>41</sup> as protected area for utilization for cultural livelihoods by Hadza. The *entire project area* is of the same soil type, habitat type and aspect as the reference region and is therefore considered under threat of deforestation and conversion to agricultural land. This assessment is based on the estimates of local stakeholders, observations from satellite analysis of the surrounding area and the expert advice of agricultural experts.

#### Determine baseline scenario using historical deforestation rate

Application of the historical deforestation rate in the reference region, 0.93%, to the land under threat in the project area results in a projected loss of 191 ha per year. After 20 years, the remaining *Acacia-Commiphora* would be reduced to 16,777 ha, a total loss of 3,834 ha from the project start.

#### Calculate the carbon benefit

The existing carbon content, 31.64 tC/ha is calculated from the AGB surveys and application of the BGB root-to-shoot ratio. Applied to the 3,834 ha of conserved *Acacia-Commiphora* woodland, the carbon benefit of the project is 97,040 tC. This figure is based on the assumption that when woodland is converted to shifting agriculture, the above ground biomass and associated carbon stock is removed and the stored carbon is released to the atmosphere. Carbon is converted to CO<sub>2</sub>e by multiplying the carbon by 44/12, the molecular weight ratio of elemental carbon to gaseous carbon dioxide. The carbon benefits of this project are 116tCO<sub>2</sub>e/ha or 444,744 tCO<sub>2</sub>e over the lifetime of the project (see Figure Gl.4.5.).

<sup>41</sup> Annex 6. CCRO certificate for Domanga and Mongo Wa Mono

### **Deduct permanence and leakage buffers**

The project has set a 20% risk buffer as a protective measure in the case of non-permanence and another 10% to be held as a leakage buffer that will be monitored annually. An explanation of how these figures were set can be found in Figure Gl.4.5. Creditable carbon benefits over the project lifetime are therefore 320,216 tCO<sub>2</sub>e.

### **Calculate annual carbon benefit eligible for crediting**

The project's total creditable carbon benefit, 320,216 tCO<sub>2</sub>e, when divided over the 20-year crediting period equates to 16,011 tCO<sub>2</sub>e per year to be issued ex-post following the monitoring protocols outlined in Part K. The calculation of the expected carbon benefit from the project is depicted in Table Gl.5 and visually represented in Gl.4.3 above. Issuance of the annual amount will depend on annual monitoring (Part K) and verified after 5 years by satellite imagery.

### **Gl.5. Ecosystem services benefits**

Table Gl.5. summarises the projected net carbon benefits attributable to this REDD project and the carbon eligible for crediting. The projected carbon benefits are based on a conservative estimate that the project will be successful in reducing deforestation in the project area by 90% compared to the baseline scenario in order to account for leakage (Gl.6 & Part K). Non-permanence buffer has been set at 20% as shown below.

<b>Table Gl.5. Projected net carbon benefit</b>					
Project	Project start date	Baseline Carbon emissions (without project scenario) over 20 year crediting period	Carbon benefit eligible for crediting deducting 10% leakage buffer	Carbon benefit attributable to project with 20% risk buffer deducted	Annual carbon benefits of project eligible for crediting
		(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)
Yaeda I	2012	444,744	400,270	320,216	16,011

Annual ex-post issuance of PVCs is based on annual activity-based monitoring results and verified every 5 years.

### **Gl.6. Leakage and uncertainty**

#### **Measures to address leakage**

Understanding the type and magnitude of potential leakage resulting from the project is essential to the success of this undertaking. For this reason, Carbon Tanzania engaged in a series of conversations with community members to determine probable sources of leakage and to develop a strategic response to it. The project will mitigate leakage wherever it is possible and cost effective to do so and discount when mitigation is not a viable strategy. Cost effectiveness is determined by the level of leakage and carbon density of the area where leakage takes place as well as the short and long term costs and likely success of proposed interventions. A 10% leakage buffer has been set (Table Gl.5.).

The project's primary strategy to prevent leakage involves tackling the underlying causes of the historic deforestation pattern and expanding this REDD+ project to adjacent villages. To this end, the project coordinator in partnership with UCRT will continue to contract with agricultural

specialists in sustainable agriculture to provide the neighboring villages with an alternative to continued land conversion (see Part F). This training will introduce the community to alternative methods of farming which are expected to improve their yields despite the challenging setting. This will, in turn, improve their livelihoods and minimize the potential for conflict with the Hadzabe and Barabaig who have begun to enforce their land use plans and CCROs. It is expected that leakage will reduce over time as a result of successful interventions and by engaging a greater number of villages in land use planning and development of CCROs, a continued process of positive leakage that can allow for continued expansion of the REDD project. As a result, it is likely that the project will have a positive effect on forest carbon stocks beyond what is credited due to any leakage being positive rather than negative in the long-term (Part K).

<b>Table Gl.6 Leakage risks and management measures</b>		
<b>Leakage Risks</b>	<b>Level of risk (low/medium/high)</b>	<b>Management Measures</b>
Displacement of agricultural activity to other land within the reference region	Medium	1. Land use planning incorporates planned agriculture. 2. Engaging agricultural specialists to teach climate smart agriculture. 3. Engaging neighbouring communities in land use planning to reduce migration and illegal agriculture
Displacement of biomass collection	Low	Biomass collection is currently not a driver of deforestation
Displacement of charcoal manufacture	Low	Charcoal is currently not a problem however this is may change within the lifetime of the project.
Revenue is not realized in neighboring communities	Low	Project is planning to scale-up into neighboring villages to increase opportunities for benefit sharing.

### **Additional activities to be supported by the project**

This project brings multiple benefits to participating communities. Plans to scale up the project are already in progress (see section GII below). The concepts of this REDD project have been introduced to the neighboring communities who see the benefits of strengthened land tenure, sustainable natural resource use and resulting PES. After completing an initial assessment of the viability of expanding the project in different areas, Carbon Tanzania and UCRT are now working with additional communities. All neighboring villages that have created district approved land use plans and have been granted land tenure by the central government could be included in this REDD project in the future. By continually expanding the project (see section GII below), a greater area of woodland will be protected from deforestation pressures, sustainable land use will be more widely adopted, and additional villages and households will benefit from the resultant socioeconomic and environmental impacts. Scaling up the project will involve much of the same processes as the pilot phase including participatory planning, capacity building and the development of appropriate community-based monitoring plans. An additional element of environmental education in the primary schools of the surrounding areas, as requested by the ward education officer, will also be added to the project activities. Lessons on the carbon cycle and the wider ecosystem will be developed and taught by an experienced environmental education teacher who works within the Tanzanian school system.

## Part GII: Technical Specifications. Yaeda II

### GI.1. Project interventions and activities

This project supports three main interventions; Facilitate participatory land use planning to ensure communities own their land and resources through CCROs, to ensure the village government and communities are able to enforce the associated village by-laws and enforce the land use plan, and finally to train agriculturists in improved techniques and management. The specific objectives to achieve each intervention are outlined below in Table GI.1.

Table GI.1 Improved land use planning and management activities			
Type of Activity	Objectives	Brief Description	Target Groups
<b>Participatory land use planning and management through education and empowerment</b>	<ul style="list-style-type: none"> <li>- To protect traditional Barabaig lifestyle by specifying areas for conservation, agricultural and pastoralist activities</li> <li>- To secure recognition of land rights and land tenure from the central government</li> <li>- To educate communities and village governments on the ecological and livelihood benefits of conservation</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitate community-led planning process to develop land use plan and by-laws that supports sustainable and diverse land uses</li> <li>- Apply for approval of land use plan and by-laws from district officials and secure title deed recognizing Yaeda Chini as owners</li> <li>- Develop educational materials for use in schools and community meetings that promote the ecological and livelihood benefits of conservation</li> </ul>	Pastoralist communities and village government of Yaeda Chini
<b>Enforcement of district approved village land use plan and by-laws in accordance with national land laws</b>	<ul style="list-style-type: none"> <li>- To ensure the indigenous Acacia-Commiphora woodland remains owned and managed by Barabaig and protected for traditional and cultural grazing</li> <li>- To reduce emissions in relation to the BAU scenario</li> <li>- To generate certified carbon credits to be sold and revenues realized by target population in the form of PES</li> </ul>	<ul style="list-style-type: none"> <li>- Employ and train community guards to monitor forest disruption, land conversion and illegal poaching activities in project area</li> <li>- Report instances of incursion or other disturbances</li> <li>- Communicate with neighboring villages about prohibited land use and associated penalties</li> <li>- Enforce land use plan and by-laws through customary and legal dispute resolution mechanisms as necessary</li> </ul>	Pastoralist communities and village government of Yaeda Chini
<b>Training in improved agricultural techniques suitable to the conditions found in reference region to combat primary driver of deforestation.</b>	<ul style="list-style-type: none"> <li>- To improve the capacity and technical know-how of farmers around project area</li> <li>- To mitigate leakage by tackling the key underlying cause behind deforestation in and around the project area</li> <li>- To improve the crop yields and livelihoods of communities surrounding project area</li> </ul>	<ul style="list-style-type: none"> <li>- Contract with local agricultural specialist to facilitate training</li> <li>- Track results of farmers employing new techniques to serve as a model for farmers more resistant to change</li> <li>- Repeat and add to training as necessary</li> </ul>	Village government of Yaeda Chini and Agriculturists in surrounding villages

## **GII.2. Additionality and environmental integrity**

**The following natural resource management laws apply to the project activities:**

### ***The Forest Act of 2002***

At present the Act does not mention the terms “Carbon Rights” or “Carbon Trading”, or indeed any other phrase concerning the leveraging of finance through non-extractive forest management activities. Tanzania’s National Forest Policy is currently being revised and any subsequent legislation that either amends or repeals the Forest Act 2002 may affect the management of the forest area within the project area. However the following policy statements illustrate that future developments in respect to carbon rights are clearly integrated into the government’s policy on forest management.

***Policy statement (5): To enable sustainable management of forests on village lands, those forests that communities wish to retain will be reserved and accorded clear ownership, user rights and incentives under REDD+.***

***Policy statement (7): Private and community forestry including management of existing natural forests, afforestation and reforestation initiatives with carbon trade opportunities and other benefits will be promoted and supported.***

### ***The Village Land Act 1999***

The legal tenure over the project area will be conferred on the target community through the Village Land Act, which allows traditional communities to apply for Customary Rights of Occupancy over areas used to support their traditional lifestyles. In this way the area under protection will be defined by this land deed, and the obligations of land and resource management outlined under this same law<sup>42</sup>.

### ***The Environmental Management Act 2004***

This law governs and regulates all activities that may have significant impacts on the environment. It requires any project that will impact the environment to be subject to an environmental impact assessment process, and further defines the kinds of projects that qualify for this scrutiny. The management and protection of natural habitat by local communities is not subject to these regulations, but the Act does give the national regulatory body (in this case The National Environment Management Council (NEMC)) powers to monitor the impact of any intervention that may affect the environment.

### ***The Local Government Authorities Act 1982***

This law governs the way that local government interacts with outside bodies, such as investors and not-for-profit organizations. It outlines codes of practice for administering and implementing projects within villages and governs the way that responsibilities and revenue are shared in accordance with the project activities. Any habitat protection activities that are tied to payments for ecosystem services (i.e. a carbon finance project for woodland conservation such as this) are governed by this law in terms of village participation. This ensures that the mechanisms that are put in place are in agreement with Tanzanian law at both a national and local level, rather than imposed by an outside body. It is recognized that sustainability is greatly increased in the scenario

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<sup>42</sup> You will note that the CCROs clearly designate the land use type; i.e. Protected for the use of Hadzabe or Protected for pastoralist use.

where local government is the main stakeholder in the implementing and governing of project activities.

### **Additionality**

The project does not owe its existence to legislative decrees or economically viable land use initiatives. Though the project area was set aside in the Yaeda Chini land use plan for the traditional land use of the pastoralist Barabaig people, the land use plan alone is not sufficient to prevent deforestation in the area. This is reflected in the recorded deforestation that continues in spite of land use planning and village level law enforcement.

In the absence of carbon finance, the project area would not be adequately protected due to both cultural and economic factors. Given pastoralist life styles, which involve moving seasonally in search of grazing and leaves agriculturalists with the impression that the land is open for their use, it is likely that the project area would be poorly defended or a point of conflict without the efforts of the REDD+ project to organize and pay the village government of Yaeda Chini to patrol and enforce the land use plan. Additionally, the project will provide funds from carbon finance to support the ward and district governments' efforts more effectively implement the land use plan.

There is no evidence that the project area has been negatively altered prior to the start of the project for the purpose of claiming payments for ecosystem services, drivers of deforestation are based on poor land use planning both locally and regionally, there are no land use schemes or activities in place that are negatively impacting the ecological integrity of the area outside of the aims and objectives of this project. Carbon Tanzania's project partners have been working in the Yaeda Valley on land use planning prior to the beginning of this project and continue to work within the area and beyond as part of a joint strategy to improve and increase land use planning and resource management in neighboring villages. There are no PES based projects in the area or the region, and Tanzania does not have a national GHG emission scheme or formal nested agreement on REDD+.

### **GII.3. Project period**

The crediting period for this project is 20 years (2016-2035)<sup>43</sup>. Payments for ecosystem services to participating communities will be structured over the 20-year crediting period as per the community sale agreement. The rationale for this length of time is twofold. First, since land use change takes place over many years, and the risk of reversal is a real threat for biological sequestration, this project chose an extended period so as to be accountable to the threat of non-permanence. Additionally, the project is introducing novel concepts to participants, which will require time to be adopted as the new norm. Specifically, it is understood that convincing people to accept agricultural practices based on conservation will be a slow process and requires evidence of success be shown to individual farmers until the more sustainable approach becomes the new conventional wisdom.

### **GII.4. Baseline scenario**

The baseline, or without project scenario, was established from the historical deforestation rate determined through analysis of ground-truthed Landsat, with technical assistance from The

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<sup>43</sup> Contract signed and project start date January 2016.

Nature Conservancy<sup>44</sup>, and calculation of the carbon content from aboveground biomass (AGB) surveys following the Winrock methodology. Monitoring of carbon stocks will be carried out through a system of *continuous activity-based monitoring* conducted by Carbon Tanzania, its partners and the community guards (*Walinzi Wajadi*) who are required to collect and report information directly relevant to the land use plans and subsequent village by-laws (see Part K). Change detection and leakage will be established by satellite monitoring on a 5-year basis (following VCS VM0015) using the same methodology that was used to establish the baseline and will be conducted by The Nature Conservancy. The project applied species and genus specific allometric equations to the AGB data and determined the belowground biomass (BGB) from a root-to-shoot ratio for woodland provided in the IPCC Good Practices Guidance for Land Use Land Use Change and Forestry document.

Recent land use change within the project area consists predominantly of conversion from *Acacia-Commiphora* woodland to a form of shifting agriculture. This land intrusion, conversion and resulting deforestation are contrary to the village by-laws, the village land use plan and national laws governing land acquisition and utilization within Tanzania<sup>45,46,47</sup>. The encroachment originates from both inside village designated agricultural areas and outside the village of Yaeda Chini from the neighboring villages of Endagunda but mostly from more densely populated areas to the East (Karatu District)<sup>48</sup>.

## Carbon Pools

*Aboveground biomass and belowground biomass were the only carbon pools* considered at this stage when calculating the likely carbon benefits resulting from project interventions. Due to the difficulty of measuring additional carbon pools in the context of community based monitoring, the project has opted to exclude soil carbon, leaf litter, deadwood, and grass biomass. By not including these carbon pools in the calculations, **the projected carbon benefits are assuredly conservative**. Whilst soil carbon was not included, 11 soil samples were taken and analyzed, based on the fact that deforestation results in complete removal of both above and below ground biomass, soil carbon might be introduced as a carbon pool at a later date.

## Baseline methodology

The project has used the Winrock aboveground biomass (AGB) methodology<sup>49</sup> to calculate the existing carbon stocks in the project areas utilizing plot sampling. In preparation for carrying out the surveys, the project consulted with statistician Dr. Colin Beale, affiliated with the University of York. The statistical analysis tool R was used to randomize plot selection and calculate carbon content from the survey results. The track in the project area was mapped using a Garmin GPS and downloaded using Mapsource<sup>50</sup>. The transect lines and plots were randomly generated using the following criteria: more than 300m away from each other, more than 200m away from the track and no more than 1000m away from the track.

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<sup>44</sup> Annex 5. Memorandum of understanding for scope of work – CT / TNC.

<sup>45</sup> Madsen, A (2000). The Hadzabe of Tanzania – Land and Human Rights for a Hunter-Gatherer Community. *Centraltrykkeriet Skive A/S*

<sup>46</sup> Peterson, D (2013) Hadzabe: By the light of a million fires. *Mkuki na Nyota Press, DSM*.

<sup>47</sup> Deforestation in Tanzania - A Development Crisis, CIGC Library

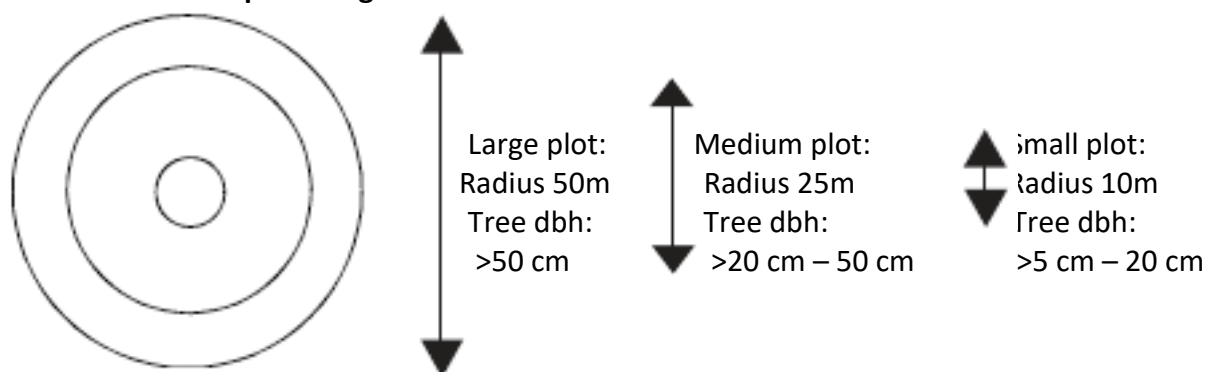
<sup>48</sup> UCRT (2007). The Hadza Cultural Mapping Project.

<sup>49</sup> [http://planvivo.org/docs/LULUCF\\_Sourcebook\\_compressed11.pdf](http://planvivo.org/docs/LULUCF_Sourcebook_compressed11.pdf)

<sup>50</sup> Mapsource – Garmin specific software for downloading GPS data

A three-nest circular plot design was chosen. Different sized trees, determined by diameter at breast height (dbh), were measured in each concentric circle as depicted below.

### Three-nest circular plot design



A preliminary survey using temporary plots was carried out to determine how many plots should be sampled in a full survey and whether stratification was necessary. The results of this initial survey determined that 62 plots should be sampled and that stratification was not applicable to the project area due to the relative homogeneity of the species and carbon stocks within it.

Allometric equations, obtained from the Kasigau Corridor REDD project<sup>51</sup> (due mainly to the similarity in species composition between the two areas) in Kenya, were used to calculate the tonnes of carbon per tree based on its dbh. Species specific equations were used when available, if no species specific equation was available, a genus specific equation was used. These equations are listed in Table 1, where y = tonnes carbon and x = dbh.

### Species and Genus Specific Allometric Equations

Tree Species or Genus	Allometric Equation
Acacia bussei	$y = 3.054x^{1.6692}$
Acacia hockii	$y = 1.7392x^{1.8478}$
Acacia nilotica	$y = 0.7075x^{2.1742}$
Acacia tortilis	$y = 3.6225x^{1.4924}$
Acacia	$y = 2.0276x^{1.761}$
Boscia coriacea	$y = 0.3641x^{2.1587}$
Boswellia neglecta	$y = 0.1521x^{2.526}$
Commiphora africana	$y = 0.5533x^{1.978}$
Commiphora campestris	$y = 0.0792x^{2.7284}$
Commiphora confusa	$y = 0.1987x^{2.461}$
Commiphora	$y = 0.1661x^{2.4862}$
Lannea alata	$y = 0.6561x^{2.0275}$
Lannea rivaie	$y = 0.5053x^{2.1106}$
Lannea	$y = 0.5898x^{2.0566}$

<sup>51</sup> Annex 3 of Kasigau Corridor REDD+ Project PDD accessible at <http://www.climate-standards.org/category/projects/>

In cases where neither species nor genus specific equations were available, one of two generic functions was used depending on the dbh. These equations obtained from the Kasigau Corridor REDD project<sup>52</sup> in Kenya are listed in Table 2, where y = tonnes carbon and x = dbh.

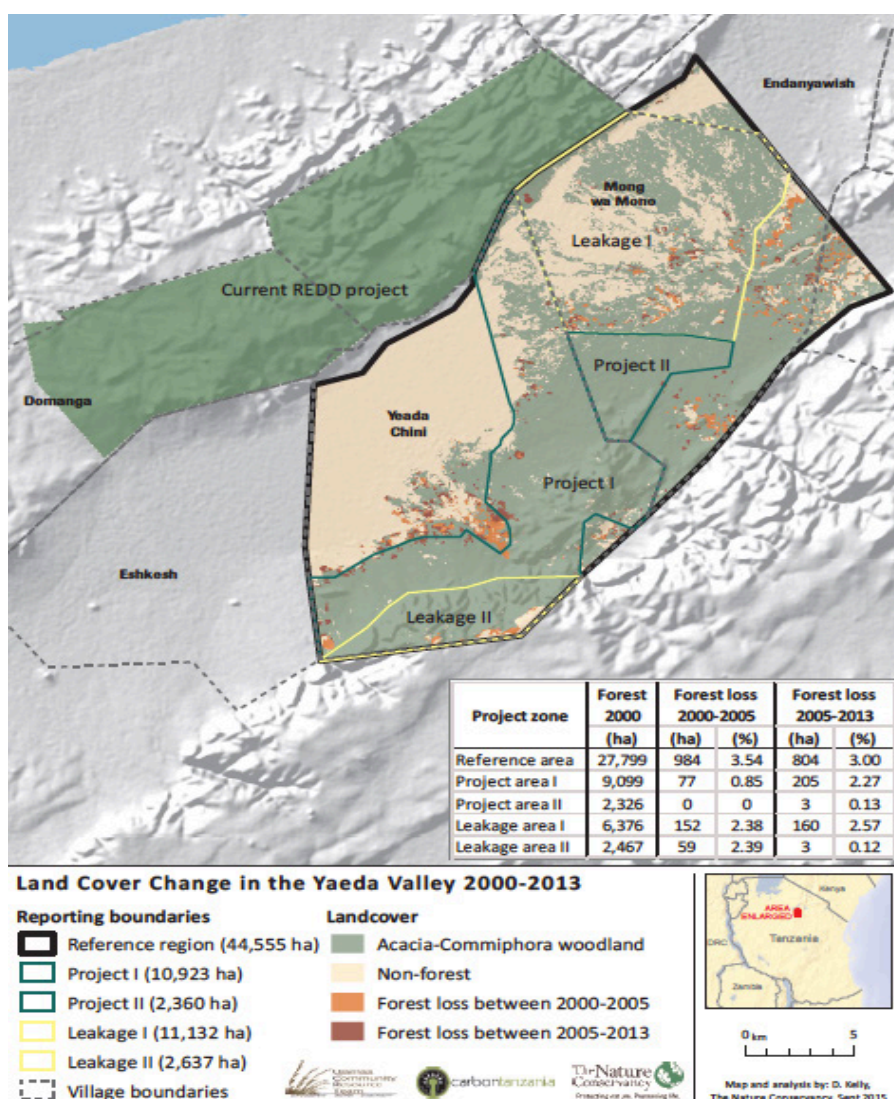
### Generic Allometric Equations

Tree Size	Allometric Equation
dbh <35 cm	$y = 0.5217x^{2.1393}$
dbh >35 cm	$y = 0.574x^2 + 9.8184x - 73.186$

### Analysis of Deforestation Rate & Baseline Scenario

The deforestation rate in the reference region, which includes the leakage belt, was determined through analysis of ground-truthed Landsat with technical assistance from The Nature Conservancy<sup>53</sup>.

### Map GII.4.1. Satellite imagery showing land use change from 2000 - 2013



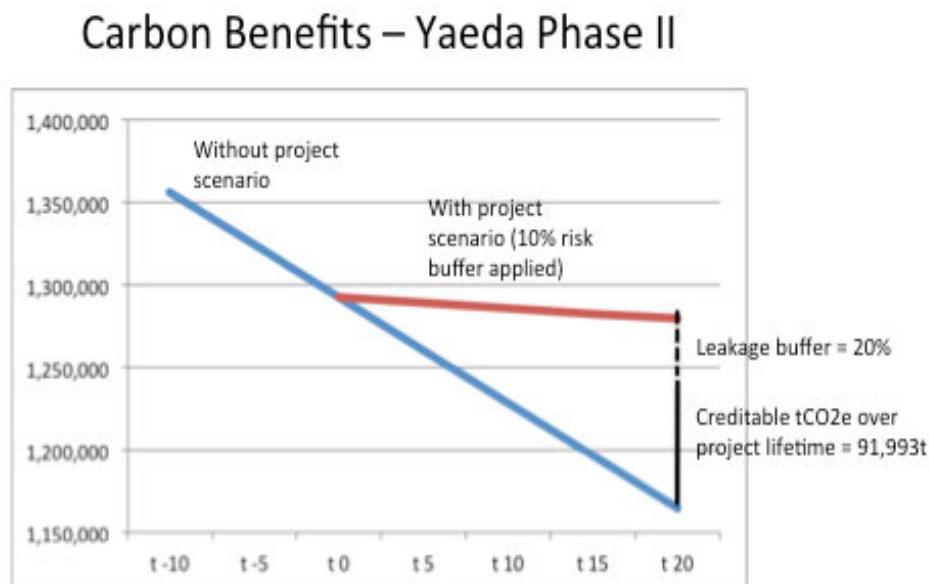
<sup>52</sup> Annex 3 of Kasigau Corridor REDD+ Project PDD accessible at <http://www.climate-standards.org/projects/>

<sup>53</sup> The Nature Conservancy is a U.S. based not-for-profit organization operating in more than 30 countries around the globe. The Tanzanian division of TNC provides technical support to a variety of community-based conservation efforts.

The total land area of the reference region is 44,555ha, of this area, 27,799ha of *Acacia-Commiphora* woodland existed in 2000 which was then reduced to 26,011ha by 2013 (see analyzed satellite imagery, Figure GII.4.) due to increasing conversion and expansion of agriculture. The rate of deforestation within the reference region has decreased in the period 2005-2013 to 3.00% from 3.54% (2000-2005). However within the project area, in the corresponding period, the rate of deforestation has increased from 0.85% (2000-2005) to 2.7% (2005-2013) in Project area I and from 0% (2000-2005) to 0.13% (2005-2013) in Project area II (see Map GII.4.1.). When combined this is a 1.82% change from 2000 to 2013. This deforestation in this area is predominately from the east not from the west as is the case of Yaeda I, so we consider the increase in deforestation between 2005 to 2013 unlikely to be linked to leakage from Yaeda I.

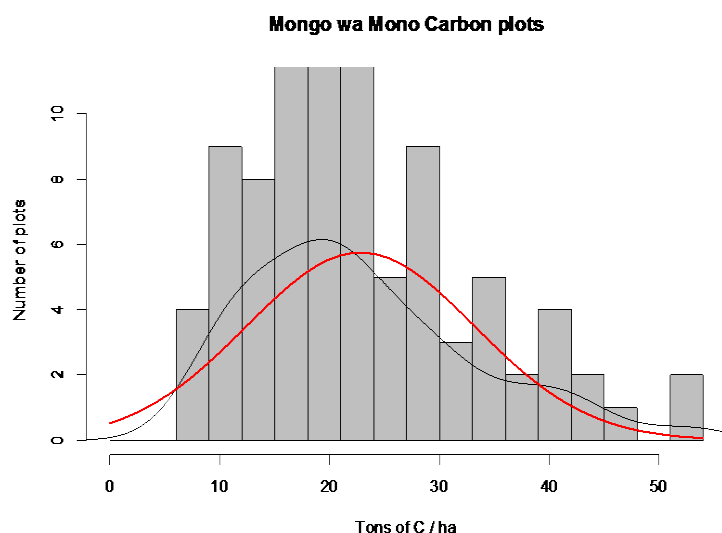
Therefore we propose to use a constant deforestation rate of 0.49% per year base on forest loss in the reference region of 984ha (2000-2005) + 804ha (2005-2013) divided by the total forest area of 27,799ha = 6.4% divided by 13 years of satellite analysis = 0.49%. The rate of change therefore is 0.49%, a figure that reflects the rate of deforestation across the entire reference region for the period 2000-2013. Although the rate of decrease in deforestation observed in the reference region in this period is significantly less than the corresponding increase in the project area, we propose to use the averaged rate in order to satisfy the recommended conservative approach. This translates into an annual loss of 137.5ha per year in the reference region and when applied to the project area, equates to 54.6ha of deforestation per year (see Map GII.4 above and Figure GII.5 below).

**Figure GII.4.2 Carbon benefit graph over the 20 year project period**



As in the scenario for the current project (Yaeda I), The project has set a 20% risk buffer as a protective measure in the case of non-permanence and another 10% to be held as a leakage buffer. An explanation of how these figures were set can be found in Figure GII.4.3. Creditable carbon benefits are therefore 91,990 tCO<sub>2</sub>e over the project lifetime or 4,600tCO<sub>2</sub>e per year over the 20-year crediting period.

## Histogram chart of sampled carbon stocks



Model-based clustering revealed that there *are not distinct habitat groups*, confirming the preliminary survey results that stratification is not applicable. Applying a 95% confidence interval, the field samples determined the existing carbon content of AGB in the project area to be  $22.8 \pm 2.16 \text{ tC/ha}$ .

Belowground biomass (BGB) was calculated based on the root-to-shoot, also known as root to stem, ratio for woodland provided in the IPCC Good Practice Guidance on Land Use, Land Use Change and Forestry<sup>54</sup> of 0.40. This ratio, applied to the results of the AGB survey, produced a BGB carbon content of 9.1 tC/ha.

**Figure GII.4.3. Baseline emission calculations**

1. Area of woodland under threat in project area	11,140	ha	Project area of 13,283ha minus the area already deforested between 2000-2013
2. Ha of woodland at end of 20-year crediting period without project	10,048	ha	Application of 0.49% deforestation rate, with annual loss of 54.6 ha
3. Loss of habitat without project over 20-year crediting period	1,092	ha	= Row 1 – Row 2
4. Total tCO <sub>2</sub> e avoided during project lifetime	127,764	tCO <sub>2</sub> e	= Row 3 x 117tCO <sub>2</sub> e
5. Leakage 10% removed	114,987	tCO <sub>2</sub> e	= Row 4 x 0.9
6. Risk buffer 20% removed	91,990	tCO <sub>2</sub> e	= Row 5 x 0.8
7. Annual carbon benefits of project eligible for crediting	4,600	tCO <sub>2</sub> e	= Row 6 / 20 years

<sup>54</sup> IPCC (2006) Guidelines for National Greenhouse Gas Inventories. *Table 4.4. value for tropical shrubland*

## Data sources

The following steps were taken to determine the carbon benefits attributable to the project:

### **Define the land area within the project boundary that is under threat of deforestation**

The project area is the 13,283 ha of land designated in the land deed certificate<sup>55</sup> as protected area for utilization by pastoralists. Of this 11,140 ha was identified as having forest cover in 2013. The *entire project area* is of the same soil type, habitat type and aspect as the reference region and is therefore considered under threat of deforestation and conversion to agricultural land.

### **Determine baseline scenario using historical deforestation rate**

Application of the historical deforestation rate in the reference region, 0.49%, to the land under threat (i.e. forested area only) in the project area results in a projected loss of 54.6 ha per year. After 20 years, the remaining area of *Acacia-Commiphora* woodland would be 10,048 ha, a total loss of 1,092 ha from the project start.

### **Calculate the carbon benefit**

The existing carbon content of 31.91 tC/ha is calculated from the AGB surveys and application of the BGB root-to-shoot ratio. Applied to the 873.6 ha of conserved *Acacia-Commiphora* woodland, the carbon benefit of the project is 27,876 tC. This figure is based on the assumption that when woodland is converted to shifting agriculture, the above ground biomass and associated carbon stock is removed and the stored carbon is released to the atmosphere. Carbon is converted to CO<sub>2</sub>e by multiplying the carbon by 44/12, the molecular weight ratio of molecular carbon to gaseous carbon dioxide. The carbon benefits of this project are 117tCO<sub>2</sub>e/ha or 127,764tCO<sub>2</sub>e over the lifetime of the project.

### **Deduct permanence and leakage buffers**

The project has set a 20% risk buffer as a protective measure in the case of non-permanence (see above) and another 10% to be held as a leakage buffer which will be monitored annually. An explanation of how these figures were set can be found in Figure G II.4.3. of this document. Creditable carbon benefits are therefore 91,990tCO<sub>2</sub>e.

### **Calculate annual carbon benefit eligible for crediting**

The project's total creditable carbon benefit, 91,990tCO<sub>2</sub>e, when divided over the 20-year crediting period equates to 4,600tCO<sub>2</sub>e per year to be issued ex-post following the monitoring protocols outlined in Part K. The calculation of the expected carbon benefit from the project is depicted in Table GII.5. below and above in Figure GII.5. Issuance of the annual amount will depend on annual monitoring (Part K) and verified after 5 years by satellite imagery.

## **GII.5. Ecosystem services benefits**

Table GII.5. summarises the projected net carbon benefits attributable to this REDD+ project and the carbon eligible for crediting. The projected carbon benefits are based on a conservative estimate that the project will be successful in reducing deforestation in the project area by 90% compared to the baseline scenario in order to account for leakage. The Non-permanence risk buffer has been set at 20% as shown below.

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<sup>55</sup> Annex 6. Yaeda Chini pastoralist CCRO

<b>Table GII.5. Projected net carbon benefit</b>					
Project	Project start date	Baseline Carbon emissions (without project scenario) over 20 year crediting period	Carbon benefit eligible for crediting deducting 10% leakage buffer	Carbon benefit attributable to project with 20% risk buffer deducted	Annual carbon benefits of project eligible for crediting
		(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)	(tCO <sub>2</sub> e)
Yaeda II	2016	127,764	114,987	91,990	4,600

Annual ex-post issuance of PVCs is based on annual activity-based monitoring results and verified every 5 years.

## **GII.6. Leakage and uncertainty**

### **Measures to address leakage**

Understanding the type and magnitude of potential leakage resulting from the project is essential to the success of this undertaking. For this reason, Carbon Tanzania engaged in a series of conversations with community members to determine probable sources of leakage and to develop a strategic response to it. The project will mitigate leakage wherever it is possible and cost effective to do so and discount when mitigation is not a viable strategy (see GII.4.3. Part K4). Cost effectiveness is determined by the level of leakage and carbon density of the area where leakage takes place as well as the short and long term costs and likely success of proposed interventions. A 10% discount factor has been included within the project's accounting for discounting purposes by which low levels of leakage can be absorbed.

The project's primary strategy to prevent leakage involves tackling the underlying causes of the historic deforestation pattern and scaling up of project activities. To this end, the project coordinator in partnership with UCRT will continue to contract with an agricultural specialist in sustainable agriculture to provide the neighboring villages with an alternative to continued land conversion (see Part F). This training will introduce the community to alternative methods of farming which are expected to improve their yields despite the challenging setting. This will, in turn, improve their livelihoods and minimize the potential for conflict with the Hadzabe and Barabaig who have begun to enforce their land use plan. It is expected that leakage will reduce over time as a result of successful interventions and by engaging a greater number of villages in land use planning and development of CCROs, a continued process of positive leakage can be developed in PES for avoided deforestation. As a result, it is likely that the project will have a positive effect on forest carbon stocks beyond what is credited due to any leakage being positive rather than negative in the long-term.

Areas outside of the project boundary where leakage could occur have been identified and are included in the leakage belt which is being monitored on a monthly basis by project participants and on an annual basis using satellite imagery to measure leakage resulting from project activities (map for leakage areas shown in Figure 3).

Table GII.6 Leakage risks and management measures		
Leakage Risks	Level of risk (low/medium/high)	Management Measures
Displacement of agricultural activity to other land within the reference region	Medium	1. Land use planning incorporates planned agriculture. 2. Engaging agricultural specialists to teach climate smart agriculture. 3. Engaging neighbouring communities in land use planning to reduce migration and illegal agriculture
Displacement of biomass collection	Low	Biomass collection is currently not a driver of deforestation
Displacement of charcoal manufacture	Low	Charcoal is currently not a problem however this is may change within the lifetime of the project.
Revenue is not realized in neighboring communities	Low	Project is planning to scale-up into neighboring villages to increase opportunities for benefit sharing.

## Part H: Risk management

### H1. Identification of risk areas

The project coordinator used the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination<sup>56</sup> to assess the project's risk level (see Annex 11). Various factors were considered including the land tenure and management type, technical capacity of the project developer, net revenue to stakeholders compared to alternative land uses, infrastructure and natural resource extraction in and around the project area, population growth, incidence of natural disturbances, and the credibility of the project financial plan. Careful evaluation of these criteria resulted in a low risk rating for the proposed project and therefore a risk buffer of 20% has been set.

Table H below addresses context specific risks identified by the project coordinator, community partner and participating communities. It also describes measures taken to manage and minimize these risks.

Table H. Permanence risks and management measures		
Permanence Risks	Level of risk	Management Measures
Shifting agriculture begins in the project areas outside of the agricultural zones designated in the land use plans	Low	Results-based payments are a sufficient incentive to prevent agricultural activity outside of the designated agricultural zones. Training on Improving agricultural practice in the designated areas under land use plan. Improved habitats in project area support Hadzabe and Barabaig livelihoods are predominantly non-agricultural.
Shifting agriculture increases in the project area from neighboring communities	Low	Implementation of the land use plan and enforcement of village by-laws restrict agricultural activity initiated from outside of the village. Conflict resolution mechanism is in place. Project will support improved agriculture practices in neighboring villages thereby reducing the need for further incursion.
Communities fail to realize revenue from carbon offsets and choose low scale agriculture in the project area	Low	Monthly payments have been made to communities in Domanga and Mongo Wa Mono from June 2011 for project activities. The communities recognize the benefit of avoided deforestation and developed their own land use plan, which includes designated areas for low scale agriculture outside of the project area.
Participating communities choose to extricate themselves from the plan vivo and sale agreements with Carbon Tanzania	Low	Project has been developed through open communication and participatory planning and therefore reflects the long-term goals of the target groups. Conflict resolution mechanism is in place and equitable to both parties. Community partner has a long history of involvement in project area.
National or District Government change the laws regarding land use and encourage agriculture	Low	Project has ensured that all land laws have been followed and is monitoring policy developments. Laws are decentralized and ownership conferred to the community. Land is poor or marginal for large-scale agriculture.
National or District Government create laws which centralize revenue from Payments for Ecosystem Services.	Low	Forest Act (2002) states that all user and ownership of forests is conferred to village and community. New forest policy builds on this to encourage PES and private sector involvement in forest conservation.

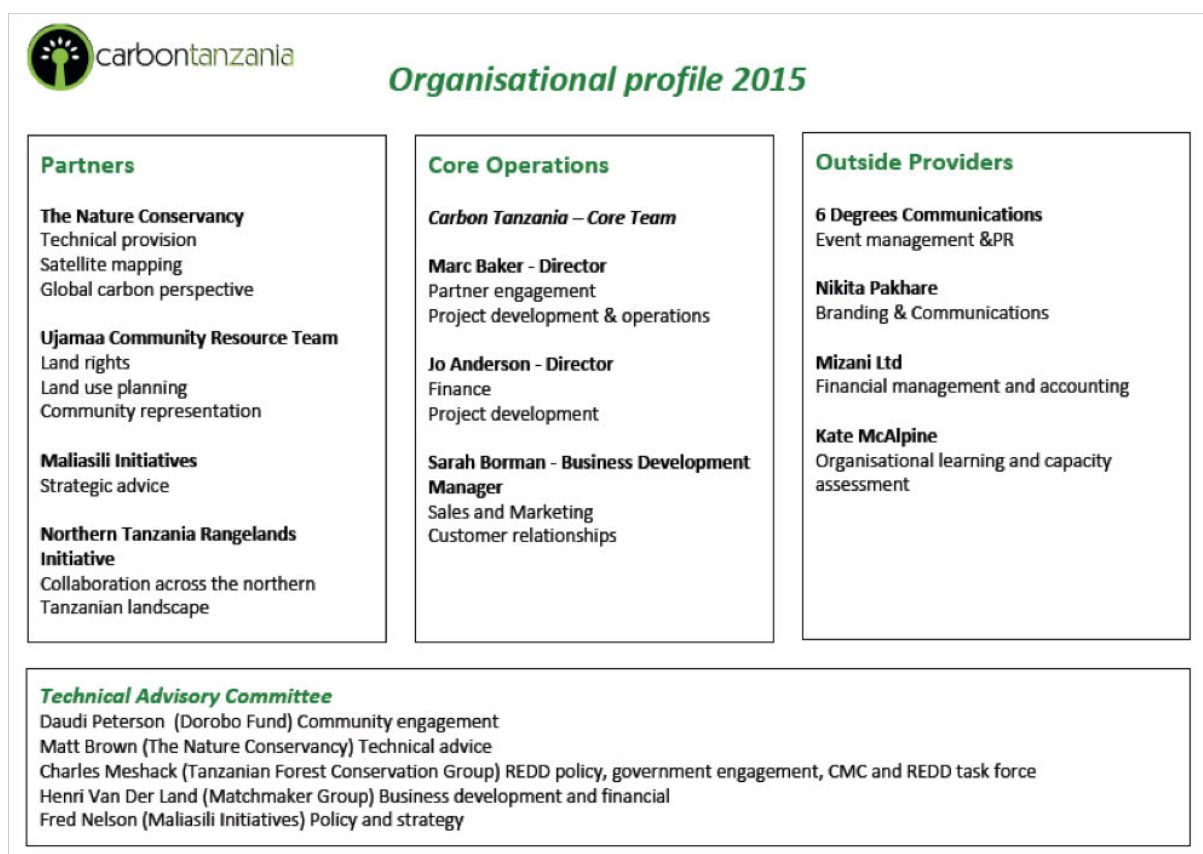
<sup>56</sup> <http://www.v-c-s.org/program-documents/tool-afolu-non-permanence-risk-analysis-and-buffer-determination>

## Part I: Project Coordination and Management

### 11. Project organisational structure

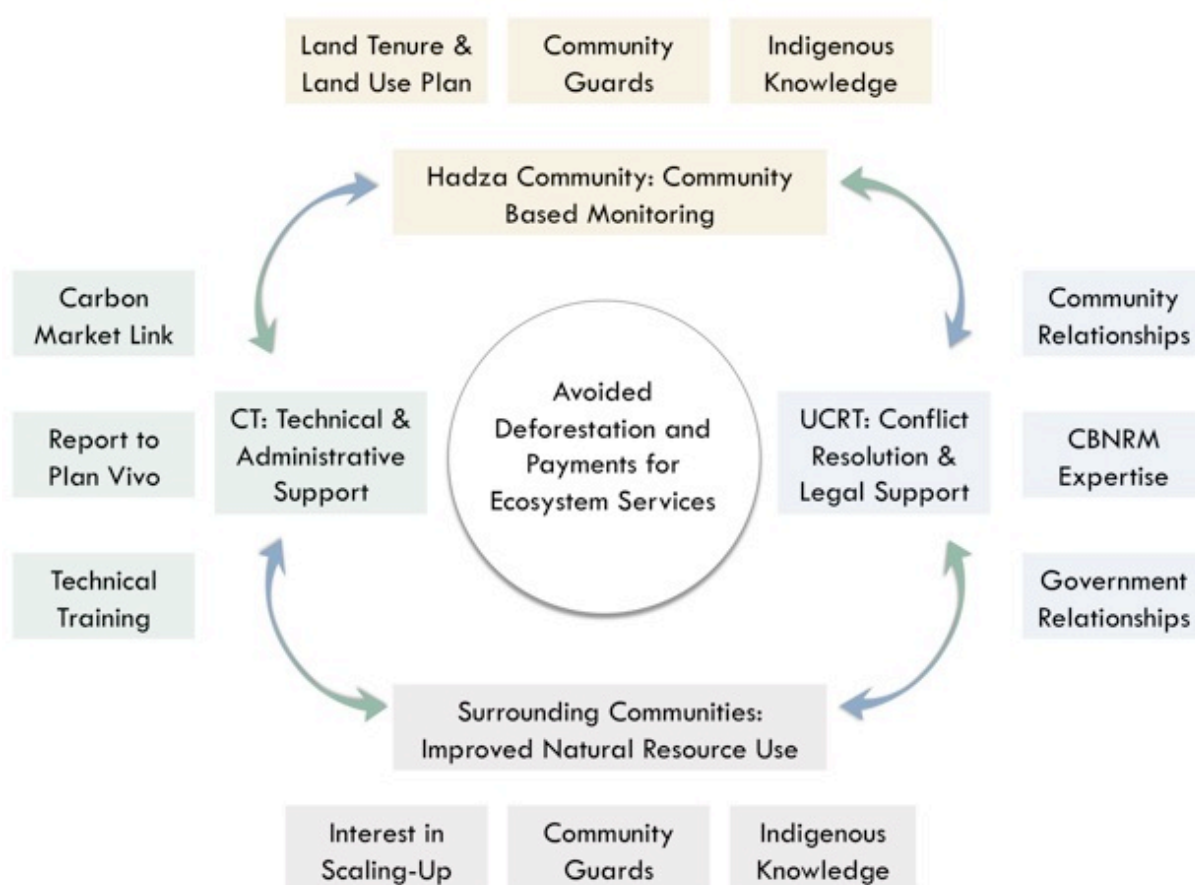
Carbon Tanzania (CT Ltd) is incorporated under the company laws of the United Republic of Tanzania. Carbon Tanzania aims to encourage the development of in-country, value added carbon offset projects, which directly benefit communities and ensure biodiversity protection and secure livelihoods for communities threatened by climate change. Carbon Tanzania will serve as the project coordinator and take responsibility for project implementation and preparation of necessary documentation required for the issuance of Plan Vivo Certificates throughout the life of the project. Carbon Tanzania staff have extensive experience in forestry, conservation, biodiversity assessment, wildlife management, sales and marketing.

#### Carbon Tanzania organisational structure



In addition, CT has relationships with individuals and institutions that provide technical support as necessary. Ujamaa Community Resource Team (UCRT) is recognized as one of the best CBNRM organizations in Tanzania and has successfully pursued its mission of supporting community rights and ownership to ensure the viable and long-term conservation of human and biological diversity. UCRT will provide access to its local support team and provide knowledge of the local context to ensure that Carbon Tanzania is able to carry out the necessary field operations. UCRT has been working in Mongo wa Mono for nine years and has established itself as a responsible and transparent partner with the Hadzabe communities. UCRT also works with the neighboring villages and is held in high regard by community members and district government alike.

## Project organisational structure and areas of responsibility



### ***UCRT to Hadzabe and the Villages of Mongo Wa Mono and Domanga***

Educating the community about land law, good governance and leadership responsibilities has been an ongoing process for UCRT; this is especially the case for the Village Land Act. While the Hadzabe are intimately connected to the land, the process of village mapping and the concept of land ownership were new to the community. The majority of this training has been directed at the 25 members of the village council and other traditional and influential community leaders, who then spread the information within the village, often through verbal and informal communication. Further training, including how to engage with outsiders who fail to respect the land use plan, will take place with community guards who patrol and monitor the project area. Community empowerment is a critical aspect to the project, as the Hadzabe will be relied upon to discourage and respond to natural resource use not in compliance with their land use plan and village by-laws. UCRT will facilitate this process in addition to educating the communities of their legal rights and appropriate conflict resolution and enforcement strategies.

### ***Carbon Tanzania to Hadzabe and the Villages of Mongo Wa Mono and Domanga***

Sensitizing the communities to the concept of climate change and the role of forests in mitigation and adaptation strategies is a slow process given the scientific nature of the issue, but efforts to improve the communities' understanding are ongoing. More important to the project's success is the enhancement of technical capacity of project participants. Carbon Tanzania employs community members in all activities such as doing AGB surveys. This process of collecting data on

the carbon content within the project area was designed to be educational as the project developer introduced the participants to community-based carbon measurement and monitoring as well as the use of certain technologies such as global positioning systems (GPS). The community has also been made aware of certain key concepts of carbon sequestration such as additionality and leakage. Community members active in the project will receive training pertaining to their roles in patrolling, data collection and monitoring of carbon stocks as well as socioeconomic and biodiversity impacts. One such example is the training of participants to use scientific approaches such as Timed Species Counts (TSC) to monitor biodiversity impacts. In order to obtain reliable data from this technique, a level of expertise is required and will be built up over time through continued engagement with participants.

**Carbon Tanzania has designed a Swahili ‘Guide to developing carbon projects on community land’ in response to community needs. This forms the basis of an educational program that the project manager conducts with community groups.**

### ***Long-term roles***

All community members, including those who are not directly involved in project activities, are aware of the project and will continue to be involved in its planning and implementation through a process of information dissemination included within the contract that ensures the main aims of the project are well known and understood (see community PES agreement, Annex 3). As the project fieldwork becomes more ingrained in the regular activities of the Hadzabe, participants become more practiced at accurately measuring project indicators, and communities gain confidence in their ability to enforce their land use plan, the communities will take on a greater management role in project. However, given the desire amongst the Hadzabe to continue their traditional lifestyle, it is not practical to ask community members to take on the administrative responsibilities of the project. Additional legal support may also be required as the community exercises its rights. Support of this nature will continue to be provided by Carbon Tanzania and UCRT as required.

### ***Community Partner – Ujamaa Community Resource Team***

UCRT serves as the intermediary between Carbon Tanzania and the community for the purpose of paying the community guards and community coordinator on a monthly basis. UCRT receives outside funding to carry out its mission and is self-sustaining. Should UCRT require financial support to cover its costs associated with this project, Carbon Tanzania will factor that into its implementation costs.

### **Stakeholder analysis**

Carbon Tanzania and Ujamaa Community Resource Team are both registered entities bound within the tax and business laws of Tanzania. Both organizations are audited and submit annual returns to national and regional regulatory bodies. Both Carbon Tanzania and Ujamaa Community Resource Team work in strict compliance with the laws of the United Republic of Tanzania and have a history of engagement at all levels with **government** agencies.

All operations regarding forest activities are carried out under the guidance of and in accordance with the Land Act (1999)<sup>57</sup> and, where relevant, in accordance with the Forest Act (2002). Carbon Tanzania and UCRT have been fully introduced and communicate with the district officials within the project area (see relevant letters and documentation, Annex 6).

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<sup>57</sup> Two Land Acts exist, both enacted in 1999, we refer to the Village Land Act No. 5.

The Hadzabe are fully supportive of the project and are an ideal population to engage with on such an initiative because they understand the importance of preserving their natural environment despite lacking the skills and knowhow to do so before this project was introduced. As people who are dependent upon the land for their livelihood, they will benefit not only from the expanded and diversified income from PES payments but also from the enhanced protection of their land which supports their traditional way of life. Farmers in neighboring communities will be engaged via agricultural training to enhance the security of their livelihoods in the face of enduring challenges. Pastoralists in the region will benefit from the protection of the project area and its natural resources that will remain accessible for sustainable use. Expansion of the project through a scaling-up process will widen the benefits to a greater number of individuals and villages.

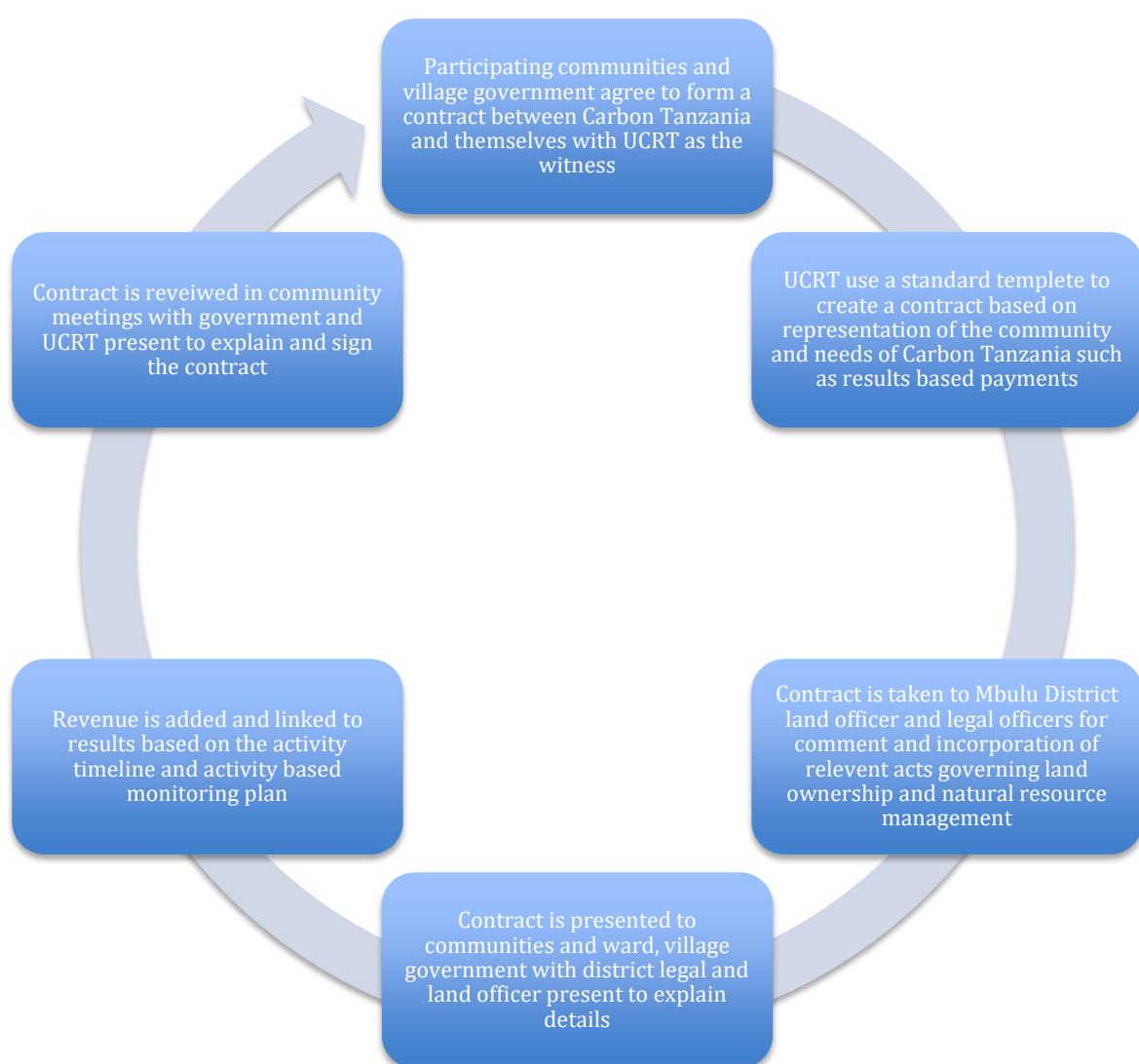
### ***Scaling-Up***

Carbon Tanzania and UCRT plan to again utilize participatory approaches to assess, plan and implement a wider project that includes the woodland areas set aside for pastoralist activities in neighboring communities. The project developers recognize the need for such a process given the differences between the land use designations and the communities found within them. Progress toward scaling-up the project will be community-led and is expected to follow a similar trajectory as that of the development of phase II (see part G II).

## Part J: Benefit sharing

### J1. Payments for Ecosystem Service Agreements

PES agreements were developed from a standardized contract format used by UCRT elsewhere. This format required the contract development process to follow a strict pathway through community for initial agreement and then through the village, ward, and district government as outlined below. The contract was signed by the community members who hold the CCRO title, in the case of the Hadza protected area under village government and Carbon Tanzania. UCRT serve as witnesses to the process and contract to ensure free prior and informed consent to the contractual agreement and to ensure that all community members understand the nature of the project.



## Activity timeline and reporting

The project's revenue is directly correlated to attainment of targets set by activity based monitoring. It is expected that these targets will be met if activities are implemented and monitored in accordance with the project activity timeline, see below. If the project participants fail to adhere to there responsibilities resulting in deforestation or degradation of the project areas revenue could be withheld.

Table J.1. CCRO management and activity timeline		
Activity	Responsible Party	Timeline
Community scouts patrol project area monitoring forest disturbances and activities in violation of land use plan, associated village by-laws	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis.	Patrolling must cover =>50% of the project area. This can be achieved in a single 3-day patrol twice a month.
Utilise camera and GPS technology to record disturbances and violations; provide narrative report to community coordinator	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis	Ongoing, as necessary
Report observed presence of large mammals (Zebra, Eland, Lion and Wild Dog populations) to community coordinator	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis	Ongoing, as necessary
Collate reports from community scouts and village members and relay monitoring information to project manager	Community coordinator / project manager	Monthly basis; egregious violations shall be relayed to Carbon Tanzania/UCRT as soon as possible.
Project manager reports to village government, Carbon Tanzania and UCRT that monitoring has been conducted inline with this plan, monitoring reports have been collected and areas of conflict have been reported to village / district government	Project manager	Monthly basis with reports but more frequently if conflicts require external intervention
Utilize conflict resolution mechanisms as outlined in the Village Land Act for land and land use disputes	Village members and village government	As necessary

Work with Carbon Tanzania to measure carbon stock in project area	Village members and village government	As necessary
Provide Carbon Tanzania with information on how surplus revenue is spent and its impacts	Signatories to The Village Fund	Bi-Annually
Create any committee required by law for the purposes of managing the project area according to the village land use plan	Village members, village government	As necessary

## J2. Payments and benefit sharing

The project coordinator has already made payments to communities of Mongo Wa Mono and Domanga over the last 4 years starting in June 2011 as well as community members and government officials involved in project planning through the customary payment of sitting allowances. These payments will continue over the life of the project in accordance with the results based payment plan outlined in the community PES agreement, (Annex 3). In an effort to spread benefits throughout the target group, different community members are being and will continue to be trained and employed as community guards and responsibilities will rotate among willing participants.

Carbon Tanzania will manage all revenue flows from the year-on-year sale of PVCs, either brokered or sold in the “over-the-counter” (OTC) market, less any commissions and premiums demanded by the aggregators. Carbon Tanzania will retain an additional 20% to cover project implementation costs such as those associated with project development, certification, the sale of credits, ongoing agricultural training, annual monitoring of all variables and reporting, and verification. The remaining 60% of carbon revenue will go to the community under the structure shown in the revenue sharing diagram (Part J2). For contractual agreements, CT used the market average of \$5/tCO<sub>2</sub>e<sup>58</sup> to calculate payments to the community at \$3/tCO<sub>2</sub>e (60% of total). Surplus funds from the sale of credits above the \$5/tCO<sub>2</sub>e rate will initially go towards recouping the project developers’ initial upstart and technical costs and to the payment of the community guards, community coordinator and technical team carrying out ecological monitoring. After upstart costs are reimbursed, presumably in the first few years after certification, the surplus will be divided appropriately among the parties to maintain the 20% CT - 20% MRV - 60% Community division of revenue over the whole of the crediting period (see financial flow diagram, J2). This means that, as time goes on, the community may receive more than the agreed upon \$3/tCO<sub>2</sub>e depending upon market forces. Carbon Tanzania will make payments to the community every six months based upon annual monitoring results as outlined in the community sale agreement. These payments will be deposited directly into the two village accounts and two community

<sup>58</sup> The \$5/tCO<sub>2</sub>e is based on the average price representing a mid-range figure based on different “varieties” of carbon offsets (high-value, plantation, biodiversity linked) from the “State of the Voluntary Carbon Markets 2012 and 2014”.

funds<sup>59</sup> accounts listed in the community sale agreement (Annex 3) and dispersed according to the percentages shown in the revenue sharing agreement J3.

***Community Partner – Ujamaa Community Resource Team***

UCRT serves as the intermediary between Carbon Tanzania and the community for the purpose of paying the community guards and community coordinator on a monthly basis. UCRT receives outside funding to carry out its mission and is self-sustaining. Should UCRT require financial support to cover its costs associated with this project, Carbon Tanzania will factor that into its implementation costs.

***Community participants – Villages of Mongo Wa Mono and Domanga***

The project coordinator has already made payments to community members involved in project planning through the customary payment of sitting allowances and to the technical team who took part in the aboveground biomass surveys. Carbon Tanzania, through UCRT, began making monthly payments to community guards in June of 2011 and to a community coordinator shortly thereafter. These payments will continue over the life of the project in accordance with the results based payment plan outlined in the community sale agreement, (Annex 3). Carbon Tanzania is currently paying Tshs 500,000 (roughly 300 USD) each month, an amount that is subject to adjustment should additional guards be required for the project's success. In an effort to spread benefits throughout the target group, different community members will be trained and employed as community guards and responsibilities will rotate among willing participants.

Carbon revenue payments, made on a biannual basis, will provide financial support for forest management as well as legal services beyond the scope of UCRT that may be required for land use enforcement. Payments in excess of what is needed to fulfill these purposes will be earmarked for community-wide development initiatives according to the financial flow diagram (J2.) and be made available to individuals who apply for funds either in times of stress (i.e., illness, food shortage) or for the purpose of increasing human capital (i.e., teaching or medical training) that will benefit the community-at-large. This approach to benefit sharing is modeled after a pre-existing village mechanism used to dispense funds generated from tourism.

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<sup>59</sup> These accounts are separate from village accounts that village councils manage and assess when proposing annual budgets to the district government. The Hadzabe may decide to allot some of these funds to the villages and, while UCRT may help to facilitate those decisions, it is not an official element of this project. Whilst only the Hadza have community accounts, both villages and community groups may choose to open specific accounts.

## J2. Revenue sharing diagram

Yaeda I. Revenue sharing in Yeada I, this process has proved to be successful since 2012 and has been resulted in the transfer of 93,000usd to communities.

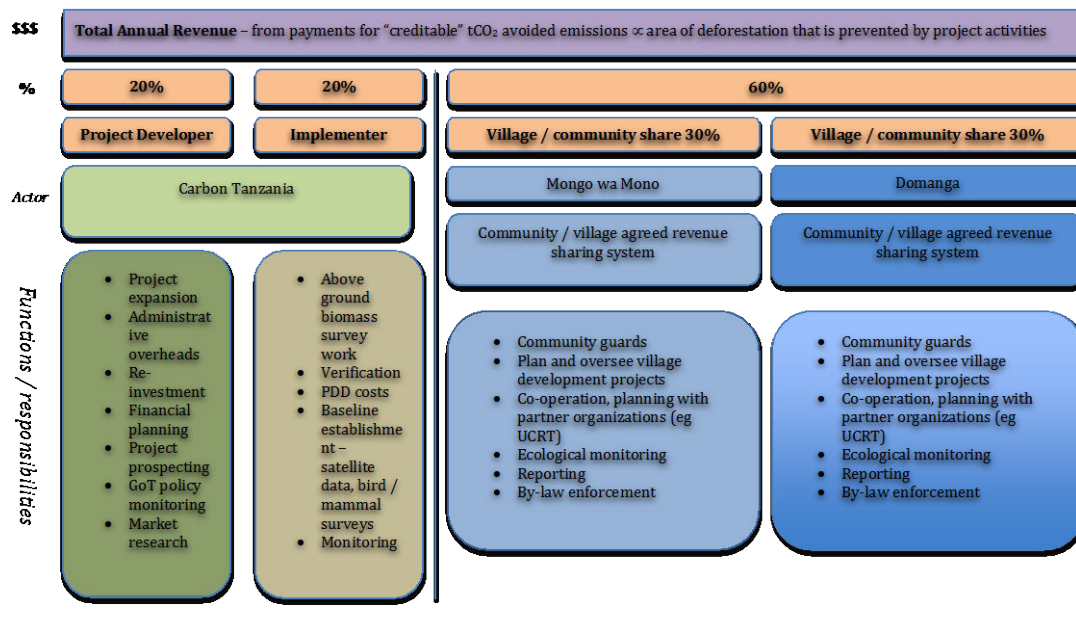


Chart: Revenue sharing and areas of responsibilities  
 Project: Avoided Deforestation in the Yaeda Valley  
 Title: Reducing Emissions from Deforestation and Forest Degradation in the Yaeda Valley, Northern Tanzania

Yaeda II. In Yaeda II all revenue will be paid to the village government.

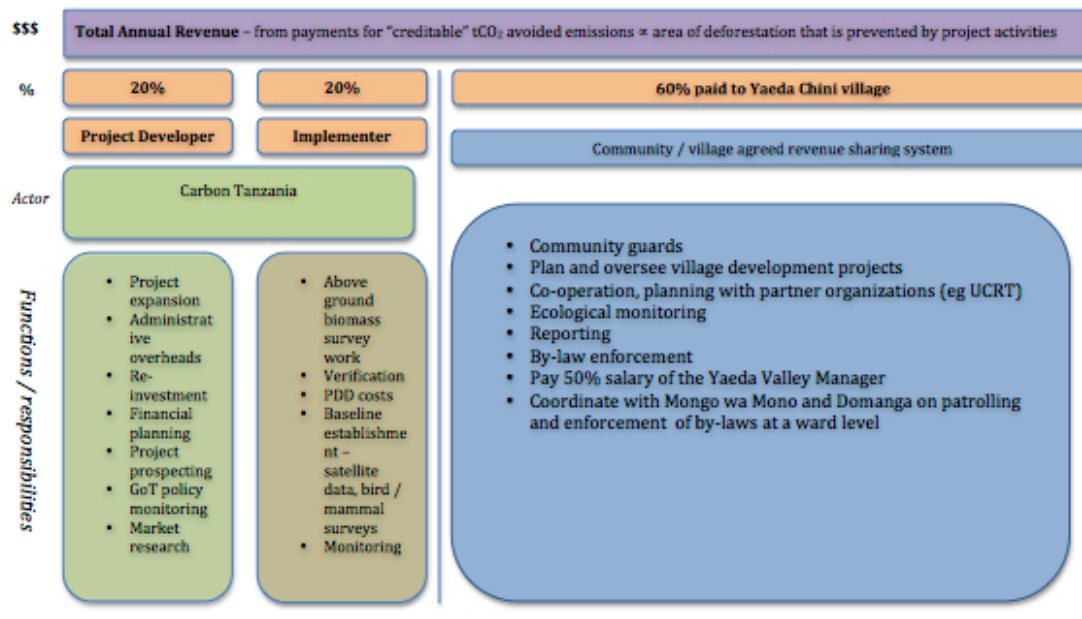


Chart: Revenue sharing and areas of responsibilities  
 Project: Avoided Deforestation in the Yaeda Valley  
 Title: Reducing Emissions from Deforestation and Forest Degradation in the Yaeda Valley, Northern Tanzania

## Part K: Monitoring

### K1. Ecosystem services benefits

The monitoring plan uses activity based monitoring indicators to trigger annual issuance of PVC and historical deforestation analysis to verify the project on a 5-year basis. Activity-based monitoring is used to demonstrate whether the project is on course to achieve the expected climate benefits and non-carbon benefits outlined in Part G. Each indicator has annual performance thresholds throughout the monitoring period (see Table K1). These indicators include a range of potential changes in legal status, institutional capacity and land use changes that may result in failure of the project to achieve its stated carbon and non-carbon benefits.

Annual issuance will be triggered by a continuous process of qualifying the incidence or reporting of changes in: community user rights over forest based resources, community land rights and village land use plans, the consistency of management institutions, effort spent on conflict resolution and the monitoring reports by the community guards of land use change, and finally the payments to community guards and communities from carbon revenue. Indicators that relate to policy, law, management capacity and financial payments are monitored by both UCRT and CT as part of normal operating procedures to ensure contractual obligations to participating villages and communities. Community-based monitoring sheets are completed monthly by the project coordinators in Domanga and Mongo Wa Mono, these are sent to the project coordinator in Arusha and added to the activity monitoring database (see monitoring sheet Annex 6).

A results-based payment plan has been included with the contracts to ensure payments to the communities are related to results and the issuance of ex-post Plan Vivo Certificates (see Table K1b.) these performance targets are set to ensure payments to the communities are related to the issuance of credits and result from the all monitoring protocols.

#### K1.1. 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 is withheld from Carbon Tanzania and revenue may be withheld from communities until evidence is shown of a corrective action being taken and having an impact.

**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.

Indicator	Thresholds			Means of verification
	Green	Orange	Red	
<b>Community user rights over forest based resources</b>	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.
<b>Community tenure and ownership over land</b>	Land use plan and associated by laws are documented and implemented. Boundaries are clear and well understood. Community rights over land are secure through Community	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	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	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

	Customary Rights of Occupancy (CCRO).	Occupancy (CCRO).	CCRO.	potential land use conflicts
<b>Management Institutions</b>	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.	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.
<b>Effort spent on conflict resolution by UCRT</b>	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.
<b>Coverage by community guards</b>	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.
<b>Land use change</b>	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.
<b>Payments to the community guards, communities and local government</b>	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.

Table K1b. Performance targets linked to issuance and payments to communities		
Performance target	Payment response / adjustment	Indicators for activity based monitoring
<b>All indicators are green.</b>	Payment continues as per schedule	Indicates that the project is on track to achieve the expected climate benefits and issuance continues as per the indicators in K1 and the contractual agreements with the communities.
<b>One or more orange indicators</b>	Payments reduced until corrective measures are taken and evidenced	Indicates some project activities are not on track to deliver the expected climate benefits. 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 until evidence is shown of a corrective action being taken and having an impact.

<b>One or more red indicators</b>	Payments suspended until evidence showing corrective measures and reported	Indicates that the project activities have are not on track to deliver the expected climate benefits. 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.
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## K2. Monitoring livelihood and socio-economic impacts

The socioeconomic impacts of this project are, to a large degree, directly related to the environmental impacts due to the traditional lifestyle of the Hadzabe and Barabaig communities. Carbon Tanzania has developed a tailored socio-economic survey in collaboration with Uppsala University in Sweden<sup>60</sup> to enable a student to conduct annual socio-economic monitoring on behalf of Carbon Tanzania. This annual socio-economic baseline identified areas in which Carbon Tanzania needs to monitor on an annual basis and focuses on main thematic areas that relate specifically to successful project operations, these include; roles and responsibilities, understanding of land use planning and user rights, understanding of carbon project development, global climate change, carbon markets and revenue.

In addition to the socio-economic survey there will be additional impacts as a result of the revenue generated through the sale of PVCs (see Table K2. below). Minutes of meetings show that communities' engagement in revenue sharing is authorized by village government and all attendees at meetings sign the minutes. Individual payment records indicate that revenue is paid to operational employees and signatures (usually fingerprints) by the recipient confirm receipt of revenue.

Table K2. Performance targets linked to issuance and payments to communities		
Area of Impact	Baseline assumption	Method of measurement
Ensure village government, Hadzabe and Barabaig communities involved in improved land management and forest conservation are aware of their roles and responsibilities	Social-economic baseline indicates some community members have a poor understanding of land use plans, associated by-laws and their roles in conserving forests	1. Socio-economic monitoring involves group discussions with participating communities to measure roles and responsibilities. 2. Socio-economic monitoring involves individuals in village government. 3. Monthly monitoring measures governance in reporting of issues surrounding land management by community guards to village government.
Ensure village government, Hadzabe and Barabaig understand the land use plan boundaries and have access to land use maps and CCRO documentation	Social-economic baseline indicates some community members have a poor understanding of land use plan boundaries and their legal rights	1. Improved demarcation of land use boundaries including beacons and signposts. 2. All village centres have copies of legal documentation for CCROs and land use plans.

<sup>60</sup> The baseline for this process was completed in May 2016 (Annex 10).

Ensure village government, Hadzabe and Barabaig have an understanding of the project development process, and that carbon sales are based on the results of community work	Social-economic baseline indicates some community members have a poor understanding of the project development process and results based payments.	1. Socio-economic monitoring involves group discussions to measure the knowledge base of communities in the project development process. 2. Records of educational programs conducted by Carbon Tanzania. 3. Development of a training manual in Swahili, which includes project development process and carbon sales.
Ensure village government, Hadzabe and Barabaig communities have an understanding of climate change and the carbon cycle	Social-economic baseline indicates few Hadzabe or Barabaig have knowledge of the carbon cycle or climate change.	1. Socio-economic monitoring involves group discussions to measure knowledge on climate change and carbon cycle. 2. Records of educational programs conducted by Carbon Tanzania. 3. Development of training manual in Swahili, which includes climate change and the carbon cycle.
Ensure payments to community guards, community coordinators and project management is reliable and consistent	Few community members have a reliable income source	1. Socio-economic monitoring measures allocation of benefits. 2. Monthly payment records signed by participating community teams.
Ensure payments to community development funds are reliable and consistent	The community currently receives income from tourism totaling a few thousand USD annually	1. Socio-economic monitoring measures allocation of benefits. 2. Account records including minutes of meetings, bank deposits and approved disbursements show revenue is spent on communal benefits
Ensure community continue to allocate resources to education	Few Hadzabe or Barabaig have any formal training or education	1. Number of individuals receiving training in natural resource management is increased. 2. Records of educational programs conducted by Carbon Tanzania. 3. Records of payments to education accounts due to carbon revenues.

### K3. Monitoring of environmental impacts of the proposed activities

Data on the biodiversity impacts of the project will be collected in two ways and analyzed to determine change over time. Timed Species Counts (TSC) will be conducted on an annual basis to monitor the change in avifauna species along a 33 km track inside the project area and in a deforested agricultural area along the southwest border of Mongo Wa Mono. Low-density, large mammal species subject to seasonal movement, specifically Lion, Wild Dog, Zebra, Eland, Cheetah and Elephant, will be monitored using community-based approaches. The community coordinator will record the presence of these mammals based on reports from both hunter-gatherers who observe them in the project areas and community scouts. This information will be collected on a monthly basis and used to assess the presence and frequency of these species in the project area over time. These species were chosen because their presence is both indicative of a healthy ecosystem and relevant to the lifestyle of the target groups.

The project will consider year-on-year consistency of data related to environmental indicators in the project area to represent the project's success in preventing deforestation and habitat degradation. Similarly, the nature of the project is ill-suited for tracking water availability and soil conservation impacts as noted in the table below

Table K3. Methods of monitoring environmental impacts of proposed activities		
Impacts	Baseline	Methods and Thresholds
Biodiversity Impacts: Avifauna	Avifauna species from baseline set in 2012	a. Timed Species Counts (TSC) conducted annually within and outside project area b. Expect to have consistent data year on year in project area as result of protected habitat. Variation between project area and degraded area is evidence of environmental impacts of project
Biodiversity Impacts: Mammals	Census data is currently being collected to establish baseline for the presence and frequency of Lion, Wild Dog, Zebra, Eland, Cheetah and Elephant.	a. Ongoing community-based monitoring of specific mammals species. b. Aim of REDD project is to preserve habitat thereby maintaining wildlife population levels over time, continued presence is evidence of success.
Water availability impacts	Project activities will preserve catchment system, some changes to water availability are reliant upon climatic conditions	Maintenance of forest covers serves as an indicator to water conservation and erosion prevention
Soil maintenance impacts	Project activities will avoid the loss of top soil resulting from shifting agriculture	Maintenance of forest cover serves as an indicator of soil conservation

#### K4. Understanding and monitoring Leakage

Both project areas have designated leakage areas. Understanding the type and magnitude of potential leakage resulting from the project is essential to the success of this REDD+ project. For this reason, Carbon Tanzania engaged in a series of conversations with community members to determine probable sources of leakage and to develop a strategic response to it. The project will mitigate leakage wherever it is possible and cost effective to do so and discount when mitigation is not a viable strategy. Cost effectiveness is determined by the level of leakage and carbon density of the area where leakage takes place as well as the short and long term costs and likely success of proposed interventions. An additional 10% leakage buffer has been included within the project's accounting for discounting purposes, by which low levels of leakage can be absorbed.

The project's primary strategy to prevent leakage involves tackling the underlying causes of the historic deforestation pattern, agriculture and scaling up of project activities, increasing land use planning in neighbouring villages. The project coordinator has contracted with an agricultural specialist in sustainable agriculture to provide the neighboring villages with an alternative to continued land conversion (see Part D, GI & GII). This training will introduce the community to alternative methods, specifically climate-smart agriculture, which are expected to improve their yields despite the challenging setting. This will, in turn, improve their livelihoods and minimize the

potential for conflict with the Hadzabe who have begun to enforce their land use plan. It is expected that leakage will reduce over time as a result of successful interventions and by engaging a greater number of villages in PES for avoided deforestation. As a result, it is likely that the project will have a positive effect (**positive leakage**) on forest carbon stocks beyond what is credited due to any leakage being positive rather than negative in the long-term.

Areas outside of the project boundary where leakage could occur have been identified and are included in the leakage belt, which is being monitored on a monthly basis by project participants and is then quantified every five years by LandSat.

Table K.4. Leakage risks and management measures		
Leakage Risks	Level of risk (low/medium/high)	Management Measures
Displacement of agricultural activity to other land within the reference region	Medium	1. Land use planning incorporates planned agriculture. 2. Engaging agricultural specialists to teach climate smart agriculture. 3. Engaging neighbouring communities in land use planning to reduce migration and illegal agriculture
Displacement of biomass collection	Low	Biomass collection is currently not a major driver of deforestation
Displacement of charcoal manufacture	Low	Charcoal is currently not a problem
Revenue is not realized in neighboring communities	Low	Project plans to continue scaling up into neighboring villages once land use plans and accompanying CCRO are completed increasing opportunities for benefit sharing.

## K5. Technical support and review

Carbon Tanzania will provide ongoing support to project participants to build their capacity to monitor carbon, biodiversity and socioeconomic impacts. The project has already engaged with agricultural specialists (FarmAfrica) who will be conducting a needs assessment in Yaeda Chini village, July 2016. These support functions will continue or repeat as necessary.

UCRT and Carbon Tanzania maintain open channels of communication with the community and receive feedback regularly, albeit often informally. In addition to this, project administration will be monitored using the same methods as socioeconomic data, most likely through focus groups or household surveys. Participants will be asked their opinion of the work of the project coordinator, community partner and those individuals and organizations providing additional education and training. The communities will be asked about instances of conflict arising from the project, regularity of payments and fund transfers, satisfaction with level of community ownership, and understanding of, and commitment to, project aims. This information will help Carbon Tanzania and UCRT improve and self-correct in terms of project administration as well as adapt to the situation on the ground in a timely and effective manner.

As previously described, the socioeconomic impacts of this project are, to a large degree, directly related to the environmental impacts due to the traditional lifestyle of the Hadza. There will, of

course, be additional impacts as a result of the revenue generated through the sale of carbon credits. Payment records will indicate increased income for individuals participating in the measurement, monitoring and patrolling activities. The project will assess these records to ascertain the concentration of benefits and will take steps to ensure benefit sharing across a variety of diverse stakeholders.

In addition to individual stipends for carrying out specific project activities, surplus revenue will be transferred directly into two Hadza community accounts, one for each village, known as the Jamii fund and the two village accounts. These payments, made on a biannual basis, will provide financial support for forest management as well as legal services beyond the scope of UCRT that may be required for land use enforcement. Payments in excess of what is needed to fulfill these purposes will be earmarked for community-wide development initiatives and be made available to individuals who apply for funds either in times of stress (i.e., illness) or for the purpose of increasing human capital (i.e., teaching or medical training) that will benefit the community-at-large. This approach to benefit sharing is modeled after a pre-existing village mechanism used to dispense funds generated from tourism.

## Annexes

### Annex 1: Key people and contact information

#### Carbon Tanzania

Mr. Marc Baker, Project Coordinator  
Director, Carbon Tanzania  
+255 (0) 784 448761  
[marc@carbontanzania.com](mailto:marc@carbontanzania.com)

Mr. St. John Anderson  
Finance and Sales, Carbon Tanzania  
+255 (0) 758 267205  
[jo@carbontanzania.com](mailto:jo@carbontanzania.com)

Mrs. Sarah Borman  
Business development manager, Carbon Tanzania  
+255 (0) 756 611035  
[sarah@carbontanzania.com](mailto:sarah@carbontanzania.com)

Mr. Isack Bryceson  
Manager, Yeada Valley REDD Project  
[carbontanzaniayaeda@gmail.com](mailto:carbontanzaniayaeda@gmail.com)  
Speaks Swahili, basic English

Mrs. Pili Goodo  
Community Coordinator, Domanga  
+255 (0) 764 539068  
Speaks Swahili and Hadzane, no English

#### Ujamaa Community Resource Team

Mr. Edward Lekaita  
Senior Programme Manager & Legal Advisor, UCRT  
+255 (0) 786 455900  
+255 (0) 754 455990  
[olekaita@gmail.com](mailto:olekaita@gmail.com)  
[okekaita2002@yahoo.com](mailto:okekaita2002@yahoo.com)

Mr. Dismas Partalala  
Program Officer – Yeada and Mongo Wa Mono, UCRT  
+255 (0) 784 310413  
[partalala@yahoo.com](mailto:partalala@yahoo.com)

## **Annex 2: Information on Public and Other Sources of Co-funding**

**Yaeda phase I.** Validated in 2012, this initial project did not received any funding from sources other than through the sale of ex-ante carbon credits. The project is grateful for the in-kind support received from The Nature Conservancy (TNC) and Brandeis University. TNC provided analysis of satellite imagery for the purpose of establishing the historical deforestation rate and assisted with mapping activities. Master's Candidates in Sustainable International Development from Brandeis University provided project planning and programmatic support.

**Yaeda phase II.** To expand the project and employ a business development manager to expand sales of PVC, Carbon Tanzania received investment from HRSV, a social impact investment fund that seeks to capitalize small to medium commercial enterprises that work to improve the quality of life of poor and low-income people in East Africa. HRSV has invested in Carbon Tanzania by providing a long-term, favorable loan facility. It has also provided capital for Carbon Tanzania to develop and greatly expand its communications, marketing and sales platforms through which we sell our internationally certified forest carbon offsets. This is the critical part of our financial, social and environmental sustainability, and will allow us to achieve long-term success.

## Annex 3: Community PES agreement (contract) (English version for example)

### This agreement is between:

**Carbon Tanzania**, hereinafter referred to as “**Carbon Tanzania**”, a designated not-for-profit entity of CT LTD, a Tanzanian owned company, registered under the laws of the United Republic of Tanzania.

**The Village Council of .....** hereinafter referred to as “**The Village**”, meaning the village government corporate and its demarcated boundaries, as registered under the laws of the United Republic of Tanzania.

**Jamii ya Hadzabe**, hereinafter after referred to as “**Jamii**”, meaning the community of Hadzabe, who have secure land tenure of the project area as recognized under the laws of the United Republic of Tanzania.

This agreement concerns the initiation of an avoided deforestation project for the purpose of carbon sequestration for the reduction of unsustainable and destructive land use, and facilitating the instigation of long-term sequestration of carbon dioxide through community based management, implemented through a partnership between **Carbon Tanzania, The Village and Jamii**.

### 1. Objectives and Roles

The overall objectives of this contract are as follows:

- a) To enable **The Village / Jamii** to generate revenue from the legal sale of carbon offsets, which are non-timber forest products, to be used for the benefit and general economic and social development of the community.
- b) To ensure continued and strengthened customary ownership and management of the land remains with **The Village / Jamii** according to the Village Land Act No 5 of 1999, subsequent acts and other relevant laws of the United Republic of Tanzania.
- c) To improve the environmental conditions and sustainability of natural resource uses in **The Village** according to the land use plan and by-laws (Annex 4).
- d) To reduce emissions of carbon dioxide and therefore contribute to global climate initiatives in line with Tanzania’s national policies.
- e) To strengthen the sustainable management of forest and other natural habitats according to Hadzabe traditional land use as stated in the certificate of customary rights and relevant village by-laws.
- f) To reduce unsustainable forest use, destruction and degradation resulting from activities which are not in accordance with the area demarcated as protected area for the traditional and cultural use by Hadzabe (Eneo la Hifadhi na Matumizi ya Asili ya Hadzabe) in the approved and adopted land use plan.
- g) To enable **The Village / Jamii** to derive revenue from the provision of ecosystem services in the form of carbon offsets through improved land use planning and sustainable forest management.

#### 1.1 Mutual and general responsibilities

- a) All parties shall adhere to the Forest Act No 12 of 2002 and subsequent acts relating to forest protection and management in Tanzania and conduct all activities according to the laws of the United Republic of Tanzania.
- b) All parties agree to prevent any activities that contradict the village land use plan and by-laws.
- c) All parties shall, with due diligence, commit to work to minimize the transfer of activities that are contrary to the aims of the project, primarily conversion of woodland to agricultural land, to adjacent areas outside of the project area (a process known as leakage). Excessive leakage outside of the project area will result in reduced revenue for all parties.
- d) All parties shall commit to monitoring how much carbon has been stored or lost within the project area.
- e) All parties shall commit to monitoring the socioeconomic changes in **The Village** and surrounding areas as a result of the initiative.
- f) All parties may review and, when necessary, agree to adjust payments and expenditures as required to meet the aims of the project.
- g) All parties shall take steps to ensure that village members and **The Village / Jamii** understand and know their responsibilities in relation to this project and are provided with the opportunity to participate.

#### 1.1 The responsibilities of Carbon Tanzania

**Carbon Tanzania shall hereby:**

- a) Provide expert services, training and support to **The Village/Jamii** as necessary for successful joint implementation of the forest carbon project, including mapping, habitat assessment, measurement of carbon content, and other processes required by **The Village/Jamii** to meet their aims of sustainable forest management.
- b) Secure appropriate buyers for the carbon stored in the project area as a result of the efforts of **The Village/Jamii**.
- c) Pay **The Village/Jamii** at least US\$3/tonne of eligible CO<sub>2</sub> if avoided deforestation targets are met in accordance with the results based payment plan (see Annex 2). If targets are achieved, deposits to the Mongo Wa Mono and Domanga Jamii Fund accounts and both village accounts will be made every six months in accordance with the payment distribution plan (see Annex 3).
- d) Pay Tshs 500,000 (\$265) per month to Walinzi Wajadi and community coordinator for activities that achieve the aims of the project, avoided deforestation. Payment amount is subject to change in accordance with the results based payment plan (see Annex 3).
- e) Provide **The Village/Jamii** with reports every six months on the development of the project through relevant committees and meetings.

### 1.3 The responsibilities of The Village/Jamii

**The Village/Jamii shall hereby:**

- a) Ensure improved land use through the implementation of the approved and adopted land use plan and by-laws, which protect the forest area for the benefit of all community members and future generations (see Annex 4).
- b) Diligently partner in avoided deforestation through improved forest management, monitoring and enforcement activities in accordance with the forest management activity timeline (see Annex 1).
- c) Take steps to ensure that village members understand and know their responsibilities in relation to this project and are provided with the opportunity to participate.
- d) Refrain from selling carbon to any other person or entity in respect of the same piece of land covered by the land use plan attached.
- e) Ensure that any information provided to Carbon Tanzania under this agreement is truthful and accurate and inform Carbon Tanzania of any valid changes resulting in reports that are no longer truthful or accurate.
- f) The Village/Jamii agrees to protect the area of the village demarcated for the purposes of *matumizi ya asili ya hadzabe* (area protected for the traditional and cultural use by hadzabe) as shown in the land use plan and supported by the right of customary occupancy.

## 2. Terms of Contract

The terms of the contract are as follows:

### 2.1 Contract Validity

This contract will be implemented over a 20 (twenty) year period starting on the date of signing of this agreement and shall expire after this period of 20 (twenty) years.

The parties may renegotiate or amend this contract at any time upon agreement by all parties for the purposes of extending or reducing the contract's expiry date. However any valid amendment or renegotiation shall be effected in writing and through all parties appending their signatures.

### 2.2 Amendments

This agreement can only be amended or improved in writing as shall be mutually agreed and through appending the signatures of all parties, **Carbon Tanzania, The Village and Jamii**.

### 2.3 Dispute resolution

In the event of any dispute that may arise between the parties in relation to this contract, all parties will meet to discuss how to resolve the dispute. If one party remains unsatisfied or if the parties fail to reach an agreement, they will refer their dispute to the Appeal and Complaints Committee. The Committee will be constituted of the following people:

1. A representative or representatives of Ujamaa Community Resource Team (UCRT)
2. A representative from Carbon Tanzania.
3. An elected representative from each of the villages participating in the avoided deforestation programme.
4. A representative of Jamii ya Hadzabe from each of the villages participating in the avoided deforestation programme.
5. Two persons of appropriate qualifications and expertise chosen by both parties to represent them.

Either party has the right to bring a dispute to court after exhausting the processes above.

## 2.4 Issues beyond normal human control / force majeure

None of the parties to this contract shall be liable for any failure to perform its obligations where such failure is as a result of acts of nature including fire, flood, earthquake, storm, hurricane or other natural disaster, war, invasion, act of foreign enemies, hostilities (whether war is declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalisation, government sanction, blockage, embargo, labour dispute, strike, lockout or interruption or failure of electricity.

The party, **Carbon Tanzania, The Village, or Jamii**, asserting force majeure as an excuse shall have the burden of proving that reasonable steps were taken (under the circumstances) to minimise delay or damages caused by the foreseeable events, that all non-excused obligations were substantially fulfilled, and that the other party was timely notified of the likelihood or actual occurrence which would justify such an assertion, so that other prudent precautions could be contemplated.

This agreement is hereunder signed by both parties of this contract and so witnessed this ..... day in the month of ..... in the year ..... and has been concluded in the Village of ..... in the ward of .....in the district of .....

### A. On behalf of Carbon Tanzania

1. Name..... Position..... Signature.....

### B. On behalf of The Village

1. Name..... Position..... Signature.....

2. Name..... Position..... Signature.....

### C. On behalf of Jamii (NB. This is only relevant for the Hadzabe)

1. Name..... Position..... Signature.....

2. Name..... Position..... Signature.....

### D. Witnessed

1. Name..... Position..... Signature.....

2. Name..... Position..... Signature.....

## Forest Management Activity Timeline (linked to contract and result based payments)

Table i: CCRO management and activity timeline		
Activity	Responsible Party	Timeline
Community scouts patrol project area monitoring forest disturbances and activities in violation of land use plan, associated village by-laws	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis.	Patrolling must cover =>50% of the project area. This can be achieved in a single 3-day patrol twice a month.
Utilize camera and GPS technology to record disturbances and violations; provide narrative report to community coordinator	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis	Ongoing, as necessary

Report observed presence of large mammals (Zebra, Eland, Lion and Wild Dog populations) to community coordinator	Community scouts chosen from the villages of Mongo Wa Mono, Domanga and Yaeda Chini and employed on a monthly basis	Ongoing, as necessary
Collate reports from community scouts and village members and relay monitoring information to project manager	Community coordinator / project manager	Monthly basis; egregious violations shall be relayed to Carbon Tanzania/UCRT as soon as possible.
Project manager reports to village government, Carbon Tanzania and UCRT that monitoring has been conducted inline with this plan, monitoring reports have been collected and areas of conflict have been reported to village / district government	Project manager	Monthly basis with reports but more frequently if conflicts require external intervention
Utilize conflict resolution mechanisms as outlined in the Village Land Act for land and land use disputes	Village members and village government	As necessary
Work with Carbon Tanzania to measure carbon stock in project area	Village members and village government	As necessary
Provide Carbon Tanzania with information on how surplus revenue is spent and its impacts	Signatories to The Village Fund	Bi-Annually
Create any committee required by law for the purposes of managing the project area according to the village land use plan	Village members, village government	As necessary

## Results Based Payment Plan

The project's revenue is directly correlated to attainment of certain carbon storage targets. It is expected that these targets will be met if activities are implemented and monitored in accordance with the project activity timeline (Annex 1). Alternatively, if **village or community** fail to adhere to the project plan, less carbon will be stored resulting in less revenue. Given that, the semi-annual payments to the Jamii fund and village accounts and the monthly payments to community scouts and the community coordinator outlined in Part J will comply with the results based payment plan in the table below.

Table ii: Performance targets and indicators		
Performance target	Payment response / adjustment	Indicators for activity based monitoring
Deforestation reduced by >80% of baseline conditions (risk and permanence buffer already removed)	Payment continues as per schedule	Indicates that the project is on track to achieve the expected climate benefits and issuance continues as per the performance targets in Table K1 and contractual agreements with the communities.
Deforestation reduced by 40% - 80% of baseline	Payments reduced until corrective measures are taken and evidenced	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 in shown of a corrective action being taken and having an impact.
Deforestation reduced by <40% of baseline	Payments suspended until evidence showing corrective measures and reported	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.

## Annex 4: Monitoring forms and database template

### Form for tracking land use information provided by community guards (English added for the benefit of the PDD)



Fomu ya taarifa ya kila mwezi kwa ajili ya shughuli maluum katika eneo la mradi ya carbon (form for important activities related to the carbon project)

Mwesi.....(month)

Mabadiliko ya matumizi ya ardhi (tarehe, eneo)  
(*changes in land use, date and place*)

1.

2.

3.

Ujangili na uwindaji haramu (tarehe, eneo)  
(*illegal poaching, date and place*)

1.

2.

3.

Hatua gani zilizochukuliwa?  
(*Who was this reported to / by*)

1.

2.

3.

**Form for monitoring the presence of large mammal species in project area**  
*(English added for the benefit of the PDD)*



**Fomu ya taarifa ya kila mwezi kuhusu wanyama wakubwa** *(Monthly form for monitoring large mammals)*

**Mwesi (Month)**.....

Tarehe (Date)	Jina la mnyama (Name of animal)	Nyayo (Did you track it?)	Kuonekana (Did you see it?)	je, imewindwa au imeliwa (Did you hunt it; did you catch it?)	Aliyeona (Who saw it?)	Eneo (Where)

**Form for Timed Species Count (TSC) Data Sheet**



**Timed Species Count data sheet** Location / Atlas Sq.....

**Date**..... **Start time**..... **Coord**.....

Species	Time	TSC index	Other

**Form for tracking payments to community guards (walinzi wajadi)**  
**(English added for the benefit of the PDD)**



P.O. Box 15111, Arusha. Tel: +255-27-2502300

Email: [info@ujamaa-crt.org](mailto:info@ujamaa-crt.org)

Email: [info@carbontanzania.com](mailto:info@carbontanzania.com)

**FOMU KWA AJILI YA MALIPO YA POSHO WALINZI WAJADI MONGO WA MONO/DOMANGA/BONDE YA YAI DA**

**PURPOSE/ACTIVITY.....DATE.....**

NO.	Jina (name)	Kiasi (amount)	Sahihi (signature)
1.			
2			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21			
22.			
23.			
24.			
25.			
30.			
31.			
32.			
33.			
	TOTAL		

## Database for tracking data from community-based land use monitoring

Activity monitoring										
Year	Month	Activity reported	Location	By who	Agriculture	area (acre)	area (ha)	Hunting	species	number
2011	Oct	Agricultural land conversion	Domanga	Generali Maatias	Maize	3	1.21405693	Poaching 1-3 people No gun	Bush Buck	1
2011	Nov	Hunting	Mongo Wa Mono	Natfali Moses						

**Database used for internal tracking of ex-ante carbon credit sales**

Offsetter	2007	2008	2009	2010	2011	2012	Totals
Summits Africa		\$597	\$588	\$558	\$952		\$2,695
Asilia				\$1,877	\$3,422		\$5,299
Braeburn School		\$577	\$1,329				\$1,906
Regional Air			\$3,762				\$3,762
The Map's Edge				\$84	\$448		\$532
				\$202	\$469		\$671
				\$214	\$601		\$815
				\$996	\$2,206		\$3,202
				\$767	\$1,005		\$1,772
				\$559	\$222		\$781
				\$575			\$575
				\$57			\$57
				\$121			\$121
				\$421			\$421
A&K				\$2,221			\$2,221
Sanctuary Lodges				\$1,220			\$1,220
Sanjan		\$965					\$965
MBS		\$520					\$520
JAS		\$350					\$350
UK offsets (various companies)			\$1,472				\$1,472
Nature Discovery					\$598		\$598
					\$763		\$763
Unknown		\$808					\$808
Nomad trust (book)	\$50						\$50
	\$50	\$3,817	\$7,151	\$9,872	\$10,686		\$31,576
					<b>tCO2e</b>	<b>3157.6 (@ US\$10/t)</b>	

## Database for tracking payments to community members

**2012**

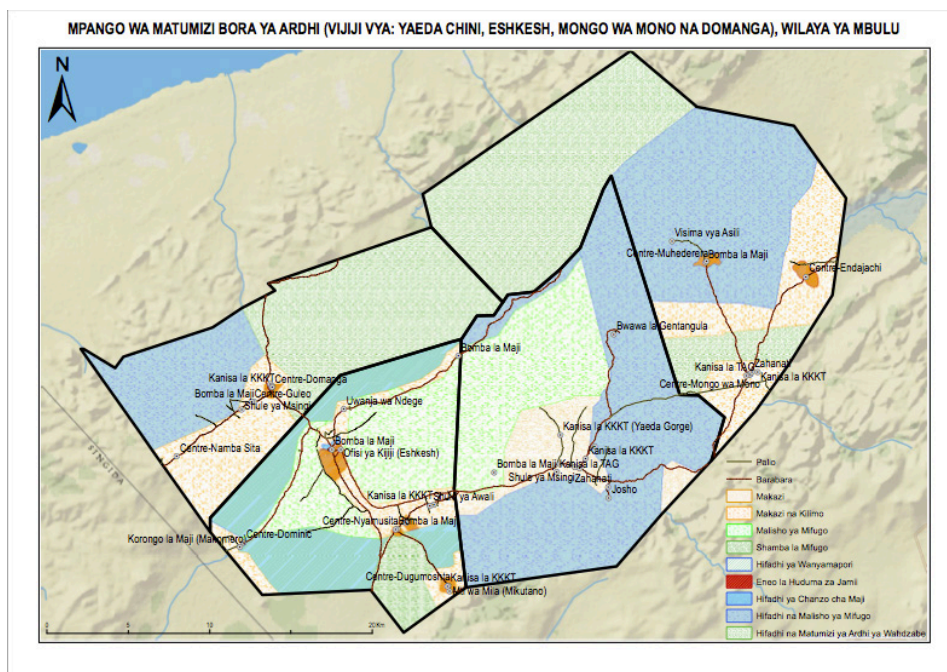
# PVCs Issued	# PVCs Sold	Revenue from PVCs (US\$)	Revenue from PVCs (Tshs) Exchange at 1:1500

Payments to Producers	Date Paid	Amount Paid US/TZS	% of Surplus Revenue	% of Total Revenue
Mongo Wa Mono Village Account		/		
Domanga Village Account		/		
Jamii Fund (Mongo Wa Mono)		/		
Jamii Fund (Domanga)		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Mongo Wa Mono Village Account		/		
Domanga Village Account		/		
Jamii Fund (Mongo Wa Mono)		/		
Jamii Fund (Domanga)		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		
Community Guards and Coordinator		/		

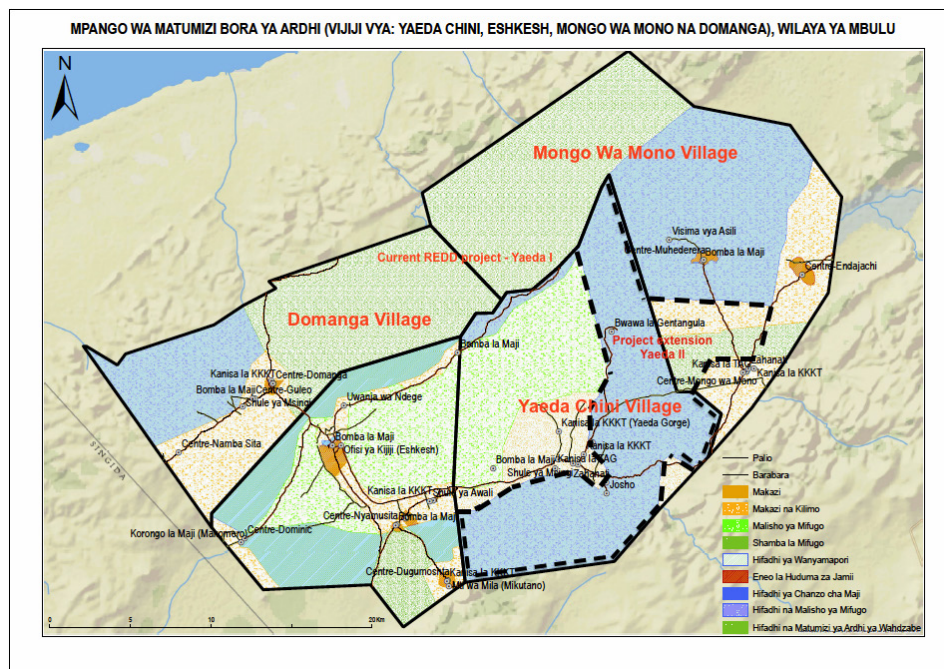
<b>Totals:</b>	<b>100%</b>	<b>60%*</b>
----------------	-------------	-------------

\*Project coordinator to pay producers a minimum of 60% of revenues over the lifetime of the project. The project coordinator will recoup initial start up and technical costs in the first two years of the project and encounter higher project development costs within the first few years after certification, after which project development and management costs will reduce substantially to a smaller percentage of the overall project costs, thereby leaving a larger surplus year-on-year for local producers.

## Annex 5: Example of forest (land) use plan



**Land use plan for the three villages with annotations showing current project area and expansion.**

Makazi: *Housing*

Makazi na kilimo: *Housing and farming*

Malisho ya mifugo: *Cattle grazing*

Shamba la mifugo: *Livestock farm (cattle enclosure construction)*

Hifadhi ya Wanyamapori: *Protected area for wildlife*

Eneo la huduma za jamii: *Area for community meetings*

Hifadhi ya chnazo cha maji: *Protected area for water catchment*

Hifadhi ya malisho ya mifugo: *Protected area for cattle grazing only*

Hifadi na matumizi ya Wahadzabe: Protected area for hunting and gathering by Hadzabe only

----- Denotes the boundaries of the project extension (Yaeda II)

Annex 6: Legal Documentation; land deeds, letters and communication.

Land deed for Mongo Wa Mono.

**JAMHURI YA MUUNGANO WA TANZANIA**

*Fomu ya Ardhi ya Vijiji*


**HATI NA.** .....

**IMESAJILIWA TAREHE**  
17/05/2011

**MUDA** .....

*Mwanga*

**AFISA ARDHI WA WILAYA** .....



**SHERIA YA ARDHI YA VIJILI, 1999**  
(Na. 5 ya 1999)

**Namba ya Hati ya Hakimiliki**.....

**HATI YA HAKIMILIKI YA KIMILA**  
(CHINI YA FUNGU LA 25)

Leo tarehe.....mwezi.....mwaka.....


Hii ni kuthibitisha kwamba Halmashauri ya Kijiji cha (jina na anwani) **MONGO WA MONO** :  
**MBULU** imetoa kwa (jina la Mkazi) **Kikundi cha Jamii ya Wahadzabe** (humu ndani akire  
"Mkazi") hakimiliki ya kimila  
(itaitwa "hakimiliki") juu ya ardhi iliyofafanuliwa katika Jedwali (humu ndani itaitwa "ardhi") :  
kisicho na kikomo\*/kwa miaka 99\*/kwa miaka.....tangu tarehe.....mwezi.....  
20.....kwa maudhui na tafsiri halisi ya Sheria ya Ardhi ya Vijiji na kwa kuzingatia vipengele  
kanuni zozote zinazotungwa chini ya sheria hiyo au sheria mbadala au marekebisho yake na k  
wa masharti yafuatayo:

\*Futa lisilohusika

- i) Mkazi /Wakazi watalipa kodi ya mwaka ya Shs.....kabla ya tar  
mwezi.....kila mwaka (kama inahusika).
- ii) Ardhi itatumika kwa ajili ya **Hifadhi na Matumizi ya asili ya Wahadzabe**
- iii) Mkazi/Wakazi watawajibika kuhifadhi mazingira (ardhi na maji)
- iv) Mkazi /Wakazi watahakikisha kwamba mipaka ya ardhi inalindwa na kutunzwa na i  
bayana kwa kipindi chote cha hakimiliki.
- v) Mkazi/Wakazi wataheshimu na kuhifadhi haki za njia zilizopo.
- vi) Uhakilishi wa hakimiliki kwa mtu yeyote au kikundi chochote cha watu ambao kwa  
wakazi wa kijiji lazima uidhinishwe na Halmashauri ya Kijiji.

**JEDWALI**  
(Maelezo kamili ya eneo na mipaka yake)

Ardhi hii yenye eneo lenye ukubwa wa hekta  
**11,343.971** iko katika Kitongoji cha **Gideru**  
Kaskazini inapakana na kijiji **Dumbechand**  
Kusini inapakana na kijiji **Yaeda Chini**  
Mashariki inapakana na kijiji **Endanyawish**  
Magharibi inapakana na kijiji **Domanga**  
Kama inavyoonyeshwa katika mchoro/ramani



1. Jina kamili... GIDABUDI AIDAHONDA

Saini... [Signature]

Anuani... P.O. BOX 74 - MBULU

Wadhifa: **Mwenyekiti wa Kijiji**

Jina kamili... PASCHAL J. KAJEMA

Saini... [Signature]

Anuani... P.O. BOX 74 - MBULU

Wadhifa: **Afisa Mtendaji wa Kijiji**

2. Mmiliki (Mkazi)

Jina

Saini/ dole gumba

PICH

(i) MKUSINI MAKANYANGE KANJUTI  
MWAKILISHI WA JAMII

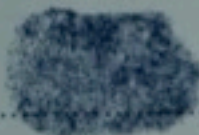


(ii) JULIANA AHUMWISI TUBANSE  
MWAKILISHI WA JAMII



(iii) RICHARD BANTON Munguira RHBaello  
MWAKILISHI WA JAMII

(iv) HASSANI TULANGI ILEME  
MWAKILISHI WA JAMII



3. Imegongwa Lakiri ya Halmashauri ya  
Wilaya ya ... MBULU ... na  
Kusainiwa leo Tarehe... 17 ...  
Mwezi... 10 ... Mwaka 20.11.

Jina: DEOSLATUS J. MAFIYU

Saini: [Signature]

Wadhifa: **Afisa Ardhi wa Wilaya**

LA

# Land deed for Domanga

**JAMHURI YA MUUNGANO WA TANZANIA**

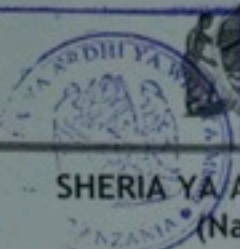
*Fomu ya Ardhi ya Vijiji Na. 21*

**HATI NA.** .....

**IMESAJILIWA TARIFE**  
12/10/2011

**MUDA** 9:00 am

*Mtawala*  
**AFISA ARDHI WA WILAYA**



**Namba ya Hati ya Hakimiliki**.....

**SHERIA YA ARDHI YA VIJILI, 1999**  
(Na. 5 ya 1999)

**HATI YA HAKIMILIKI YA KIMILA**  
(CHINI YA FUNGU LA 25)

Leo tarehe.....mwezi.....mwaka.....

Hii ni kuthibitisho kwamba Halmashauri ya Kijiji cha (jina na anwani) **DOMANGA S.L.P 74** **MBULU** imetoa kwa (jina la Mkazi) **Kikundi cha Jamii ya Wahadzabe** (humu ndani akirejewa "Mkazi") hakimiliki ya kimila


(itaitwa "hakimiliki") juu ya ardhi iliyofafanuliwa katika Jedwali (humu ndani itaitwa "ardhi") kwa kisicho na kikomo\*/kwa miaka 99\*/kwa miaka.....tangu tarehe.....mwezi.....n 20.....kwa maudhui na tafsiri halisi ya Sheria ya Ardhi ya Vijiji na kwa kuzingatia vipengele vya kanuni zozote zinazotungwa chini ya sheria hiyo au sheria mbadala au marekebisho yake na kwa r wa masharti yafuatayo:

\*Futa lisilohusika

- i) Mkazi /Wakazi watalipa kodi ya mwaka ya Shs.....kabla ya tarehe.. mwezi.....kila mwaka (kama inahusika).
- ii) Ardhi itatumika kwa ajili ya **Hifadhi na Matumizi ya asili ya Wahadzabe**
- iii) Mkazi/Wakazi watawajibika kuhifadhi mazingira (ardhi na maji)
- iv) Mkazi /Wakazi watahakikisha kwamba mipaka ya ardhi inalindwa na kutunzwa na idumu bayana kwa kipindi chote cha hakimiliki.
- v) Mkazi/Wakazi wataheshimu na kuhifadhi haki za njia zilizopo.
- vi) Uhakilishi wa hakimiliki kwa mtu yeyote au kikundi chochote cha watu ambao kwa kawaida wakazi wa kijiji lazima uidhinishwe na Halmashauri ya Kijiji.

**JEDWALI**  
(Maelezo kamili ya eneo na mipaka yake)

Ardhi hii yenye eneo lenye ukubwa wa hekta **9,445.957** iko katika Kitongoji cha **Domanga** Kaskazini inapakana na kijiji **Matala** Kusini inapakana na kijiji **Eshkesh** Mashariki inapakana na kijiji **Mongo wa mono** Magharibi inapakana na **Makazi ya Domanga** Kama inavyoonyeshwa katika mchoro/ramani hapa kulia.



1. Jina kamili GERSON MALLE ZUGIHA

Saini.....

Anuani S.L.P 74 MBULU

Wadhifa: **Mwenyekiti wa Kijiji**

Jina kamili PAULO GADALLO

Saini.....

Anuani S.L.P 74 MBULU

Wadhifa: **Afisa Mtendaji wa Kijiji**

2. Mmiliki (Mkazi)

Jina

Saini/ dole gumba

PIC

(i) Marko Mussa Mazinziri.....  
MWAKILISHI WA JAMII

(ii) Mwangaza Mpanda Bagayu.....  
MWAKILISHI WA JAMII

(iii) Pile Gudo Mahiya.....  
MWAKILISHI WA JAMII

(iv) Martini petro Danduru.....  
MWAKILISHI WA JAMII

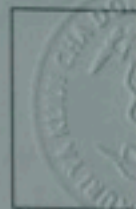
3. Imegongwa Lakiri ya Halmashauri ya  
Wilaya ya MBULU..... na  
Kusainiwa leo Tarehe 17.....  
Mwezi 10..... Mwaka 2011.

Jina: DEOGNATUS J. MATIYA

Saini:.....

Wadhifa: **Afisa Ardhi wa Wilaya**

LAKIRI/  
W  
HALMA  
YA K



LA

# Land deed for Yaeda Chini

**HATI NA. 01/MB/46**  
**IMESANLIW. T.**  
**12-06-2012**  
**MUDA 10:01 PM**  
**APISA ARDHI WA WILAYA**

**JAMHURIYA MUUNGANO WA TANZANIA**  
**Fomu ya Ardhi ya Vijiji Na. 21**

**Namba ya Hati ya Hakimiliki 01/mb/46**

**SHERIA YA ARDHI YA VIJILI, 1999**  
**(NA. 5 YA 1999)**  
**HATI YA HAKIMILIKI YA KIMILA**  
**(CHINI YA FUNGU LA 25)**

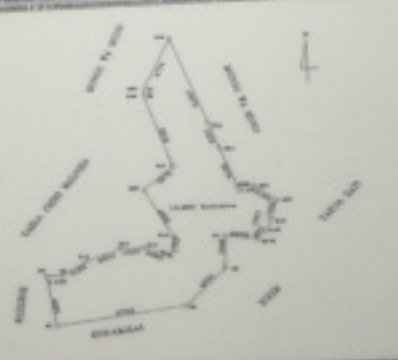
Leo tarehe.....mwaka.....  
Hii ni kuthibitisha kwamba Halmashauri ya Kijiji cha (jina na anwani) **YAEDA CHINI, S.L.P 74 MBULU, WILAYA YA MBULU** imetoa kwa (jina la Mmiliki) **HALMASHAURI YA KIJILI CHA YAEDA CHINI** (humu ndani akirejewa kama "Mmiliki") hakimiliki ya kimila (itaitwa "hakimiliki") juu ya ardhi iliyofafanuliwa katika Jedwali (humu ndani itaitwa "ardhi") kwa kipindi kisicho na kikomo\*/kwa miaka 99\*/kwa miaka.....tangu tarehe.....mwaka.....  
20.....kwa maudhui na tafsiri halisi ya Sheria ya Ardhi ya Vijiji na kwa kuzingatia vipengele vyake na kanuni zozote zinazotungwa chini ya sheria hiyo au sheria mbadala au marekebisho yake na kwa mujibu wa masharti yafuatayo:

\*Futa lisilohusika

- Mmiliki atalipa kodi ya mwaka ya Shs.....kabla ya tarehe..... ya mwaka..... kila mwaka (kama inalohusika)
- Ardhi itatumika kwa ajili ya **MALISHO YA MIFUGO NA HIFADHI**
- Mmiliki atawajibika kuhifadhi mazingira (ardhi na maji)
- Mmiliki atahakikisha kwamba mipaka ya ardhi inalindwa na kutunzwa na idumu kuwa bayana kwa kipindi chote cha hakimiliki.
- Mmiliki ataheshimu na kuhifadhi haki za njia zilizopo.
- Uhakikishi wa hakimiliki kwa mtu yeyote au kikundi chochote cha watu ambao kwa kawaida si wakazi wa kijiji lazima uidhinishwe na Halmashauri ya Kijiji.

**JEDWALI**  
*(Maelezo kamili ya eneo na mipaka yake)*

Ardhi hii yenye eneo la ukubwa wa **HEKTA 13,990**, iko katika viongoji vya **DUGUMAGINGI, YAEDA KATI, LAGANGA na GETAQULA**.  
Kaskazini inapakana na **MONGO WA MONO**  
Kusini inapakana na **ENDAMILAI / DIRIM**  
Mashariki inapakana na **MONGO WA MONO / HARSHA**  
Magharibi inapakana na **YAEDA CHINI / ESHKESH**  
Kama inavyoonyeshwa katika mchoro/ramani hapa kulia.



LAKIRI/MUHURI  
WA  
HALMASHAURI  
YA KIJILI

1. Jina kamili... Juma Hamisi Omani

Saini... Hk1

Anuani... 74 MBULU

Wadhifa: Mwenyekiti wa Kijiji

Jina kamili... AMOS GADI BUDY

Saini... AD

Anuani... S.C.P. 74 MBULU

Wadhifa: Afisa Mtendaji wa Kijiji

2. Mmiliki (Mkazi)

(i) Jina JOSEPH ELIAKIM Saini/ dole gumba

(ii) YEREMIA SHABADI

(iii) AGREY O. Yindi

3. Imegongwa Lakiri ya Halmashauri ya  
Wilaya ya MBULU na  
Kusainiwa leo Tarehe... 12  
Mwezi... Juni Mwaka 2013

Jina: DEBUNATIAS S. MARIYA

Saini: Deputy


Wadhifa: Afisa Ardhi Mteule  
MBULU

Letter from the district government inviting UCRT to engage in activities that enable the Hadzabe to maintain their traditional way of life.

This letter was initiated by the President of Tanzania, Honorable Jakaya Kikwete.

**THE UNITED REPUBLIC OF TANZANIA**  
**PRIME MINISTER'S OFFICE**  
**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

Tel. No: 027-2533019  
027-2533036



District Commissioner's Office,  
Mbulu District,  
P.O. Box 1,  
MBULU

In reply please quote:

Ref. No. DC/MB/A3/41 Vol II/131

24<sup>th</sup> October, 2008

**The Director,  
UCRT,  
P.O. Box 15111,  
ARUSHA**

*We have only met on this  
last year 2008.*

**Re: A ROUND TABLE MEETING ON HADZABE DEVELOPMENT  
TRANSFORMATION ON 13<sup>TH</sup> NOVEMBER, 2008 AT MBULU**

Please refer to the above subject.

As you all know we have been struggling to ensure a sustainable development in Yaeda Chini, more specifically among the Hadzabe Community. The work is entrusted to us all (Development Partners).

During his visit to Mbulu District, Honourable Jakaya Kikwete, The President of the United Republic of Tanzania, was touched by the Hadzabe development predicament, and ordered the parties concerned with Hadzabe development to discuss and come up with implementable and sustainable plans.

You, as our partner in development and an organization working among the Hadzabe people, are invited to attend this important meeting in order to chart out how we can implement this. We need to focus, plan and later implement the intended programmes together. Your presence is therefore very important.

In that meeting we expect to hold a cross-sector dialogue in order to enable all stakeholders to understand the importance of Hadza

Transformation Strategy especially on Socio-development; and the role of each Stakeholder (NGO/CBO/Government) in improving the lives of that community.

We expect, after our meeting, to identify sets of activities to be consolidated into programmes; look for the sources of the needed resources; make some schedules and implementation timetables (time frames) etc.

The meeting will be held at Mbulu Community Centre starting at 10.00 a.m. You are requested to finance and facilitate your representatives

Come with your proposals, come with ideas and come with advices, in this consultative and participatory process.

Thank you in advance and hope to meeting you during that meeting (13<sup>th</sup> November, 2008)



**Elias G.B. Goroi**  
**DISTRICT COMMISSIONER**  
**MBULU DISTRICT**

**Copy: Regional Commissioner**  
**MANYARA REGION**

**Regional Administrative Secretary**  
**MANYARA REGION** - More information later.

**District Executive Director,**  
**MBULU** - follow up

Letter to the District Executive Director and copied to the district Land Officer outlining the land use conflict and offering assistance to create and build upon the land use plan



Ujamaa Community  
Resource Trust

EMPOWERMENT JUSTICE STEWARDSHIP

P.O.Box 15111, Arusha. Tel: +255-27-250 2300

Email: [info@ujamaa-crt.org](mailto:info@ujamaa-crt.org)

05/11/2009.

Att: District Executive Director  
Mbulu District Council  
P. o . Box 74  
Mbulu.

Ref: Re-demarcation of Land Use planning in Yaeda valley

UCRT (Ujamaa Community Resource Trust) is working with natural resource management and land rights. In Early 2007 we have collaborated with District Council in production of land use maps, after all the land use – land rights trainings been conducted in the villages. Mapping exercise which include preparation of joint village base topographic map, land use zone demarcation with GPS measurements, production of land use map and printing of maps for Mongo wa Mono and Yaeda Chini village in Mbulu District.

However, some allocated areas for conserved areas for forest and communal use invaded by Immigrant from neighbor villages and district without following the normal procedure.

Mid August 2009, the team of UCRT and two District Personnel made a visit to Yaeda valley with the purpose to carry out pre- survey of communal reserved land in order to provide certificate of customary right of occupancy.

We therefore ask for District Land Officer and District Surveyor Officer to carry out the above exercise starting November from 14<sup>th</sup> -30<sup>th</sup>, 2009.

UCRT will provide transport and moderate field allowance in accordance to organizational financial policy.

Best regard,

Dismas Meltaya

UCRT Programme Officer.

cc. District Land Officer



Letter to District Natural Resource Officer outlining UCRT's plan to work with Carbon Tanzania and continue its work in Mongo Wa Mono village



P.O. Box 15111, Arusha. Tel. +255-27-250 2300  
Email: [info@ujamaa-crt.org](mailto:info@ujamaa-crt.org)

Att. District Natural Resource Officer  
Mbulu District Council  
P.O. Box 74  
Mbulu

24<sup>th</sup> August 2010

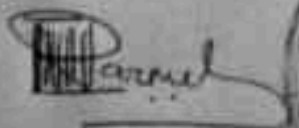
RE: Community support for Mongo wa Mono village through a system of payments for ecosystem services

UCRT is collaborating with Carbon Tanzania to continue its work in Mongo wa Mono through payments from carbon forestry. This concept involves the support and empowerment of the community for the protection of village natural resources and improved management outlined within the by-laws and land use plan.

As you are one of our organizations stakeholders, we are required to inform Mbulu District, especially the District Natural Resource Office (DNRO) of this initiative in order to provide collaboration on this project.

We look forward to working together on this project which aims to further support our ongoing work to protect our natural resources for present and future generations.

Best Regards

  
Edward Loure  
UCRT Coordinator



**Letter Carbon Tanzania to Yaeda Chini regarding expanding current REDD project.**



**Mr. Marc Baker  
Carbon Tanzania  
P.O. Box 425  
Arusha  
Tanzania**

**ATT: Village Government and Communities of Yaeda Chini and Mongo Wa Mono**

**REF: Process for the development of a Carbon Forestry project in the areas designated as Hifadhi na Malisho ya Mifugo in Yaeda Chini and Mongo Wa Mono Villages.**

**Dear Sirs,**

Over the last 3 months, Carbon Tanzania and the village governments of Yaeda Chini and Mongo Wa Mono have discussed extending the current carbon project from the Hifadhi na Matumizi ya Ardhi ya Wahadzabe in Domanga and Mongo Wa Mono to include the areas designated as Hifadhi na Malisho ya Mifugo in the villages of Yaeda Chini and Mongo Wa Mono.

Carbon Tanzania aims to protect these areas designated in the land use plans and wishes to achieve this by paying the village and community for manage these areas in accordance with the established land use plans. The revenue that is paid to the village and community comes from companies in both Tanzania and internationally that want to protect trees. If the village and Carbon Tanzania can prove to these companies that the trees are protected, then the village will receive payments based on the amount of carbon in the trees and the area under management.

Following the process that Carbon Tanzania has agreed with the communities in Domanga and Mongo Wa Mono to establish this project, Carbon Tanzania must carry out the following processes to ensure that a third party organization, Plan Vivo, can certify the project.

1. Ensure land use plan and CCROs are understood by village government and all community members.
2. Ensure that the role of Carbon Tanzania is understood by village government and all community members.
3. To identify a Coordinator in Yaeda Chini who will be responsible for ensuring that the land use plan is followed by all community members.
4. To conduct a survey of the trees in the Hifadhi na Malisho ya Mifugo so that Carbon Tanzania can measure the amount of carbon in the trees.
5. To develop and sign a contract with the villages which outlines the roles and responsibilities of the village government, communities and Carbon Tanzania.

6. To develop a payment structure to ensure that money is paid to the Village and community in a transparent way, like that currently used in Domanga and Mongo Wa Mono villages.

7. To document the project development process through official minutes of meetings to show Plan Vivo that the community agrees to follow the village land use plan.

8. To be certified by Plan Vivo which will allow Carbon Tanzania, to be paid by companies wishing to protect trees.

After Plan Vivo certify the project, Carbon Tanzania can begin to approach companies and ask them to fund the protection of trees in areas designated as Hifadhi na Malisho ya Mifugo in Yaeda Chini and Mongo Wa Mono villages. Carbon Tanzania can then begin to make payments to the village government and communities.

Carbon Tanzania is looking forward to working with the villages of Yaeda Chini and Mongo Wa Mono and providing revenue and jobs in the villages based on improved land use planning and the protection of the environment.

Sincerely,

Mr. Marc Baker.  
Director  
Carbon Tanzania

CC. Mr. Dismas Partalala  
Mr. Richard Baalow

## **Memorandum of Understanding between Carbon Tanzania (CT) and Ujamaa Community Resource Team (UCRT)**

### **Background**

In order to develop successful land management projects that can result in viable, long-term conservation and generate permanent carbon reductions, several factors are critical. Firstly, projects should be based in areas where land and resource tenure is clear and where local communities are able to make and control land and resource use decisions; in the context of Tanzania, this means that projects must be in areas that are clearly village lands, and ideally where village land boundaries have already been clarified.

Second, projects should be in areas with relatively high carbon storage potential; this means areas with either forest or woodland (savannah) land cover. Third, these forests or woodlands should be under some level of threat, such that local conservation measures would serve to *increase* the amount of carbon stored than would otherwise occur in the absence of the project (this is known as the 'additionality' principle and is a fundamental element of carbon markets). Such increases may occur through forest recovery (improved forest management) or through 'avoided deforestation', using a credible baseline scenario which demonstrates that in the absence of carbon market funds, existing vegetation will be cleared and carbon lost.

Lastly, projects should involve a fairly large area of land and thus a significant amount of stored carbon. Carbon forestry or land use projects involving very small areas tend to be very costly in relation to the revenues they generate, because of the high up-front costs required in project design and third-party verification and validation (whereby an independent organization validates the offsets which a project developer claims to have generated).

As such, this initiative will target three separate areas with fairly large forest areas, where local tenure over land and forests/woodlands is relatively clear, and where a credible baseline can be made to demonstrate that projects will protect 'additional' forests from loss or degradation. Critically, these are all areas where UCRT has a long-established presence, local relationships and familiarity, and has done much work to build local natural resource management capacity over the past decade.

### **I. Parties**

This Memorandum of Understanding (hereafter 'MoU') is between the following two parties:

**Carbon Tanzania**, being a non-profit subsidiary of Ecological Initiatives Ltd., registered in Tanzania and having official residence at plot number 146A, Ngaramtoni Coffee Estate, Olasiti, Arusha District. P.O. Box 425, Arusha Tanzania, and with the mission of developing carbon offsetting projects involving indigenous forest conservation and community-based forest management in Tanzania.

**Ujamaa Community Resource Team Ltd**, being a non-Profit Company limited by guarantee, registered in Tanzania and having official residence at Olasiti, near Dorobo premises, Arusha District. P.O.Box 15111, Arusha Tanzania, and with vision to Improved livelihoods for pastoralists, Hunter-gatherers and Agro-pastoralists communities through social Justice and sustainable Natural Resource management in Tanzania.

The purpose of this MoU is to articulate a collaborative relationship between the two parties based on mutual interests and pursuit of common aims and objectives, and the general rights and obligations of the two parties within that evolving relationship.

## **II. Duration**

This MoU will apply from 1<sup>st</sup> December 2010 until 31<sup>st</sup> December 2012. The MoU may be renewed with any amendments based on the written consent of both parties. The MoU can be resigned without or including changes to the content with the consent of both parties.

## **III. Scope and Nature of Partnership**

Carbon Tanzania (CT) will provide the skills to assess, document and process the necessary documentation required to prepare an area for the development of verified and certified carbon credits. This process will be done in order to enable UCRT to fulfill its mission and aims to support community rights and community ownership over an area to ensure the viable and long-term conservation of biological diversity.

Ujamaa Community Resource Team (UCRT) will provide access to its local support team and provide technical and local knowledge to ensure CT is able to carry out the necessary field operations. UCRT can represent CT at community level through this partnership which enables both organizations to fulfill their missions and aims.

This partnership includes

1. Assistance in strategic organizational planning, including identification of technical, human resource, and financial requirements and gaps, and development of strategies to address those;
2. Assistance in identifying and pursuing funding opportunities, including potentially joint funding proposals;
3. General networking and linking to other potential partner organizations and individuals, nationally and internationally;
4. Assistance in analysing and communicating key lessons and experiences through publications and other forms of media;
5. Direct technical support to field projects, which may include:
  - a. Policy and institutional analyses
  - b. Development of project strategies and proposals
  - c. Input to technical documents
  - d. General advice on project implementation as may be required

## **IV. Areas of collaboration:**

### **A. Primary area of collaboration:**

- The primary area of collaboration and focus for activities for the year 2012 will be the The Kidero hills of the Yaeda Valley, Mbulu District. This area of dry but dense *Acacia* and *Baobab* woodland is contained within Mongo wa Mono village, and is the last remaining expanse of natural habitat remaining under the control of the Hadzabe hunter-gatherers. UCRT has worked in the area since the late 1990s and enabled the village to develop a land use plan and by-laws, and to demarcate the Kidero hills as a resource management and conservation area under the village's control. Nevertheless the area faces constant pressures of encroachment from densely populated areas to the west (Meatu District), south (Mbulu District) and

north (Karatu District). Without strengthened local management capacity and incentives the area is likely to be degraded, with severe consequences for the Hadzabe's cultural survival.

**B. Other possible areas of collaboration:**


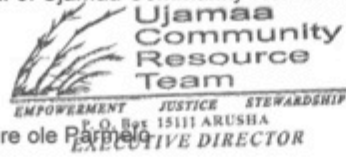
Depending on availability of time and resources the parties also agree to investigate the potential for collaborative activities in the following areas:

- The southern Maasai Steppe of Simanjiro District and northern Kiteto District. This semi-arid area contains vast woodlands and some pockets of forest, and its extensive savannah contains critical livestock forage for tens of thousands of pastoralists in the area. The region has long been subject to gradual encroachment from other ethnic groups, immigrants from adjacent highlands, and commercial farming interests. At present the southern Maasai Steppe stands at a frontier of encroaching agriculture from the northeast and the southwest, and is the largest remaining area of native vegetation and pastoralist land uses in northern Tanzania.
- The Loliondo forest, Loliondo Division. This area of highland forest is partly contained within a government forest reserve and partly on village lands, including the lands of 3-5 villages. The forest provides numerous ecosystem services, such as water catchment for rivers that flow into Lake Natron and dry season grazing refuge. The forest is however being rapidly degraded from over-harvesting and lack of local management and protection measures, and has a very high carbon storage potential per hectare.


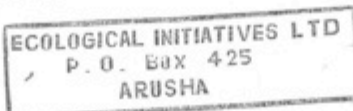
Both organizations shall follow normal practice of duly acknowledging the partnership described in this MoU when presenting or publicizing information about any of the work done through the course of this collaboration, and will share drafts and provide opportunities for incorporating comments from the other party before publishing information about the partnership that includes specific mention of the other organization.

Dated this the 7<sup>th</sup> day of FEBRUARY 2012.

Signed on behalf of Ujamaa Community Resource Team

  
  
Mr. Edward Loure ole Pampile  
Coordinator  
Ujamaa Community Resource Team

Signed on behalf of Carbon Tanzania

  
  
Mr. St. John Anderson.  
Director  
Ecological Initiatives & Carbon Tanzania.

## MoU between Carbon Tanzania and The Nature Conservancy

### Background

In order to develop successful land management projects that can result in viable, long term conservation and generate permanent carbon reductions, several factors are critical. Firstly, projects should be based in areas where land and resource tenure is clear and where local communities are able to make and control land and resource use decisions; in the context of Tanzania, this means that projects must be in areas that are clearly village lands, and ideally where village land boundaries have already been clarified.

Second, projects should be in areas with relatively high carbon storage potential; this means areas with either forest or woodland (savannah) land cover. Third, these forests or woodlands should be under some level of threat, such that local conservation measures would serve to *increase* the amount of carbon stored than would otherwise occur in the absence of the project (this is known as the 'additionality' principle and is a fundamental element of carbon markets). Such increases may occur through forest recovery (improved forest management) or through 'avoided deforestation', using a credible baseline scenario which demonstrates that in the absence of carbon market funds, existing vegetation will be cleared and carbon lost.

Lastly, projects should involve a fairly large area of land and thus a significant amount of stored carbon. Carbon forestry or land use projects involving very small areas tend to be very costly in relation to the revenues they generate, because of the high up-front costs required in project design and third-party verification and validation (whereby an independent organization validates the offsets which a project developer claims to have generated).

As such, this initiative will target **two** separate areas with fairly large forest areas, where local tenure over land and forests/woodlands is relatively clear, and where a credible baseline can be made to demonstrate that projects will protect 'additional' forests from loss or degradation.

### I. Parties

This Memorandum of Understanding (hereafter 'MoU') is between the following two parties:

**Carbon Tanzania**, being a non-profit subsidiary of Ecological Initiatives Ltd., registered in Tanzania and having official residence at plot number 146A, Ngaramtoni Coffee Estate, Olasiti, Arusha District. P.O. Box 425, Arusha Tanzania, and with the mission of developing carbon offsetting projects involving indigenous forest conservation and community-based forest management in Tanzania.

**The Nature Conservancy**, being an international non governmental organization working on land use conservation and headquartered in 4245 N Fairfax Dr #100, Arlington, VA 22203 United States.

The purpose of this MoU is to articulate a collaborative relationship between the two parties based on mutual interests and pursuit of common aims and objectives, and the general rights and obligations of the two parties within that evolving relationship.

### II. Duration

This MoU will apply from January 2013 until 31 December 2017. The MoU may be renewed with any amendments based on the written consent of both parties. The MoU can be resigned without or including changes to the content with the consent of both parties.

### III. Scope and Nature of Partnership

Carbon Tanzania (CT) will provide the skills to assess, document and process the necessary documentation required to prepare an area for the development of certified carbon credits and to sell these credits. This process will be done in order to enable Carbon Tanzania to fulfill its mission and aims to support community rights and community ownership over an area and ensure the viable and long-term conservation of biological diversity.

This partnership includes

1. Assistance in strategic organizational planning, including identification of technical constraints and the development of strategies to address those;
2. Assistance in identifying and pursuing funding opportunities, including potentially joint funding proposals;
3. General networking and linking to other potential partner organizations and individuals, nationally and internationally;
4. Assistance in analysing and communicating key lessons and experiences through publications and other forms of media;
5. Direct technical support to field projects, which may include:
  - a. Development of project strategies and proposals
  - b. Technical analysis of land use and land use changes measured by remote sensing to understand the baseline within project areas
  - d. General advice on project implementation as may be required

#### IV. Areas of collaboration:

- The southern Maasai Steppe of Simanjiro District and northern Kiteto District. This semi-arid area contains vast woodlands and some pockets of forest, and its extensive savannah contains critical livestock forage for tens of thousands of pastoralists in the area. The region has long been subject to gradual encroachment from other ethnic groups, immigrants from adjacent highlands, and commercial farming interests. At present the southern Maasai Steppe stands at a frontier of encroaching agriculture from the northeast and the southwest, and is the largest remaining area of native vegetation and pastoralist land uses in northern Tanzania.
- The Kidero hills of the Yaeda Valley, Mbulu District. This area of dry but dense *Acacia* and *Baobab* woodland is contained within Mongo Wa Mono village, and is the last remaining expanse of natural habitat remaining under the control of the Hadzabe hunter-gatherers. The area faces constant pressures of encroachment from densely populated areas to the west (Meatu District), south (Mbulu District) and north (Karatu District). Without strengthened local management capacity and incentives the area is likely to be degraded, with severe consequences for the Hadzabe's cultural survival.

Both organizations shall follow normal practice of duly acknowledging the partnership described in this MoU when presenting or publicizing information about any of the work done through the course of this collaboration, and will share drafts and provide opportunities for incorporating comments from the other party before publishing information about the partnership that includes specific mention of the other organization.

Date

Signed on behalf of The Nature Conservancy

Mr Matt Brown  
Tanzania Country Director  
The Nature conservancy

Signed on behalf of Carbon Tanzania

Mr. Marc Baker

Director

Ecological Initiatives & Carbon Tanzania

## Annex 7: Evidence of community participation

**Image 1. Dismas Partalala (UCRT), Marc Baker (CT) and Matt Brown (TNC) land use planning in Yaeda Valley.**



**Image 2. Village Council Meeting in Yaeda Chini village to discuss project expansion.**



**Image 3. Village assembly meeting in Yaeda Chini with Barabaig community representatives.**



**Image 4. Land use planning with Hadzabe community.**



**Image 5. Village executive officer for Mongo Wa Mono signing contract with Carbon Tanzania in 2012.**



**Image 6. Theron Morgan-Brown from Tanzania Forest Conservation Group (TFCG) during validation visit to Yaeda in 2012.**



## **Mongo Wa Mono General Assembly Meeting (Yaeda phase I)**

22 March 2012 (English outline of meeting)

- 1) Opening of meeting by Hadzabe chairperson.
- 2) Self-introductions of guests (Dismas Partalala of UCRT (DP) and Marc Baker (MB) of Carbon Tanzania).
- 3) Update on carbon project
  - Review of general principles of project and the activities over the last 6 months
  - AGB surveys – results and congratulations to the AGB team
  - Walinzi wajadi and community coordinator, comments on ongoing anti-poaching activities and the monitoring by the community coordinator. Greater input was required for the coordinator to be able to clearly outline walinzi activities.
  - Pending certification and validation visit, what Plan Vivo will do when in location and the purpose of this visit. MB outlined the need for the walinzi wajadi and community members to engage with the validation process and voice their opinions of the project.
- 4) DP introduces contract concept, why have a contract and for whose benefit. The community recognized a contract due to working with tourism companies in the past
- 5) Richard Ballow (RB), Yaeda Ward Executive Officer, reads through contract in Swahili and Hadzane, explaining the contract in detail, page to page. RB explains at length the need to respond and engage in the contract process.
- 6) Discussion of contract and questions
  - 20-year crediting period and permanence
  - Request further training on carbon
  - Clarification of benefits and incentives of parties (community, CT & UCRT)
  - Results-based payment plan and timeline
  - Transparency of monitoring and payment data
- 7) Attendees and village chairperson express intent to sign contract with Carbon Tanzania at a future date (23-26 April 2012).

## **Domanga General Assembly Meeting (Yaeda phase I)**

23 March 2012

- 1) Opening of meeting by Hadzabe chairperson
- 2) Agenda of meeting presented by Richard Ballow, Yaeda Ward Executive Officer
- 3) Introductions of guests (Dismas of UCRT and Marc and Jess of Carbon Tanzania)
- 4) Update on carbon project
  - Review of general principles of project
  - AGB surveys
  - Walinzi wajadi and community coordinator, comments on ongoing anti-poaching activities and the monitoring by the community coordinator. Greater input was required for the coordinator to be able to clearly outline walinzi activities.
  - Pending certification and validation visit, what Plan Vivo will do when in location and the purpose of this visit. MB outlined the need for the walinzi wajadi and community members to engage with the validation process and voice their opinions of the project.
- 5) Dismas introduces contract concept
- 6) Ward Councilor and Village Chairperson arrive and discuss procedures for contracting with village
- 7) Richard Ballow reads through contract in Swahili and Hadzane

- 8) Discussion of contract and questions
- Procedure and amount of walinzi wajadi payments reviewed
  - Enhancing the authority of walinzi wajadi
  - 20-year crediting period and permanence
  - Results-based payment plan, price and timeline
  - Community to decide how funds are spent
- 9) Question to UCRT on educational program addressed by Dismiss
- 10) Attendees and village chairperson express intent to sign contract with Carbon Tanzania at a future date (23-26 April 2012).

## **SHERIA ZA SERIKALI ZA MITAA.(SERIKALI ZA VIJILI) (Village by-laws) Yaeda Phase I / II for the Land Use plan shown in Annex 5 and list of attendees and signatories to the village by-laws on land use designation.**

SEHEMU YA TATU:

SHERIA NDOGO

### Kipengele Na. 1

Kilimo

Maelezo Maeneo yote ya kilimo ni kwa ajili ya kilimo cha mazao ya chakula na biashara kidogo. Pia kilimo kitafanyika ndani ya eneo la makazi ya kudumu. Maeneo yote tajwa ya kilimo yatawekwa alama za kudumu ndani ya kila kitongoji. Serikali ya kijiji watashirikiana na kamati mbalimbali za kijiji na wanavitongoji wenyewe katika zoezi la kuweka mipaka na alama za kudumu.

Masharti a) Si ruhusa kabisa kwa mtu yeyote kuchunga au kuingiza mifugo ya aina yeyote ile kwenye shamba ambalo mazao ya kilimo hulimwa liwe shamba lake au mwingine.

b) Hairuhusiwa kulima nje ya maeneo yaliyotajwa na wakazi wa vitongoji vyote vya kijiji cha Mongo wa Mono.

c) Hairuhusiwa kutoa shamba zaidi ya ekari kumi (10), serikali ya kijiji kwa mujibu wa sheria za serikali za mitaa ina uwezo wa kutoa ndani ya eneo la kijiji kuanzia ekari 1 hadi 10 tu.

Adhabu Mtu atakayekiuka masharti haya atatozwa faini ya sh.5,000/-

Kama ni shamba atatozwa faini y sh. 5,000/- kwa kila ekari moja na kunyang'anywa.

### Kipengele Na. 2:

Mifugo (Ufugaji)

Maelezo Mifugo ni wanyama wote wafugwao kama vile ng'ombe, mbuzi, kondoo, punda na n.k.

Ufugaji utafanyika kulingana na mpango wa matumizi ya ardhi na shughuli za kiuchumi za wakazi wa kila kitongoji. Hakuna eneo maalum kwa ajili ya ufugaji kwenye vitongoji vya Mongo wa Mono na Domanga. Hivyo basi, ufugaji mdogo sana utafanyika kwenye eneo la makazi na kilimo katika vitongoji vya Domanga na Mongo wa Mono.

Ufugaji utafanyika katika vitongoji vya Endajaj, Mashinoda na Mohaderar.

Masharti a) Kuchungia mifugo katika maeneo yaliyofungwa na Halmashauri ya Kijiji (Kwa huduma ya jamii na uhifadhi yaani, shule, kanisa, misitu na wanyamapori) na pia katika mashamba ya watu binafsi ni kosa

b) Ni kosa kwa mtu yeyote kuingiza au kufuga mifugo zaidi ya hamsini (50) katika vitongoji vya Mongo wa Mono na Domanga. Ufugaji mkubwa utafanyika katika vitongoji vya Endajaj, Mashinoda na Mohaderar.

c) Ni kosa kuchungia mifugo kwenye mashamba ya mazao.

d) Mtu yeyote atakayeingiza mifugo katika eneo lililotengwa kuwa Karantini ni kosa.

Adhabu Mtu yeyote atakayekiuka sheria hii atakuwa ametenda kosa na adhabu yake faini sh. 50,000/- mtu yeyote atakayeshindwa au kurudia kosa atashitakiwa na serikali ya kijiji.

### Kipengele Na. 3:

Makazi ya kudum

Maelezo Haya ni maeneo yaliyo tengwa na wanavitongoji kwa lengo la wana vitongoji kuishi. Maeneo yote haya yamezungushiwa alama za kudumu kwa kutumia rangi nyeupe.

Masharti a) Ni kosa kujenga ama kuweka makazi ya kudumu nje ya mipaka iliyotajwa katika sehemu ya matumizi bora ya ardhi, mazingira na maliasili kwa kila kitongoji.

b) Ni kosa kwa mtu yeyote wa nje kuishi au kujenga katika maeneo hayo bila kuruhusiwa au kukubaliwa na serikali ya kijiji.

Adhabu Mtu yeyote atakayekiuka sheria hii atatozwa faini ya sh. 3,000/- na kufukuzwa kijijini

### Kipengele Na. 4:

Misitu

Maelezo Haya ni misitu yote ya kijiji kama ilivyotajwa kwenye mpango wa matumizi ya ardhi ya kila kitongoji. Ukusanyaji wa matunda, madawa, mizizi na mazao mengine ya misitu kama asali itaruhusiwa kwa wenyeji kwa matumizi ya kawaida/nyumbani ya jamii bila vibali.

Kambi za watalii wapiga picha katika maeneo ya misitu yataruhusiwa kwa maelewano na serikali ya kijiji kinyume cha hapo rejea masharti hapo chini

Masharti a) Ni marufuku mtu yeyote au mwanakijiji yeyote kukata miti kwa ajili ya biashara, kuchoma moto na kuchoma mkaa katika misitu iliyoko ndani ya mamlaka ya serikali ya kijiji bila kibali.

b) Ni marufuku kuweka makazi ya kudumu ,isipokuwa kambi za muda kwa wenyeji wawindaji/wakusanyaji katika maeneo yote ya misitu ya kijiji.

c) Ni kosa kulima au kuchunga katika maeneo yote yaliyohifadhi ndani ya kijiji.

d) Ni marufuku kuingia kwenye maeneo yote ya misitu na kufanya shughuli yeyote ya biashara kama kupiga kambi, picha au kufanya utafiti wowote bila idhini ya serikali ya kijiji.

Adhabu Atakayepatika na kosa atatozwa faini isiyopungua sh. 20,000/- au zaidi kulingana na kosa na kufikishwa mahakamani.

### Kipengele Na. 5

Wanyama Pori

Maelezo Maeneo yote yaliyo tajwa katika sehemu ya pili ya sheria hii ni juu ni kwa ajili ya wanyama pori na siyo vinginevyo katika kanda za juu kitongoji cha Domanga.

Uwindaji wa mila utafanywa na wenyeji (wawindaji/wakusanyaji) kwa kutumia upinde (silaha za jadi) na utakuwa ni uwindaji wa wanyama wadogo tu.

Uwindaji huu wa mila utaendelea kufuatana na azimio/ruksa waliopewa wawindaji/wakusanyaji na Rais wa Tanzania.

Uwindaji huu utafanyika bila vibali ila taratibu za uwindaji unaweza kupangwa na kubadilishwa kulingana na matakwa ya walengwa wenyewe kwa njia ya uamuzi wa serikali ya kijiji kwa kufuata ushauri wa kamati ya wanyama pori, wataalamu wa ngazi ya kata na wilaya.

Wawindaji wawinde wanyama wadogo wadogo kwa ajili ya chakula tu.

Masharti 1) Ni marufuku kwa mtu yeyote kuingia maeneo ya kijiji na kuanza kuwinda bila kibali maalum kutoka Idara ya wanyamapori Halmashauri ya Wilaya ya Mbulu na kupitia au kuidhinishwa na serikali ya kijiji na kuruhusiwa kufanya hivyo baada ya serikali ya pande/ngazi zote husika kuridhika na mtu huyo, Pia mtu huyo atalazimika kulipa/kuchangia mfuko wa maendeleo ya kijiji, kulingana na mapato yake. Makubaliano yatawekwa kati ya pande zote mbili zinanazohusika.

2) Mwindaji ni lazima kibali chake ionyeshe orodha na aina ya wanyama anaotaka kuwinda, ni kosa kuwinda wanyama ambao hawapo kwenye orodha.

3) Ni marufuku mwindaji kuwinda jirani/karibu na makazi ya watu, lazima aonyeshwe na serikali ya kijiji eneo la kuwinda au kutega wanyama ili kuepuka athari ya kudhuru watu na mifugo.

4) Ni marufuku kwa mtu yeyote kuchukua wanyama hai, nyuki, ndege na mayai hapa kijijini bila kibali maalum kutoka idara ya wanyama pori wakishirikiana na Halmashauri ya wilaya na kijiji kupata ushauri kutoka kamati ya mazingira na maliasili ya kijiji cha Mongo wa Mono.

5) Ni marufuku kuwinda wanyama jike na adimu.

Adhabu Mwindaji au kampuni yeyote itakayokiuka sheria hii atafukuzwa kijijini na kufikishwa mahakamani kwa mujibu wa sheria hii ndogo na sheria Mama ya wanyama pori ya Tanzania.

**Kipengele Na. 6 Maji**

Maelezo Mwenyekiti na Katibu wa kijiji wanao uwezo endapo wataridhika wa kuzuia matumizi ya chanzo chochote cha maji yaliyochafuliwa au ambayo yapo katika hatari ya kuchafuliwa na kwa hivyo kuweza kusababisha madhara ya afya za binadamu na wanyama.

Masharti Hakuna ruhusa kwa mtu yeyote kuchafua, kuchoma moto, kukata miti au kulima ndani ya eneo la mita 100m, kutoka chanzo vya maji (chemchem, visima na mito) ambayo ni kwa ajili ya matumizi ya binadamu na wanyama.

Adhabu Mtu yeyote atakayekiuka masharti haya atatozwa faini ya sh. 5,000/- na kama ni shamba atasimamishwa na kunyang'anywa zana zake na kulipa gharama ya uharibifu.

**Kipengele Na. 7 Utalii**

Maelezo Raia wote wa nje wanaopiga picha katika maeneo ya kijiji kama ilivyoelezwa kwenye sehemu ya pili ya matumizi bora ya ardhi.

Masharti 1) Ni marufuku kwa mtu yeyote kuingia kijijini na kuanza kufanya shughuli za kitalii na utafiti bila kuwa na mkataba na kijiji au kuwasiliana na kuruhusiwa na serikali ya kijiji.

2) Raia wa nje anayepiga picha katika maeneo ya kijiji atalazimika kuchangia mifuko ya maendeleo ya kijiji, aidha watafiti kutoka nje ya nchi, wanaofanya utafiti katika maeneo ya kijiji ya Mongo wa Mono, watawajibika kulingana na sheria hii kuchangia maendeleo ya Halmashauri ya kijiji na fedha hizo lazima zifunguliwe akaunti.

3) Raia wa nje kwa siku atachangia Sh.16,000/- au \$ 20 kwa wale watakojishughulisha na upigaji picha. Raia wa nje wanaofanya utafiti kwenye eneo na ndani ya jamii inayohusika atalazimika kulipa ada ya Tsh. 250,000/- kila baada ya miezi mitatu.

4) Mtu atakaye ruhuswa na kijiji kufanya shughuli za kitalii kijijini ni lazima idadi ya wageni ifahamike, muda watakoaka kijijini na mahali/sehemu watayoweka kambi na watalazimika kusaini kitabu cha wageni.

Adhabu: Mtu yeyote raia wa nje atakayekiuka sheria hii atatozwa faini isiyopungua 50,000/- na kufikishwa mahakamani (vyote kwa pamoja). Hakuna msamaha utakaotolewa.

**Kipengele Na. 8 Biashara na Huduma mbalimbali**

Maelezo Maeneo yote yaliyotajwa katika mpango wa matumizi bora ya ardhi Kitongoji cha Mongo wa Mono.

Masharti 1) Ni marufuku kufanya shughuli za biashara nje ya maeneo yaliyotajwa bila ruhusa ya serikali ya kijiji.

2) Ni marufuku mtu yeyote kutoka nje ya kijiji na kufanya biashara au shughuli yeyote katika eneo lililotajwa bila kuruhusiwa na serikali ya kijiji.

3) Ni marufuku kuingiza au kufuga mifugo katika eneo hilo.

Adhabu Atakayekiuka sheria hii atatozwa faini isiyopungua sh. 3,000/- au kulingana na uharibifu

**Kipengele Na. 9 Elimu**

Maelezo Sheria ndogo hii itaitwa sheria ndogo ya Elimu ya 2000 ya Halmashauri ya kijiji cha Mongo wa Mono.

Kwa mujibu ya sheria ndogo hii ni kosa kwa kushindwa(kwa kutojali), kukataa kumpeleka shule mtoto aliyetimiza umri wa miaka saba.

Mtoto akishaanza shule kumkataza kuhudhuria kila siku shule au kufanya vitendo ambavyo vitaathiri uwezekano wa mtoto kuhudhuria kila siku kama, kumtuma kazi yeyote badala ya kwenda shule, kumuoza na au kumwingiza kwenye shughuli za biashara ya aina yeyote.

Masharti 1) Kila mzazi au mlezi ahakikishe kuwa kila mtoto mwenye umri wa kwenda shuleni (6-7) apeleke na anahudhuria masomo ya shule hiyo mpaka atakapomaliza masomo ya elimu ya msingi.

2) Ni marufuku kwa mtu yeyote kumwajiri mtoto wa shule kwenye kazi yeyote.

3) Kwa mujibu wa sheria hii ni kosa kumpa mtoto wa shule mimba au hata kumwandikia barua zinazohusu mambo ya mapenzi.

Adhabu Mtu yeyote atakayekiuka sheria hii atakuwa na hatia na adhabu yake ni faini isiyozidi elfu kumi tu 10,000/-

Mzazi atakaye sababisha utoro wa mto shuleni atatozwa sh. 3,000/-

**Kipengele Na. 10 Uhamiaji**

Maelezo Uhamiaji ni kitendo cha mtu kuhama kijiji chake na kwenda kijiji kingine.

Masharti 1) Mhamiaji ni lazima atume maombi yake kijijini kabla ya kuruhusiwa kuingia, barua hiyo ionyeshe majina isiyo pungua matatu na iambatane na barua kutoka kijiji anako toka.

2) Mhamiaji haruhusiwi kuhamia kijijini bila kupata barua ya kukubaliwa au kukataliwa kijijini.

3) Mhamiaji ni lazima aonyeshe vibali vyake vya kijiji anayetoka na akubaliane na masharti ya wanakijiji iwapo ataruhusiwa kuhamia.

Adhabu Mtu atakayekiuka masharti haya atafukuzwa na kulipa uharibifu na gharama yeyote aliyosababisha.

**Kipengele Na. 11: Madini**

Maelezo Haya ni maeneo yote ndani ya kijiji ambayo madini ya aina yeyote yanapatikana.

Masharti Ni marufuku kwa mtu yeyote kufanya utafiti, kupegi au kuchimba madini katika sehemu yeyote kijijini bila kibali maalum kutoka serikali ya kijiji wakishirikiana na kata na wilaya.

Mchimbaji atakaye ruhuswa kuchimba madini hapa kijijini ni lazima afuate masharti ya kijiji kama vile kulipa 50,000/- malipo ya kibali, pia atalipa asilimia thelasini (30%) ya mapato yake.

Adhabu Mtu au kampuni yeyote atakayekiuka sheria hii atafukuzwa kijijini na kufikishwa mahakamani na kutozwa faini ya sh. 50,000/- au vyote kwa pamoja.

**Kipengele Na. 12 Uchomaji Moto ovyo**

Maelezo Huu ni uchomaji moto holela usiozingatia taratibu za wenyeji na uhifadhi wa maliasili na mazingira. Uchomaji maalum ni kama vile kuchoma majani yaliyokomaa ili kupata majani mapya kwa ajili wanyama pori na mifugo, ikiwa ni pamoja na kuua wadudu wanaoshambulia wanyama pori na mifugo kama vile kupe na mbung'o.

Masharti Ni marufuku kuchoma moto ovyo katika maeneo yote ya kijiji yakiwepo maeneo maalum ya hifadhi ya wanya pori na misitu ya asili.

Adhabu Mtu atatozwa faini ya sh. 10,000/- au kufikishwa mahakamani.

**Kipengele Na. 13 Uchomaji Mkaa**

Maelezo Uchomaji mkaa ni kuteketeza na kuangamiza misitu yote ya asili katika mazingira wanayoishi wanadamu, wanyama na misitu ya asili isiyopandwa na mikono ya mwanadamu, hii ni zawadi kutoka kwa Mungu na mwanadamu hapaswi kuteketeza, kuharibu au kuangamiza.

Masharti Ni marufuku kwa mtu yeyote kuchoma mkaa hapa kijijini, bila kibali kutoka serikali ya kijiji.

Adhabu Mtu yeyote atakayekiuka masharti haya atatozwa faini ya sh. 50,000/- au zaidi kulingana na uharibifu aliyosababisha na kunyang'anywa mkaa.

**SEHEMU YA NNE : Utaratibu wa kurebisha na kutekeleza mpango huu**

1. Kamati ya mali asili na mazingira kwa kushirikiana na serikali ya kijiji kupitia maazimio ya mkutano mkuu wa kijiji inaweza kubadili, kurekebisha au kuzisahihisha sheria hizi ili kuongeza ufanisi endapo itaona kuna umuhimu wa kufanya hivyo. Endapo itaamuliwa katika mkutano mkuu wa kijiji ya kwamba sheria ndogo ama ifutwe au ibadilishwe maana yake, halmashauri ya kijiji inapaswa kuipeleka tena kwa halmashauri ya wilaya ili mabadiliko yapitishwe na kuidhinishwa.

2. Litakuwa jukumu la kijiji kutoza faini, kutoa vibali, na kutoa uamuzi kwa shughuli zote zinazohusu sheria hizi ndogo. Lakini halmashauri ya kijiji inaweza kuagiza baadhi ya shughuli zote hizi kwa kamati ya mali asili na mazingira au ikibidi kwa Afisa Mtendaji, Mwenyekiti au mtu (watu) yeyote. Kwa vyovyote kamati au mtu aliyeagizwa atawajibika kwa halmashauri ya kijiji ambayo nayo itawajibika kwa mkutano mkuu wa kijiji

3. Kamati ya mali asili na mazingira, itateuliwa na kubadilishwa na halmashauri/serikali ya kijiji na kuidhinishwa na mkutano mkuu wa kijiji - Kila baada ya miaka mitatu.
4. Kamati ya mali asili na mazingira inaweza kuhakikisha ada zinalipwa vitakavyotolewa. Fedha zote zitakazopatikana zitaingizwa katika akaunti ya kijiji na matumizi ya fedha yataamuliwa na serikali ya kijiji. Pia ni lazima serikali itoe taarifa/reporti ya mapato na matumizi kila baada miezi mitatu.
5. Lazima itolewe stakabadhi ya nambari kwa ada zote, faini zote na mali zote zitakazotafishwa.
6. Kiongozi au mwanakijiji yeyote wa kijiji cha Mongo wa Mono anayo jukumu la kumkamata mtu yeyote anayefanya kosa kinyume na sheria ya kijiji na kumfikisha katika serikali ya kijiji au kamati ya mali asili na mazingira.
7. Ni wajibu wa kila mwanakijiji kutoa taarifa ya ukiukaji wa sheria hizi kwa uongozi wa kijiji.
8. Motisha itatolewa kwa mtu atakaye saidia kufichua uhalifu. Motisha itakuwa asilimia 25% ya chochote kitakacho tozwa kama malipo.
9. Kila kitongoji kitaweka utaribu wa kulinda na kuthibiti matumizi mabaya ya mali asili na mazingira. (kamati ndogo ya watu wanne wa kile kitongoji)

Sheria hizi zitumike chini ya mamlaka ya Halmashauri au Serikali ya Kijiji cha Mongo wa Mono kufuatana ma Hati ya Kumiliki Ardhi Na. \_\_\_\_\_

**MUHURI WA HALMASHAURI YA  
KIJILI CHA MONGO WA MONO**

<p>Reuben Matayo Mwenyekiti wa Serikali ya Kijiji cha Mongo wa Mono.</p> <p>MUHURI WA HALMASHAURI YA WILAYA YA MBULU ULIWEKWA KULINGANA NA AZIMIO LILILOPITISHWA NA KIKAO KILICHOKETI TAREHE <u>9 Oktoba, 2001</u></p> <p>NA KUTHIBITISHWA NA:</p> <p>Nakubali (Sahihi)</p> <p>Mhe. Issac D. Bayo Mwenyekiti wa Halmashauri (w) Mbulu.</p> <p>MUHTASARI WA KIKAO CHA SERIKALI YA KIJILI CHA MONGO WA MONO KILICHOKETI TAREHE - 26/05/ 2000.</p>	<p>Bryson Magombe Afisa Mtendaji wa Serikali ya Kijiji cha Mongo wa Mono</p> <p>MUHURI WA HALMASHAURI YA WILAYA YA MBULU ULIWEKWA KULINGANA NA AZIMIO LILILOPITISHWA NA KIKAO KILICHOKETI TAREHE <u>9 Oktoba, 2001</u></p> <p>Nakubali (Sahihi)</p> <p>Bw. Welhemi L. Tsere Mkurugenzi Mtendaji wa Halmashauri (w) Mbulu.</p>
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Wajumbe waliohudhuria:

1. Reuben Mathayo	-	Mwenyekiti.
2. Bryicson I. Magombe	-	Katibu.
3. Magandula Kizale	-	Mjumbe.
4. Leocadiya Kampala	-	Mjumbe
5. Anna Zengu	-	Mjumbe
6. Joyce Zengu	-	Mjumbe
7. Emiliana Tawashi	-	Mjumbe
8. Laway Neema	-	Mjumbe
9. Agustino Dawi	-	Mjumbe
10. Megasa Hangu	-	Mjumbe
11. Gidamugaida Gidagwarda	-	Mjumbe
12. Gidaburda Gayos	-	Mjumbe
13. Msungu Gidag'awoga	-	Mjumbe
14. Mkuyu Makanyange	-	Mjumbe
15. Stephano Gimbi	-	Mjumbe

Wajumbe wasiohudhuria:

1. Jiri Magombi
2. Shabani Gidaguy
3. Imbori Arusha
4. Gidabude Gidahonda
5. Gisaktaida Munik
6. Samson Salimu
7. Marta Salimu

Wakaribishwa(Wawezeshaji):

1. Jovita Dukho	-	WEO Yaeda.
2. Richard Baallow	-	CDA Yaeda.
3. Danieli K. Ngoitiko	-	Tazama Dorobo, Arusha.
4. Steven S. Mgomba	-	Kilimo, Mbulu.
5. Dismas P. Meitaya	-	Tazama Dorobo, Arusha.

**Agenda No. 1 Kufungua kikao**

Kikao kilifunguliwa na mwenyekiti wa serikali ya kijiji mnamo saa 5:30 kwa kuwakaribisha wajumbe wote waliohudhuria na kuwataka kuchangia kwa makini agenda zilizo mbele yao. Pia Mwenyekiti aliwapa pole wajumbe kutoka Vitongojini, Kata, Wilayani na Tazama Dorobo Arusha.

**Agenda No. 2 Kusoma, kuchambua na kupitisha mpango wa kijiji wa matumizi bora ya ardhi na sheria ndogo.**

Katibu Mtendaji wa Kijiji Bwana Bryceson I. Magombe alianza kwa kuwaelaza wajumbe kwamba kwa muda mrefu tumekuwa tukijishughulisha na suala la uhifadhi wa mazingira na mpango wa matumizi bora ya ardhi katika kijiji chetu. Kwa hiyo tumependekeza kuunda sheria ndogo za kijiji zitakazo saidia kulinda mipango yetu na kuratibu shughuli mbalimbali hapa kijijini. Mapendekezo haya yametokana na kazi kubwa iliyofanywa na kamati ya mazingira na maliasili(KMM) ambayo iliweza kutembelea vitongoji vyote vya kijiji na kupata maoni yao iliyopelekea kuwepo na mpango huu wa matumizi bora ya ardhi na kuundwa kwa sheria ndogo za kijiji. Mpango wote ulisomwa mbele ya wajumbe wa serikali ya kijiji na kuelezea kipengele moja hadi kingine. Wajumbe waliyachambua vipengele mbalimbali kwa kuboresha, kupunguza na kuongeza kama ilivyoonekana inafaa kufanya hivyo.

Baada ya uchambuzi wa kina uliyofanywa na wajumbe, hatimaye mapendekezo ya vitongoji na kamati ya mazingira na maliasili kuhusu mpango wa matumizi bora ya ardhi, mazingira, maliasili na huduma mbalimbali za jamii zilikuwabiwa na kupitishwa na serikali ya kijiji kwa kauli moja.

MUHTASARI WA MKUTANO MKUU WA KIJILI CHA MONGO WA MONO ULIOFANYIKA - 29/05/2000.

Waliohudhuria:

1. Roben Matayo	-	Me
2. Mahiya matulu	-	Me
3. Isaya Meza	-	Me
4. Malkia Mwengela	-	Me
5. Samson Salimu	-	Me
6. Gisena Nkinda	-	Me
7. Paulo Marko	-	Me
8. Musa Zenze	-	Me
9. Matayo Mahiya	-	Me
10. Emanueli Richard	-	Me
11. Kassim Ibrahim	-	Me
12. Manase Benjamin	-	Me
13. Martini Gongu	-	Me
14. Hamisi Martin	-	Me
15. Marengereko Ngw'apo	-	Me

16.	Sanga Gudo	-	Me
17.	Mgere Gudo	-	Me
18.	Scania Martin	-	Me
19.	Saidi Zakayo	-	Me
20.	Mahiya Sandarwa	-	Me
21.	Jofrey makungu	-	Me
22.	Gryson Male	-	Me
23.	Paulo Mataturu	-	Me
24.	Marta Salimu	-	Ke
25.	Christina Salimu	-	Ke
26.	Raheli Paulo	-	Ke
27.	Dorekas Doffu	-	Ke
28.	Elizabeth Lameck	-	Ke
29.	Herita Petro	-	Ke
30.	Halima Benjamin	-	Ke
31.	Eliwaza Philipo	-	Ke
32.	Mwangaza Mpanda	-	Ke
33.	Christina Paulo	-	Ke
34.	Milimo Marko	-	Ke
35.	Hadja Benjamin	-	Ke
36.	Veronika Kizale	-	Ke
37.	Soke Piwa	-	Ke
38.	Amina Martin	-	Ke
39.	Esther Martin	-	Ke
40.	Tatu Lengo	-	Ke
41.	Janeth Lukas	-	Ke
42.	Nyibara Fanu	-	Ke
43.	Teresia Mpanda	-	Ke
44.	Minja Marko	-	Me
45.	Piwa Ngw'apo	-	Me
46.	Saitoti Isaya	-	Me
47.	Mile Kampala	-	Ke
48.	Sima Fanueli	-	Ke
49.	Selina Thomas	-	Ke
50.	Katarina Thomas	-	Ke
51.	Zablon Emanueli	-	Me
52.	Gidagutida Gemung'au	-	Me
53.	Gidagwaka Ng'aida	-	Me
54.	Manisi Gidahuyda	-	Me
55.	Malamba Masawa	-	Me
56.	Agnes Mashimba	-	Ke
57.	Herita Emanuel	-	Ke
58.	Emiliana Martin	-	Ke
59.	Tatu Abeli	-	Ke
60.	Gidagwakwa Gidali	-	Me
61.	Gidagwakwa Gidaungu	-	Me
62.	Gidale Gidawita	-	Me
63.	Esther Salimu	-	Ke
64.	Nyauda Burra	-	Me
65.	Gidakulaji Gaida	-	Me
66.	Gidagwakwa Gisagonga	-	Me
67.	Matayo Magha	-	Me
68.	Warin Ngurungu	-	Me
69.	Shanyad Gidahij	-	Me
70.	Gidamedebi Gitabega	-	Ke
71.	Gidamanida Gijaloda	-	Ke
72.	Udandi Gidabung'eda	-	Ke
73.	Joyce Zengu	-	Ke
74.	Kisima Gitabag	-	Ke
75.	Gitahaji Giliday	-	Ke
76.	Gilesen Gasanoga	-	Me
77.	Gitando Gasanoga	-	Ke
78.	Ali Tarmo	-	Me
79.	Udametida Gayida	-	Ke
80.	Magisanga Hango	-	Ke
81.	Dahadeye Gasaku	-	Ke
82.	Malesh Nyeuda	-	Ke
83.	Meambwe Gidale	-	Ke
84.	Hayuda Gidamaroj	-	Ke
85.	Gidamandita Gemung'au	-	Ke
86.	Udaweshweshida Ghaju	-	Ke
87.	Udauti Gongo	-	Ke
88.	Marta Sanu	-	Ke
89.	Udawesh Tagino	-	Ke
90.	Udaghaduweda Gidagogo	-	Ke
91.	Majihaksi Gilowe	-	Ke
92.	Udagabunga Gidamawenka	-	Ke
93.	Udabienjida Gidale	-	Ke
94.	Utu Nanae	-	Ke
95.	Ununu Nyudende	-	Ke
96.	Hawasi Gasanog	-	Ke
97.	Maghay Musungu	-	Ke
98.	Udagabunga Mashine	-	Ke
99.	Masiketa Gweku	-	Ke
100.	Fanusi Tawashi	-	Me
101.	Danieli Kunuta	-	Me
102.	Jonson Emanuel	-	Me
103.	Magandula Kizale	-	Me
104.	Elinoli Yesaya	-	Ke
105.	Raeli Issa	-	Ke
106.	Soki Issa	-	Ke
107.	Charles Mpanda	-	Me
108.	Abas Muhina	-	Me
109.	Zephania Athumani	-	Me
110.	Siagi Philipo	-	Me
111.	Martin Nangay	-	Me
112.	Samson Kampala	-	Me
113.	Jumapili Makungu	-	Me
114.	Joseph Petro	-	Me

115.	Gidasena Gisina	-	Me
116.	Hotay Hagichan	-	Me
117.	Zakayo Rupande	-	Me
118.	Axwiso Danglish	-	Me
119.	Gimbi Saidi	-	Me
120.	Gafachu Mada	-	Me
121.	Iyaya sengwa	-	Me
122.	Sarawili Philipo	-	Me
123.	Ingita Siaga	-	Me
124.	Yohona Sarawili	-	Me
125.	Daniel Bilauri	-	Me
126.	Issak Maganga	-	Me
127.	Sqina Masangu	-	Me
128.	Maduru Philipo	-	Me
129.	Saidi Mlekwa	-	Me
130.	Juma Isaya	-	Me
131.	Fabiano Ingita	-	Me
132.	Masandawe Juma	-	Me
133.	Gidametida Majungu	-	Me
134.	Gadie Kwaslema	-	Me
135.	Balawa Gidahongwa	-	Me
135.	Karatu Ako	-	Me
136.	Gisada Bokida	-	Me
137.	Gidale Momoya	-	Me
138.	Makanda Gidandete	-	Me
139.	Awaki Gidasangu	-	Me
140.	Ralea Diloda	-	Me
141.	Ine Warin	-	Me
142.	Gidamildi Giselsi	-	Me
143.	Gasambeda Gidaxoma	-	Me
144.	Daniel Duru	-	Me
145.	Mika Salasini	-	Me
146.	Dahaye Sungwa	-	Me
147.	Maloba Masungu	-	Me
148.	Kazana Zekayo	-	Me
149.	Bariheda Hiloga	-	Me
150.	Seghe Gidamuhale	-	Me
151.	Gidaburida Dayosi	-	Me
152.	Gisagasi Matle	-	Me
153.	Haydahau Ginawe	-	Me
154.	Bashageda Gidadel	-	Me
155.	Hanje Gemoshi	-	Me
156.	Barie Malengeso	-	Me
157.	Gidakuugete Langu	-	Me
158.	Gidabalaw Gamunga	-	Me
159.	Emanueli Geso	-	Me
160.	Martha Mpanda	-	Ke
161.	Soke Tulangi	-	Ke
162.	Gidamede Bilosi	-	Me
163.	Demay Gasaghe	-	Me
164.	Philipo Subayda	-	Me
165.	Lehada Gidahab	-	Me
166.	Magwer Masaelda	-	Me
167.	Seleli Uba	-	Me
168.	Amina Zengu	-	Ke
169.	Mogoshi Heghon	-	Me
170.	Juliana Athuman	-	Ke
171.	Mede Nangay	-	Ke
172.	Kaangwa Saidi	-	Ke
173.	Lameck Lukas	-	Me
174.	Maria Marko	-	Ke
175.	Raheli Zakayo	-	Ke
176.	Emiliana Tawash	-	Ke
177.	Gesha Tawash	-	Ke
178.	Mendi Hashi	-	Ke
179.	Mandoo Axweso	-	Ke
180.	Leocadiya Masangu	-	Ke
181.	Udagaromungu Genda	-	Ke
182.	Udanisho Gisohosi	-	Ke
183.	Usabarod gidahab	-	Ke
184.	Udamasahud Hagichan	-	Ke
185.	Udamalele Manonga	-	Ke
186.	Udahabod Jokoda	-	Ke
187.	Unuwas Aweda	-	Ke
188.	Daati Matle	-	Ke
189.	Ngway Jonson	-	Ke
190.	Esther siagi	-	Ke
191.	Sefu Sangwa	-	Ke
192.	Nsalu Juma	-	Ke
193.	Sabina Siagi	-	Ke
194.	Gidamuswada Gidanulele	-	Me
195.	Jatoshita Gisada	-	Me
196.	Gwatojan Dawita	-	Me
197.	Gidamusada Gidanyule	-	Me
198.	Gidamisi Balela	-	Me
199.	Gidabuger Heghon	-	Me
200.	Girigris Gitakayad	-	Me
201.	Gidashangi Hando	-	Me
202.	Nasto Giray	-	Me
203.	Mkuyu Makanyange	-	Me
204.	Naji Shangembe	-	Ke
205.	Ng'aida Dumel	-	Ke
206.	Majalu Axweso	-	Ke
207.	Hando Amsi	-	Me
208.	Xwasau Dagthro	-	Me
209.	Udagutageta Gidahab	-	Ke
210.	Udabasati Hakwe	-	Ke
211.	Udamasau Sagwere	-	Ke
212.	Manamba Akonay	-	Me

213.	Golida Akonay	-	Me
214.	Polisi Akonay	-	Me
215.	Bukhay Baran	-	Me
216.	Bdamaba Gidamani	-	Me
217.	Basati Susa	-	Me
218.	Boay Matle	-	Me
219.	Boay Sikay	-	Me
220.	Bude Gidanonda	-	Me
221.	Gidamisi Gidamadini	-	Me
222.	Qamunga Matle	-	Me
223.	Gitarda Lengu	-	Me
224.	Gidahayde Heghon	-	Me
225.	Habiba Marsel	-	Ke
226.	Saenga Gisagonga	-	Me
227.	Haldajota Tluway	-	Me
228.	Dapapai Gilosi	-	Me
229.	Hudayu Gidamti	-	Me
230.	Meitu Sungu	-	Me
231.	Bahili Darabe	-	Me
232.	Munyau Gidabota	-	Me
233.	Washin Sarau	-	Me
234.	Hhakwala Maganga	-	Me
235.	Bogali Roka	-	Me
236.	Gilenya Dawita	-	Me
237.	Gitalsu Gisamo	-	Me
238.	Gidabeka Gidafulada	-	Me
239.	Lohay Maganga	-	Me
240.	Bifa Akonay	-	Ke
241.	Bei Baso	-	Ke
242.	Dodo Kibaya	-	Me
243.	Shigabe Mahungwe	-	Ke
244.	Gidagau Gidawita	-	Ke
245.	Umboy Axwesso	-	Ke
246.	Tonga Masango	-	Ke
247.	Dumida Igamba	-	Ke
248.	Gidasada Gusili	-	Me
249.	Shabani Gidaguy	-	Me
250.	Gidabarida Nangai	-	Ke
251.	Gidang'eri Gidagurja	-	Ke
252.	Mandai Shingaded	-	Ke
253.	Minga Jacob	-	Ke
254.	Gaseri Giwako	-	Me
255.	Giloxoma Gidiko	-	Me
256.	Sarme Bariye	-	Me
257.	Alexander Gisajay	-	Me
258.	Gidakway Gidagurja	-	Me
259.	Gidawashi Darasi	-	Me
260.	Gidabaki Gidagurja	-	Me
261.	Slaa Giya	-	Me
262.	Gasmay Mangai	-	Me
263.	Arusha Mangai	-	Me
264.	Doho Gidodo	-	Me
265.	Salaini Amsi	-	Me
266.	Kibagi Hahanda	-	Ke
267.	Faustini Agustino	-	Me
268.	Salamu Chombe	-	Me
269.	Qamu Deleku	-	Ke
270.	Safari Siasi	-	Me
271.	Thehay Lala	-	Me
272.	Kwathema Dawi	-	Me
273.	Juma Nada	-	Me
274.	Baran Musaku	-	Me
275.	Samaki Gidauta	-	Me
276.	Safari Tarmo	-	Me
277.	Mamao Gemush	-	Ke
278.	Majuma Axweso	-	Ke
279.	Guseri Gusse	-	Ke
280.	William Motle	-	Me
281.	Donali Ilianga	-	Me
282.	Masangu Mugunga	-	Me
283.	Gidamosh Shomonge	-	Ke

Wakaribishwa (Wawezeshaji):

1.	Jovita Dukho	-	WEO Yaeda
2.	Mh. Yonas Assecheck -	-	Diwani Yaeda
3.	Richard Baalow	-	CDA Yaeda
4.	Daniel K. Ngoitiko	-	Tazama Dorobo - Arusha
5.	Steven S. Mgomba	-	Kilimo Mbulu
6.	Dismas P. Meitaya	-	tazama Dorobo - Arusha

Agenda No. 1 Kufungua kikao

Mwenyekiti wa kijiji aliwakaribisha wanakijiji wote na kuwaomba wajadili kwa makini mada iliyopo mbele yao.

Agenda No. 2 kupitia, kuchambua na kupitisha mpango wa kijiji wa matumizi bora ya ardhi na sheria ndogondogo.

Katibu wa serikali ya kijiji alianza kusoma mpango huu mbele ya alaiiki ya wanakijiji, alisoma kipengele moja hadi kingine. Wanakijiji walichangia sana katika kuboresha, kupunguza na kuongeza kwenye vipengele mbalimbali. Baada ya michango mbalimbali ya mawazo wanakijiji walipitisha kwa pamoja mpango wa matumizi bora ya ardhi, mazingira na maliasili kama mpango wa kijiji kizima. Kikao kilihairishwa na Mwenyekiti yapata 11:00 jioni kwa kuwashukuru wanakijiji kwa uvumilivu wao na mchongo wao wa mawazo. Pia aliwashukuru wawezeshaji kwa mchango wao wa kipekee wa kitaalamu kuelimisha wanakijiji juu ya mpango huu.

KITONGOJI	WAKAZI	SHUGHULI
1. Mongo wa Mono	Wahadzabe	Uwindaji na Ukusanyaji
2. Endajaj	Watatoga	Ufugaji
3. Mashinoda	Watatoga na Wairaq	Ufugaji na Ukulima

4. Mohaderar	Watatoga	Ufugaji
5. Domanga	Wahadzabe	Uwindaji na Ukusanyaji

JEDWALI B

KIPENGELE	KOSA	ADHABU
1. Kilimo	Kulima nje ya maeneo yaliyotengwa	Sh. 5,000/- kwa kila ekari moja
2. Ufugaji	Kuchingia mifugo nje ya maeneo yaliyotengewa	Sh. 50,000/- au kufikiswa mahakamani
3. Makazi	Kuvunja masharti ya makazi	Sh. 3,000/- au kufukuzwa kijijini kama ni mtu wa nje
4. Misitu	Kuvunja sheria ndogo ya misitu	Sh. 20,000/- au kufikishwa mahakamani
5. Wanyama Pori	Kuvunja sheria ndogo ya wanyama pori	Kufukuzwa kijijini na kufikishwa mahakamani
6. Maji	Kuvunja sheria ndogo ya maji	Sh. 5,000/- na kulipa gharama za uharibifu
7. Biashara na Huduma	Kuvunja sheria ndogo ya Biashara na Huduma	Sh. 3,000/- au zaidi kulingana na uharibifu
8. Utalii	Kuvunja sheria ndogo ya utalii	Sh. 50,000/- na kulipa gharama za uharibifu au kufikishwa mahakamani.

JEDWALI C

KITONGOJI	MAKAZI YA KUDUMU	MAKAZI YA MUDA
1. M/Mono		
2. Endajaj		
3. Mashinoda		
4. Mohaderar		
5. Domanga		

Wajumbe waliohudhuria:

1.	Yonas Assecheck	-	M/kiti wa Kikao, (Diwani Kata)			
2.	Jovita Dukho	-	Katibu wa Kikao, (WEO Yaeda)			
3.	Bryson Isaack	-	Mwenyekiti wa CCM Kata	Mjumbe		
4.	Juma H. Omari	-	Mwenyekiti kijiji Yaeda chini	Mjumbe		
5.	Paulo Gutmok	-	Katibu kijiji Yaeda chini	Mjumbe		
6.	Amosi G. Buay	-	Katibu kijiji	-	Mjumbe	
7.	Reuben Matayo	-	Mwenyekiti kijiji cha Mongo	Mjumbe		
8.	Tunzo Elangwa	-	NGO Assistant Yaeda	-	Mjumbe	
9.	Nanagi Gisagas	-		-	-	Mjumbe
10.	Laurence Baynit	-	Mwl. Mkuu Yaeda	-	Mjumbe	
11.	Mosses Lameck	-	CDC Yaeda	-	Mjumbe	

Wajumbe Wasiohudhuria:

1.	Richard Baalow	-	CDA	-	Taarifa.
2.	Obedi Lionile	-	RMA	-	Taarifa.
3.	Manjano Mahiya	-	CDA	-	Mgonjwa.

Waloioakaribishwa:

1.	Nelson Nduttu	-	Katibu CCM Kata.
2.	S.S. Mgomba	-	Mwezeshaaji, Kilimo Mbulu.
3.	D.P. Meitaya	-	Mwezeshaaji, Tazama Dorobo - Arusha.
4.	D.K. Ngoitiko	-	Mwezeshaaji, Tazama Dorobo - Arusha.

Agenda No. 1 Kufungua kikao

Mwenyekiti wa kikao aliwakaribisha wajumbe wote na kuwaomba kujadili kwa makini mada iliyo mbele yao.

Agenda No. 2 Kusoma, kuchambua na kupitisha mipango ya matumizi bora ya ardhi na sheria ndogo za vijiji vya Eshkesh, Mongo wa mono na Yaeda Chini.

Katibu wa kikao cha WDC Ndg. Jovita Dukho aliwasilisha mbele ya mkutano wa WDC mipango ya matumizi bora ya ardhi na sheria ndogo za vijiji vya Mongo wa Mono, eshesh na Yaeda chini. Akianza alisema, mipango hii imeandaliwa na kamati ya mazingira na maliasili ya kila kijiji wakishirikiana na wawezeshaji kutoka kata, wilaya na Tazama Dorobo na wanavitongoji wa vijiji tajwa juu. Aliwaeleza washiriki wote kuwa mpango huu tayari umekubalika na kupitishwa katika ngazi za vitongoji, vilevile serikali za vijiji husika imeshapitisha mipango hii.

Katibu wa WDC aliwasilisha kwa utaratibu wa kusoma mpango wa kila kijiji na baadaye kutoa nafasi kwa washiriki kujadili kwa kufanya masahihisho na marekebisho mbalimbali (Kuboresha, Kuongeza na kamati ya mazingira na maliasili ya kila kijiji wakishirikiana na wawezeshaji kutoka kata, wilaya na Tazama Dorobo na wanavitongoji wa vijiji tajwa juu. Aliwaeleza washiriki wote kuwa mpango huu tayari umekubalika na kupitishwa katika ngazi za vitongoji, vilevile serikali za vijiji husika imeshapitisha mipango hii.

## Annex 8: Images of Yaeda Valley and the project Area

**Photos 1 & 2:** *Adansonia digitata* (Baobab) is not included in any of the biomass assessments as it is rarely cut down by agricultural activity and is not used for charcoal or firewood. This species does, however, provide nesting sites for numerous bird and small mammal species as well as bee hives; honey being an important food source for the Hadzabe.



Photo 1



Photo 2



Photo 3

Photos 3 & 4: Deforestation can often take several months depending on the time of year. In this case the *Acacia tortilis* trees are ring-barked prior to being removed once the rains start.



Photo 4

**Photos 5 & 6:** The water source at Kukumako during the dry season. Note the fence erected to divide the water and the right hand picture showing the damage overuse by cattle can do to the water source.



Photo 5



Photo 6

**Photos 7 & 8:** The boundary of the project area is clearly defined on all the major tracks into the area with signposts (area for the traditional use by Hadzabe). The rest of the boundary is marked by painted trees.



Photo 7



Photo 8

**Photos 9 & 10:** Every element of project operation is conducted as a training and information sharing process, here Jo Anderson explains the mathematical models used during AGB calculation. Measuring a *Commiphora* Spp during AGB surveys.



Photo 9



Photo 10

## Annex 9. Avifauna Species List for Mongo Wa Mono, Domanga and Yaeda Chini

### Key

B	Breeding Activity
X	Suspected Breeding
/	Observed Presence
<b>Bold Font</b>	Species Endemic to Tanzania or East Africa

bno	species	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
1	Ostrich		/	/			/	/	/	/	/		
3	Black-necked Grebe	B	B	X						/			
4	Little Grebe	/	/	/			/			/		/	
11	White Pelican	/	/	/	/	/	/	/	/	/	/	/	
12	Pink-backed Pelican	/	/	/	/	/	/		/	/		/	
17	Long-tailed Cormorant	/	/	/	/	/	/	/	/	/			/
18	Greater Cormorant	/	/		/	/	/		/	/		/	
25	Grey Heron	/	/	/	/	/	/	/	/	/		/	
26	Goliath Heron			/									
27	Black-headed Heron	/	/	/	/	/	/		/	/	/	/	/
28	Purple Heron	/		/									
30	Squacco Heron	/	/	/	/	/	/		/			/	
31	Rufous-bellied Heron	/											
32	Cattle Egret	/	/	/	/	/	/	/	/	/	/	/	/
33	Green-backed Heron	/						/			/		
34	Great White Egret	/	/	/	/	/	/	/	/	/	/	/	
35	Black Heron	/		/									
36	Little Egret	/	/	/	/	/	/		/	/	/	/	
38	Yellow-billed Egret	/	/	/		/	/	/	/	/	/		
40	Night Heron				/	/	/						
42	Hamerkop	/	/	/	/	/	/	/	X	/	/	/	/
43	Open-billed Stork	/	/	/	/	/	/		/	/	/	/	/
44	Abdim's Stork	/	/	/									/
45	White Stork	/	/	/			/	/		/	/	/	/
46	Woolly-necked Stork	/	/										
47	Black Stork	/											
48	Saddle-billed Stork	/			/								
49	Marabou Stork	/	/	/			/	/		/	/	/	/
50	Yellow-billed Stork	/	/	/	/	/	/	/	/	/	/	/	
51	Hadada Ibis	/		/	/		/	/			/	/	
53	Glossy Ibis	/	/	/	/	/	/	/	/	/	/	/	
54	Sacred Ibis	/	/	/	/	/	/	/	/	/	/	/	/
55	African Spoonbill	/	/	/	/	/	/	/	B	/		/	
57	Lesser Flamingo	/	/	/		/	/	/	/	/	/	/	/
58	Greater Flamingo	/	/	/	X	/	/		/	/	/	/	
59	Fulvous Whistling Duck		B	/	/					/		/	
60	White-faced Whistling Duck	/	/	/	/		/		/	/	/	/	
61	Egyptian Goose	/	X	/	/	/	/	/	/	/	/	/	/
62	Pintail											/	
63	Cape Teal	/					/		/		/		
64	Shoveler	/		/								/	
66	Red-billed Teal	/	/	/	/	/	/		/	/	/	/	
67	Hottentot Teal	/	/	/	/	/	/		/	/	/	/	
69	Garganey	/	/	/								/	
72	Yellow-billed Duck	/	/	/						/		/	

73	Northern Pochard			/									
76	Southern Pochard	/	/	/	/		/		/	/	/	/	
77	African Pygmy Goose			/									
78	Maccoa Duck				/								
79	Spur-winged Goose	/	X	/	/	/	/		/	/	/	/	/
80	Knob-billed Duck	/	X	/	/				/	/	/	/	
83	Secretary Bird	X	/	/			/		/	/			
85	White-backed Vulture		/	/					/	/	/	/	/
86	Ruppell's Vulture			/					/	/	/	/	
87	Hooded Vulture	/		/							/		
88	Egyptian Vulture										/		
89	Lappet-faced Vulture	/		/			/	/			/	/	
90	White-headed Vulture		/	/			/		/		/		
92	Eurasian Marsh Harrier	/	/	/	/	/						/	/
93	Pallid Harrier	/	/	/							/	/	
94	Montagu's Harrier	/	/	/				/			/	/	
95	African Marsh Harrier	/	/	/	/	/	/			/		/	
96	Gymnogene	/	/	/	/	/	/	/		/	/	/	
98	Brown Snake Eagle	/	/	/	/	/	/		/	/	/	X	/
100	Black-chested Snake Eagle	/	/	/		/	/	/	/	/	/	/	
101	Bateleur	/	/	/	/	/	/		/	/	/	/	
102	Shikra										/		
107	Little Sparrowhawk		/	/								/	
111	African Goshawk		/				/						
114	Steppe Eagle	/	/									/	
115	Lesser Spotted Eagle	/											
116	Tawny Eagle	/	/	/	/	/	/		/	/	/	/	/
117	Verreaux's Eagle	/		/	/				/	/	/		
118	Wahlberg's Eagle		/		/				/	/	/		/
120	Augur Buzzard	/	/	/		/	/	/	/	/	/	/	/
122	Common Buzzard	/	/	/		/					/		
127	Booted Eagle			/							/		
128	African Hawk Eagle	/	/	/	/	/	/		/	/	/	/	
130	Long-crested Eagle	/	/	/			/	/		/	/	/	
131	Gabar Goshawk	/	/	/	/	/	/		/	/	/	/	
132	Dark Chanting Goshawk	X	/	/	/	/	/	/	/	/	/	/	/
133	Pale Chanting Goshawk	/	/	/			/	/	/	/	/		/
134	Martial Eagle	/	/	/			/		/	/	/		
137	Fish Eagle	/	/	/	/						/	/	/
138	'Black Kite'	/	/	/							/	/	
140	Honey Buzzard			/		/							
142	Black-shouldered Kite	/	/	/	/	/	/	/	/	/	/	/	
143	Bat Hawk									/			
147	Grey Kestrel	/	/				/		/	/	/	/	
148	Lanner Falcon			/		/				/	/		
151	Sooty Falcon			/									
152	African Hobby	/		/									
156	Lesser Kestrel	/	/	/									
158	Peregrine Falcon	/		/		/			/		/	/	
159	White-eyed Kestrel			/							/		
160	Hobby	/	/	/									/
161	Kestrel	/	/	/				/					
163	Pygmy Falcon	/	/	/	/	/	/	/	/	/	/	/	/
165	Common Quail		/	/	/		/						
166	Harlequin Quail	/	/	/	/	/	/			/			
167	Red-necked Spurfowl			/		/			/	/		/	

170	Coqui Francolin			/	/							/	
171	Hildebrandt's Francolin	/	/	/	/	/	/	/	/	/	/	/	
175	Yellow-necked Spurfowl							/	/	/	/	/	
181	<b>Grey-breasted Spurfowl</b>	/	X	X	/	/	/	/	/	/	/	/	/
182	Crested Francolin	/	X	/	/	/	/	/	/	/	/	/	/
183	Shelley's Francolin	/	/	/	/		/		/	/	/	/	
188	Crested Guineafowl			/						/			
190	Helmeted Guineafowl	/	X	/	/	/	/	B	X	/	/	/	/
191	Quail Plover			/									
193	Button Quail	/	/	/		/	/		/	/	/	/	
194	Grey Crowned Crane	/	/	/	/	/	/		/	/		/	
198	Lesser Moorhen									/			
199	Common Moorhen	/		/		/	/			/		/	
201	Black Crake	/	/	/	/		/	/		/	/		
202	Allen's Gallinule									/			
203	Purple Gallinule	/	/			/	/			/		/	
215	Red-knobbed Coot	/	X	X	/	/	/		/	/	/	/	
217	Hartlaub's Bustard	/	/	/									
218	Black-bellied Bustard	/	/	/	/		/		/	/	/	/	/
219	Buff-crested Bustard	/	/	/	X	/	/	/	/	/	/	/	/
220	White-bellied Bustard	X	/	/		/	/	/	/	/	/	/	/
224	Kori Bustard	X	/	/	/	/	/	/	/	/	/	/	
225	Jacana	/	/	/	/	/	/	/		/		/	
226	Lesser Jacana	/											
227	Painted Snipe	/		/								/	
230	Caspian Plover	/	/	/						/			
233	Ringed Plover	/		/						/		/	
237	Chestnut-banded Sandplover	/	/	/	/		/		/		/		
238	Kittlitz's Sandplover	B	/	/	/		/	/	/	/	/	/	/
239	Three-banded Sandplover	/	/	/	/	/	/	/	/	/	/	/	/
243	Blacksmith Plover	/	/	/	/	/	B	/	B	/	/	/	/
244	Crowned Plover	B	/	/	/	/	/	B	B	/	B	/	/
245	Long-toed Plover	/	/		/								
247	Black-winged Plover	/	/						/	/			
248	Wattled Plover	/											
249	Spur-winged Plover	/		/					/	/		/	
252	Common Sandpiper	/	/	/	/		/	/		/	/		
255	Spotted Redshank											/	
256	Wood Sandpiper	/	/	/						/	/	/	
257	Greenshank	/	/	/			/		/	/	/	/	
258	Green Sandpiper	/	/	/						/			
259	Marsh Sandpiper	/	/	/	/					/	/	/	
270	Curlew Sandpiper	/			/				/	/		/	
272	Little Stint	/	/	/	/				/	/	/	/	
274	Temminck's Stint	/											
278	Black-tailed Godwit	/	/	/					/	/		/	
279	Ruff	/	/	/	/				/	/	/	/	
281	Turnstone	/											
282	Black-winged Stilt	/	/	/	/	/	/		/	/	/	/	/
283	Avocet	/	/	/				/	/	/	/	/	
287	Spotted Thicknee	/	/	/	/	/	/		/	/	/		
288	Stone Curlew						/			/			
290	Water Thicknee	/		/								/	
292	Temminck's Courser			/								/	
294	Two-banded Courser	/	/	/	B	/	/	/	/	/	/	/	/
295	Violet-tipped Courser	/	/	/		/							

296	Heuglin's Courser		/	/	/	/						/	
300	Collared Pratincole	/	/	/			/		/	/		/	/
306	Grey-headed Gull	/	/	/		/		/	/	/		/	
307	Lesser Black-backed Gull	/											
317	Whiskered Tern	/	X	X	/	/	/		/	/	/	/	
318	White-winged Black Tern	/	/	/	/		/		/	/			
320	Gull-billed Tern	/		/		/			/	/	/		
332	Black-faced Sandgrouse	/	/	/	/	/	B	/	/	/	/	/	/
333	Chestnut-bellied Sandgrouse	/	/				B	/	/				
334	Yellow-throated Sandgrouse		/			/	B	/	/	/		/	/
341	Speckled Pigeon	/	/	/	/	/	/	/	/	/	/	/	/
345	Namaqua Dove	/	/	/	/	/	B	/	/	/	/	/	/
346	Ring-necked Dove	/	/	/	/	/	/	/	/	/	/	/	/
347	Mourning Dove	/	/	/	/	/	/	/	/	/	/	/	/
348	Dusky Turtle Dove	/	/	/	/		/						
350	Red-eyed Dove	/	/	/	/	/	/	/	/	/	/	/	
351	Laughing Dove	/	/	/	X	X	/	/	/	/	/	/	/
356	Emerald-spotted Wood Dove	X	/	X	X	X	X	/	/	/	/	/	/
357	Tambourine Dove		/	X	/	X	/	/					
358	Green Pigeon			/			/		/	/		/	
361	Fischer's Lovebird	/	/	/	/	/	/	/	/	/	/	/	/
362	Yellow-collared Lovebird			/									
367	Brown Parrot	/	/	/	/	/	/	/	/	/	/	/	/
369	Orange-bellied Parrot												/
374	White-bellied Go-away Bird												/
375	Bare-faced Go-away Bird	/	/	/	/	/	/	/	/	/	/	/	
388	Didric Cuckoo	/	/	/	/	/						/	
389	Emerald Cuckoo	/	/	/						/			
391	Klaas' Cuckoo	/	/	/		/	/		/	/	/		
392	Great Spotted Cuckoo	/	/	/	/							/	
393	Jacobin Cuckoo	/	/	/	/								
394	Levaillant's Cuckoo	/	/	/								/	
395	Eurasian Cuckoo	/									/		
396	Black Cuckoo	/	/	/						/			
399	Red-chested Cuckoo	/	/	/								/	/
406	White-browed Coucal	/	X	/	/	/	/	/	/	/	/	/	/
407	Barn Owl	/	/	/		/	/		B	/	/	/	
409	African Marsh Owl									/			
412	Spotted Eagle Owl	/	/			/			X				
414	Verreaux's Eagle Owl				/		/	/		/		/	/
419	Pearl-spotted Owlet	/	/	/	/	/	/	/	/	/	/	/	/
422	White-faced Scops Owl		/			/	/				/		
424	African Scops Owl	/	/	/		/	/		/	/	/	/	
427	Slender-tailed Nightjar		/	/		/		/	/		/		
431	Gabon Nightjar	/	/	/	/		/	/	/	/	/	/	/
439	Freckled Nightjar	/	/	X			/		/	/	/	/	
442	Mottled Swift								/	/	/		
443	Little Swift	/	/	/	/		/			/	/	/	/
444	Eurasian Swift	/	/	/								/	
447	White-rumped Swift		/		/							/	/
448	Horus Swift		/	/			X	/					
450	Nyanza Swift										/		
452	Palm Swift	/	/	/	/		/	/		/	/	/	/
453	Scarce Swift		/								/		
457	Mottle-throated Spinetail	/	/	/		/	/	/	/	/	/	/	
459	Speckled Mousebird	/	/	X	/	/	/	/	/	/	/	/	/

460	Red-faced Mousebird			/									
461	Blue-naped Mousebird	/	/	/	/	/	/	/	/	/	/	/	/
472	Striped Kingfisher	/		/	/		/	/	/	/	/	/	/
473	Chestnut-bellied Kingfisher	/	/	/	/	X	/	/	/	/	/	/	/
475	Woodland Kingfisher	/	X	X	/	/	/	/			/	/	/
478	Pygmy Kingfisher	/	/	/	/	/	/			/	/	/	X
480	Eurasian Bee-eater	/	/	/							/	/	
488	Cinnamon Bee-eater			/				/		/			
490	Blue-cheeked Bee-eater	/	/	/	/					/		/	
491	Little Bee-eater	/	/	X	X	/	/	/	/	/	/	/	/
493	Madagascar Bee-eater			/		/							
496	Lilac-breasted Roller	/	/	/	/	/	/	/	/	/	/	/	/
497	Eurasian Roller	/	/	/								/	
498	Rufous-crowned Roller	/	X	/	/	/	/	/	/		/		/
502	Hoopoe	/	/	/	/	/	/	/	/	/	/	/	/
505	Scimitarbill	/	/								/		
507	Abyssinian Scimitarbill	/	/	/	/	/	/	/	/	/	X	/	/
508	Green Wood Hoopoe	/	/	/	/	/	/	/	/	/	/	/	/
515	Crowned Hornbill		/	/					/				
517	Von der Decken's Hornbill	/	/	/	/	/	/	/	/	/	/	/	/
519	Pied Hornbill	/	/	/								/	
524	Grey Hornbill	/	/	/	/	/	/	/	/	/	/	/	/
528	Ground Hornbill	/	/	/	/		/	/	/	/	/	/	/
535	Red-fronted Barbet	/	/	/	/	/	/	/	/		/	/	
539	Spot-flanked Barbet	X	/	/	X	X	/	/	/	/	/	/	/
540	White-headed Barbet	/	/	/	X		/	/	/	/	/	/	/
541	Black-throated Barbet	/	/	/	/	/	/	/	/	/	/	/	/
552	Red-fronted Tinkerbird	X	X	X	/	X	/	/	/	/	/	/	/
557	d'Arnaud's Barbet	/	/	/	/	/	/	/	/	/	/	/	
558	Red & Yellow Barbet	/	/	/	/	/	/	/	/	/	/	/	/
559	<b>Usambiro Barbet</b>	/	/	/	/	/	/	/	/	/	/	/	
563	Greater Honeyguide	/	/	/	/	/	/	/	/	/	/	/	/
566	Lesser Honeyguide	/	/	/	/	/	/	/		/	/		/
578	Golden-tailed Woodpecker				/			/		/	/	/	
583	Nubian Woodpecker	/	/	/	/	/	/	/	/	/	/	/	
585	Cardinal Woodpecker	/	/	/			/					/	
590	Grey Woodpecker	/	/	/		/	/	/	/	/	/	/	/
594	Bearded Woodpecker	/	/	/	/	/	/			/	/	/	
601	Red-capped Lark		/	/	/		/		/	/			
605	Fischer's Sparrow Lark	/	/	/	/	/	/	/	/	/	/	/	/
612	Rufous-naped Lark	/	/	/	/	/				/			
613	Fawn-coloured Lark	/	/	/	/	/	/		/	/	/	/	
614	White-tailed Lark	/	/	/									
615	Singing Bush Lark			/									
617	Red-winged Bush Lark		/	/					/	/			
621	Flappet Lark	/	/	/	/	/	/		/	/	/	/	
623	House Martin			/									
624	Striped Swallow	/	X	/	/	/	/	/	/		/	/	
630	Red-rumped Swallow	/	X	/		/	/			/			
632	African Rock Martin	/	B	/	/	/	/	/	/	/	/	X	
634	Barn Swallow	/	/	/	/	/				/	/	/	
636	Mosque Swallow	/	/	/	/	/	/		/	/	/	/	
637	Wire-tailed Swallow	/	/	/	X		B	B	B	/	/	/	/
639	White-headed Roughwing		/										
641	Banded Martin								/	/			
642	African Sand Martin	/	X	/		/	/	/	/	/		/	

643	Sand Martin	/	/							/		
644	Drongo	/	/	/	/	/	/	/	/	/	/	
646	African Golden Oriole	/	/	/			/	/		/		/
649	Black-headed Oriole	/	/	/	/		/	/	/	/	/	X
651	Golden Oriole		/	/								
653	White-naped Raven			/				/		/		
654	Pied Crow	/	/	/		/	/		/	/		/
661	White-bellied Tit	/	/	/			/		/	/	/	X
663	<b>Red-throated Tit</b>		/	/			/		/		/	
668	African Penduline Tit			/								
681	Arrow-marked Babbler	/	/	/	X	/	/		/	/	/	/
685	Rufous Chatterer	/	/	/	X	/	/	/	/	/	/	/
688	Black Cuckoo Shrike		/	X			/					
710	Yellow-bellied Greenbul	X	/	/	/	X	/	/	/	/	/	/
716	Eastern Nicator		/									
732	Yellow-vented Bulbul	/	B	/	X	/	/	/	/	/	/	/
744	White-browed Scrub Robin	X	/	/	/	/	/	/	/	/	/	/
748	Spotted Morning Thrush	/	/	/	/	/	/	/	/	/	/	/
751	White-browed Robin Chat	/	/	/	X	/	/	/	/	/	/	X
763	Sprosser	/	/	/	/							
769	Rock Thrush	/	/	/							/	
775	Isabelline Wheatear	/		/								
776	Schalow's Wheatear	/	/	/	/	/	/		/		/	
777	Northern Wheatear	/	/	/						/	/	
778	Capped Wheatear	/	/	/	/	/	/		/	/	/	/
779	Pied Wheatear	/										
784	Stonechat		/	/						/		
792	Cliff Chat	/	/	/			/	/	/	/	/	
793	Olive Thrush			/								
805	Great Reed Warbler		/									
806	African Reed Warbler											/
818	Yellow-breasted Apalis	/	/	/		/	/	/	/	/	/	/
837	Grey-backed Camaroptera	X	/	X	/	X	X	/	/	/	/	/
847	Desert Cisticola			/					/			
854	Rattling Cisticola	/	X	/	/	/	/	/	/	/	/	/
859	Tabora Cisticola						/					
860	Winding Cisticola		/	/			/	/				/
862	Zitting Cisticola	/	X	X								
873	Trilling Cisticola		/	/							/	
878	Yellow-bellied Eremomela										/	
888	Olivaceous Warbler	/							/			
899	Banded Parisoma	/	/	/			/		/	/	/	/
900	Brown Parisoma			/								
902	Buff-bellied Warbler	/	X	X			/	/		/	/	
908	Willow Warbler	/	/	/						/	/	
913	Tawny-flanked Prinia	/	/	X		/	/		/	/	/	/
917	Blackcap										/	
918	Garden Warbler			/								
919	Common Whitethroat										/	
921	Northern Crombec	/	/				/		/	/	/	
925	Red-faced Crombec	/	/	/		X	/	/	/	/		
927	Grey Flycatcher	/	/	X	/	/	/	/	/	/	/	B
928	Pale Flycatcher			/	/	/					/	
929	Silverbird	/	/	/	/		/		/	/	/	
935	Southern Black Flycatcher						/			/		
945	Spotted Flycatcher	/	/	/							/	

951	Chin-spot Batis	/	/	/	/	/	/	/	/	/	/	/	/
968	Paradise Flycatcher	/	/	X	/	/	/	/	/	/	/	/	/
977	Red-throated Pipit	/											
981	Grassland Pipit	/	/	/	/	/	/			/		/	
982	Long-billed Pipit								/				
986	Rosy-breasted Longclaw			X									
991	African Pied Wagtail	/	/	/	/	/	/	/	/	/	/	/	/
995	Mountain Wagtail											/	
996	Yellow Wagtail	/	/	/	/							/	/
999	Black-backed Puffback	/	/	/		/	/	/	/	/	/	/	/
1004	Tropical Boubou			/		/				/		/	
1006	Slate-coloured Boubou	/	/	/	/	/	/	/	/	/	/	/	X
1012	Grey-headed Bush Shrike	/	/	/	/	/	/		/	/	/	/	
1019	Sulphur-breasted Bush Shrike	/	/	/	/	/	/			/	/	/	
1020	Brubru	/	/	/		/	/	/	/	/	/	/	/
1022	Brown-crowned Tchagra	/	/	X	/	/	/	/	/	/	/	/	/
1027	Magpie Shrike	/	/	/	/		/	/	/	/	/	/	
1028	Long-tailed Fiscal	/		/		/	/		/		/	/	
1029	Common Fiscal	/	/	/	/	/	/		/	/	/	/	
1030	Red-backed Shrike	/	/	/	/								/
1031	Taita Fiscal		/	/							/		
1032	Grey-backed Fiscal				/							/	
1034	Red-tailed Shrike	/	/	/									
1041	Northern White-crowned Shrike	/	/	/	/	/	/	/	/	/	/	/	/
1043	White Helmet Shrike	/	B	B	/	/			/	/	/	/	
1044	Grey-crested Helmet Shrike								/				
1048	Violet-backed Starling	/	/	/					/	/	/	/	
1051	Ashy Starling	/	X	X	X	/	/	/	/	/	/	/	/
1052	Wattled Starling	/	X	/	/	/	/	/	/	/	/	/	
1055	Blue-eared Starling		/	/			/				/	/	
1060	Ruppell's Starling			/									
1064	Red-winged Starling	/	/	/		/	/	/		/	/	/	
1074	Hildebrandt's Starling	/	/	/	/	/	/	/	/	/	/	/	/
1076	Superb Starling	/	/	/	/	/	/	/	/	/	/	/	/
1077	Yellow-billed Oxpecker			/									
1078	Red-billed Oxpecker			/					/		/		
1080	Collared Sunbird			/			/						
1084	Eastern Violet-backed Sunbird	/	/	X	/	/	/	/	/	/	/	/	/
1107	Mariqua Sunbird		/	/							/		
1116	Beautiful Sunbird	X	X	X	X	/	/	/	/	X	X	X	X
1122	Scarlet-chested Sunbird	/	B	X	/	/	/	/	/	/	/	/	/
1128	Variable Sunbird	/	/	/	X	/	/	/	/	/	/	/	/
1131	Abyssinian White-eye	/	/	/					/	/	/		
1134	Grosbeak Weaver	B		X	/		/			/			/
1135	Red-headed Weaver	/	X	X					/		/		
1137	Yellow-crowned Bishop		X	X									
1138	White-winged Widowbird	X	X	X			/						
1139	Red-naped Widowbird		X	X	X	X							
1140	Fan-tailed Widowbird	X	X	X						/			
1141	Yellow Bishop	X	X	X			/		/				
1144	Black Bishop	X	X	X	X	X	X						
1146	Black-winged Red Bishop	X	X	X	X	X	/	/		/	/		/
1148	Yellow-mantled Widowbird			X	X		/						
1150	Southern Red Bishop	X	X	X	X	X	/						
1165	Village Weaver		B	X	/	/							
1170	Masked Weaver	X	X	B	X							X	/

1171	Golden-backed Weaver	X	B	X		X	X						
1176	Black-necked Weaver	/		/	/	/	/	/		/			
1177	Spectacled Weaver	/		/									
1180	Chestnut Weaver	X	X	X		/						X	/
1181	Speke's Weaver	X	X	X		/					/	X	
1187	Vitelline Masked Weaver	X	B	X	X	X	/			/	/	/	
1189	Holub's Golden Weaver		/	X	/	/	/	/	/	/	/	/	X
1191	Cardinal Quelea	X	B	/	/								
1192	Red-headed Quelea	/	/	/			/						
1193	Red-billed Quelea	/	X	/	X	/		/	/	/	/	/	/
1195	Red-billed Buffalo Weaver	/	X	X	X	/	/	/	/	/	/	/	
1196	White-headed Buffalo Weaver	/	X	/	/	/	/	/	/	/	/	/	
1197	Rufous-tailed Weaver	/	X	X	X	/	X		/	/	/	X	
1201	Grey-capped Social Weaver	/	B	X	/	/	/	/	/	/	X	X	/
1205	Chestnut Sparrow	X	X	X							/	X	
1206	Grey-headed Sparrow	/	B	/	/	/	/	/	/	/	/	/	/
1207	Rufous Sparrow			/						/	/	X	
1208	Yellow-spotted Petronia		/			/		/		/	/	/	/
1210	Speckle-fronted Weaver	/	/	/	/	/	/	/	/	/	/	X	
1211	Village Indigobird	X	X	X	X	X	/	/	/				
1212	Dusky Indigobird		/	/	/								
1214	Straw-tailed Whydah	X	X	X	X	X	/	X	/				
1215	Steel-blue Whydah	X	X	X	X	X							
1216	Pin-tailed Whydah	X	X	X	X	X	/	/				X	/
1218	Eastern Paradise Whydah	X	X	X	X	X	/			/	/	X	
1219	Zebra Waxbill											/	
1226	Common Waxbill			/			/			/			
1228	Black-cheeked Waxbill	/	/	/	/				/	/	/		
1233	Crimson-rumped Waxbill	/	/	X	/	X	/	/	/	/	/	/	/
1238	Jameson's Firefinch										/		
1239	African Firefinch	/	/	/	/		/	/	/	/	/	/	/
1241	Red-billed Firefinch	X	/	X	X	X	X		/	/	X	/	X
1249	Quailfinch		/										
1256	Green-winged Pytilia	/	/	X	/	X	/	/	/	/	/	/	/
1261	Red-cheeked Cordonbleu	/	/	X	/	/	/	/	/	/	/	/	/
1262	Blue-capped Cordonbleu	/	/	B	/	/	/	/	/	/	/	/	/
1263	Purple Grenadier	/	/	/	/	/	/		/	/	/	/	
1264	Cut-throat			/					/		/	/	/
1268	Grey-headed Silverbill		/	/		/	/						/
1269	Silverbill			/									
1273	Golden-breasted Bunting	/	/	X	/	/	/		/	/	/	/	
1278	Cinnamon Rock Bunting	/	/	/	/	/	/		/	/	/	/	/
1280	Yellow-rumped Seedeater	/	/	/	/	/	B	/	/	/	/	/	/
1283	East African Citril	/		/		/			/			/	
1285	White-bellied Canary	/	/	/	/	/	/	/	/	/	/	/	
1290	Yellow-fronted Canary	/	/	/	/	/	/	/	/	/	/	/	/
1292	Streaky Seedeater			/									
1293	Brimstone Canary								/	/			
9016	African Hoopoe	/	/	/		/	/			/	/	/	
9052	Swahili Sparrow	/	X	/			/	/		/	/	/	
9073	Yellow-billed Kite	/	/	/									
9085	Ruaha Hornbill	/	/	/	/	/	/	/	/	/	/	/	/

## **Annex 10. Socio-economic monitoring baseline questions**

Interview guidelines conducted in May 2016 by Sabrina Fassbender/ Uppsala University as part of research questions for her Masters.

### **[Key Theme 1: *Role of forest community for conservation*]**

- How is protecting the land important to you?
- Where there any discussions prior to the project implementation?
- How long was the process?
- Who can participate in the project?
- Who decides who can participate?
- What has changed for you since the project started?
- What is the role of the village for the conservation project?
- What are the most important resources Carbon Tanzania provides to you?
- How can the village influence the activities in the conservation area?
- How do you decide on the land use plans?
- How do you decide on the protected zones?
- How do you decide on the farming zones?
- How often do you meet and how do you discuss the work in the community?
- How often do you meet and how do you discuss the work with Carbon Tanzania?
- How do you decide in a group?
- Do you have to learn special skills for the project?
- How did you learn it?
- If you could change something, what would that be?

### **[Key Theme 2: *Land tenure rights and allocation of benefits*]**

- Does the land belong to somebody?
- Who is responsible for the land?
- Are there other people who want to use the land?
- Can you protect yourself from other people taking the land?
- Has there been loss of land available for you?
- What are the benefits for the village from protecting the trees?
- How do you use the community money that comes from protecting the trees?
- *Who is on the village council?*
- *How do you decide who is on the village council?*

### **[Key Theme 3: *Project Partners and Financing of Project*]**

- Why do you think people from other countries are interested in the trees?
- Why do you think they pay to protect the trees?
- Do you have an idea why the trees are important to them?

### **[Key Theme 4: *Cooperation on national and sub-national level*]**

- Does the government acknowledge Hadza land?
- Do you get any support from the government?
- Does the government tell you how to use the land?
- Does the government support hunter-gatherer / Hadza lifestyle?
- Have there been attempts to change your lifestyle?

## Annex 11. VCS risk tool analysis.

Yaeda REDD Project VCS Risk Assessment				
<u>Internal Risks</u>				6%
<u>Technical Complexity</u>				18.0%
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
a	Proven project design	H	5	
b	No. Activities	L	4	
c	Enforcement	H	5	
d	Size & Accessibility	M	4	
<u>Management Capacity</u>				18
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
a	Experience	L	1	
b	Proximity	H	5	
TCM				-14.4%
<u>Financial Viability</u>				10.0%
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
a	Funding		10%	
b	Forward Agreement		0%	
Longevity	Medium Term		10.0%	
<u>External Risks</u>				11%
<u>Land Tenure</u>				5%
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
	Ownership	b		
	Use Rights	CM	0%	
d	Disputes		5%	
e	Resolution Process	no	0%	
f	Endorsement	yes	0%	
<u>Community Engagement</u>				2%
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
a	Engagement		10%	
b	Mitigation		-8%	
<u>Political Risk</u>				4%
<u>Criteria</u>	<u>Description</u>	<u>Rank</u>	<u>Score</u>	
a	WB score	-0.365333333	6%	
b	Mitigation	UN Redd	-2%	
<u>Natural Risks</u>				5.00%
<u>Factor</u>	<u>Likelihood</u>	<u>Significance</u>	<u>Mitigation</u>	<u>Risk</u>
Fire	0	0	0	0.00%
Pest	0	0	0	0%
Disease	0	0	0	0%
El Nino Drought	1	1	1	5%
Extreme Weather	0	0	0	0%
Geological	0	0	0	0%
<u>Total Risk</u>				22%
<u>Rating</u>				