

THE KASIGAU CORRIDOR REDD PROJECT PHASE II – THE COMMUNITY RANCHES

3RD MONITORING REPORT (M₃)



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GENERAL

1.1 Summary Description of the Project (G3)

Provide a summary description of the project.

Through a combination of dryland forest protection and extraordinary community sustainable development activities, the Kasigau Corridor REDD Project – Phase II The Community Ranches (hereby referred to as “the project”) is estimated to avoid the gross emission of over 49 Million metric tonnes of CO₂e, which would have been emitted due to slash and burn deforestation over the 30 year project life, or on average approximately 1.6 Million metric tonnes per year across the Carbon Pools of Above and Belowground Biomass (forest carbon), and Soil Carbon. Accounting for both ex-ante leakage estimates as well as measured activity-shifting leakage and a conservative risk-of-reversal buffer discount, Wildlife Works aims to reduce 39 Million metric tonnes of CO₂e, or on average, just over 1 Million metric tonnes per year.

The project ecosystem is home to a fantastic diversity of mammals (over 50 species of large mammal, more than 20 species of bats), birds (over 300 species) and important populations of IUCN Red List species such as Grevy’s zebra (*Equus grevyi*), Cheetah (*Acinonyx jubatus*), Lion (*Panthera leo*) as well as over 500 African elephants (*Loxodonta africana*) seasonally.

The project is very clearly additional and the project baseline, is an extension of actual deforestation that was occurring aggressively in the reference region, immediately adjacent to the project area. This has been demonstrated using novel remote sensing techniques developed for Wildlife Works’ methodology VM0009, as well as a set of GIS tools designed especially for assessing historical deforestation.

Describe the project’s major climate, community and biodiversity objectives (see G3.1).

The Kasigau Corridor REDD Project aims to leverage the financial support of the global carbon marketplace to;

- Prevent the gross emission of over 49,000,000 tonnes of CO₂e over the 30 year crediting period of the project by preventing any further deforestation of the project area and surrounding project area.
- Add financial sustainability to the expansion of the world class conservation project that has been protecting biodiversity, avoiding deforestation on Rukinga Sanctuary and providing substantial community development benefits in the project area, so that we may continue through the project crediting period and hopefully well beyond to protect the area’s magnificent biodiversity.
- Prevent the loss of spectacular biodiversity and protect the area as a wildlife corridor for important indigenous species such as African elephant (*Loxodonta africana*), Cheetah (*Acinonyx jubatus*), Grevy’s zebra (*Equus grevyi*), African hunting dog (*Lycaon pictus*), Lion (*Panthera leo*) and 50 other large mammal species both by direct protection of our Rangers within the project area and through our influence, in the project area
- Expand the influence of Wildlife Works into the surrounding Dryland Forests within the Kasigau Corridor that are under similar threat to Rukinga and that are community

owned, and not currently in a position to make the investments that Wildlife Works has made in biodiversity protection by co-venturing with those community landowners in Phase II of the Kasigau Corridor project

- Manage the protection of over 400,000 acres of Dryland Forest in the Kasigau Corridor to maximize biodiversity values, and provide substantial co-benefits to community members who in some cases have never received any financial income from their forested lands
- Invest the proceeds of the carbon project back into alternative livelihood creation for people in the surrounding areas so that pressure on the forest is removed
- Ensure long term community support for the conservation of the Forests and wildlife through educational outreach in issues such as alternatives to slash and burn etc.
- Expand our organic greenhouse to implement community based nurseries to provide agricultural and fuelwood growing alternatives that remove the need of the local people to deforest the Land and surrounding areas.
- Identify, educate and implement community woodlots in the community lands this should avoid deforestation and enrich areas in the project area.
- Jojoba – build and maintain a campaign to introduce jojoba as a non-conflict cash crop into the existing largely agricultural communities.
- Education and awareness programs through women’s groups, schools and existing community forums such as Marungu Hills Environment Association
- As biodiversity returns identifying, researching, construction and marketing of Kasigau Corridor ecotourism projects.
- Expand our innovative Ecocharcoal project to provide a viable cost effective substitute to firewood and lump wood based bush charcoal to meet the fuel consumption needs in the local communities surrounding the Kasigau Corridor REDD project.

1.2 Project Location (G1 & G3)

Indicate the project location and geographic boundaries.

As part of the 2010 ratification of the Kenyan Constitution, counties were introduced as new geographical administrative units. These counties number the same as the old districts (47), but there are significant governance changes planned after the elections of 2013, including a devolution to a new two-level governance system, which sees only national and county governments. The Kasigau Corridor REDD Project Phase II - The Community Ranches is located in Southeastern Kenya, in Taita Taveta County, Coast Province, Kenya, approximately 150 km northwest of the city of Mombasa.

This monitoring report covers all the land known as The Community Ranches, which consists of 13 group-owned ranches and conservancy land totaling 419,440 acres (169,741.1 ha). Specifically, the project consists of the following ranches and conservancies:

- Taita Ranch, which is 35,612 ha known as LR 12264 owned by Taita Ranching Company Ltd a collection of indigenous local shareholders

- Mgeno Ranch, which is 21,232 ha known as LR 12178 and owned by Mgeno Ranching (DA) Company Ltd., a collection of indigenous local shareholders
- Maungu Ranch, which is 21,619 ha known as LR 12179, and owned by Maungu Ranching (DA) Company Ltd. a collection of indigenous local shareholders
- Kasigau Ranch, which is 21,186 ha known as LR 12180, and owned by Kasigau Ranching (DA) Company Ltd., a collection of indigenous local shareholders
- Wangala Ranch, which is 2,023.5 ha known as LR 12262 and owned by Livingstone and Alphonse Ikonge, local indigenous shareholders
- Kambanga Ranch, which is 12,948 ha known as LR 29094 and owned by Kasigau Ranching (DA) Company Ltd., a collection of indigenous local shareholders
- Dawida Ranch, which is 4,046.86 ha known as LR 14208 and owned by Dawida Ranching Group Company Ltd., a collection of indigenous local shareholders
- Washumbu Ranch, which is 14,501 ha known as LR 14206 and owned by Washumbu (DA) Ranching Company Ltd., a collection of indigenous local shareholders
- Amaka Ranch, which is 5,998 ha known as LR 14207 and owned by Amaka Development Limited., a collection of indigenous local shareholders
- Sagalla Ranch, which is 17,402 ha known as LR and owned by Sagalla Ranching (DA) Company Ltd., a collection of indigenous local shareholders
- Ndara Ranch, which is 1834.77 ha known as LR 12176 and owned by Eliud Timothy Mwamunga, a local indigenous stakeholder
- Choke Ranch, which is 5076 ha known as LR 12199/3 and owned by Raymond Joel Mwangola a local shareholder
- Kutima Ranch, which is 5076 ha known as LR 12199/4 and owned by Kutima Investments Limited, a collection of indigenous local shareholders
- Marungu Hills Conservancy Area, a small 1030ha, but important community owned strip of land at the ridge of the Marungu Hills that the Community has requested be placed in the REDD project.
- Wildlife Corridor Link, 156.3ha secured by Wildlife Works as a safe crossing point for local fauna.

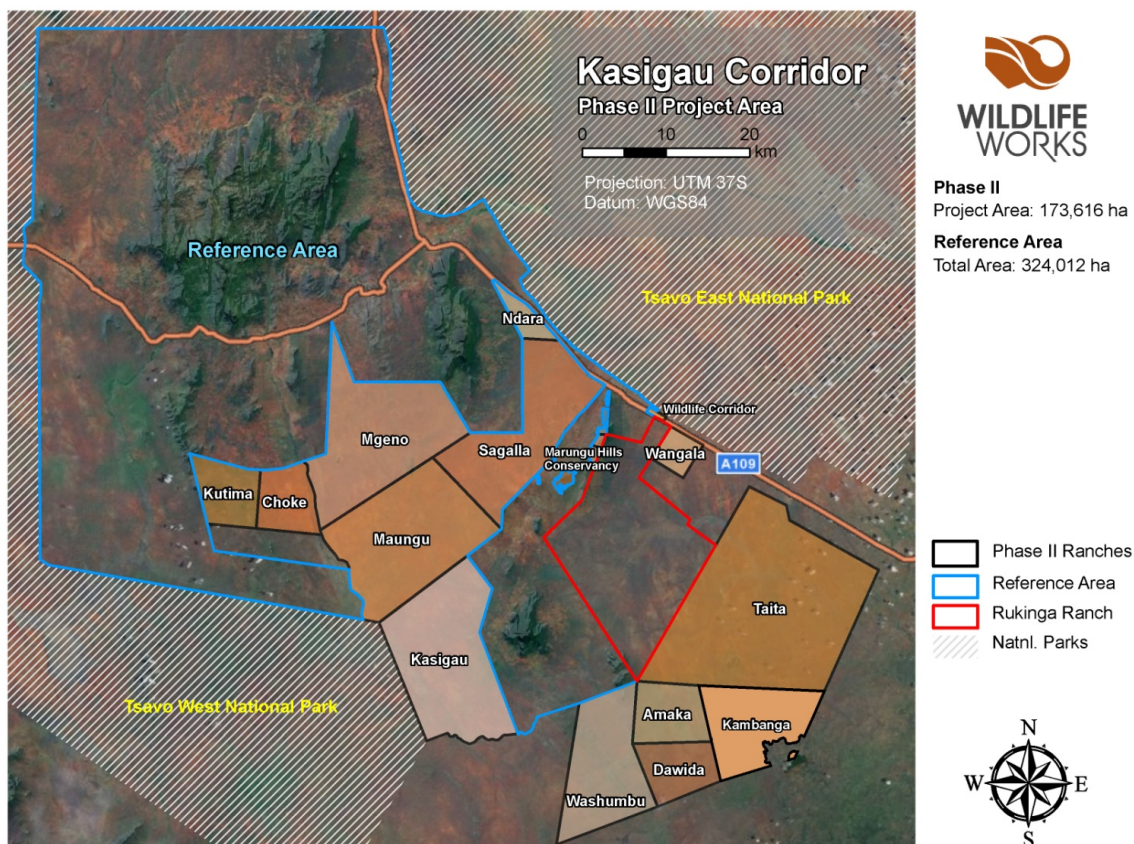
These community ranches and conservancies are part of that land that forms a corridor of land (the Kasigau Wildlife Corridor) between the Tsavo East National Park and the Tsavo West National Parks to the East of the Marungu range. The project and reference areas are clearly delineated in the PD in section 5.1, and GIS vectors representing the boundaries have been made available to the project validator and are also displayed on the VCS Website. The land within the project boundary has been classified as tropical dryland forest¹ for at least 20 years and has been primary forest throughout recorded history².

Describe the location of the project and basic physical parameters (eg, soil, geology, climate), including specification of the project zone. Include a map identifying the project location and boundaries of the project area(s), the project zone and additional surrounding locations that are predicted to be impacted by project activities (see G1.1, G1.3 & G3.3).

¹ UN IPCC, Good Practice Guidance for LULUCF, Table 3A.1.8;

² The earliest record that has been located is dated 1895 which identifies the area as forested [Hobley 1895 – Upon a Visit to Tsavo and the Taita Highlands – The Geographical Journal 1895 Vol 5 No 6 pp 545-561]

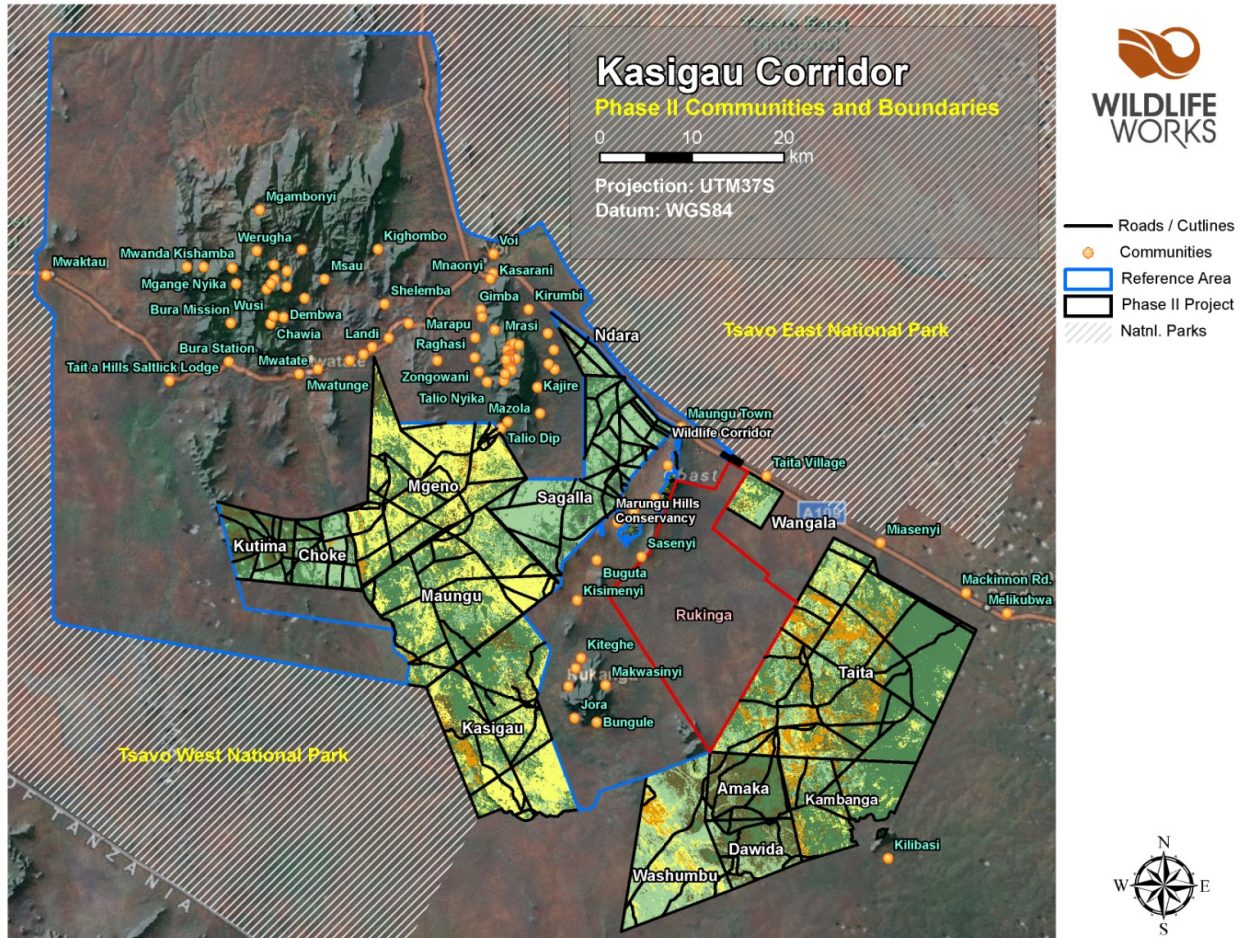
The project is located in Southeastern Kenya, in the Coast Province about 2 hour's drive from the port town of Mombasa along the Nairobi-Mombasa highway. The project EcoRegion is typified by a dryland forest ecosystem, dominated by Acacia and Commiphora drought-resistant species. The majority of people in the area descend from the Taita tribe, with significant populations of Duruma, Kamba and other less-prevalent tribes. More detailed information concerning the social, economic and geographic attributes of the Project Zone can be found in the PDD.



The project area for the Kasigau Corridor REDD project Phase II is illustrated in the map above; The corresponding group ranch identities are listed above in VCS section 1.2.

The community group ranches are part of that land that forms a corridor of land (the Kasigau Wildlife Corridor) between the Tsavo East and Tsavo West National Parks, located to the South East of the Taita Hills, an area of high conservation value and the northern most extent of the Eastern Arc Mountain range (see map above).

There are several Kenyan Administrative Districts associated with the project area, with a total estimated population of over 350,000 people. There are estimated to be approximately 100,000 people within 5 km of the project boundaries. The map below shows communities directly involved with/affected by the Kasigau Corridor Phase II Project.



Communities within the scope of influence of the Phase II project.

Climate

The climate in this region of Kenya is semi-arid, with average annual rainfall in the 300-450mm range. There are no permanent water sources on the Project Land. Historically, rains occurred seasonally twice a year, in December and April, known as the grass rains and the long rains respectively. However, in the past ten years, local climatic conditions appear much more irregular and there have been two periods of extended drought in this time period.

The project is located at 3° south, and receives strong sunshine most days of the year. The coolest month is August, the hottest February.

Soils

The dominant soil type within the project area, and typical for this area of Kenya, is red laterite, which characteristically contains high amounts of iron and aluminum. There are also small bands of black cotton soil occurring randomly within the project area, but account for a tiny - and we believe insignificant - contributor to the project's soil carbon pool. There are areas within the Project Boundary where Gneiss Islands, or rocky outcrops penetrate the soil to form small rocky

hills. These outcrops also represent a tiny portion of the land and were therefore similarly omitted from the project's soil carbon pool.

Geology

The project area is geologically dominated by the remnants of the Eastern Arc Mountains, which include the Taita Hills, Mt. Kasigau (seen in the photo below) at the Centre of the project area, and lesser hills such as Sagalla, and the Marungu Range that runs North-South along the Western boundary of the Rukinga Sanctuary. These hills all fall within the Kasigau Corridor project area, and are home to remnant patches of montane cloud forest, and to several endemic bird and flora species.

1.3 Project Proponent (G4)

Provide contact information and roles/responsibilities for the project proponent(s).

The project is being implemented by Wildlife Works Carbon LLC, on behalf of the indigenous Community Group of landowners. These landowners are the rightful holders of the carbon credits derived from a Reduced Emissions from Deforestation and Degradation (REDD) project in Southeastern Kenya, in an area of wilderness known as the Kasigau Corridor. This carbon project is managed in Kenya by Wildlife Works Carbon LLC.

Contacts:

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Where there are multiple project proponents, identify a single project proponent who is responsible for the project's design and implementation (see G4.1).

As mentioned above - in VCS section 1.3 - Wildlife Works Carbon LLC is the project proponent for the Kasigau Corridor REDD Project Phase II – The Community Ranches. Ultimate project responsibility within Wildlife Works lies with Mike Korchinsky, the President of Wildlife Works Carbon LLC. In addition Wildlife Works hired a VP Carbon Development, who is a Geospatial and Carbon Accounting expert, Jeremy Freund to perform the detailed preparation of the carbon accounting, manage all audits and project documentation.

Funding for the project is provided by Wildlife Works Carbon LLC, and in-country employment for the carbon project is provided by Wildlife Works Sanctuary Ltd, a Kenyan Limited Liability Company, majority owned by Mike Korchinsky.

1.4 Other Entities Involved in the Project (G4)

Provide contact information and roles/responsibilities for any other entities involved in the development of the project.

Describe key technical skills that have been deployed to implement the project successfully and demonstrate that the implementing team's human and financial resources have been adequate to implement the project (see G4.2).

Wildlife Works is managed by **Mike Korchinsky**, a serial entrepreneur, with significant large company management expertise. Mike is supported by Colin Wiel who is a successful entrepreneur in his own right and the founder of the San Francisco chapter of the Keiretsu Forum, a world class angel investor forum.

Key personnel in this project include:

Wildlife Works' CEO and Founder - **Mike Korchinsky**, who has been a large scale owner of conservation lands for almost 15 years, in Africa and Canada, and who had a very successful business career prior to being the founder of Wildlife Works. He has experience managing multi-million dollar projects all over the world, some of those projects had as many as 5,000 team members, and he has had to operate with profit and loss responsibility for all of those projects in addition to the experience of being a member of a US Public company executive team. Mike founded Wildlife Works in 1997, and it has come to be respected by many of the leading conservation groups in the world as a model for community based conservation. Mike and his team on the ground in Kenya have successfully steered Rukinga Ranch through many challenges over the years, to create the vibrant biodiversity sanctuary that it is today. Mike's achievements in the Carbon world are now bordering on legendary, and would run off of this page if listed in their entirety.



VP African Field Ops - **Rob Dodson**

Rob has more than 20 years of experience in managing various aspects of development projects in Africa, from building schools, tourism resorts and production facilities to managing over 100 staff and interfacing directly with hundreds of community members on a regular basis. He speaks



Swahili fluently and has gained the respect of administration officials at all levels of local and regional government in Kenya. In fact, Rob is so well respected he was recently elected Chairman of the Board of the brand new Secondary School, the first of its kind in the community. For the last 8 years, Rob has been responsible directly for all aspects of land management of the 74,490 acre Rukinga Ranch, the entire project area, plus additional lands totaling another 5,000 acres

that Wildlife Works manages for conservation for the owners of those lands. He has extensive knowledge of local and regional biodiversity, is an honorary warden with the Kenya Wildlife Service, has a great appreciation for the needs of local peoples, having lived among them in the small rural village of Maungu for over 10 years, and has the experience of managing ecotourism both within the project area, and before joining Wildlife Works, in the world famous Maasai Mara. He is a world class auto mechanic, critical to being able to keep a fleet of aging patrol vehicles in operation, and he is a qualified and highly experienced microlight pilot, an invaluable skill for aerial survey and monitoring of the project area and Zone.

VP Carbon Development – **Jeremy T. Freund**

With over 18 years' experience in the fields of satellite remote sensing, GIS and applied geography, Jeremy brings broad technical and managerial skills to the Wildlife Works Carbon management team. Possessing a B.S. in Aerospace Engineering from the University of Colorado at Boulder, Jeremy specialized in satellite image processing with several years' experience working for prime US government contractors. He went on to receive his Masters in Geography from the University of California, Santa Barbara, where he developed a crop monitoring/ famine early warning system for the country of Kenya. He has spent several years working in applied natural resource science with emphasis on GIS/remote sensing for ecosystem services monitoring and applied forestry / biometric applications. As the technical lead for Wildlife Work Carbon, Jeremy's



primary responsibilities involve management of AFOLU carbon accounting for REDD projects and project validation / verification. Jeremy also oversees all information and data both at the company's corporate HQ in California and in Rukinga, Kenya. Jeremy manages the writing of all technical documents for Wildlife Works, including CCB PDDs, VCS PDs, feasibility reports and methodologies. His recent achievements include: successful validation/verification of the Kasigau Corridor REDD Projects Phase I and Phase II, validation of the VCS methodology VM0009, "Methodology for Avoided Deforestation", and the recent successful validation and verification of the first Congo Basin REDD+ project, The Lac Mai Ndombe REDD+ Project in the DRC.

Other key Management Roles to ensure successful continuation of all Project Activities include the following;

Company Accountant – **Paschal Mulonzya**

Paschal is a qualified accountant having received a Bachelor's and Masters Degree in



Commerce, Accounting Option, from Rani Durgavati Vishwavidyalaya University in India. He has been working in Kenya as Chief Accountant for a number of firms prior to joining Wildlife Works in 2005. Paschal is a Kenyan citizen, from the Kamba tribe, his home located to the northwest of the project area. He is responsible for all bookkeeping and accounting task with Wildlife Works including interfacing with

the external auditors who produce our audited financials annually. It was not possible for us to find someone with his skill set in the local community.

Sewing Factory Manager – Daniel Munyao

Daniel is a Kenyan citizen, and like Paschal is a Kamba, and he is an experienced sewing factory supervisor having held positions at several large factories in Nairobi and Mombasa prior to joining Wildlife Works in October 2002. He began his career in 1982 as a machinist and worked his way up through the management ranks. His wide experience of all aspects of apparel production, together with his personal attributes of being an excellent team player, a positive reinforcement style manager, and needing little or no supervision on a day to day basis, make him an invaluable resource for us in managing our sewing factory in the bush.



Office Manager, Community Relations and Personnel - Lenjo Laurian



Lenjo is of Taita origin from the immediate community and was one of our first employees hired as a storekeeper and assistant to the then Site Manager Alice Ndiga in January 2001, and he was trained into the position he now holds – his skills include people management, cultural knowledge of local community norms, basic administration computer skills such as Word and Excel, excellent verbal and written communication skills with fluency in English, Swahili and Taita and excellent conflict resolution

Director of Biodiversity and Social Monitoring – Dr. Mwangi Githiru

As Director of Biodiversity and Social Monitoring, Mwangi’s main role is to formulate biodiversity and social monitoring plans, and lead research teams undertaking surveys and studies geared towards evaluating the impact of Wildlife Works’ REDD+ programmes in Africa.



Greenhouse, Nurseries and Jojoba Project Manager - Joseph Mwanganda

Joseph is a consultant to Wildlife Works, in addition to his role as Agricultural Extension Officer for the District Agricultural Office of the Kenyan Government. He is a Taita from the project area. Joseph has a wide range of Agricultural skills and experience, and has assisted us in setting up our own Organic Greenhouse, as well as trial nurseries within the villages of the project area. He will play a key role in the extension of nurseries proposed as a project activity, as well as in the expansion of the Dryland Farming/Jojoba Project also proposed as a project activity.



Carbon Development Associate - Simon Bird

Simon has been working in the forest ecology and environmental conservation industry for over 10 years. Simon has a B.S. in Environmental Science and a M.S. in Soil Science from the University of Vermont. Simon works in the Carbon Technical Development department at Wildlife Works Carbon's San Francisco California office. There he assists with the development of REDD projects, including the validation and verification process and the annual monitoring, reporting and verification for existing REDD projects. Simon's duties include overseeing biomass sampling methods and protocols, forest modeling, and technical writing and reporting to both the VCS and CCB standards. Simon has additionally participated in the revision process of VCS REDD methodology VM009.



Head Wildlife Ranger - Eric Sagwe

Eric is a wonderful product of our policy to hire locally and to promote from within. Eric grew up less than 1 mile from our project headquarters, and was originally hired as a young man with no formal training to be a wildlife ranger in the sanctuary, when his father passed away unexpectedly. At that time the Head Ranger was a Kenyan, Ekiru Mirimuk from a different region of Kenya, who had been brought in at the start of our project because he had specific knowledge and experience with managing a ranger force in the Kenyan bush, to patrol and to perform anti-poaching and other activities. When Ekiru retired, Eric was promoted to Head Ranger. His skills include motivation and leadership by example, tracking, patrol design and supervision, wildlife recognition and bush awareness and conflict management.



Carbon Operations Manager – Jamie Hendriksen

Jamie is in charge of the new projects and developments that are needed to ensure that the Project is feasible for its 20 year life span. His duties include supporting Rob Dodson and oversee the design, budget, construction and management of the expansion plans to all the new ranches within the project area. Jamie has had over 11 years' experience in running high end Tourist Lodges throughout Africa. He is skilled mechanically, trained in technical design, and has an uncanny ability to get a job done quickly and professionally. He is fluent in Swahili and has had great experience operating in Wildlife Sanctuaries, in often high conflict areas. He is a skilled communicator, negotiator, great team player and possesses a wonderful diffusing personality which commands Jamie much respect from his peers and employees alike.



Conservation Office Manager – Cara Braund

Since joining Wildlife Works in January 2012, Cara has been based at the Kenyan Headquarters where she is in charge of managing the office operations. One of her primary roles is communicating with the local landowners regarding the progress of the Kasigau Corridor REDD project,



including producing their quarterly revenue reports. Cara also assists the VP African Field Operations in various aspects of work, in which she serves as a primary or secondary point of contact for external stakeholders and project partners such as NGOs, private sector operators and government agencies. Cara also handles the logistics of national and international visitors to the project.

Strategic REDD+ Policy Advisor - **Christina Ender**

Christina joined Wildlife Works as an intern in March 2012, and now works full time in the Kenya office. Her main role is to assist in the writing of documents, including feasibility studies, proposals and PDs. As the Strategic REDD+ Policy Advisor, she also closely follows new developments on the REDD policy front and disseminates this information to the relevant people in the African operations sphere. Christina is in charge of the production of the periodic Kasigau Corridor community newsletter. She also provides support to management, including writing applications and creating PowerPoint presentations.



1.5 Project Start Date (G3)

Indicate the project start date, specifying the day, month and year.

The Project Start Date is January 1st, 2010. This monitoring period (m₃) is the third monitoring period, starting on January 1st, 2012 and ends on December 31st, 2012.

1.6 Project Crediting Period (G3)

Indicate the project crediting period, specifying the day, month and year for the start and end dates and the total number of years

The Project Crediting Period starts on January 1st, 2010 and ends on December 31st, 2039 (30 years).

Include the project lifetime and implementation schedule and explain any difference with the project crediting period (see G3.4).

As stated above, The Phase II Project is 30 years in length, and will end on December 31, 2039. Wildlife Works took financial responsibility for all conservation activities within the Phase II Project Area as of January 1st 2010, as is evidenced by the presence of Wildlife Works rangers and their active protection of the land. Conservation Easements were signed with all Phase II entities, copies of which have been provided to the validators.

Wildlife Works will monitor and plans to verify the project every year, producing accurate and credible documentation for all VCS required project accounting. Per VCS minimum requirements, a baseline revision will be performed once every 10 years, on January 1, 2020 and January 1, 2030. If the VCS standard regarding baseline revision periodicity changes in the future, Wildlife

All project activities described in the PD are continued during this monitoring period. The following is a list of active project activities for Phase II (projects considered commenced and operational under Phase I are greyed out, and are listed and described in the Phase I Monitoring Report), all of which are operational currently and were operational during this monitoring period (m₃):

- **NEW** Sagalla Conservation and Development Forum (SCDF), Mwatate District Stakeholders' Forum (MDSF) and Mwachabo Development Forum (MDF)
- Organic Greenhouses
- Financial Aid to Marungu Hill Conservancy Association
- Jojoba propagation & extension into the Community
- Reforestation of Mt. Kasigau
- Wildlife Works REDD Forest and Biodiversity monitoring
- Community Wildlife Scouts
- Kasigau Development Trust
- REDD Carbon Inventory Monitoring
- Ecotourism Projects
- School Construction and Bursary Scheme
- Group Ranch Office Renovations / Construction
- Wildlife Works Eco-Charcoal Production Facility for the Kasigau Corridor REDD Project
- Wildlife Works/Tsavo Soap Factory
- Wildlife Works REDD Project Product Sales and Marketing

All project activities are described in full detail in the PD, section 6.1 Baseline Scenario. These project activities were designed to mitigate deforestation and human-wildlife conflict, and therefore by default serve to mitigate leakage and uphold project permanence.

Several projects were commenced and are currently active during this monitoring period, but are new enough that we have not yet collected data on them. We will do so throughout the next monitoring period and report on indicators within the next Monitoring & Implementation Report. These projects include:

- JORA WATER TANK- Construction of a 100 cubic meter water storage tank and piping for the Jora community.
- SCHOOL FURNITURE UPDATE AT MOI HIGH SCHOOL- Fabrication of 50 steel chairs, 50 lockers and 50 bunk beds for Moi High School.
- MAKWASINYI WATER TANK- Construction of 25 cubic meter water storage tank for the Makwasinyi water tank.
- REHABILITATION OF NGANGU WATER PROJECT- Improvement/rehabilitation of a rainwater harvesting project. Construction of settling tanks to remove silt and debris from the water.
- CONSTRUCTION OF CLASSROOM AT MWATATE SECONDARY SCHOOL- An extension/expansion of existing classroom block, by adding a new building to accommodate secondary school pupils.

- WATER ROOF CATCHMENT AT MAILI KUMI PRIMARY- Installation of guttering and PVC water tanks for rainwater harvesting.
- OFFICE RUNNING COST FOR MWACHABO DEVELOPMENT FORUM- Initial purchase of office equipment, hardware and software as well as covering salaries for office staff and monthly rental of the office building.
- OFFICE RUNNING COST FOR SAGALLA CONSERVATION AND DEVELOPMENT FORUM-As above
- OFFICE RUNNING COST FOR MWATATE STAKEHOLDER FORUM- As above
- OFFICE RUNNING COST FOR KASIGAU DEVELOPMENT TRUST- As above
- OFFICE RUNNING COST MARUNGU HILL CONSERVANCY ASSOCIATION- As above
- SASENYI ROCK CATCHMENT- Restoration and expansion of a natural water catchment, to hold 630 cubic meters of water. Including clearing of surrounding encroaching bush and scrub, and extension of catchment walls.

The following indicates contributions to the project from each activity during the current monitoring period:

2.2.1 Wildlife Works Carbon Trust

The Wildlife Works Carbon Trust works in conjunction with several Locational Carbon Committees (LCCs) and Community Based Organizations (CBOs) Projects are funded through the Wildlife Works Carbon Trust (WWCT), which manages distributions from the Kasigau Corridor REDD Projects. The Local Carbon Committees elected by community members decides where the funds are spent according to a proposal/award system. Funds flow directly to Community Based Organizations who oversee implementation of the projects approved by the WWCT. The LCCs, a group of independent, elected community members from varied backgrounds make decisions about proposed projects under this system to mitigate corruption and perverse incentive. The system is set up to ensure proper checks and balances. There are 5 locations that the LCCs and CBOs work from to ensure fair distribution of funds and specialized application of funds based on local needs.

We expect the list of community projects to grow over the lifetime of the carbon project as proceeds continue to flow.

2.2.2 Sagalla Conservation and Development Forum (SCDF), Mwatate District Stakeholders' Forum (MDSF) and Mwachabo Development Forum (MDF)

Three new Community Based Organizations (CBOs) were formed in the Project Zone this monitoring period (m3). They are actively ramping up their capacity to manage carbon-funded projects under the tutelage of Wildlife Works. Their LCCs diverted funds from the first community income to equip and either build or refurbish their offices, with SCDF, MDSF and MDF receiving 750,000 Ksh, 833,000 Ksh and 669,000 Ksh respectively. The CBO staff have attended training days and workshops on subjects including the REDD process and financial management.

2.2.3 Financial Aid to Marungu Hill Conservancy Association

Wildlife Works has further increased its support of MHCA to 111,050 Ksh per month in order to cover salaries for a Project Coordinator, a Secretary, an Accounts Clerk, four Community Waste Technicians and eight Community Wildlife Scouts. There has been a sustained level of input in order to continue building capacity in the Community Based Organization, through workshops and training days.

2.2.4 Reforestation of Mt. Kasigau

During May 2012, our greenhouse team undertook the monitoring of trees planted in November 2011, locating 14,670 seedlings giving a survival rate of 58%. Due to a lack of good rainfall in 2012, we only had one tree-planting period, which took place in November and early December. During this time, 20,310 seedlings were planted with primary and secondary schools, community groups, government institutions and individuals.

2.2.5 Wildlife Works' Biodiversity and Social Monitoring Plan

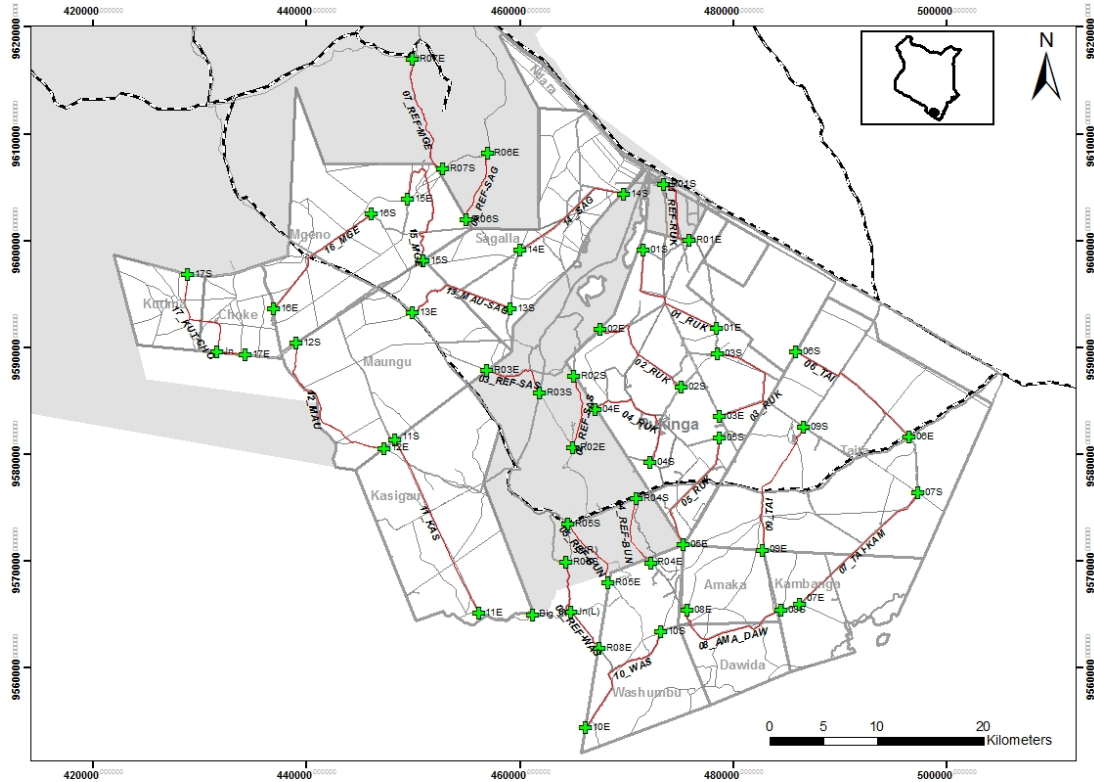
The following sub-sections describe any updates and/or new developments that have occurred in relation to Wildlife Works' Biodiversity Monitoring Program. All information in this section appears courtesy of Dr. Mwangi Githiru, Wildlife Works' Director of Biodiversity and Social Monitoring. For more detailed information, please refer to the official Biodiversity and Social Report.

2.2.5.1 Road transects

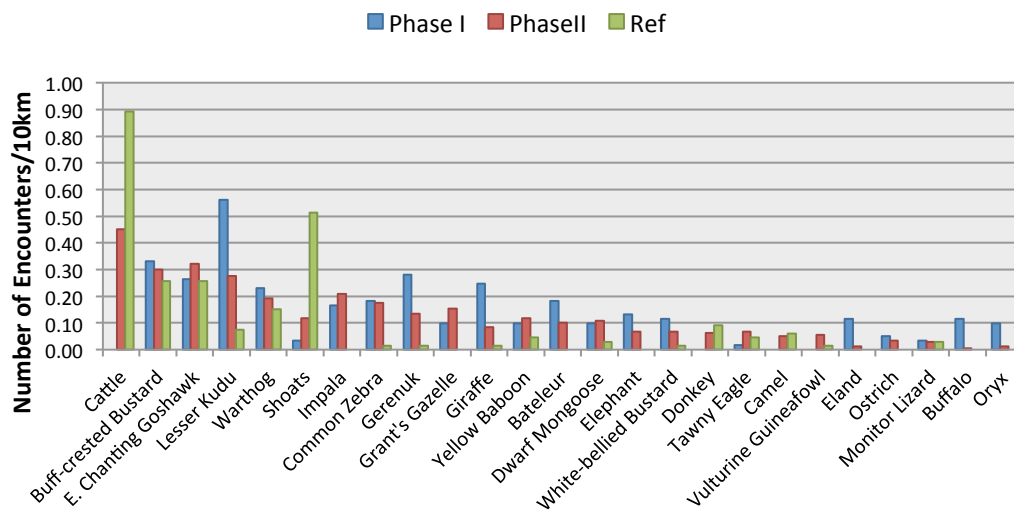
Twenty five permanent transects ranging from 7-18 km were established in the project area to sample medium-sized to large mammals and bird birds: 5 in Phase I, 12 in Phase II and 8 in the Reference Areas (Figure below). Six sessions (every two months) of road transects were conducted in the one year between October 2011 and October 2012. A total of 82 species were counted along the transects during this time. Overall, the commonest species encountered were Kirk's Dikdik (679 encounters), unstriped squirrel (352) and cattle (139); the 20 next commonest species were a mix of mammals various birds (Fig. 2).

When broken down by the specific project area and corrected for transect lengths (total transect lengths were 60.5km in Phase I, 176.9km in Phase II, and 66.1km in the Reference Area), Kirk's Dikdik and Unstriped squirrel were still commonest with a mean of 2.2 and 1.2 encounters per 10km of transect, respectively. There were two other notable patterns (Figure below): expectedly, livestock were commonest in the Ref and to some extent in Phase II but virtually absent in Phase I, while Phase I had a healthier mix of large and medium-sized mammals (e.g., elephants, giraffe, buffaloes, eland and kudu) than Phase II.

Finally, preliminary analysis of the elephant data, considering the numbers counted and the mean distances from the transect line, gave a density estimate of 1.6-2.4 individuals/km² in Rukinga, and 1.0-1.5 individuals/km² in Phase II, giving a total of 480-720 elephants in Rukinga and 1700-2550 individuals in Phase II. These figures will be refined when exact distances of observation are considered in the computations and the exact habitat types considered in the extrapolations.



25 permanent road transects in the Kasigau Corridor project area including Phase I, II and the Reference Area

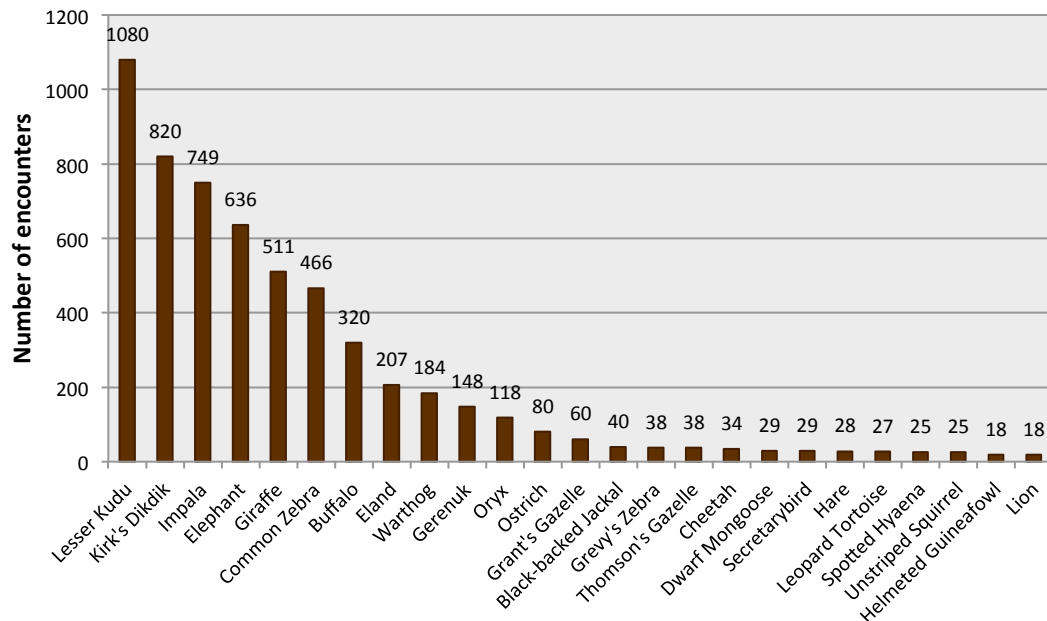


Total number of encounters of the 25 commonest species (excluding the Dikdik and Squirrel) per 10 kilometers of transect in the three project areas: Phase I, II and Reference Area

2.2.5.2 Ranger Patrols

During the last year, our rangers recorded an impressive 5820 individual animals comprising 49 species across the entire Project Area in the course of their everyday operations. The top-five commonest species observed were: Lesser Kudu, Kirk's Dikdik, Impala, Elephant and Giraffe.

Besides elephant, other species of conservation concern were observed regularly including Grevy's Zebra, Cheetah, Secretary bird Lion (Fig. 5), while others were more rarely seen such as the African Wild Dog (spotted twice) and the rarer Striped Hyaena (spotted thrice). A refresher course for rangers is planned for 2013 in order to further improve their biodiversity data collection focusing on GPS and camera use and species ID amongst other issues.



Number of encounters for the top 25 most commonly seen species by ranger on patrol

2.2.5.3 Camera traps

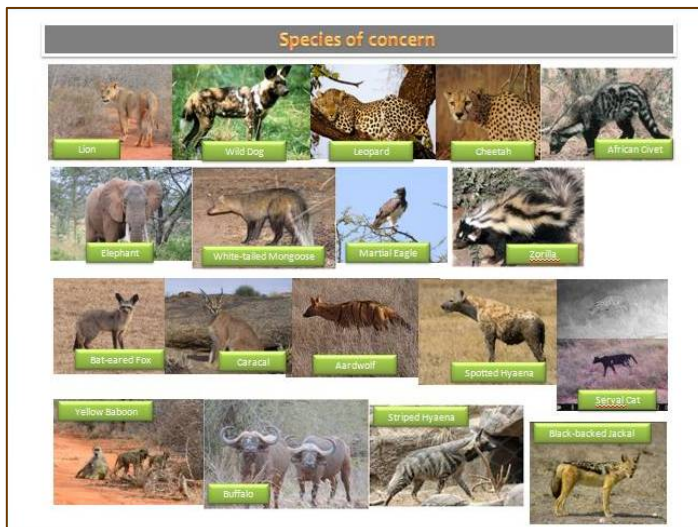
As scientists, there is a limit to our capacity to observe and record wildlife activity. Remote photography is increasingly more widely used to sample wildlife populations especially for cryptic or shy species. Thus to add to the road transect monitoring efforts above, we have set up camera traps at 24 randomly selected sites on Rukinga Ranch. These are our 'eyes' in the field even in our absence; they enable us to observe and collect data on all animals passing near the camera, 24 hours a day, 7 days a week.

2.2.5.4 Community Monitoring

In 2012, we initiated a community wildlife monitoring scheme currently in seven areas across our project area: Zongowani; Talio Dip/Mazola; Kajire/Kishamba; Makwasinyi; Jora; Bungule; and Kale/Buguta/Mkamenyi/Birikani. In each of these areas, we have selected a community member who records all incidences of wildlife, especially focusing on the species of interest, either conservation-wise or human-wildlife conflict-wise.

In the long term, these data will inform Wildlife Works of the times when different animals appear in the community areas especially crop-raiding elephants and livestock predators in order to help planning of mitigation measures.

Some highlights in 2012 from these community monitors included several mentions of species 'interacting' with the community including: elephants, baboons, hyaenas, lions, mongooses, buffalo, wild dogs and (an unconfirmed) leopard. Commonest conflicts were crop raiding, chicken and goat predation, while cattle predation and destruction of property though mentioned, were rarer.



2.2.5.5 Habitat Monitoring

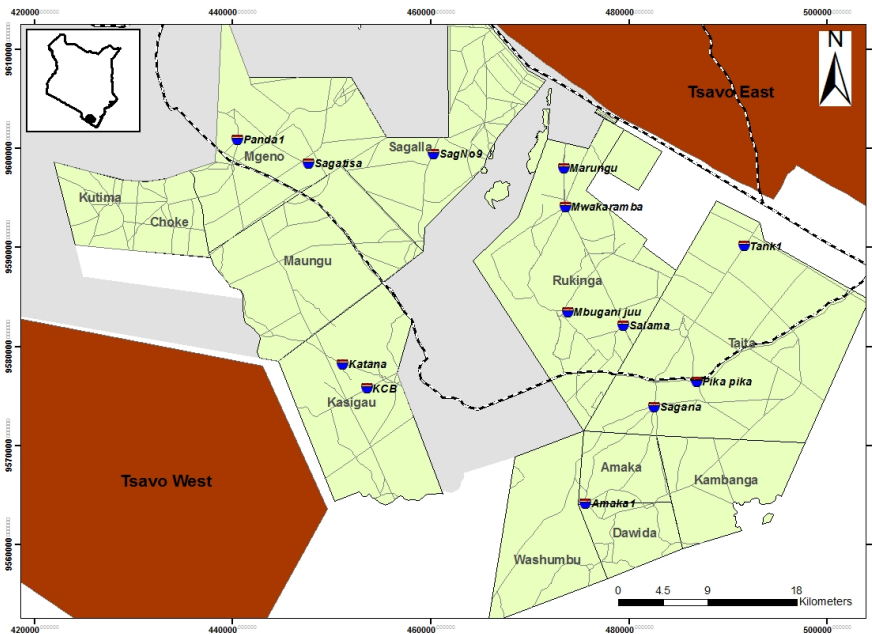
We have three habitat monitoring fronts, apart from the carbon monitoring. One key basis for this is to measure the impact of growing elephant populations on the vegetation, besides measuring other forms of disturbance and regeneration.

Carbon plots

From our permanent carbon plots, we have a database of more than 15000 individual trees which we shall individually monitor over the project lifetime for various effects. In addition, number of saplings and seedlings are counted in smaller concentric plots within the permanent carbon plots to assess regeneration.

Waterhole transects – piosphere effects

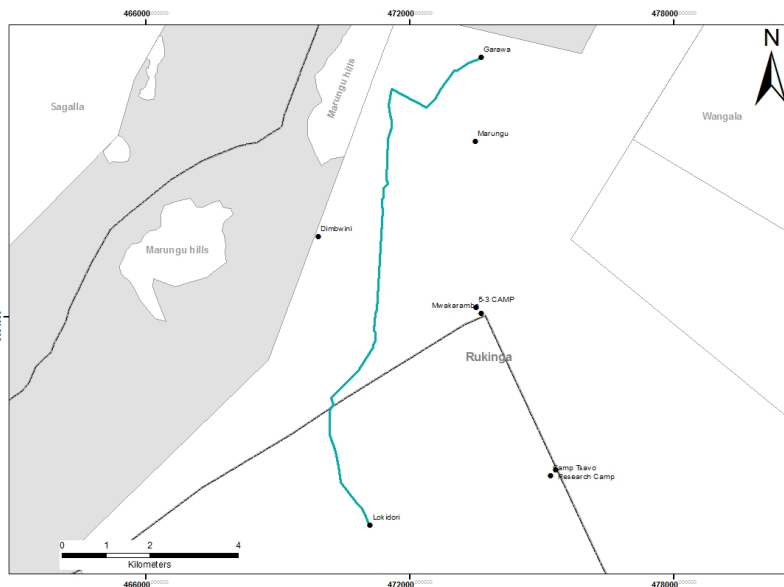
We have selected 13 waterholes (some of which were recently re-scooped while others may be re-scooped at a later date; Fig. 9) from which we have set two permanent 1-km transects leading away from the waterhole in opposite directions. All trees 5m on either side of the transect line are assessed for elephant-related impacts to evaluate the impact of having water in the waterhole for longer periods (as is expected following re-scooping) has on vegetation. This research design will be refined in the coming year and monitoring conducted annually over the project lifetime, even if the selected waterholes fail to retain water.



Water holes from which two permanent 1-km transects have been set up to study piosphere effects of elephant feeding

Elephant feeding transect – Rukinga Ranch

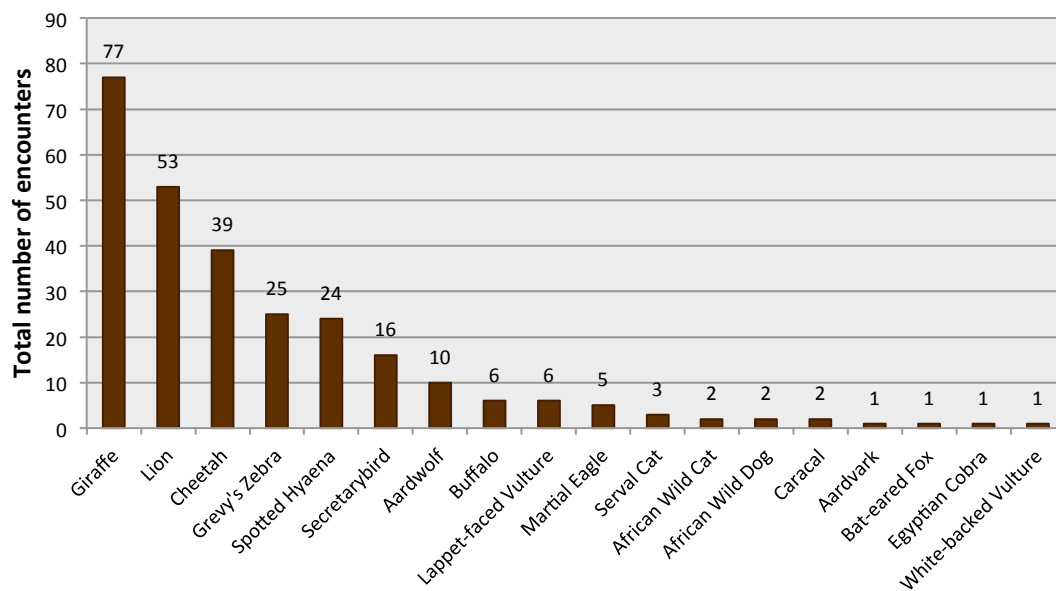
Finally, we selected one 13-km transect running along the base of Marungu hills in Rukinga (Fig. 10) which is an important dry season habitat for elephants being one of the last green areas due to the moisture from the hills. We set 55 30m² plots every 250m on alternative sides of the transect in which we assess impacts of recent elephant feeding on the vegetation (trees and shrubs) in the plot. This will be done twice a year – in the wet and dry seasons – both to assess the plant choices made by elephants and how the choices and intensity vary across seasons.



The 13-km transect running from Garawa Tank to Lokidori in Rukinga Ranch for monitoring elephant feeding patterns

2.2.5.6 Daily logs

A Daily Log system was constituted where different people going about their activities note down species of interest they encounter also noting their position using a GPS or on a prescribed grid system (for Rukinga Ranch). 579 species of interest were recorded across the project area, a vast majority of them (562) being in Rukinga. The Rukinga sightings were dominated by elephants (288, 51%); other commonly spotted species of conservation interest (HCVs) were lion, cheetah, Grevy’s zebra and secretary bird, whilst others were less common such as the African wild dog, various vulture and raptor species (Fig. 6). Also of interest was a Grevy’s zebra sighting in Phase II (Washumbu Ranch), a first for this ranch. This will continue into 2013 with some refinement in the species of interest in order to focus mainly on the globally endangered species, and only a few other species.



Number of encounters of all species of interest recorded anecdotally in Rukinga Ranch

2.2.5.7 Mt. Kasigau Monitoring

Elevational bird ringing

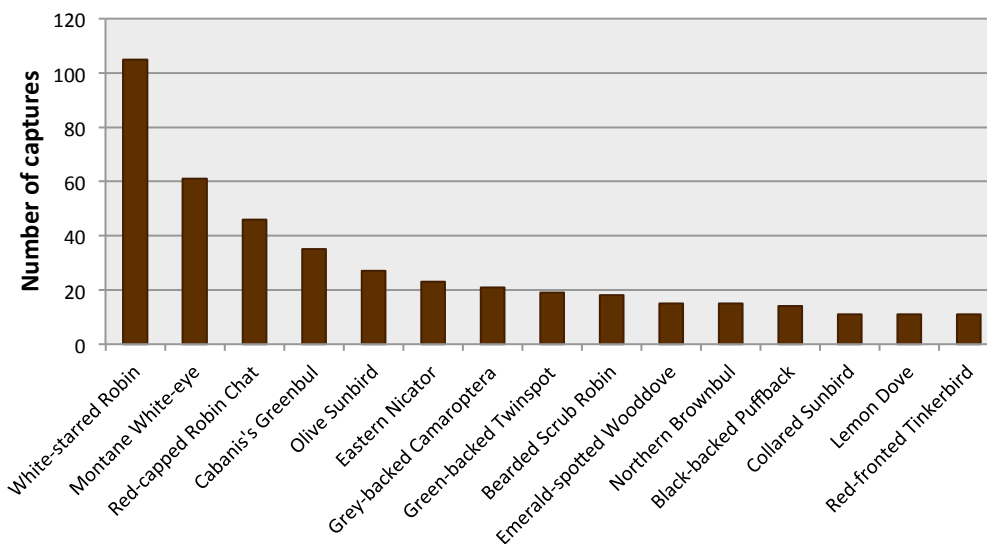
Four mist net lines for bird capturing were set-up at different elevations in Mt. Kasigau (Fig. 11): 850m, 1100m, 1320m and 1550m. In 2012, 496 individual birds comprising 39 species were captured or re-captured in four ringing sessions conducted in January (151 comprising 23 species), April (88; 24species), July (93; 25species) and October (164; 20species). Overall, the White-starred Robin was the commonest species captured (Fig. 12). Interesting species captured included the Taita sub-species of the Montane White-eye (until 2011 considered a separate species), and Palearctic migrants (such as the Eurasian Cuckoo and Willow Warbler). Another one was the Striped Pipit which is endemic SE Kenya and NE Tanzania. Its range is described to be between 1500 and 2000m and hence our capture could represent a confirmed altitudinal range extension, since it was captured at site II which is at an elevation of 1100m.



Total number of individuals captured in Mt. Kasigau in 2012 across the 4 net-lines (shown are species with more than 10 total captures)

Elevational vegetation monitoring

A total of 20 plots were set up from which vegetation measurements were taken from the base of the mountain to the top. They overlapped with the bird capturing sites (Fig. 11) so that any concurrent changes in birds and vegetation characteristics can be captured and compared. Tree and shrub data were collected including species richness and diversity, as well as vegetation vertical diversity and canopy cover. Data analysis is underway; these vegetation data will be collected annually.



Total number of individuals captured in Mt. Kasigau in 2012 across the 4 net-lines (shown are

species with more than 10 total captures)

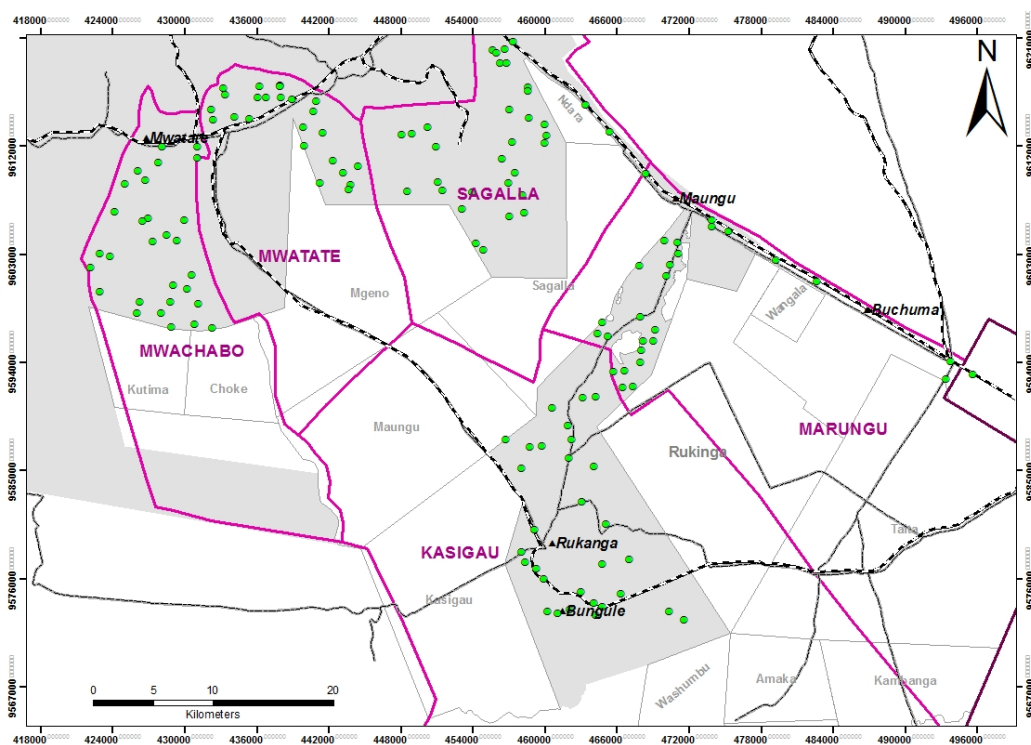
2.2.5.8 Social Monitoring

Household survey

The bulk of our social impact monitoring will take place via this household-level survey in 150 randomly-selected households across the five Locations in the Project area (see figure below). The first (baseline) survey was completed in April 2012 and will be repeated annually to assess progress with key indicators as the carbon project is implemented. While the complete household survey draft report is available for the auditors if desired, some key highlights included:

- **Scope:** Data were collected from about 60 villages across the five administrative Locations falling within the Kasigau Corridor REDD Project Area
- **Basic household data:** As expected, the majority (64%) of the 145 respondents were Taita, while the Duruma and Kamba made up 15% each. In about 80% of the households the man makes most key decisions. Number of persons per household varied from 1 to 18 with an overall mean of about 5±3; this did not vary much across locations
- **Livelihood security and income:** 87% of the households were subsistence farmers, with the majority of them (75%) not selling any of their on-farm produce. Most households (62%) did not obtain any livelihood-supporting products outside their farms, and for those that did, most off-farm sources (74%) were communal lands. A few households (15%) did not have any sources of cash income in the preceding 12 months
- **Crop, Farm Animals, Soil, Land & Water Management:** A vast majority (about 61-75%) said they had made no crop or animal changes on their farms over the past 10yrs; neither had they altered the ways they did their soil, land and water (SLW) management
- **Food Security:** Most households were food secure between May and September. About a quarter of the respondents suffered from food shortage year-round, whilst 25-30% did not have food shortage at any time of year
- **Water use: household and agricultural:** About a third of all households relied on rainwater harvesting, but sources of water for household use varied across locations. Less than 10% of households interviewed used additional water sources for agriculture apart from natural (rain-fed)
- **Land: access and use:** A majority (90%) of the households had access to some land for household use. Excluding 2 outliers, the overall mean farm size was 6.5±5acres, ranging from 0 to 30acres. About two-thirds of the respondents did not plant or protect any trees on their farms in the 12 months preceding the study; the commonest trees planted were: Mlezeni (13 mentions), Mkurumbutu (*Melia volkensii*), Mnago (*Manilkara mochisia*). Of those that received seedlings over the past year (about 27% of the respondents), most (46%) said they received them from Wildlife Works
- **Weather and Markets Information:** A vast majority of the respondents (83%) did not receive any weather or market-related information that they could use, e.g., drought and flood forecasts, rains start forecasts, daily or monthly weather and pest or diseases forecast
- **Governance and association:** Household participation in decision-making processes at the Village and/or Location levels was average, with 45% of respondents saying they were not involved in any committees dealing with education, water and other key issues; an overwhelming majority (83%) of the households were not members of any community groups.
- **Climate crises:** A majority (71%) of the respondents said they had experienced some form of climate-related crisis (e.g., flood, drought, fire) in the last five years

- Education & fees: Overall, 13% (of 247) students were not in school due to fees at primary level, 57% (of 37) at secondary level, and 71% (of 9) at tertiary level. Except for free primary education, fees are overwhelmingly footed by the households themselves; none of the households had received Wildlife Works-connected bursaries
- Infrastructure and Services: By the respondents own estimation, the mean distances the household members had to cover in order to access key services were: 2.9km to a primary school, 7.7km to a secondary school, 6.4km to a health facility, 3.4km to a shopping centre or market, and 4.3km to a permanent water point
- Income and Expenditure: In good (normal) years, almost half (45%) of the respondents said they earn between Ksh1500 and 5000 per month, while another 32% make between Ksh5000-10000. Crucially, in bad years, most drop to below the region's poverty line of about Ksh1500 (54%), while only a third manage Ksh1500-5000
- General knowledge about Environment and REDD: In terms of the perceived relationship between environmental protection and livelihoods, most (84%) of the respondents thought it was bad. This was predominantly related to conflicts with elephants damaging crops, property or humans; a few mentioned livestock predation and other wildlife conflicts (e.g., baboons). Although 75% of the respondents said they had heard about the REDD carbon project, a majority (78%) of them said it had had no effect to them. Crucially, 17% stated that it had effected, or feared it would affect, their access to forest-related products.



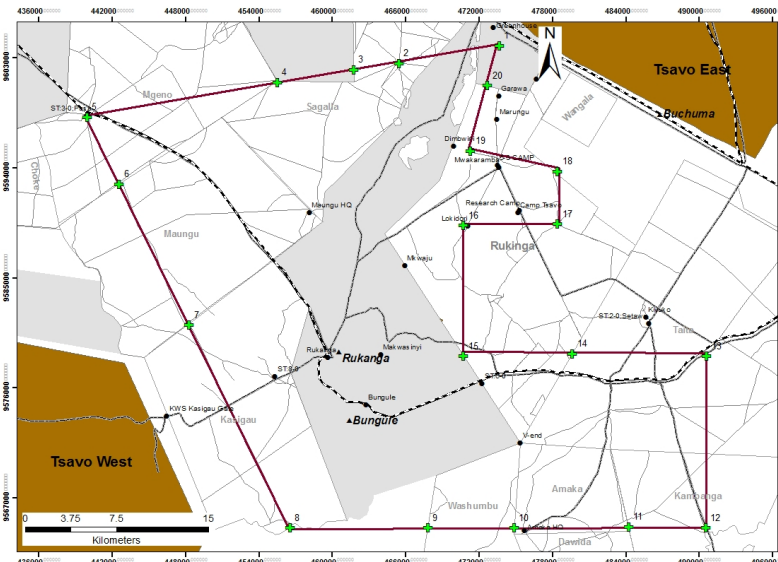
Households where the Social Impact Assessment questionnaire was administered for the Kasigau Corridor REDD Project in 2012

2.2.5.9 Aerial Transect

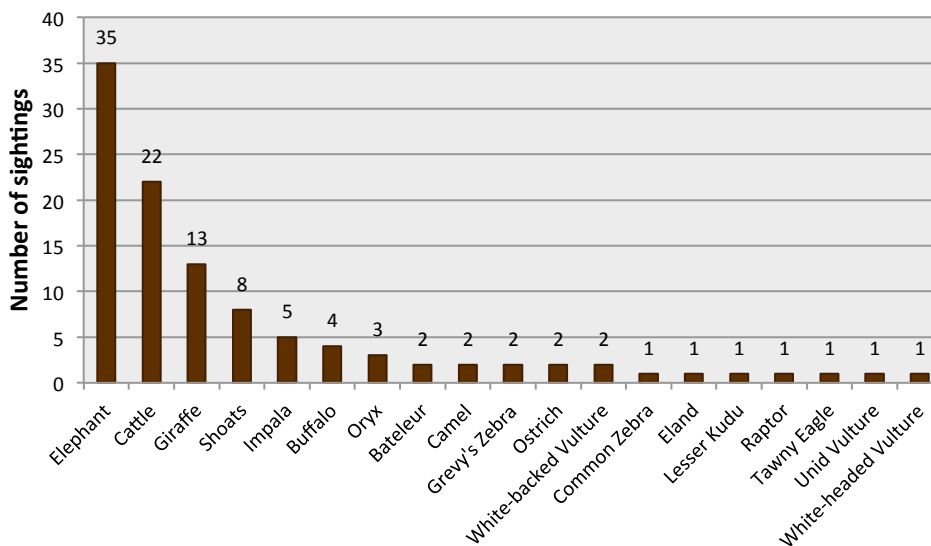
In October 2012, following a few trial tests, we conducted our first proper aerial transect from a gyrocopter. This is a 180km transect line traversing the entire Project Area (See figure below) which takes approximately 2hrs to complete. This will be conducted at least once every two months for the coming year monitoring both wildlife as well as other incidences such as livestock,

charcoaling activities, poaching etc.

Two transect-runs were completed in October and December 2012 from which a total of 160 entries were made: 79 species, 56 incidences, 17 bomas with livestock; the rest were waterholes which we monitor the water-levels. Elephant was the most commonly encountered species (including, an exceptional group of about 120 individuals with 20 juveniles in Mgeno Ranch), followed by cattle and giraffe (see figure below). Other species of interest included Grevy's Zebra and the rarely seen White-headed Vulture.



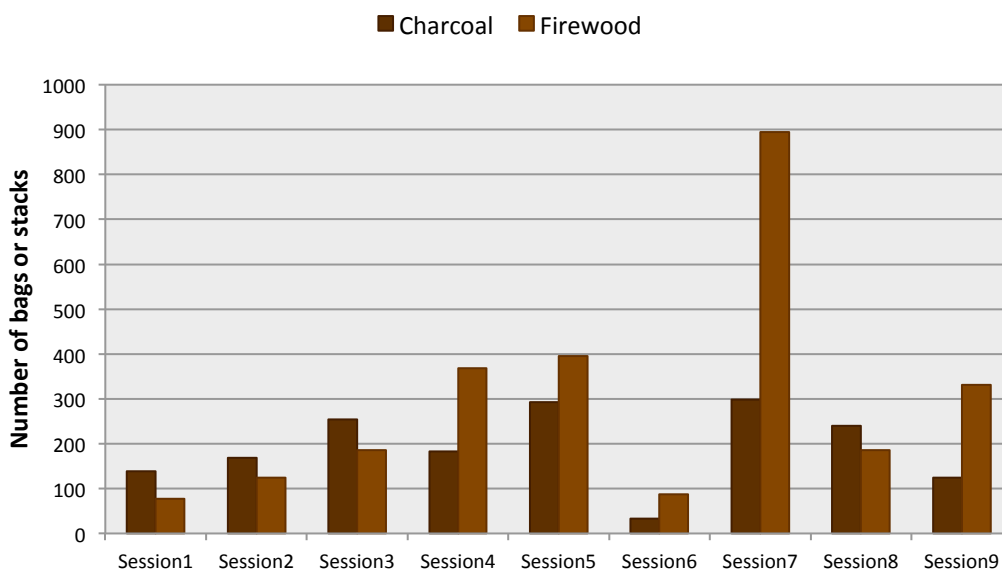
The permanent aerial transect in the Kasigau Corridor project area, mainly covering Phase I & II



Total number of encounters of all species (including livestock) seen during aerial transect counts in October and December 2012

2.2.5.10 Charcoal and Firewood Monitoring

Since February 2012, we have been conducting monthly counts of the amount of fuel wood along the Nairobi-Mombasa Highway along the section that touches our Project Area i.e., Voi town to McKinnon Road town, a distance of about 63km. Over nine sampling sessions, a total of 332 incidences were encountered, 196 of which were charcoal and 136 firewood. There was an average of 21 and 15 charcoal and firewood encounters along the transect, respectively per session. Over the nine sessions, there was a mean of 192 charcoal bags and 294 firewood stacks along the 63km stretch; this would be slightly higher if the July session (Session 6) which had unusually few records is omitted (see figure below).



Number of charcoal bags and firewood stacks counted along the Nairobi-Mombasa Highway between Voi and McKinnon Road in 2012

2.2.5.11 Charcoal Traders Survey

In 2012, we also conducted a short survey of the charcoal and firewood traders along the stretch of the road from Voi to McKinnon Road. This was meant to complement the charcoal and firewood monitoring above by understanding the people behind the trade in this area as well as the business itself, key drivers, and potential alternatives. These data are currently being analysed. The questionnaire used focused on five key areas besides the preamble where the interviewers introduced themselves and obtained consent:

- i. Basic household information: including household size, ethnicity, age and other income sources
- ii. Buying price: this included whether they were predominantly primary or secondary producers, plus the costs of acquiring a bag of charcoal or stack of firewood. This also included a question on the commonest and/or most preferred trees, if they have changed over the years, and how this impacts on prices
- iii. Retailing price: this was about the prices they sold their charcoal or firewood at, and what

influenced this

- iv. Sales: was about the numbers moved and how these change over the course of the year or any changes in the medium term
- v. Final general issues: these included sources of the fuelwood; their major customers; and general feelings about the business – why they do it and any alternative that they would prefer/accept.

2.2.5.12 Amara Radio Survey

Wildlife Works was also involved in this short radio listening survey in collaboration with Amara Conservation Group, designed to establish both what various people in the project area like to listen to at the moment, and why, and what they would be looking for in a new station. Although not a Wildlife Works initiative, it was deemed strategic to get involved due to the potential synergies, both for spreading the REDD-carbon message as well as other key information e.g., weather-related forecasts, which our household survey above showed to be lacking. Some of the knowledge gained from this study, e.g., preferred means of communication would also be directly useful for Wildlife Works' Community Liaison teams in designing modes of information dissemination.

A total of 108 questionnaires were administered across the five project locations within which the Kasigau Corridor REDD Project Area. Within each Location, 2 shopping centres were selected, within which 4 villages were selected. Some highlights included:

- Best qualities of a new radio station: Three general themes that stood out as best qualities were: (i) candidness and open discussions; (ii) a local touch (employment, local language and local issues); and (iii) a good signal or wide coverage). These desired qualities were similar across different age groups and sexes
- Preferred programmes in the new station: Local news topped the list of the programmes that the respondents would like to listen to in the new station, followed by good music and (environment) conservation issues. Advice programmes and religious matters completed the top-five of preferred programmes
- Best modes of presentation: When asked which of the four modes of presentation they preferred the most to deal with difficult matters, a majority mentioned calling-in as the most preferred mode; expert talking and comedy programmes made up most of the other responses. These preferences did not vary by age or gender.

2.2.6 Community Wildlife Scouts

Wildlife Works is continuing to fund eight CWSs in Marungu location and CWSs in Kasigau location. The locational Community Based Organisations (CBO) primarily manage CWSs. At this time, the CBOs in the Mwachabo, Sagalla and Mwatate locations do not have the capacity to manage new CWS recruits. However, Wildlife Works will be working with the CBOs to build their capacity to recruit similar numbers of CWS in these locations.

2.2.7 Kasigau Development Trust (KDT)

Wildlife Works contributes 30,000 Ksh a month to cover salaries for five Community Wildlife Scouts. As with MHCA, there has been an increased level of input in order to build capacity in the

Community Based Organisation through training days and workshops. KDT has started administering water projects and construction projects in the Kasigau Location and has awarded further educational bursaries through the Wildlife Works Carbon Trust.

2.2.8 REDD Carbon Inventory Monitoring

As per VM0009 and the VCS Project Description (PD), 20% of the 429 plots have been sampled for yearly monitoring of carbon by Wildlife Works' team of 13 plot samplers.

As per VM0009 and the VCS Project Description (PD), 20% of the 429 plots have been sampled for yearly monitoring of carbon by Wildlife Works' team of 16 plot samplers. The teams have also worked on the Leakage and Quality Control plots.

2.2.9 Ecotourism Projects

There are no major updates to the Ecotourism projects as of the current monitoring period.

2.2.10 School Construction and Bursary Scheme

After the successful distribution of bursaries to over 700 bright pupils, double orphans and vulnerable students in the first months of 2012, all Locational Carbon Committees took the decision to allocate between 40-50% of the next income to bursaries. In September 2012, 26 students from the 5 project locations were chosen by the bursary committees to receive their first installment of tuition for universities, colleges and other further education institutions. As before, the bursary money has gone directly to the relevant institution to ensure transparency in the process.

During the monitoring period, the LCCs and Wildlife Works Carbon Trust approved five construction projects in schools. In Kasigau, Moi Secondary School received 50 beds, lockers and chairs fabricated in the region and in Mwachabo, the construction of a new classroom was completed at Mngama Primary School. In Mwatate, construction started on a new classroom at both Mwemba Primary School and Mwatate Secondary School. Additionally in Mwatate, construction is almost complete on a roof water-catchment at Maili Kumi Primary School.

2.2.11 Group Ranch Office Renovations / Construction

Further renovations are planned at one group ranch, with construction beginning shortly, but there were no further developments during the monitoring period.

2.2.12 Eco-Charcoal Production Facility

Based on the success of Wildlife Works Eco-Charcoal project during the last monitoring period (m2), WWC have decided to scale-up the efforts into a mechanized production system, including a production center at Mackinnon Road, just outside the southern edge of the project area. This decision was made in an effort to enhance and amplify the positive outcomes described in the original project documents as well as those observed from the test plots and pilot studies. Specifically, the expected outcomes are to enhance the role of alternative livelihood creation and the relief of pressure on local forest resources for providing fuel in the form of "bush charcoal". During the current monitoring period (m3), and with the up-scaling, the eco-charcoal project has

encountered some significant challenges. While the modus of collection of biomass will remain the same (i.e. harvesting the annual re-growth of hardwood shrubs and bushes and ensuring that regrowth is more significant than harvested biomass) the up-scaling has required that the project pass through a lengthy regulatory process, which has slowed production. Under the 2009 Charcoal Regulations, commercial charcoal production must be governed by a licensing agreement with the Kenya Forest Service (KFS). Additionally, the construction of a production center requires a full Environmental Impact Assessment Study Report, submitted to the National Environmental Management Authority (NEMA). The license to produce eco-charcoal from KFS is contingent on the results of the EIA Study Report and as of January 2013 NEMA have not yet released the results of the application allowing WWC to proceed with the construction. In the meantime, KFS remain tremendously supportive of the initiative and have expressed this in both written and verbal communiqués. WWC are confident that the successful resolution of this issue is forthcoming.

Concurrently, WWC continue to produce briquettes using the previous methods and maintain strong external institutional interest in the project. WWC believe that, with this continued interest, mainly by hotels and safari operators, that once WWC gain the regulatory licenses, the sustainability of the product will enhance the alternative livelihood creation in the area substantially while decreasing the pressure on unsustainable forest resource harvesting.

2.2.13 Project Product Sales and Marketing

Wildlife Works has recently successfully negotiated the purchase of a roadside plot of land, where a quality vending point for Kasigau Corridor products will be built. This will provide a point of sale for quality crafts and art produced in the project area.

Meanwhile, through a small shop at Camp Tsavo on Rukinga Ranch and private sales, we have managed to increase the numbers of baskets sold from the Kasigau community. Working with a volunteer, quality baskets are encouraged in a variety of sizes to cater for different tastes and needs, and these are detailed with leather by a local craftsman.

Describe how each project activity has achieved the expected community and biodiversity impacts, and any unexpected impacts not included in the project description, and their relevance to achieving the project's objectives (see G3.2).

Wildlife Works has been engaged in the project area for over ten years, and unlike previous NGOs in the area, that typically set up projects, left the area, and pay sporadic visits to "see how things are going", Wildlife Works has had employed a hands-on approach since the very beginning of our presence in Kenya. The company employs now over 400 local people in a range of activities that has significantly expanded with carbon funding, and has reached full stride during this monitoring period (m₃) The activities are also listed above in Section 2.2, but are listed below as well:

Wildlife Works Sustainable Development Initiatives

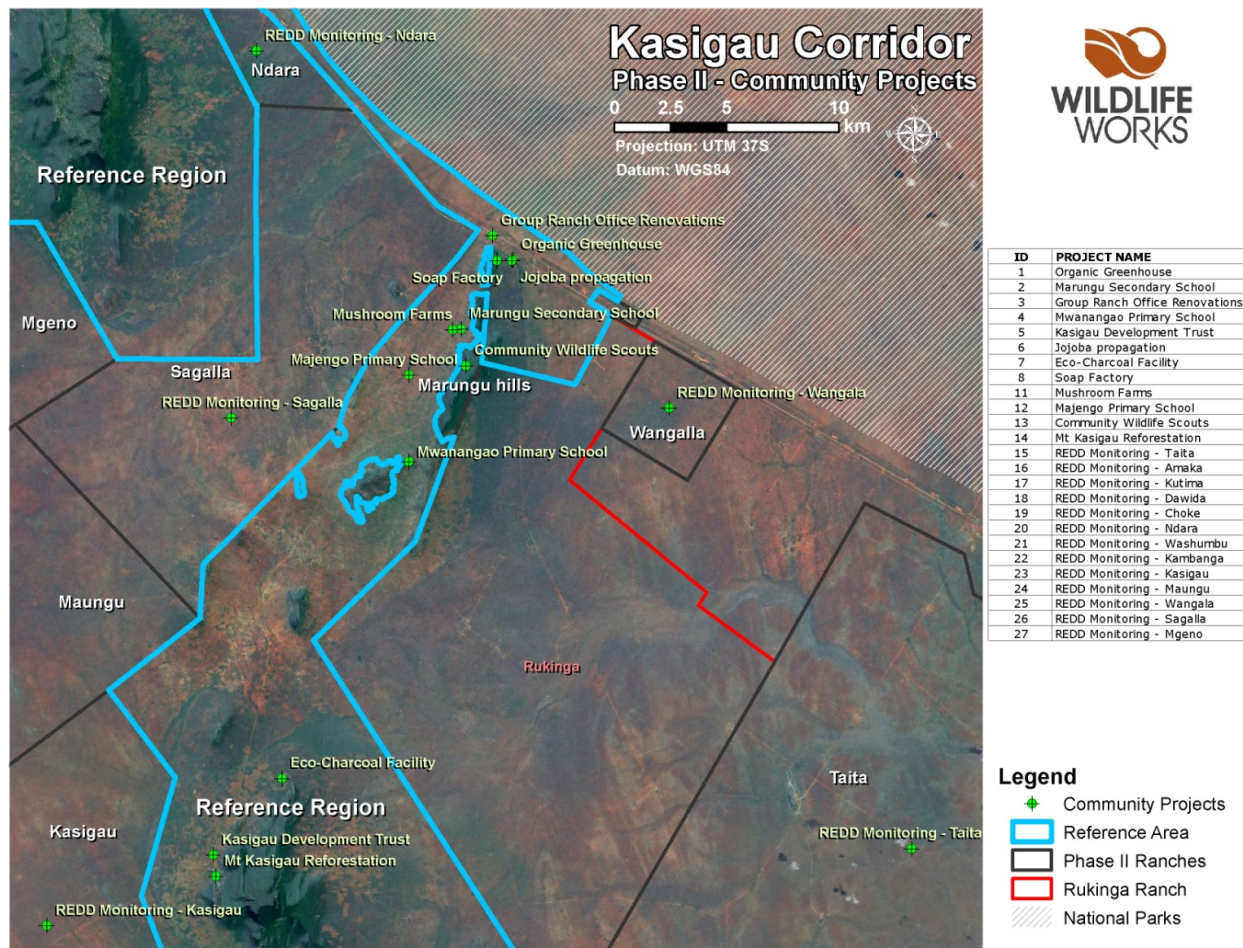
Wildlife Works implemented a wide range of sustainable development initiatives in the project area over the past ten years, and has started a new range of innovative co-benefits for the communities now that carbon funding has begun to flow. These initiatives collectively form the

basis of Wildlife Works' leakage mitigation strategy, and an implementation schedule for these project activities, with timelines and budgets is perpetually available to the auditor for perusal.

The following is a list of project activities that have been initiated during the first verification period and are continuing to thrive during this monitoring period: m₃: January 1st, 2012 to December 31st, 2012. These activities have been originally supported using carbon funds from Phase I (Rukungu) of this project and are now sustained with Phase II carbon proceeds. It should be noted that the bulk of carbon project activities were designed to be implemented at or near the commencement of the carbon project. This list, therefore, remains relatively constant throughout the project crediting period. Any additions to the list, in the form of newly initiated activities, or significant changes to existing activities will be described in this and all subsequent monitoring report/PIR documents.

- Development and support of Community Based Organizations (CBOs)
- Organic Greenhouse
- Financial Aid to Marungu Hill Conservancy Association
- Jojoba Propagation & Extension into the Community
- Ecotourism Projects, including Imani Women's Group Initiatives
- Reforestation of Mt. Kasigau
- Wildlife Works REDD Forest and Biodiversity Monitoring
- Community Wildlife Scouts
- Kasigau Development Trust (KDT)
- REDD Carbon Inventory Monitoring
- School Construction and Bursary Scheme
- Group Ranch Office Renovations / Construction
- Wildlife Works Eco-Charcoal Production Facility for the Kasigau Corridor REDD Project
- Wildlife Works REDD Project Product Sales and Marketing
- Expansion of Eco Factories and Corporate Partnerships for Retail Product Sales
- Marungu Hills Conservancy Project Proposal System
- Project Broad Environmental Impact, Household Income, Support for Conservation (Social Impact Assessment)
- Wildlife Works Newsletter

The following map shows the location of the projects implemented during the current verification period, m₃: January 1, 2012 through December 31, 2012:



Major project activities commenced in the current verification period

Full descriptions for all sustainable project activities were not included in this report for the sake of brevity, but can be found in the PDD, section G3.2.

2.3 Management of Risks to Project Benefits (G3)

Describe the implementation of measures to mitigate likely risks to the expected climate, community and biodiversity benefits during the project lifetime. Describe the implementation of measures to maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime (see G3.5 & G3.7).

Major identified risks that could have impact on the project are listed as follows:

- Change in legislation – government expropriating the land through compulsory purchase for development scheme; as the Government of Kenya is very supportive of our project, and has no recent history of expropriation of private conservation lands, this risk is very low. We will continue to seek international press for our project, as keeping it in the spotlight promotes awareness, and reminds the Government of the value it is adding to the country of Kenya.
- Income - risk carbon market revenues do not eventuate - or are less than adequate to - sustain the project financially; financial sustainability was modeled at extremely

conservative carbon offset sale values, and we have a very popular project with high potential value in the marketplace. The likelihood of financial insolvency is therefore deemed to be very low.

- Crop failure - substantial and repeated crop failure in surrounding communities could lead to increased poaching and use of forests for financial benefit; this is quite likely, and virtually all of our alternative economic development efforts are aimed at mitigating this risk.
- Invasion of cattle grazers due to famine in adjacent communities, or lack of grazing elsewhere - Any influx of cattle only affects the quantity of grass in the project area and leads to no significant change in carbon stock. Again, this is possible especially as Somalis have used land in this area to feed and water their cattle over the years, sometimes with permission and sometimes without. However, given increasing aridity in the area, we believe Somali cattle herders will be forced to look elsewhere for rangelands. We will be using carbon funding to increase ranger patrolling to better protect the project area from illegal incursion.
- Drought – drought is an increasing reality in this area of Kenya. We anticipate that climate change will worsen this problem throughout the project crediting period. Drought inherently introduces two additional risks:
 - Wildlife – drought places severe stress on wildlife in the project area. However, many of the species living in this ecosystem are extraordinarily drought-adapted, and have little problem surviving in extended periods without rain. For those that aren't, we plan to continue to provide emergency water sources at all the ranches in the project area, just as we have done in the past on Rukinga for Phase I. This issue is dealt with in much more detail in Section GL1.2 below.
 - Cash crops – drought will render the survival of cash crops, such as Jojoba and citrus trees more difficult. However, these high value cash crops will be planted sparingly and actually require much less water than a comparable maize field, and are able to survive higher temperatures, provided they receive some water. Farmers will be in a position to provide this to preserve the financial value of the crop under project funding.
- Fire – grass fires are common in the region due to intense heat and dry conditions. Naturally occurring fires are actually extremely rare; Our strategy is to continue educating the local population, especially the youth, about the dangers of burning fallows to improve grazing for their animals. Fires tend to burn the grasses and shrubs, but move very quickly, and typically don't kill the trees which have become grass-fire tolerant over the years.

Measures Taken to Enhance CCB Benefits Beyond Project Lifetime

The Kasigau Corridor REDD project is a component of a comprehensive conservation project being executed by Wildlife Works since 1998, and it is our intention to utilize carbon funding provided by the REDD project to make necessary investments in job creation and income generation activities to sustain financial stability into the foreseeable future. We have demonstrated the effective management of carbon proceeds throughout the first and second verification periods, achieving consecutive successful verifications, making it the most advanced REDD project validated under VCS and CCB. The project has executed carbon right agreements in the project area and received carbon proceeds through the sale of credits in the voluntary market as an operational REDD project; As a result, landowners now realize the value of their carbon. It is our intention to get these CRAs registered as full easements against the title deed of the land, although there is no perfected mechanism under Kenyan law as of yet. Our approach to transfer knowledge and our assistance in creating conservation institutions within the community speak to the efforts to ensure the CCB benefits extend indefinitely into the future.

It is Wildlife Works' intention to create a lasting culture of job creation and financial health in the project's sphere of influence. To that end, every job created thus far, and every job slated for creation in the future upon receipt of carbon funding is designed to last not only throughout the project crediting period, but in fact well beyond. Carbon revenues have, and will continue to change the face of these communities, and Wildlife Works has effectively raised awareness about the link between forest / wildlife protection and the availability of sustainable employment. We have made detailed job creation information available to the public, and included many of the metrics in the various versions of this document. For virtually each and every project activity, as one of the measures of success, we will be tracking the number of jobs created as a direct result of that activity. Employment information will be reported in each PIR/Monitoring report throughout the lifetime of the project. The types of job created by the Kasigau Corridor REDD project activities, whenever possible, are full-time, permanent positions, designed to last well beyond the crediting period.

2.4 Measures to Maintain High Conservation Values (G3)

Describe the implementation of specific measures to ensure the maintenance or enhancement of High Conservation Values attributes identified in the project zone (see G3.6).

The Kasigau Corridor REDD project holds a dryland forest biome that doubles up as an important migratory corridor and range extension area, especially for elephants and other wide-ranging wildlife such as big cats from the protected parts of the Tsavo Conservation Area. It contains several critically endangered wildlife including Grevy's Zebra and African Wild Dog, as well as others considered to be under threat globally (e.g., Lion, Cheetah, Elephant, several vultures, and the Secretary Bird). In addition, adjacent to the Kasigau Corridor REDD Project Area is the majestic Mt. Kasigau, an important site holding a threatened cloud forest ecosystem that provides basic services for wildlife in critical (dry) situations. It also provides critical and fundamental livelihood and cultural resources for local communities.

Wildlife Works' entire Kasigau REDD+ project set-up is designed to maintain these High Conservation Values (HCVs) within the Project Area and at Mt. Kasigau from four main fronts: security provision, habitat enhancement, community engagement and a commitment to long-term monitoring.

- 1. Security provision and enhancement:** 2012 saw a sharp increase in elephant poaching, both locally and globally. In an effort to counter this, Wildlife Works instituted several initiatives:
 - *Increased ranger force:* our ranger force was increased from 72 in January to 81 in December 2012, including 6 female rangers. In addition, we increased watchmen numbers from 14 to 21 during the same period in order to free up rangers for wildlife security matters. These rangers maintained daily foot and car patrols from 8 outposts distributed across the entire Project Area.
 - In addition to improving the conditions in 6 ranger outposts by supplying them with improved solar power supply, surveying sites for two mobile outposts (for easy deployment of units in areas of greatest need) was completed in 2012; they will initially be set up in Sagalla and Kutima ranches.
 - *Kenya Wildlife Service (KWS) collaboration:* because Wildlife Works rangers remain unarmed, the working relationship with the KWS Special Operations Teams was

strengthened in 2012, including providing accommodation for their teams at our key outpost (called 6-0) during times of heightened poaching activity.

- Lastly, whenever appropriate, Wildlife Works also engages like-minded conservationists in fighting the poaching menace, and in 2012 flew in tracker dogs from Mbirikani Ranch in the Chyulu Hills to track poachers who had murdered two KWS rangers.

2. Habitat enhancement in Project Area: Water being the critical limiting resource in this dryland ecosystem, we improved water availability for wildlife in the Project Area in 2012 by scooping 4 more waterholes in Rukinga Ranch (in addition to the four scooped in 2011). This effort will be strategically expanded into the other ranches immediately. 2012 also saw a pilot effort at improving vegetation cover by re-foresting areas previously cleared for cattle *bomas* (kraals). 7000 seedlings were planted in one such big boma in Rukinga ranch around Mwakaramba Tank (see picture). Survival will be closely monitored, evaluating the usefulness of a temporal solar-powered electric fence to keep away elephants, so as to inform future re-forestation efforts of such areas across the project area



- *Habitat enhancement in Mt Kasigau:* a total of 2,450 seedlings were planted in November 2012 around the mountain in neighbouring schools and farms in an effort to reforest the landscape and reduce pressure on the trees on the mountain. Sites planted included: Bungule Primary, Jora Primary, Rukanga Primary, Ngambenyi Primary, Moi High, Malewa Trust (private), Kiteghe Primary, Ian Pesa (private), Makwasinyi Primary and Kasigau Girls. Survival will be monitored in 2013.

3. Community engagement: this took place on both the local and international fronts:

- Locally, other than community outreach efforts of the Community Liaison team at Wildlife Works, in an effort to reduce human-wildlife conflict, one community – Sasenyi – was provided with deterrents (e.g., bright torches) and food at the height of elephant crop-raiding to help them stay outside at night to repel elephants.
- Internationally, in 2012, Wildlife Works hosted and supported the filming of an anti-poaching documentary aptly named **Ivory Wars**. This exciting documentary highlights the plight of the African Elephant, the intricacies of the trade and dangers facing those assigned to protect them. It was shot in Rukinga Ranch as a three-part series set to be aired in 2013 on a major cable network. To further increase awareness, we set up, and currently maintain, an anti-poaching blog on our website.

4. Entrenching monitoring: the detailed biodiversity and social monitoring activities (outlined in 2.2.4) illustrate Wildlife Works' efforts to monitor both wildlife and vegetation in and around Mt Kasigau, including foot, car and aerial surveys and camera traps. To backstop these efforts, a fully-functional Research Camp was completed and furnished inside Rukinga Ranch in 2012. It currently holds residential houses for the Biodiversity and Social Monitoring staff and functional office complete with internet and power options as well as basic GIS capability (see photo above). This compound will be expanded to house a functional campsite and extra accommodation for visiting researchers. Wildlife Works supports a long-term view of entrenching the monitoring and research components that will support implementation of the REDD programme.



5. Donation to Bird conservation: Within the Reference Area of the Kasigau Corridor REDD project lie the Taita Hills, whose indigenous forests hold globally important biodiversity (as part of the Eastern Arc Mountains Hotspot). They are recognised as an Important Bird Area in Kenya, due to the presence of the two Critically Endangered bird species: the Taita Thrush and Taita Apalis. In an effort to aid in the conservation of these two important species, Wildlife Works contributed Ksh 23,1800 (USD 2,800) in 2012 for their monitoring in the six small forest fragments in which they continue to subsist. This was completed under the auspices of BirdLife International's *Species Guardian initiative*. Dr. Mwangi Githiru, Wildlife Works' Director for Biodiversity and Social Monitoring is the 'Species Guardian' for both species (http://www.birdlife.org/extinction/pdfs/Taita_spp_Guardian_Action_Update.pdf).

2.5 Project Financing (G3 & G4)

Describe how financial mechanisms have provided an adequate flow of funds for project implementation and to achieve the anticipated climate, community and biodiversity benefits. Document the financial health of the implementing organization(s) (see G3.11 & G4.7).

Project Financial Support

Wildlife Works is responsible for project implementation and support with funding coming from successful sale of credits from Phase I and Phase II of the Project. Both look-back historic financials to the project start, and forecasts that include the carbon revenues are available for perusal. This information is commercially sensitive and will be shared with auditors at the site visit upon request. All costs associated with carbon inventories and development of project design documents have been met by Wildlife Works.

We have also made available a detailed spreadsheet of the first two years cash flow for the project, indicating there will be a large surplus of funds at the end of year 2, and showing the steady state finances for a full year of the project from 2012 and onwards. The revenues in the cash flow are based on actual transactions to sell pre-certified carbon credits that closed in November 2009 and September 2010. There is therefore little uncertainty about the cash flow for this period.

This cash flow matches the project activity implementation schedule. To support this cash flow document, we have made available the following documents, which demonstrate our knowledge of the capital expenditure costs needed to accomplish the various project activities we have committed to in the implementation schedule;

1. Factory Addition Cell 2 Cost - EcoFactory Expansion Costing for Dye and Screen Print House.
2. Wildlife Works Shade House Costing – Provides cost of building an additional shade house at Rukinga and also the cost of each of the 10 community nurseries we will build in the community villages.
3. Bungule Guard Post Costing – provides the cost of adding a new ranger station to monitor the southeastern boundary of the project area.
4. Typical Classroom Budget – budget indicating that our \$30K / yr school construction maintenance budget will be adequate to build 3 new classrooms each year if so desired by the community.

Financial Health of Implementing Organizations

Wildlife Works, Carbon LLC. is a Delaware registered Limited Liability Corporation in good standing, majority owned by Wildlife Works, Inc. and Mike Korchinsky.

Wildlife Works, Inc. is a US registered corporation and, as such, is governed by the corporation laws of California which ensure that, at all times, the company remain financially solvent and able to meet its liabilities.

The company is owned by independent shareholders of good standing and has a Board of Directors of 4 members. It is sufficiently capitalized through its Joint Venture with Wildlife Works Carbon LLC to ensure completion of the project. Wildlife Works Carbon LLC has also received several high-profile investments from international corporations who support Wildlife Works' mission and believe wholly in its cause. Such deals include multi-million dollar investments from Allianz SE and PPR as well as advance purchases from BNP Paribas, Nedbank SA and PPR Home. For more information on the details of these investments and pledges, visit the following links:

[PPR Home Invests in Wildlife Works](#)
[Wildlife Works / Nedbank Agreement](#)
[BNP Paribas Invests in Wildlife Works](#)
[Allianz Invests in Wildlife Works](#)

Please see the CCB PDD, Section G3.11 for further details on project finance. All project financial information is held at the Carbon Office in Rukinga, Kenya. Wildlife Works also employs a full-time bookkeeper and accountant who is assigned to both the Phase I and Phase II projects.

2.6 Employment Opportunities and Worker Safety (G4)

Describe training provided for the project's employees and relevant people from the communities. Describe how people from the communities have been given equal employment opportunities. Describe the implementation of measures to inform workers of risks to their safety and to minimize such risks (see G4.3-4 & G4.6).

Capacity Building

Wildlife Works has always provided training for its employees in Kenya, starting from the early days when we built a factory and taught local women how to sew from first principles. We have trained local wildlife rangers, factory workers and supervisors, organic greenhouse workers, personnel managers, forest inventory specialists (plot sampling teams). We have provided the validator with training programs for Wildlife Works rangers, factory workers and greenhouse workers. The most recent specialized hires have been for the Biodiversity Monitoring Team, which involves geo-location of animal sightings, detailed inventory management and reporting and skilled field techniques.

As mentioned above in section 2.2.1, Wildlife Works has supported the development of community based organizations, whose aim it is to win and manage carbon-funded activities. The CBOs are trained in grant-writing and management, project management, accounting and other key skills pertinent to developing the communities in the area. The goal is for these CBOs to eventually become 100% self-sustaining, but at their request they are currently under the tutelage and financial support of Wildlife Works. Without carbon funding, the CBOs would not have been implemented, and Wildlife Works is proud to be able to present the communities in the sphere of influence of the carbon project with the capacity to manage their funds accordingly.

Employee Safety

Wildlife Works is committed to worker safety and has a very strong track record of safety. In the

field of wildlife management it is impossible to remove all risks, as our Rangers walk every day in the bush that is now full of wild animals. We are proud to say that the training and supervision we provide them together with guidance on how to avoid conflict with armed poachers, or marauding elephants has lead to a clean record, of no on the job fatalities or even serious injuries in over ten years. We self insure our medical plan so employees and their families are fully covered for any illness or injury they incur whether on the job or not.

Hazards associated with jobs performed are as follows;

| Hazard | Mitigation |
|---------------------------------|---|
| <u>Sewing Factory Employees</u> | All risks are identified in training manual provided to Validator along with how to avoid risk. |
| Needle sticking fingers | Finger guards are provided, sharps bin is provided for safe disposal of needles that are replaced |
| Inhalation of fibers | Face masks are provided |
| Fire | Fire exits clearly marked, no smoking in factory, fire fighting stations in factory, three doors out of facility |
| <u>Greenhouse Employees</u> | All risks are identified in training manual provided to Validator along with how to avoid risk. |
| Exposure to Chemicals | Only non-toxic chemical free organic materials used in Greenhouse therefore no toxic or caustic chemical exposure. Rubber gloves and protective eyegear provided if needed. |
| Inhalation Hazard | Only non-toxic chemical free organic materials used in Greenhouse therefore no toxic or caustic chemical exposure. Masks provided during spraying of organic pesticides. |
| Temperature Extremes | Frequent breaks and availability of water during hot conditions. Shade cloth covering of work area. |
| Slip, Trip and Fall | Ensure work is clear of all slip or trip hazards before work begins. |
| Lifting | Use proper lifting techniques, always get help for lifting heavy objects. |

| | |
|--|--|
| Cuts | Wear gloves, keep tools sharp and always be aware of the proximity of fingers to blades when making cuts. |
| Electric Shock | There is no electricity at all at the Organic Greenhouse. |
| Pinching and Crushing Points | Wear gloves, keep tools sharp and always be aware of the proximity of fingers to blades when making cuts. |
| Inclement/Adverse Weather | Organic Greenhouse located adjacent to Ranger station so employees can retreat indoors in adverse weather. |
| Snakes, animals | Keep greenhouse floor clear of organic debris for clear visibility, always be aware of the possibility for snakes, spiders, scorpions to be present, and do not approach or touch if seen. |
| <u>Wildlife Works Rangers</u> | All risks are identified in Ranger training manual provided to Validator along with how to avoid risk. |
| Elephants, Lions, Buffaloes, Snakes etc. | Training is given in how to approach, identify and stay a safe distance from potentially dangerous animals. First Aid training is provided in cuts, limb fractures, snake bites, dehydration and other possible health risks. Team design of 6 minimizes risk. |
| Poachers | Training is given in how to track, and peacefully apprehend poachers if possible and how to avoid confrontation with armed and aggressive poachers. Team design of 6 minimizes risk. |
| Sun Exposure, thorns etc. | Rangers all provided with uniforms with long sleeves and long trousers and brimmed hats and boots. Lots of drinking water available at Ranger posts. |
| <u>WW/Tsavo Soap Factory</u> | All risks are identified in Soap Factory Safety training manual provided to |

Validator along with how to avoid risk.

Lye

Comprehensive instructions are given on how to mix lye safely, and goggles and gloves are provided for employees.

Oils, Gas heating

Vegetable oils are only heated to 50-55° C, so are only hand warm. Gas stove is simple self igniting LPG camp stove.

2.7 Stakeholders (G3)

Describe how communities and other stakeholders potentially affected by the project activities have been involved in project design through effective consultation, and how their submission of comments on this monitoring & implementation report to the Climate, Community & Biodiversity Alliance (CCBA) has been facilitated during the CCBA public comment period. Describe the implementation of the formal process for handling conflicts and grievances that arise during project planning and implementation (see G3.8-10).

Stakeholder Engagement

Please refer to sections G3.8-G3.10 in the CCB PDD for details of Wildlife Works' commitment to stakeholder engagement and consultation.

Public Comment Period

The Kasigau REDD Project, Phase II - The Community Ranches Monitoring & Implementation Report (MR/PIR) was posted for public comment on the CCBA website (<http://www.climate-standards.org>) and it was open to comments for 30 days (January 25th to February 25th, 2013). The document was also made available to the public in hard copy during the public comment period, at our carbon offices in Rukinga, and at several other communities involved in Phase II, affording local stakeholders an opportunity to review the documents and to raise any issues.

The hours for the Carbon offices are 8:30 am to 4:45 pm Monday through Friday.

Grievance Policy and Process

Wildlife Works' Conflict Resolution Process has been formalized in a document called the "Wildlife Works Community Conflict Process" which has been provided to the validation auditors, and is available at the Carbon Office. Any comments that are raised which require adjustment of the document will be addressed promptly, and for the life of the project, we aim to continue our open door policy with members of the community. All comments and conflicts are documented for the life of the project, together with their resolution, which will typically involve mediation by the local administrative chief. We are familiar with this process throughout interaction with community for ten years, and we are committed to providing written responses within 30 days.

Wildlife Works' grievance policy was updated as a result of CL2 from last year's monitoring report (m₂):

Wildlife Works' open-door policy is always communicated to the project stakeholders through the

frequent community barazas (meetings) organized by the Community Liaison office for various goals. In future, we will enhance the grievance airing mechanism at Wildlife Works in two ways. First, in order to ensure that all stakeholders in the project area know and understand about Wildlife Works' open-door policy, we shall (i) hold quarterly Locational barazas specifically for providing project updates and providing a forum for airing grievances, and (ii) have a permanent insert into our quarterly Newsletter informing the readers of this policy and various avenues of airing grievances. In addition, besides being able to air grievances through the Locational barazas or through the Community Liaison or Carbon Offices, we are in the process of establishing Suggestion Boxes at the Chief's offices in the five locations for persons wishing to remain anonymous. We shall establish an inclusive and transparent mechanism for opening and dealing with any complaints dropped in the boxes. Lastly, Notice Boards are also in the process of being put up at the Chief's Offices where project updates shall be regularly posted for the entire community's access, because all have free access to the Chief's Office.

This update was successful in satisfying the audit clarification, and it was closed henceforth.

3 LEGAL STATUS

3.1 Compliance with Laws, Statutes, Property Rights and Other Regulatory Frameworks (G4 & G5)

Identify and demonstrate compliance of the project with all and any relevant local, regional and national laws, statutes and regulatory frameworks.

Include a list of all relevant laws and regulations relating to worker's rights and all applicable international treaties and agreements and, where relevant, demonstrate how compliance was achieved. Provide evidence that the project has ongoing approval from the appropriate formal and/or traditional authorities, as appropriate (see G4.5 & G5.1-2).

Wildlife Works operates within all local and national employment laws, and has been doing so for over 14 years in the country of Kenya. Like any business, Wildlife Works is subject to periodic audit by the Government Employment Officer. We have always passed these inspections, whether it be from local officials or International agencies such as Verite.

The laws that are relevant to this project are as follows:

EMPLOYMENT LAWS.

Export Processing Zone's Act (Cap. 547)

As an Export Processing Zone Company we are exempted from the standard Labor Laws of Kenya, and instead must conform to those laws that that have been deemed applicable to (General Provisions of the Employment Act (Cap 226-229) or amended for EPZs as covered by the Export Processing Zone's Act (Cap. 547).

National Health Insurance Fund

N.H.I.F was established on 12th July 1966 by an act of parliament Cap 255 of the Laws of Kenya, and become a state corporation on 15th February 1999 through an act of Parliament no.9 of 1998. The objective of its establishment is to enable majority of Kenyans to access healthcare services

at supplemented costs. Contribution to the fund are compulsory for all persons whose income is Ksh.1000/= and above. We physically go to the NHIF offices in Voi monthly to submit our monthly payroll and have the NHIF amount calculated by them, we pay and they give us a receipt. We are also subject to random checks with the NHIF inspector visiting our facility without notice and inspecting our books. We have never been found in violation of this act.

The National Social Security Fund act ,Cap 258, is a government fund established by the National Social Security Fund Act,1965 ,For the benefit of the Members. It is a compulsory savings scheme into which the employer pays a statutory contribution for every employee who is a member. We physically go to the NSSF offices in Voi monthly to submit our monthly payroll on a NSSF form, and we pay the monthly dues. We are subject to strict audit checks by the NSSF inspector who visits our facility every two months and on passing the audit provides us with an official letter indicating we are in compliance. We have never been found in violation of this act.

Pay As you Earn (P.A.Y.E)

Section 37 of the Income Tax act.

The “Pay As You EARN” method of deducting income tax from salaries and wages applies to weekly wages, monthly salaries, annual salaries, bonuses, commissions and directors fees (Whether the director is resident or non-resident). We are required to go to the bank (Kenya Commercial Bank = KCB) on a monthly bases to pay the tax withheld from our employees’ wages and salaries; the bank takes one folio from our KRA receipt book, and stamps the other two folios, one of which we then take to the KRA office in Voi and provide it to them.

The Factories and Other Places of Work Act

The Factories Act (Cap. 514) deals with the health, safety and welfare of an employee who works in a factory or other place of work. We have never been audited by this department in the Government as it is very small and covers the whole country, however we have good reason to believe we are in full compliance with this act as a result of a third party audit of our factory and operations performed by the independent NGO Verite, from the USA.

FairTrade

As of 2012, the 3 Wildlife Works ecoFactories are now certified Fairtrade.

The Work Injury Benefits Act (Cap. 236) provides for methods through which an employee who is injured when on duty may be compensated by the employer. We are required to maintain private insurance to cover our responsibility under this act.

Regulation of Wages and Conditions of Employment Act (Cap. 229)

This act sets the conditions of work and the minimum wage guidelines. The EPZ Act supersedes this act with regard to minimum wage and in fact the EPZ minimum wage guidelines are slightly higher than the National Employment Act guidelines.

Labor Relations Act, 2007 (Acts No. 14)

This is the new version of the old Trade Unions Act and the Trade Disputes Act, revised to harmonize the old Trade Acts with Kenya’s recent ratification of many of the elements of the ILO Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87). We are required to provide our workers with the freedom of association. We are required to honor a dispute process as laid out in the act. We currently have no collective bargaining agreement in place nor are we required to do so. To the best of our knowledge none of our employees belong

to any Trade Unions, and it is our belief that our employees do not at this time feel that the benefits of membership outweigh the costs of dues which are born solely by them under the Act. We have never had a dispute with any employee that resulted in any collective action, lock out etc. and we have no disputes at all at this time, and we believe that we are in full compliance with this Act. To ensure that employees are aware of their rights under the Act, we have added the following language to all employment contracts issued by Wildlife Works;

“Wildlife Works, EPZ Ltd. acknowledges the importance of the recently enacted Labor Relations Act 2007, and therefore we wish to inform you that you are entitled to Freedom of Association, and specifically to join the Kenya Textile Workers Union(KTWU) should you so choose. Should you choose to join the KTWU, all membership dues and agency fees for the Union will be payable directly by you.”

3.2 Evidence of Right of Use (G5)

Provide evidence of right of use with respect to the GHG emission reductions and removals (see G5.6)

At present, it is not common practice to register a carbon easement against title in Kenya, although the Environment Act did envisage such a concept, but not explicitly. Wildlife Works has committed written approval from the landowners that should such a possibility exist, they would cooperate fully with Wildlife Works in ensuring the successful registration. As it stands, Wildlife Works has conducted a full Free, Prior and Informed Consent campaign with the Ranch Owners (see CCB PDD Section 5.3).

3.3 Emissions Trading Programs and Other Binding Limits (CL1)

Where applicable, demonstrate that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions (see CL1.5).

Kenya, at the present time, has no nationally instated emissions cap, and it is likely that as a poor country with very low historic emissions, it will not be subject to one in the near future. Wildlife Works is in close contact with the Kenya Forest Service, the focal point for REDD within the Kenyan Government, and we expect no issues with double counting even when and if Kenya formalizes a jurisdictional / nested approach. We are currently working with the Government of Kenya (GoK) to integrate the Kasigau Corridor projects into the first Jurisdictional program in Kenya, which will be focused in the Coast Conservancy area (formerly the Coast Province).

3.4 Participation under Other GHG Programs (CL1)

Indicate whether the project has been registered, or is seeking registration under any other GHG programs. Where the project has been registered under any other GHG program, provide the registration number and details (see CL1.5).

The Kasigau Corridor REDD Project Phase II is not registered with another GHG program, nor is it seeking registration with one, with the exception of the inclusion of Kenya’s jurisdiction / nested approach. As Wildlife Works will be instrumental in the development Kenya’s JNRI Program, the

Kasigau Projects will be the first projects to participate in the jurisdictional program, and it will therefore be ensured that there are no conflicts with any existing or other GHG programs. In fact, Wildlife Works will be pushing for VCS' JNR program to be implemented, and any VCS project is guaranteed not to conflict with their own JNRI system.

3.5 Other Forms of Environmental Credit (CL1)

Demonstrate that the project neither has nor intends to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program, or that any such credit has been or will be cancelled from the relevant program (see CL1.5).

The Kasigau Corridor REDD Project Phase II neither has, nor intends to generate any other form of GHG-related environmental or GHG emission reductions or removals claimed under the VCS program.

3.6 Projects Rejected by Other GHG Programs (CL1)

Indicate whether the project has been rejected by any other GHG programs. Where the project has been rejected, provide the relevant information (see CL1.5).

The Kasigau Corridor REDD Project Phase II has, and we don't believe ever will, be rejected from any other GHG program, or any GHG program at all, for that matter.

3.7 Respect for Rights and No Involuntary Relocation (G5)

Demonstrate that free, prior and informed consent has been obtained from those whose rights may be affected by project activities. Demonstrate that the project has not required the involuntary relocation of people or of the activities important for the livelihoods and culture of the communities (see G5.3-4).

Nobody currently or historically lives on the project area; the project does not involve the relocation of any people. The project will never re-locate any people that could conceivably encroach on the project area lands, although we actively prevent this from occurring. The reason for the "chunk" of land removed from the southeastern-most tip of the project is because there were some groups of families spilling onto the project land in that location. We immediately excised that land from the carbon project - within Kambanga ranch - and it is excluded from our protection and from carbon benefits, thus leaving the people who live there to go about their lives in peace. Please refer to the map of Phase II Project Boundaries for more detail.

3.8 Illegal Activities and Project Benefits (G5)

Identify any illegal activities that could affect the project's climate, community or biodiversity impacts and demonstrate that project benefits are not derived from illegal activities (see G5.5).

The illegal activities that may be conducted from time to time in the project area include bush meat snaring or torch and horn poaching of wild animals; chopping of hardwood trees for charcoal production and occasionally for building poles.

Wildlife Works has a long and successful track record of monitoring the project area, catching poachers and charcoal burners before they can do significant damage to the ecosystem, and dealing with the offenders using non-violent methods, all the while working closely with Kenyan government authorities. Neither the project, nor members of the community related to the project, benefit in any way from these illegal activities.

4 APPLICATION OF METHODOLOGY

4.1 Title and Reference of Methodology

Provide the title, reference and version number of the methodology(s) applied to the project.

The project utilizes VM0009 *Methodology for Avoided Mosaic Deforestation of Tropical Forests* V1.1, approved by the VCS for Sectoral scope 14 on 10 November 2011.

4.2 Deviations from the Monitoring Plan

Describe and justify any deviations from the monitoring plan in the project description.

The following deviations were listed in the previous VCS monitoring plan for M2, and will be listed here to carry forward every deviation made from the PD for the lifetime of the project. The deviations listed below were accepted during the m2 verification:

m₁ Deviations

There were no deviations in the first monitoring period

m₂ Deviations

In the first validation event of the Kasigau Corridor Phase II project we received a Change Action Request (CAR 1) requesting that an additional year of imagery be included in the CDM analysis. This increased the number of points in the analysis from 8,650 (the value listed in the PD) to 11,231. Due to this change, the value for U_DF changed to 0.0479. There have been no other major deviations from the the PD in general, section 13 Monitoring, or in the monitoring standard operating procedure documents: 'Standard Operating Procedure - Biomass' and 'Standard Operating Procedure - Soils'.

The plot sampling team has been expanded to 16 members, and the biomass monitoring team is now fully implemented and operational, with a manager, Mwangi Githiru, a Biomass Monitoring center and 3 full-time members as well as seasonal interviewers.

m₃ Deviations

There were no deviations in the third monitoring period

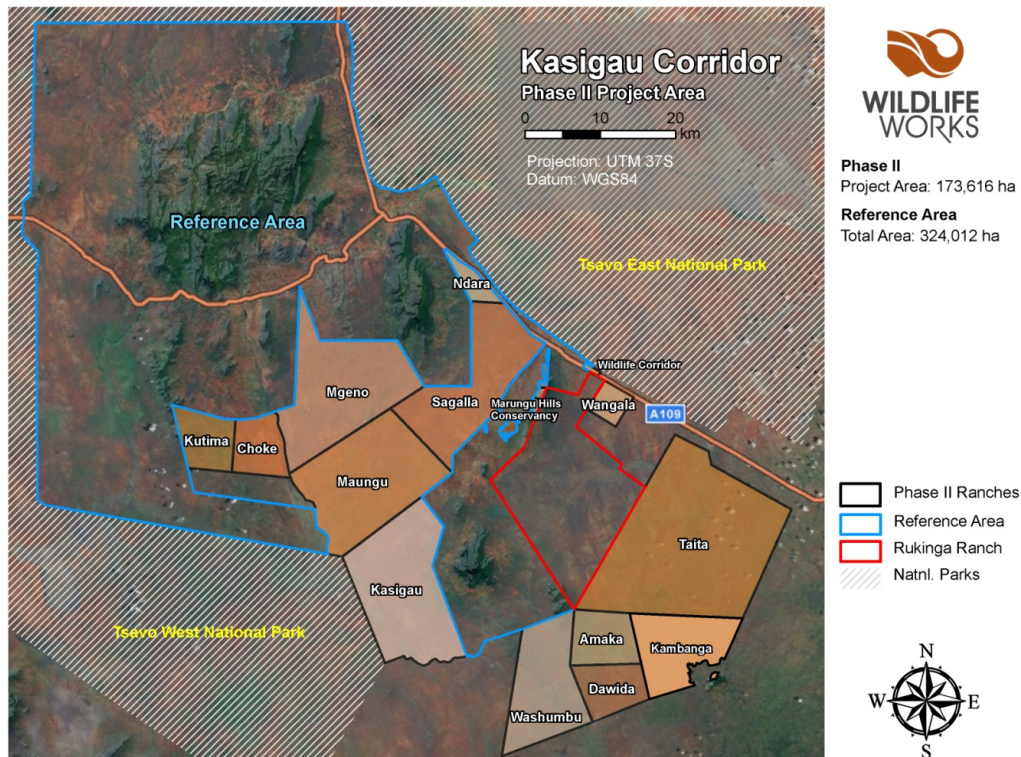
4.3 Project Boundary (G1)

Define the VCS project boundary and identify the relevant GHG sources, sinks and reservoirs for the project and baseline scenarios (including leakage if applicable).

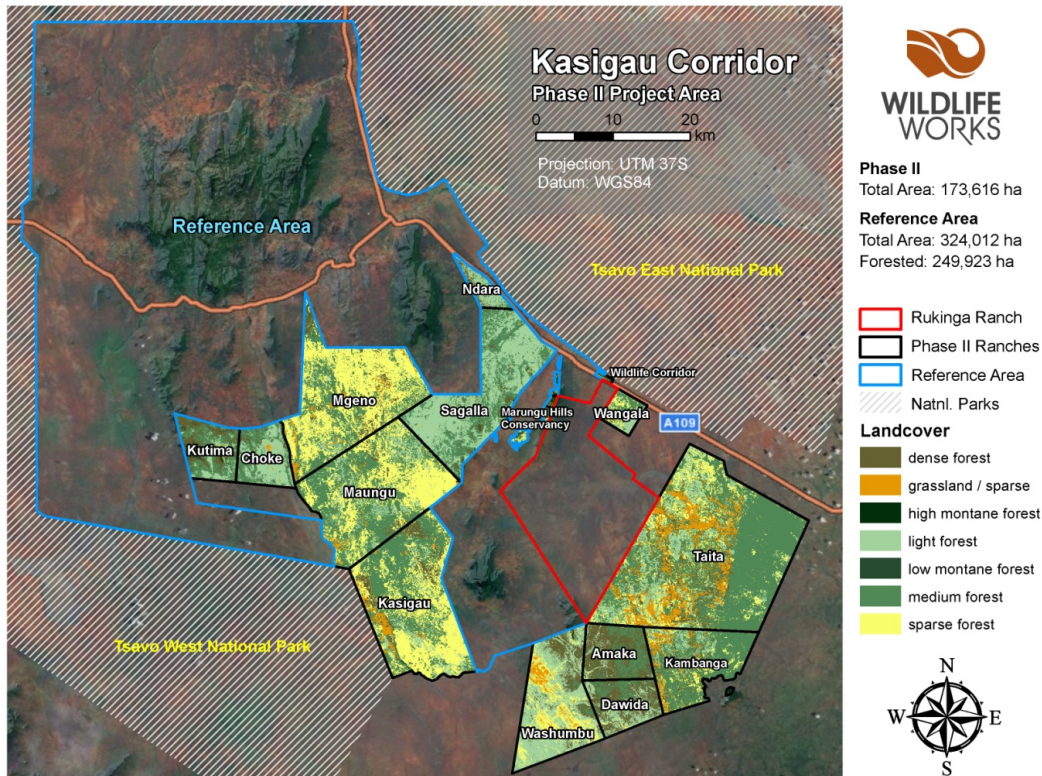
Kasigau Corridor Phase II - The Community Ranches

This Project Design Document (PDD) covers Phase II of the Kasigau Corridor Project, involving the forest conservation of 13 blocks of land owned by Indigenous Community Ownership Groups, each one of the thirteen blocks being owned by different legal entities formed years ago by the Communities and the Government of Kenya to hold legal title to the land. Additionally, the project area includes A Community Conservation Area (described below) and a Wildlife Corridor, both in the vein of the new culture of forest and wildlife conservation in the Tsavo area instituted by Wildlife Works.

The Phase II project area covers 169,741 hectares of dryland forest land. It conforms to the latest VCS definition of forest, with an average canopy cover of 34.6%, and mature tree height at 5-10m, and has been primary forest since historic times. A GIS database with canopy measurements for 5 Phase II ranches is available to the validators upon request.



The Kasigau Corridor REDD Project - Phase II Project Area and Reference Region Boundaries



Phase II Landcover Map, Classified from several Landsat 7 scenes, 2003-2005

The following table shows the landcover strata for Phase II and their respective areas. Strata sum to the total area for the project, 169,741.4 hectares.

| Stratum | Area (ha) |
|-----------------------------------|------------------|
| dense Acacia / Commiphora forest | 15,337.00 |
| medium Acacia / Commiphora forest | 52,273.92 |
| light Acacia / Commiphora forest | 47,346.60 |
| sparse Acacia / Commiphora forest | 44,211.34 |
| high montane forest | 298.44 |
| low montane forest | 581.15 |
| grassland / sparse shrubs | 9,692.96 |
| Total area: | 169,741.4 |

Landcover Strata area for the Phase II Project Area

For additional maps and detailed geographic information, please refer to Section 1.2 of this Document and the CCB PDD Section G1.1 / VCS PD Section 5.1.

The table below indicates the components that comprise the Phase II Project, including the 13 Group Ranches, the Wildlife Corridor and the Community Area all under protection. The components sum to the total project area.

| Phase II - Kasigau Corridor Areas | Area (ha) |
|-----------------------------------|-----------|
|-----------------------------------|-----------|

| | |
|-------------------------------------|------------------|
| Amaka Ranch | 5,998.00 |
| Choke Ranch | 5,076.00 |
| Dawida Ranch | 4,046.86 |
| Kambanga Ranch | 12,948.00 |
| Kasigau Ranch | 21,186.00 |
| Kutima Ranch | 5,076.00 |
| Maungu Ranch | 21,619.00 |
| Mgeno Ranch | 21,232.00 |
| Ndara Ranch | 1,834.77 |
| Sagalla Ranch | 17,402.00 |
| Taita Ranch | 35,612.00 |
| Wangala Ranch | 2,023.50 |
| Washumbu Ranch | 14,501.00 |
| Marungu Hills Community Area | 1,018.61 |
| Wildlife Corridor | 156.35 |
| | 169,741.4 |

Project Components- Community Ranches, Community Area and Wildlife Corridor

| Source | | Gas | Included? | Justification/Explanation |
|----------|--------------------------------------|------------------|-----------|-------------------------------------|
| Baseline | Above-ground Large Trees (AGLT) | CO ₂ | X | Major Baseline Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| | Below-ground Large Trees (BGLT) | CO ₂ | X | Major Baseline Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| | Above-ground Non-tree /shrubs (AGNT) | CO ₂ | X | Major Baseline Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| | Below-ground Non-tree /shrubs (BGNT) | CO ₂ | X | Major Baseline Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| Project | Above-ground Large Trees (AGLT) | CO ₂ | X | Major Project Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |

| Source | | Gas | Included? | Justification/Explanation |
|--------|--------------------------------------|------------------|-----------|------------------------------------|
| | | Other | | De minimis |
| | Below-ground Large Trees (BGLT) | CO ₂ | X | Major Project Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| | Above-ground Non-tree /shrubs (AGNT) | CO ₂ | X | Major Project Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |
| | Below-ground Non-tree /shrubs (BGNT) | CO ₂ | X | Major Project Carbon Pool Included |
| | | CH ₄ | | De minimis |
| | | N ₂ O | | De minimis |
| | | Other | | De minimis |

4.4 Baseline Scenario (G2)

Identify and justify the baseline scenario.

Include a description of how the most likely land use scenario associated with the baseline scenario would affect communities and biodiversity in the project zone (see G2.1 & G.2.4-5).

Unlike with many REDD projects, it was not difficult to identify the baseline scenario for this project: rapid deforestation due to unplanned slash and burn agricultural expansion by subsistence immigrants at the frontier of human expansion. Virtually all the conditions of the baseline were in place before the arrival of Wildlife Works. There is little need for speculation as to what would happen in the absence of the project if protection ceased, and the presentation of alternative livelihoods for the community wasn't continued along its successful pattern: the mosaic pattern of deforestation would (and has before the project) certainly expand into the project area.



Typical deforested area in the Kasigau Corridor reference area view from the ground

Aggressive cutting of trees (see picture below) for the production of unsustainable charcoal is also another source of land use in the area where a few benefit from the income to the detriment of the broader land area. This activity was widespread across the project area upon Wildlife Works' arrival on the scene, and is in fact a very serious problem throughout East Africa. The result of such practices is a thoroughly degraded forest. Because charcoal makers target the hardest wood (it makes better charcoal because it burns hotter and longer), only softwood is left, containing minimal carbon content. Therefore, illegal charcoal practices not only hurt the environment, but also lower carbon values and therefore potential benefits for carbon project stakeholders. The project has successfully quelled most of the illegal project activity and aims to keep up efforts to do so throughout the project lifetime.



Non-Sustainable Charcoal Kiln used to create "bush-charcoal"

4.5 Additionality (G2)

Demonstrate and assess the additionality of the project, undertaken in accordance with the applied methodology.

Within the Project Area, none of the proposed Project activities violate any law.

a) Identification of alternative land use scenarios

a. Continuation of the pre-project land use as community group cattle ranch:

Since the implementation of the REDD project in the Phase II project zone, the Project Proponent has spent a significant and unsustainable amount of money financing activities to attempt to protect the Phase II forests from destruction, including additional ranger patrols, patrol vehicle purchase, expanded community investments etc.. Those activities provide no significant sources of income from the land to offset the land protection costs. The ranch lands were being degraded prior to the project start date when the Project Owners could not afford significant protection, and the inability of the Project Proponent to continue to protect the forest in the absence of carbon funding is clear.

b. Land use in the ten years prior to Project start date:

Cattle Ranching - The current majority landowners of each of the ranches all acquired their respective interests in the 13 Community Ranches more than 10 years prior to the proposed Project Start Date. For most of the prior ten years, the owners of most of the ranches were leasing their land on a financially unsustainable basis to commercial Somali cattle ranchers, who frequently overloaded the land in violation of their lease and overgrazed the lands to the point of damage to the Dryland Forest. The area is too dry with no permanent water for sustainable cattle ranching, and there was predation by lions on the cattle which lead to poisoning of lions by the herders and other significant human wildlife conflicts.

Illegal Charcoal – in several of the ranches there were small scale illegal charcoal operations that provided a small income to the ranches but was significantly degrading the forest by taking out the best hardwoods.

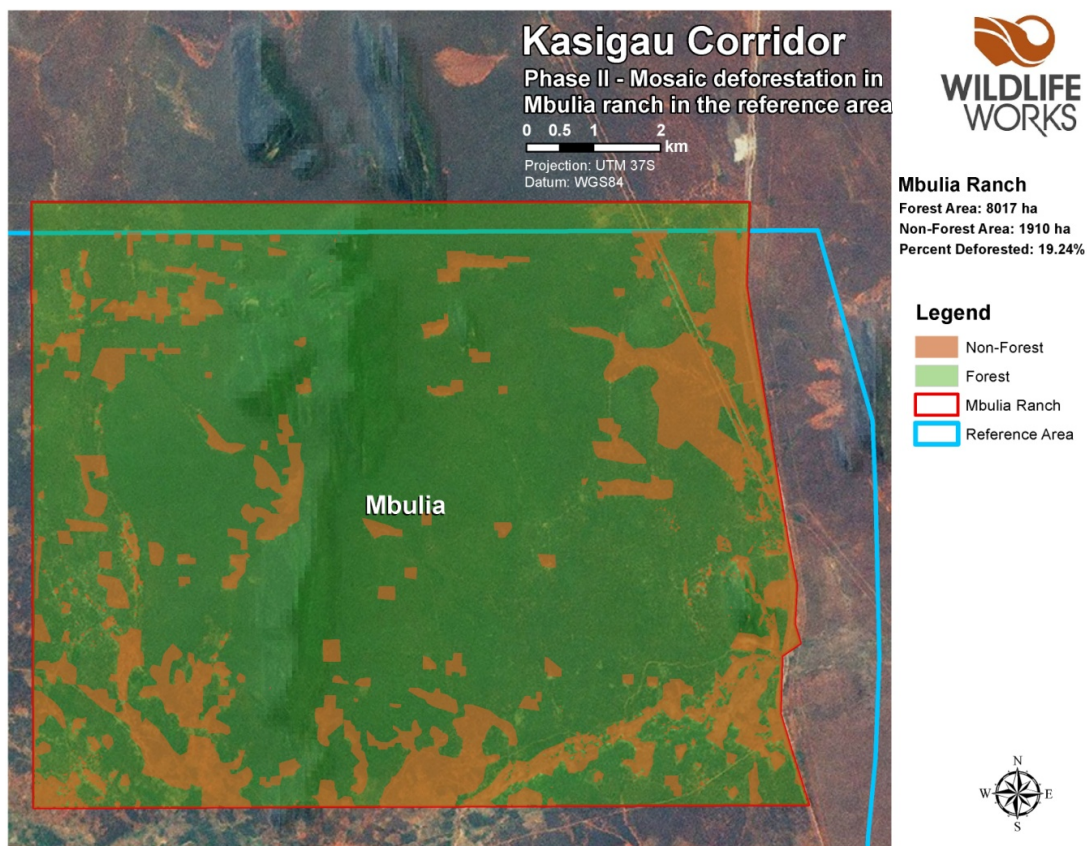
Ecotourism - The owners of one of the community ranches had a failed ecotourism facility on their land, which failed because of pressure from poaching and overgrazing by large illegal Somali cattle herds, which made it difficult for the local tourism operator to provide a wildlife product to his safari guests.

c. Slash and Burn Agriculture by subsistence farmers:

Local people had begun to clear part of the Project area, and have systematically cleared the dryland forest from a majority of the Reference area in order to provide land for annual crops. This is evidently the most likely Baseline scenario, as it had been carried out routinely throughout the Reference region, in clear violation of land laws.

b) Consistency of credible land uses with enforced mandatory laws and regulations:

All of the alternative land use scenarios above represent legal land uses, with the exception of slash and burn agriculture, which essentially consists of squatting on privately owned land; illegal under Kenyan law. However, there is overwhelming evidence that this law had been systematically unenforced. To demonstrate this case in point, an evaluation of the reference area was performed. The reference area contains group ranches under identical land tenure (group-owned ranches) as those within the project area. The map below depicts Mbulia ranch landcover analysis using Landsat 7 ETM+ data from 2009. The classification confirms that the land tenure status, identical to that within the project area, offers little to no protection against incursion, and it can be easily observed below following a classic mosaic configuration. The analysis shows that nearly 20% of the ranch has been deforested illegally through 2009. Please refer to the map in section 6., which shows all group ranches in the reference area overlaid on 10m high-resolution visible imagery for further evidence of illegal incursion, despite legal ranch boundaries.



Mbulia Ranch in the Kasigau Corridor reference region

Thus, all the land uses above are considered credible.

c) Investment Analysis – Simple Cost Analysis:

Physical protection of the Project area, and provision of deforestation mitigation activities, such as school building, scholarships, ranger patrols, reforestation of deforested indigenous forests etc. for the community are projected to cost the Project Proponent approximately \$1,000,000 per

year. There exists no significant income to offset these costs. In the absence of active protection, both physical and that created by partnering with the communities to create economic alternatives, it is clear the land in the Project Area would be cleared aggressively for subsistence agriculture, as that was in fact what was already happening in areas prior to our arrival. Slash and burn agriculture faces no economic barriers, and is therefore once again the most likely Baseline scenario.

d) Common Practice Analysis

It is common practice to protect wilderness in Africa, and to provide sustainable development support for rural African communities, but that common practice is typically funded by governments or donor agencies, and not by financial return from the project activities. It is NOT common practice for private companies that are not donor funded, such as the Project proponent to protect forested wilderness in Africa for financial return, in the absence of AFOLU revenues. The Project proponent's Rukinga Sanctuary project is the first AFOLU Project Activity of its type in Kenya, and one of the very first in Africa.

Summary of Additionality Test

In summary:

- the Kasigau Corridor REDD project is not the only credible alternative land use consistent with enforced mandatory applicable laws,
- one of those alternative land uses, that of Slash and Burn Agriculture is by far the most likely baseline land use,
- the Kasigau Corridor project passes the Investment Analysis Test as it is not a financially viable land use without the AFOLU VCS project revenues
- and the project activities are NOT common practice.

Therefore, it is additional under the rules of VT0001 Tool for the Demonstration of Additionality in VCS AFOLU Project Activities.

Include a justification that community and biodiversity benefits would not have occurred in the absence of the project (see G2.2).

Protecting this 169,741ha piece of dryland forest comes at a significant cost. There are no significant sources of income from the land to offset protection costs. Therefore, this project could not be contemplated in the absence of carbon funding. Without protection, both physical, and that created through partnerships with the communities to create economic alternatives, it is clear the land in the project area would be cleared aggressively for subsistence agriculture, as the Group Ranches continued to fail or are sold for agricultural plots.

The local agents of deforestation in the project area are Taita people who have traditionally farmed the fertile cloud forested hills of the Eastern Arc Mountains: Kasigau, Sagalla and the Taita Hills. As their population exceeded the carrying capacity of the land on the hills, they moved down into the dryland Acacia-Commiphora forest that dominates the lower elevations of the district. However here their traditional farming practices were not effective, due to extremely low average rainfall. After colonizing all the land with permanent water sources, they began to clear

any available unprotected land. The larger blocks of remaining land in the area apart from communally owned land protected by local administrations, were privately held "group ranches" designated as cattle carrying areas for the communities of the hills back in the 1970s. However, due to the remoteness of these areas and the lack of permanent water sources, they have never been developed as cattle ranches, and remained natural forest over the years, until the mid-1990s when rainfall patterns initiated a population boom in the area. This was further facilitated by the improvement of the main Mombasa highway and a local arterial road that runs along the northeast edge of the Kasigau Corridor project area.

The other agents of deforestation in our project area are Duruma originally from over 100km away in Coast province, a very poor tribe that has historically opportunistically and illegally sought farm land that was unprotected throughout Kenya. These people were first introduced to the district in the early 1990s, brought in by a corrupt politician who promised them land (not owned by him) in return for votes...once they realized they could find unprotected land in the district, more families came.

Both these populations began aggressively converting land in the late 1990s just prior to our arrival to the area. Shortly after Mike Korchinsky funded the first ranch, called Rukinga, and Wildlife Works began to protect the land in 2005, the immigration slowed, and in fact some families returned to the Coast.

The population pressure on the Phase II ranches is largely due to an expanding local Taita population, those still coming down from the Taita Hills, and the population of Voi Town, which is expanding as the town transitions into a commercial center.

m₃ Updates

As of the third monitoring period, The Kasigau Corridor Projects remain in disbursement mode, and the ranch owners and communities continue receiving regular distributions. Wildlife Works has successfully sold all credits from the 2010 and 2011 vintage, with hopes to sell the 2012 vintage at a premium in order to continue to support the communities through project activities described in this document. Project Activities are in full swing with most area locals being employed by Wildlife Works at this juncture. The company has changed the face of the community at large and we will continue or quest to create alternatives to slash and burn agricultural practices through job creation. The core project activities show no sign of slowing down during this monitoring period.

5 MONITORING DATA AND PARAMETERS

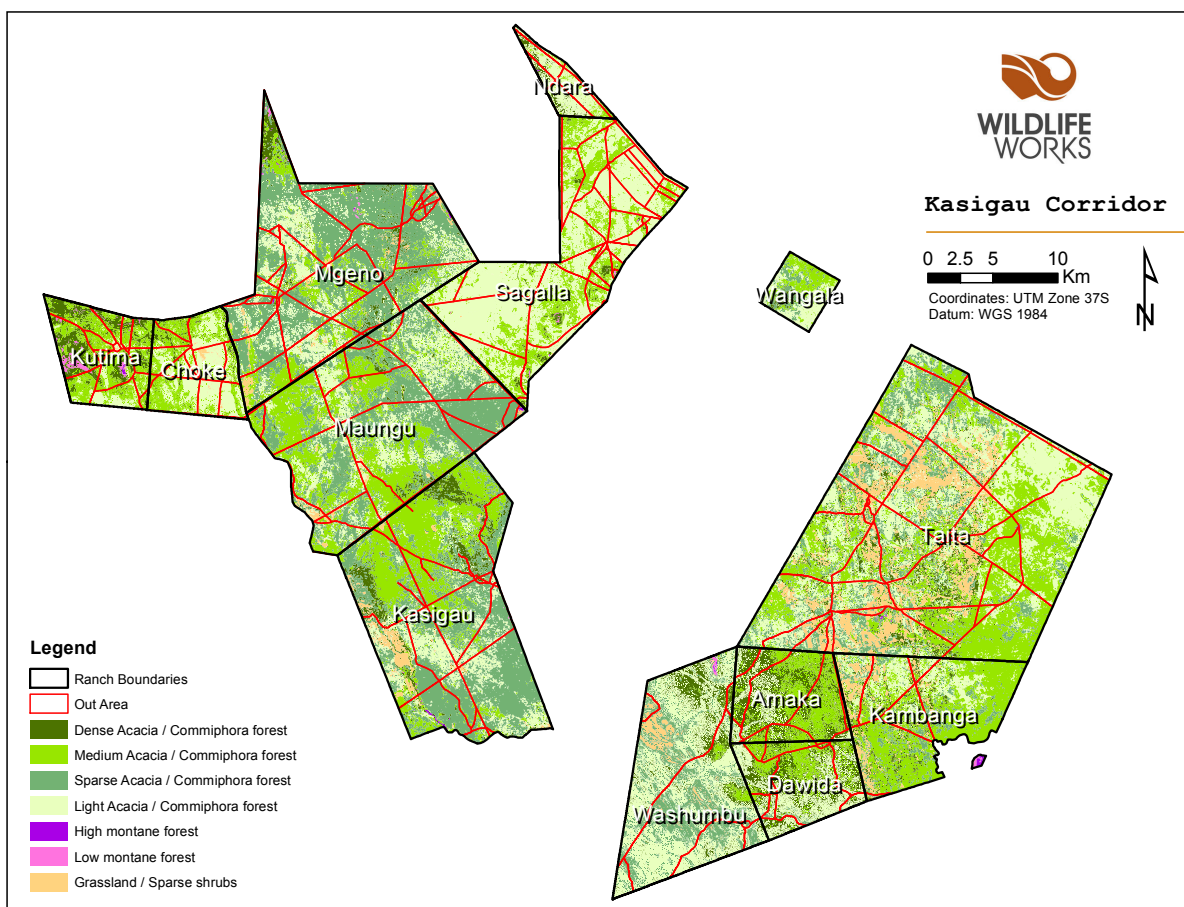
5.1 Description of the Monitoring Plan (CL3, CM3 & B3)

Describe the implementation of the monitoring plan.

- *Identify organizational structure, responsibilities and competencies.*
- *Describe methods for generating, recording, storing, aggregating, collating and reporting data on monitored parameters.*
- *Describe procedures for handling internal auditing and non-conformities.*
- *Line diagrams may be used to display the data collection and management system.*

The following is an overview of the monitoring plan, a detailed rendition of which can be found in the PD under Section 13.14 *Monitoring of Carbon Stocks in the Project Area* (see Standard Operating Procedure - Biomass and Standard Operating Procedure - Soils accompanying files for detailed field procedures).

In order to most accurately estimate biomass in the Phase II project area, with reasonable time and expense, we divided the area into 7 landcover strata based on ecosystem type, as there exists a high perceived variation in average biomass across the 6 forest strata, with larger trees in high density in the dense montane forest stratum, medium to large trees and lots of shrubs in the middle dryland forest strata and scattered trees, very few shrubs and heavy grass cover in the grassland / sparse stratum. An additional stratum was created that encompasses all of the roads in the project area. Overall, the 8 strata sum to the total project land area, depicting overall the landcover in the Phase II project area:

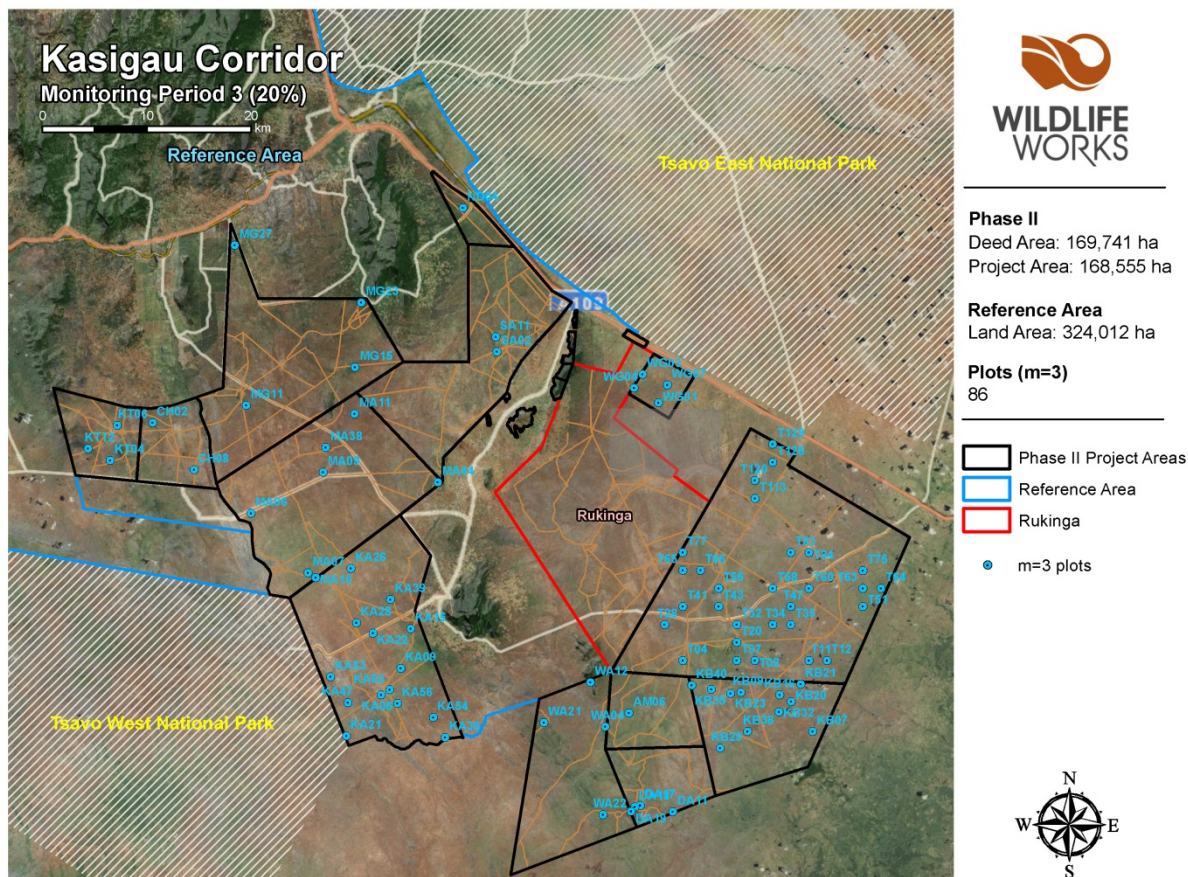


The Kasigau Corridor REDD Project Phase II – The Community Ranches landcover strata

Biomass plot sampling was conducted throughout the monitoring period under the supervision of VP African Field Operations Rob Dodson. All plot sampling was conducted using the same successful, exacting protocol that was used for the first monitoring period for this project. Proper adherence to the updated SOP was ensured throughout the sampling process for all 13 group ranches.

We had initially determined that a stratified random plot sampling technique would be best suited

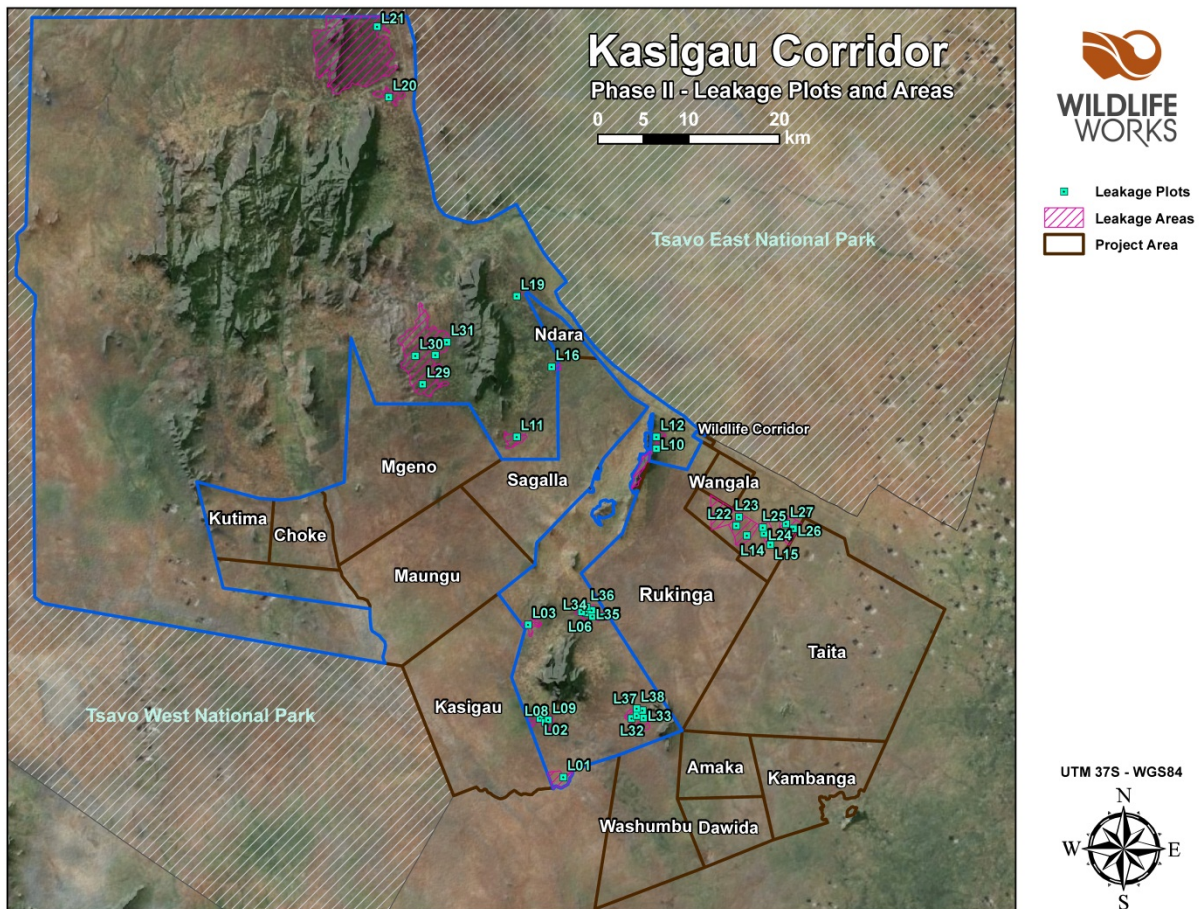
to the project area. A total of 429 Plots were overlaid on each of the 13 group-owned ranches in a stratified random pattern for all strata identified, and the Biomass SOP was used to collect a comprehensive forest inventory. It was determined that it was both redundant and too time consuming to monitor every plot each monitoring period, so the decision was made to monitor 100% of the plots every five years, thereby monitoring 20% of the plots (selected at random) each yearly monitoring period. For this monitoring period (m_3), 86 plots were measured across all 13 ranches.



Biomass plots for m_3 – 20% of the 429 permanent plots are measured every monitoring period

86 plots monitored during this monitoring period (m_3). Plots were randomly selected.

Leakage plots are assessed differently than biomass plots. Although they are permanent, they are located in the leakage area, and necessarily placed in random spatial locations. They therefore cannot be conspicuously marked as are the biomass plots. The Northeast corner of each leakage plot is recorded in a GIS system, and the plot is evaluated by the leakage plot sampling team using two walking transects per plot. The teams were specially trained by Jamie Hendriksen, Wildlife Works Operations Manager to recognize and measure degradation due to charcoal burning and kilning, a phenomenon which is typical to this particular area. A detailed rendition of the degradation estimation procedure is listed in Standard Operating Procedure - Leakage provided to the validators.



Leakage Plot Locations

Organizational Structure

Wildlife Works has 2 dedicated plot sampling teams, each containing 8 sampling specialists, ultimately commanded by Rob Dodson, VP African Field Ops. Each team is directed by a team leader, who is trained in GPS operation and forest techniques, and must demonstrate proficiency in species identification, biometric estimation techniques (calculating DBH, height, measuring angle from north, etc.). These team leads have typically grown into their position with experience and proven acumen in the field, and this position is coveted within the Wildlife Works hierarchy. The overall team leader is Joel Mwadigha, while each team also has an operation leader: Joshua Kitiro and Kakoi. Collectively, these three are responsible for data collection and transfer to the Rukinga office. Their names are attached to each and every soil and biomass plot; any discrepancies can be easily traced back to date and time of collection, as well as team members who collected the data.

As mentioned above, leakage plot teams are specially trained by the VP African Field Ops and the Operations Manager to recognize the specific type of forest degradation typical of the Kasigau Corridor. An internal audit was conducted prior to project validation to ensure consistent measurement techniques; such an audit will be carried out every monitoring period.

Data Collection, Storage and Aggregation

Data collected in the field is systematically translated into carbon workbooks developed by

Jeremy Freund, VP Carbon Development. These "carbon models" contain dropdown lists and pre-filled formulas to ensure accuracy of entry and minimize human translation error. Data for this monitoring period were entered by Defence Mghoi, who has been trained by the VP Carbon development. Data entry is cross checked internally, as well as by staff in the US office. Several programmatic, automated data checks are also run on the data.

Carbon model aggregation is ultimately the responsibility of the VP Carbon Development, and all Carbon accounting procedures were developed by him, and adhere to the MED.

Global inventory data are stored in the United States in Wildlife Works' San Francisco offices, where it is backed up. The data is also aggregated reported from this location. The Wildlife Works technical team is currently designing an online, spatially-enabled data inventory for biomass, soil and biodiversity information collected by field crews. In the future, GIS server software will be utilized to perform spatial analysis (species distribution modeling) on animal sightings, calculations of biomass and other spatially tagged events.

Field Training

Field training was initially conducted in February, 2009 for the first tree plot sampling team. This team consisted of;

- A local tree expert who was able to identify all the different acacia and Commiphora species encountered in the sampling - Joel Mwadigha
- Mike Korchinsky – CEO, Wildlife Works
- Rob Dodson – VP African Field Operations
- A Wildlife Works employee who was being groomed to become a permanent team lead and data recorder
- Three casuals to assist with carrying equipment into the field and marking the plots
- A driver
- A ranger for security

The Standard Operating Procedures for Biomass and Soils were produced following refinement of the field techniques by this initial team. Three additional teams have been trained using this procedure, and accompany our permanent team periodically, to ensure consistency in method. Field training is continually performed by Jeremy Freund, VP Carbon Development and Rob Dodson, VP African Field Ops.

Internal Auditing

Internal checks are routinely performed on biomass, soil and leakage plots. The VP Carbon Development, VP African Field Operations and Operations Manager routinely embark on "check cruises" to evaluate the employees' work, and often, management will audit individual measurements. Wildlife Works has also instituted an official Quality Control system for biomass plots which has been reviewed by the validators (see QC Standard Operation Procedure). As mentioned above, once the data is translated into electronic format, various internal checks are performed to eliminate errors. Wildlife Works management continually reviews the work done by other members of management. It is a company policy that no significant results may be published or submitted without at least one set of eyes (other than the author's) having viewed the work to be published.

- Describe monitoring and reporting frequency, and plans for publication and dissemination to the communities and other stakeholders (see CL3, CM3 & B3).

The following is a summary of the plans to monitor Climate, Community and Biodiversity (CCB) impacts on the environment as a result of the carbon project’s direct influence. For a detailed monitoring plan, please refer to the CCB Project Monitoring Plan (PMP), produced to the CCB validation auditors at the time of project validation. Please also refer to Sections CL3, CM3 and B3 for Climate, Community and Biodiversity monitoring plans, respectively, in the CCB PDD.

Climate Monitoring

As this project seeks full CCB/VCS accreditation, all climate monitoring is assumed to fall under the VCS monitoring plan, fully described in the CCB Project Monitoring Plan Document, in Section 5.1 of this document, and also in the VCS PD Section 13.14 *Monitoring of Carbon Stocks in the Project Area*. Additional specific monitoring information can be found in the Standard Operating Procedures for Biomass, Soil and Leakage. All of the aforementioned documents are available for perusal by the audit team. In addition, the following describes the climate impacts we expect to monitor from a CCB vantage point:

The following Carbon Pools will be monitored, as specified under the VCS methodology VM0009 *Methodology for Avoided Deforestation of Tropical Forests V1-0*:

| Pool | Required | Included in Project? | Justification |
|--|----------|----------------------|--|
| Above-ground large tree biomass | Yes | Yes | Major pool considered |
| Above-ground small tree biomass | Yes | Yes | Major pool considered |
| Above-ground non-tree biomass | Optional | Yes | Major pool considered |
| Below-ground large tree biomass | Optional | Yes | Major pool considered |
| Below-ground small tree biomass | Optional | Yes | Major pool considered |
| Below-ground non-tree biomass | Optional | Yes | Major pool considered |
| Litter | No | No | Conservatively excluded |
| Standing dead wood | Optional | Yes | Major pool considered |
| Lying dead wood | Optional | No | Conservatively excluded |
| Soil | Optional | Yes | Major pool considered |
| Long-lived wood products | Yes | Yes | May be a significant reservoir under the baseline scenario |

The purpose of the carbon monitoring plan is to ensure;

- That the project has protected the dryland forest within the project area from any unplanned GHG emissions during the project crediting period, and;

- That no identifiable leakage has occurred that can be attributed to this project.

Emissions reductions calculations were based on two models, both according to the methodology. The first is a current carbon inventory of the project area land, conducted using a stratified-random, fixed permanent plot methodology, accepted as a more accurate method for forest carbon inventory than remote sensing, and the second being the use of satellite imagery for ~20 years prior to the beginning of the project, clearly and empirically demonstrating the deforestation rate in the project area.

For the first model, we carry out annual resampling of 20% of the total number of permanent plots originally created for the forest inventory, on the anniversary of the initial inventory, to ensure minimum seasonal variability in carbon stocks, which southeastern Kenya can be considerable. We re-measure diameter at breast height (dbh), height, and status of all the trees originally included in the inventory for each plot. Annual resampling is rotated such that every five years we have performed a complete (100%) resampling of the forest. We will also fund the external auditors of our project to verify our sampling plan on a yearly timetable.

We plan to monitor the soil carbon pool once every 5 years, as soil carbon changes quite slowly and our robust model requires many samples, which is exceedingly expensive to carry out at the same frequency as our biomass measurements. The methodology employs a decay model which depicts the release of carbon from soil after being converted from forested land to cropland. This soil model, accepted at the validation of this project, does not require yearly re-measurement of each soil carbon plot to maintain an accurate depiction of soil carbon behavior.

Disturbance Monitoring

We have developed a monitoring system and plan for disturbances, reversals, catastrophic events and any other potential large negative effect on carbon levels within the project. This system is described as follows:

Identification of Disturbances

In order to quickly identify disturbances in the project area resulting from natural events (e.g., fires) or encroachment, the project proponent shall perform the following monitoring activities:

- a) Forest ranger patrols and community scouts: Regular patrols of the project area shall be carried out in order to detect encroachment or other disturbance. In addition, designated 'community scouts' have been instructed to notify the project proponent when they observe newly disturbed areas within the project area. (Refer to Forest Patrols and Perimeter Observation monitoring activities, described above.)
- b) Analysis of imagery: Analysts shall periodically examine one or more imagery products in order to detect encroachment or other disturbance. Imagery products may include Landsat, MODIS, FEWS NET, GoogleEarth imagery, or aerial imagery or videography collected by the project proponent.

Frequency of Disturbance Monitoring

In addition to the regular forest patrols (described in the Frequency of Perimeter Observation section, above), project proponents shall use aerial imagery each year in order to quickly and accurately identify potential disturbances within the project area.

Definition of a Significant Disturbance

A disturbance shall be considered significant if:

The disturbed area is greater than 250 ha, or

The disturbance results in a decrease in carbon stock estimates (tCO₂e/ha) of greater than 5%.

The magnitude of the change in carbon stocks shall be determined by comparing the carbon stock estimates of the disturbed area's stratum prior to disturbance with the results of a pilot sample of approximately 5 plots in the disturbed area.

Accounting of Disturbances

If a disturbance is determined to be significant according to the criteria listed above, the project proponent shall do the following:

- a) Delineate a new stratum for the disturbed area. This delineation can be performed in the field using a GPS or using a remote sensing product.
- b) Install plots and re-measure above- and below-ground biomass.
- c) Determine new project area carbon stocks with the new stratum included.

Community Monitoring

Wildlife Works gathers data relevant to community impact in a variety of ways and at a range of frequencies. At one end of the spectrum is Human population data for the Project Reference Area are gathered every ten years from Kenya's national census data, while at the other end, there is daily information being recorded in areas such as sales of products from the project, such as fruit trees and eco-charcoal. In between is monthly information being collected in areas such as payroll and irregular periodicity data being collected such as for specific community project investments, such as number of greenhouses implemented.

In addition to census data, the only data to be collected on a longer than annual periodicity is data related to measures of community well-being that are not solely or directly under the influence of Wildlife Works project activities, such as community wide household income (HHI) or attitudes towards conservation. This data will be collected through Participatory Rural Appraisals (PRAs) probably every other year, but at frequencies determined by the independent researchers who are performing this work at the request of Wildlife Works.

As mentioned above in the Climate Impact Monitoring section, Wildlife Works plans to verify this project yearly. Therefore, once a year, we will summarize all of the data collected and include that summary in the CCB and VCS Verification reports for each monitoring period.

Biodiversity Monitoring

Wildlife Works has been gathering data on wildlife populations for over 10 years. Dr. Mwangi Githiru continues to function as Wildlife Works' Biodiversity and Social Monitoring Director. He is in charge of a Biodiversity team, whose goal is to gather, verify, analyze and report key biodiversity indicators. The goal is of course to demonstrate that the project is delivering on the stated commitment to improving the situation of the HCV species present in the project area.

Biodiversity data collection activities are performed on a daily basis both by a dedicated biodiversity monitoring team, but also by the forest rangers, who record the location of HCV

wildlife and other points of interest throughout their daily activities. That data is entered into our systems locally for analysis by Dr. Githiru and his team. Dr. Githiru produces a robust Biodiversity and Social Monitoring Report yearly. Also once a year, we summarize this report and most of the data therein in the this document for each monitoring period (see

5.2 Data and Parameters Available at Validation (CL3)

Describe data and parameters available at validation using the following table (copy table for each data unit/parameter (see CL3.1).

The following data parameters were available at the point of project validation. These include data for the baseline (without-project scenario) and project carbon pools (soil and forest). Please refer to section 5.1 of this document for more detailed information about the monitoring plan for net-positive climate influence from the project. None of the variables in this section change with each monitoring period and are thus not periodically monitored. They are, however, used extensively in all sections of the project, and are reported within each Monitoring & Implementation Report.

| | |
|------------------------|--|
| Data Unit / Parameter: | $\delta_{LE}, \hat{\delta}_{LE}$ |
| Data unit: | Time |
| Description: | Lag parameter of leakage model. |
| Source of data: | The parameter is estimated from the observed cumulative forest degradation and deforestation, \hat{d}_t , observed at the beginning of the project, t_0 . This proportion is observed using a sample of plots in the leakage area, and the parameter is calculated using equation 9. |
| Value applied: | -0.5046 |
| Purpose of the data: | To produce a parameterized leakage model that can be used to predict cumulative deforestation and degradation at any point in time. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | $\hat{\eta}$ |
| Data unit: | Real |
| Description: | Estimated linear predictor of cumulative deforestation model. |
| Source of data: | Calculated using Equation 7. Equation 7 is fit using historic observations of forest state in the reference area. |
| Value applied: | 0.03069047 |
| Purpose of the data: | The linear predictor is used to predict the future degree of forestation in the project area at any point in time after the project start date. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | $\hat{\lambda}$ |
| Data unit: | Proportion |
| Description: | Exponential soil carbon decay parameter |
| Source of data: | Calculated using empirically measured, project specific data. |
| Value applied: | 0.55 |
| Purpose of the data: | To predict the decay of soil organic matter in the project area under the project scenario. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | ρ_{sp} |
| Data unit: | kg · m ⁻³ |
| Description: | Wood density of species <i>sp.</i> |
| Source of data: | Literature |
| Value applied: | 0.24 |
| Purpose of the data: | Value is used as the wood density of standing dead wood with decay class of II. It converts the calculated wood volume to biomass. |
| Any comment: | Value was taken from: Harmon, Woodall, Fasth, Sexton and Yatkov. 2011. Differences between standing and downed dead tree wood density reduction factors: A comparison across decay classes and tree species. Research Paper NRS-15. Newton Square, PA. U.S. Department of Agriculture, Forest Service, Northern Research Station. |

| | |
|------------------------|---|
| Data Unit / Parameter: | $\hat{\sigma}_{DF}$ |
| Data unit: | Standard Deviation |
| Description: | The estimated standard deviation of the state observations used to fit the cumulative deforestation model. |
| Source of data: | Value calculated from the point observations in the cumulative deforestation model using Equation 17. |
| Value applied: | 0.3358 |
| Purpose of the data: | Used to determine the uncertainty in the cumulative deforestation model and number of leakage plots required. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | $a_{project}$ |
| Data unit: | Hectares (ha) |
| Description: | Total project area |
| Source of data: | Measured using GIS analysis and from the land deed. |
| Value applied: | 169,741.38 |
| Purpose of the data: | Total project area used for determining total carbon quantities from inventory. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | a_{LE} |
| Data unit: | Hectares (ha) |
| Description: | Total leakage area. |
| Source of data: | Measured using GIS analysis. |
| Value applied: | 169,741.38 |
| Purpose of the data: | Used to define the area within which plots are established to measure any potential leakage from the project area. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | c_{fsp} |
| Data unit: | t C · t. d. m. ⁻¹ |
| Description: | Carbon fraction of dry matter for dead wood. |
| Source of data: | In cases where an adequate value is not available from peer-reviewed literature, the methodology calls for the IPCC default value of 0.5 to be used. In this project the IPCC default was used |
| Value applied: | 0.5 |
| Purpose of the data: | Used to convert the calculated total dry biomass of wood to carbon for each tree measured. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | $d_{j,k}$ |
| Data unit: | Meters (m) |
| Description: | Depth of soil sample in plot j in stratum k . |
| Source of data: | Measured, defined in the Soil carbon SOP "Standard Operating Procedure Kasigau - Soil v1.0_5_24_2011.pdf" |

| | |
|----------------------|--|
| Value applied: | 1 |
| Purpose of the data: | Used in the soil carbon model for estimating total soil carbon quantities. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | $f_{sp}(\cdot)$ |
| Data unit: | Function |
| Description: | Allometric equation for species <i>sp.</i> |
| Source of data: | Derived from destructive sampling of trees in the same region of the project. |
| Value applied: | Please see section 5.1, List of Allometric Equations for a table displaying the species specific allometric equations used in the carbon analysis. |
| Purpose of the data: | Used for calculating tree biomass. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | $\hat{\rho}_{max}$ |
| Data unit: | Proportion |
| Description: | The estimated maximum proportion of soil carbon lost over time. |
| Source of data: | Measured and calculated by quantifying soil carbon in cultivated areas within the reference area where the time of deforestation is known. The mean soil content from these measurements is then divided by the mean soil carbon measured within the project area. |
| Value applied: | 0.4973 |
| Purpose of the data: | Used to determine the proportion of the total soil carbon in the project area that would be lost under the without-project deforestation scenario. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | \hat{m}_{LE} |
| Data unit: | Count |
| Description: | The sample size in the leakage area. |
| Source of data: | Equation 10 calculates the sample size of plots needed in the leakage area. |
| Value applied: | 38 |
| Purpose of the data: | To determine the number of sample plots needed to measure forest degradation and deforestation in the leakage area with the desired confidence |

| | |
|--------------|---------|
| | levels. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | n_{SCL} |
| Data unit: | Count |
| Description: | The actual sample size used to estimate the maximum proportion of soil carbon loss. |
| Source of data: | Is equal to the variable \mathcal{A} , the set of all sampled farms in the reference area to estimate $\hat{\ell}_{max}$, the maximum proportion of soil carbon loss. |
| Value applied: | 28 |
| Purpose of the data: | Used in equation 19 to determine the uncertainty in the soil carbon loss model. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | p_{forest} |
| Data unit: | Proportion |
| Description: | The proportion of the project area that is forested. |
| Source of data: | Measured using GIS and remote sensing analysis. |
| Value applied: | 1 |
| Purpose of the data: | Used to determine the total amount of the project area that is forested. Used in equation 33. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | p_{BGLT} |
| Data unit: | Proportion |
| Description: | Proportion of below-ground large tree biomass removed as a result of land conversion to agriculture. |
| Source of data: | Default value from methodology based on the fact that project area would be converted to agriculture in without project scenario. |
| Value applied: | 1 |
| Purpose of the data: | Used in equation 24 to determine the baseline emissions in below-ground large tree biomass. |
| Any comment: | |

| | |
|------------------------|----------|
| Data Unit / Parameter: | r_{sp} |
|------------------------|----------|

| | |
|----------------------|--|
| Data unit: | Unitless |
| Description: | Ratio of below-ground biomass to above-ground biomass (root to shoot ratio) for species <i>sp.</i> |
| Source of data: | Value taken from the IPCC Guidelines for National GHG Inventories, for AFOLU (2006), Table 4.4. Value is for Tropical Shrubland, the Ecological type of the project area as determined from FAO Africover landcover dataset. |
| Value applied: | 0.4 |
| Purpose of the data: | Used in Equation 64 to estimate the belowground carbon stock in non-trees and trees from the above ground measured component. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | r_{WP} |
| Data unit: | Proportion |
| Description: | Proportion of above-ground large tree biomass converted to long-lived wood products. |
| Source of data: | Expert local knowledge or peer reviewed literature. |
| Value applied: | 0 |
| Purpose of the data: | To account for carbon stored in biomass from the project area that is converted to long-lived wood products during any monitoring period. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | x |
| Data unit: | Real, vector |
| Description: | Vector of observed covariates to deforestation. |
| Source of data: | Independent variable used in the disforestation model, derived from expert local knowledge or peer-reviewed literature. |
| Value applied: | 0 |
| Purpose of the data: | Used in the parameterization of Equation 7, the linear predictor of deforestation, part of the logistic deforestation model. |
| Any comment: | |

| | |
|------------------------|----------|
| Data Unit / Parameter: | U_{DF} |
| Data unit: | Percent |

| | |
|----------------------|--|
| Description: | Estimated uncertainty in the cumulative deforestation model. |
| Source of data: | Calculated from Equation 15. |
| Value applied: | 4.79 |
| Purpose of the data: | Used in Equation 36 to determine the average uncertainty in carbon stocks and the baseline model at monitoring period [m]. |
| Any comment: | |

| | |
|------------------------|--|
| Data Unit / Parameter: | U_{SCL} |
| Data unit: | Percent |
| Description: | Estimated uncertainty in the soil carbon loss model. |
| Source of data: | Calculated from Equation 19. |
| Value applied: | 13.1 |
| Purpose of the data: | Used in Equation 36 to determine the average uncertainty in carbon stocks and the baseline model at monitoring period [m]. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | – |
| Data unit: | Percent |
| Description: | Moisture content of Tree green biomass. |
| Source of data: | Measured on site by cutting discs from destructively harvested trees. The value was calculated by the difference of the disc's green mass and its dry mass. |
| Value applied: | 50 |
| Purpose of the data: | To convert the green weight of tree biomass as calculated by the allometry to dry tree biomass. |
| Any comment: | |

| | |
|------------------------|---|
| Data Unit / Parameter: | – |
| Data unit: | Percent |
| Description: | Moisture content of Shrub green biomass. |
| Source of data: | Value was derived from the literature for African woody plants, based on moisture content at the Genus level for the primary shrub species. The source document is Simpson, William T., 1996. "Method to Estimate Dry-Kiln Schedules and Species Groupings: Tropical and Temperate Hardwoods." Research Paper FPL-RP-548. |

| | |
|----------------------|---|
| | Madison, WI: United States Department of Agriculture, Forest Service, Forest Products Laboratory. |
| Value applied: | 45 |
| Purpose of the data: | To convert the green weight of shrub biomass as calculated to dry shrub biomass. |
| Any comment: | |

5.3 Data and Parameters Monitored (CL3, CM3 & B3)

Describe data and parameters monitored subsequent to validation using the following table (copy table for each data unit/parameter) (see CL3).

The following data parameters were monitored during this period (m₃) subsequent to project verification. These include project carbon pools (forested) and leakage. Baseline data is only measured at the point of baseline-reevaluation, and soil data is measured once every 5 years. Those pools are therefore not measured during this monitoring period. Values for those parameters were measured at initial project validation, but as they are utilized within this monitoring report, they are reported herein and in fact within every Monitoring & Implementation Report.

It should be noted that with the new format of this document (combination of the VCS Monitoring Report and the CCB Project Implementation Report), this section must necessarily contain “climate” variables monitored from both standards. We firstly list the carbon inventory / model variables from the VCS analysis (as reported in the VCS monitoring report). Next, we report all CCB metrics associated with net-positive climate benefits as listed in the CCB Project Implementation Report.

VCS Data and Parameters Monitored:

| | |
|--|---|
| Data Unit / Parameter: | $\rho_{\text{soil},j,k}$ |
| Data unit: | $\text{g} \cdot \text{cm}^{-3}$ |
| Description: | Mass-equivalent bulk density of fine portion of soil sample. ρ_{soil} is the lower of the two mean values for bulk density a) within the project area and b) in the reference area for all plots j across all strata k. |
| Source of data: | Measured in the project area and reference area. |
| Description of measurement methods and procedures to be applied: | Measured according to the SOP: ‘Standard Operating Procedure Kasigau - Soil v1.0_5_24_2011.pdf’. |
| Frequency of monitoring/recording: | Updated at the monitoring event [at least] once every five years. |
| Value monitored: | Please see table in Section 9.2 for a table displaying all of the data from the soil sampling for this monitoring period. |
| Monitoring equipment: | As described in the SOP: ‘Standard Operating |

| | |
|---------------------------------|--|
| | <p>Procedure Kasigau - Soil v1.0_5_24_2011.pdf.</p> <ul style="list-style-type: none"> • Handheld GPS receiver • Shovel(s) • Garden hoe • Large tarp • Sharpie markers • Soil collection bags. |
| QA/QC procedures to be applied: | <p>QC: Wildlife Works' VP Carbon Development checks the accuracy of the stratification with sample plot information sourced from the inventory data and also with other available geographical datasets.</p> <p>QA: The accuracy of the classification is also checked partially by the CEO of Wildlife Works Carbon and by the other staff in the Carbon Development department, all of who possess GIS and remote sensing expertise.</p> |
| Calculation method: | Calculated using Equation 60. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $a_{j,k}$ |
| Data unit: | Hectares (ha) |
| Description: | Area of plot j in stratum k |
| Source of data: | Measured. |
| Description of measurement methods and procedures to be applied: | Plot radius, and therefore area, are determined according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Tree biomass plots have an area of 0.1 ha (having a radius of 17.84 m) and Shrub biomass plots also have an area of 0.1 ha (having a radius of 17.84 m). |
| Monitoring equipment: | Field measuring tapes for plot delineation and measurement. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Calculation method: | N/A. |
| Any comment: | |

| | |
|------------------------|-------|
| Data Unit / Parameter: | a_k |
|------------------------|-------|

| Data unit: | Hectares (ha) | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------|-----------|----------------------------------|----------|-----------------------------------|----------|----------------------------------|----------|-----------------------------------|-----------|---------------------------|---------|--------------------|-------|---------------------|--------|-----------|--------|-------------------|-------------------|
| Description: | Area of stratum <i>k</i> | | | | | | | | | | | | | | | | | | | | |
| Source of data: | Measured | | | | | | | | | | | | | | | | | | | | |
| Description of measurement methods and procedures to be applied: | GIS analysis is used for the mapping and measurement of the strata within the project area. | | | | | | | | | | | | | | | | | | | | |
| Frequency of monitoring/recording: | Measured at each monitoring event. | | | | | | | | | | | | | | | | | | | | |
| Value monitored: | <table border="1"> <thead> <tr> <th>Stratum name</th> <th>area (ha)</th> </tr> </thead> <tbody> <tr> <td>Dense Acacia / Commiphora forest</td> <td>15,262.7</td> </tr> <tr> <td>Medium Acacia / Commiphora forest</td> <td>52,170.6</td> </tr> <tr> <td>Light Acacia / Commiphora forest</td> <td>47,159.0</td> </tr> <tr> <td>Sparse Acacia / Commiphora forest</td> <td>44,114.33</td> </tr> <tr> <td>Grassland / sparse shrubs</td> <td>9,693.0</td> </tr> <tr> <td>Low montane forest</td> <td>557.0</td> </tr> <tr> <td>High Montane Forest</td> <td>298.44</td> </tr> <tr> <td>Out Areas</td> <td>486.35</td> </tr> <tr> <td>total area</td> <td>169,741.38</td> </tr> </tbody> </table> <p>Additionally, please see the project area and strata map in Section 3.3.</p> | Stratum name | area (ha) | Dense Acacia / Commiphora forest | 15,262.7 | Medium Acacia / Commiphora forest | 52,170.6 | Light Acacia / Commiphora forest | 47,159.0 | Sparse Acacia / Commiphora forest | 44,114.33 | Grassland / sparse shrubs | 9,693.0 | Low montane forest | 557.0 | High Montane Forest | 298.44 | Out Areas | 486.35 | total area | 169,741.38 |
| Stratum name | area (ha) | | | | | | | | | | | | | | | | | | | | |
| Dense Acacia / Commiphora forest | 15,262.7 | | | | | | | | | | | | | | | | | | | | |
| Medium Acacia / Commiphora forest | 52,170.6 | | | | | | | | | | | | | | | | | | | | |
| Light Acacia / Commiphora forest | 47,159.0 | | | | | | | | | | | | | | | | | | | | |
| Sparse Acacia / Commiphora forest | 44,114.33 | | | | | | | | | | | | | | | | | | | | |
| Grassland / sparse shrubs | 9,693.0 | | | | | | | | | | | | | | | | | | | | |
| Low montane forest | 557.0 | | | | | | | | | | | | | | | | | | | | |
| High Montane Forest | 298.44 | | | | | | | | | | | | | | | | | | | | |
| Out Areas | 486.35 | | | | | | | | | | | | | | | | | | | | |
| total area | 169,741.38 | | | | | | | | | | | | | | | | | | | | |
| Monitoring equipment: | Supervised classification of the project area was accomplished using commercial software to perform Land-use/Land-cover classification, as well as to perform QA/QC procedures. Wildlife Works used a common software package to perform this stratification. | | | | | | | | | | | | | | | | | | | | |
| QA/QC procedures to be applied: | <p>QC: Wildlife Works' VP Carbon Development checks the accuracy of the stratification with sample plot information sourced from the inventory data and also with other available geographical datasets.</p> <p>QA: The accuracy of the classification is also checked partially by the CEO of Wildlife Works Carbon and by the other staff in the Carbon Development department, all of who possess GIS and remote sensing expertise.</p> | | | | | | | | | | | | | | | | | | | | |
| Calculation method: | After identifying strata within the project, the classes are converted to GIS vectors (polygons) and their area calculated. A map is then created depicted the strata within the project. | | | | | | | | | | | | | | | | | | | | |
| Any comment: | | | | | | | | | | | | | | | | | | | | | |

| | |
|--|--|
| Data Unit / Parameter: | $cf_{soil,j,k}$ |
| Data unit: | Dimensionless: (kg · kg ⁻¹ ; kilogram Carbon per kilogram soil) |
| Description: | Carbon fraction of soil sample <i>j</i> in plot in stratum <i>k</i> |
| Source of data: | Measurement |
| Description of measurement methods and procedures to be applied: | Measured according to the SOP: 'Standard Operating Procedure Kasigau - Soil v1.0_5_24_2011.pdf'. |
| Frequency of monitoring/recording: | Updated at the monitoring event at least once every five years. |
| Value monitored: | Please see Section 9.3 for a table displaying all soil carbon fraction data. |
| Monitoring equipment: | As described in the SOP: 'Standard Operating Procedure Kasigau - Soil v1.0_5_24_2011.pdf'. <ul style="list-style-type: none"> • Handheld GPS receiver • Shovel(s) • Garden hoe • Large tarp • Sharpie markers • Soil collection bags. |
| QA/QC procedures to be applied: | <p>QC: The VP of African Field Ops and the Director of Operations, Kasigau Corridor are in charge of carrying-out consistency checks of all data and confirming that the field team has followed the SOPs, and they perform regular field audits and data collection checks.</p> <p>QA: The processing of the samples and the soil analysis is done by a third party laboratory, "Cropnuts". The Laboratory has its own measures of control and its management is independent to that of the project proponent. A complete description of the company and its procedures can be found at http://www.cropnuts.com</p> |
| Calculation method: | Calculated from laboratory analysis. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $dbh_{i,j,k}$ |
| Data unit: | Centimeters (cm) |
| Description: | Diameter at breast height (DBH) of the <i>i</i> th tree in plot <i>j</i> in stratum <i>k</i> . |
| Source of data: | Measurement |
| Description of measurement methods and procedures to be applied: | Tree diameter is measured with a metric diameter tape according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |

| | |
|------------------------------------|--|
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see each individual ranch carbon model (e.g. Amaka Ranch carbon model_M=3 v2.xls, Choke Ranch carbon model_M=3 v2.xls, etc.) for a list of tables displaying the values for $dbh_{i,j,k}$ for all plots. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: <ul style="list-style-type: none"> • Handheld GPS (with plot coordinates pre-entered in UTM) • Steel rebar and plot-center caps for marking plot centers • Diameter tape (D-tape) for measuring DBH • Metric tape at least 50m long, preferably fiberglass or weatherproof material • Tree tags (preferably aluminum to prevent rusting, stamped with successive numbers) • Flagging tape, multicolored for marking direction, etc. • Compass, preferably with mirror • Clinometer / Inclinometer for measuring tree height • Notepads/plot sheets, preferably waterproof • Pens, preferably waterproof • Backpack, equipment holder • Water, food, sunscreen, bug spray • First-aid kit • Cell phone, sat-phone or 2-way radios |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $h_{i,j,k}$ |
| Data unit: | Meters (m) |
| Description: | Height of the i th tree in plot j in stratum k . |
| Source of data: | Measurement |
| Description of measurement methods and procedures to be applied: | Tree height is measured with a metric measurement stick according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf.' |

| | |
|------------------------------------|---|
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the tree measurement and all data by plot. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: Tree height measurement stick and/or clinometer |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | v |
| Data unit: | Count |
| Description: | Shrub size class per species. |
| Source of data: | Measurement. |
| Description of measurement methods and procedures to be applied: | Shrub count is measured using ocular methods according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the plot measurement and contains all shrub counts for each plot. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: Shrub height measurement stick and field metric measurement tape. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A |
| Any comment: | |

| | |
|------------------------|--------------------------------------|
| Data Unit / Parameter: | <i>T_{BASE,i,j,k}</i> |
| Data unit: | Centimeters (cm) |

| | |
|--|--|
| Description: | Base radius of the i^{th} standing dead, decay class II tree in plot j in stratum k . |
| Source of data: | Measured |
| Description of measurement methods and procedures to be applied: | Tree base diameter is measured at breast height with a metric diameter tape according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the tree measurement and contains all values measured for $r_{BASE,i,j,k}$ by plot. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: <ul style="list-style-type: none"> • Handheld GPS (with plot coordinates pre-entered in UTM) • Steel rebar and plot-center caps for marking plot centers • Diameter tape (D-tape) for measuring DBH • Metric tape at least 50m long, preferably fiberglass or weatherproof material • Tree tags (preferably aluminum to prevent rusting, stamped with successive numbers) • Flagging tape, multicolored for marking direction, etc. • Compass, preferably with mirror • Clinometer / Inclinometer for measuring tree height • Notepads/plot sheets, preferably waterproof • Pens, preferably waterproof • Backpack, equipment holder • Water, food, sunscreen, bug spray • First-aid kit • Cell phone, sat-phone or 2-way radios |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A. |
| Any comment: | |

| | |
|------------------------|-----------------|
| Data Unit / Parameter: | $r_{TOP,i,j,k}$ |
|------------------------|-----------------|

| | |
|--|---|
| Data unit: | Centimeters (cm) |
| Description: | Top radius of the i^{th} standing dead, decay class II tree in plot j in stratum k . |
| Source of data: | Estimated. |
| Description of measurement methods and procedures to be applied: | The top diameter of standing dead, decay class trees is conservatively estimated to be 0 cm. This is the most conservative value for top diameter since the standing dead bole volume is calculated with the equation of a truncated cone, using Equation 52. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | 0 (Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the tree measurement and shows that the values estimated for $r_{TOP,i,j,k}$ are all 0) |
| Monitoring equipment: | N/A. |
| QA/QC procedures to be applied: | N/A. |
| Calculation method: | N/A. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $v_{i,j,k}$ |
| Data unit: | m^3 |
| Description: | Volume of the i^{th} standing dead, decay class II tree in plot j in stratum k . |
| Source of data: | Calculated from equation 51 in the methodology. |
| Description of measurement methods and procedures to be applied: | N/A. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the tree measurement and contains all values measured for $r_{BASE,i,j,k}$ by plot. |
| Monitoring equipment: | N/A. |
| QA/QC procedures to be applied: | N/A. |
| Calculation method: | Calculated from equation 51 in the methodology. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $Y_{INTACT,j,k}$ |
| Data unit: | Tonnes CO ₂ e • ha ⁻¹ |
| Description: | Carbon stock in standing dead trees in decay class I, plot <i>j</i> , stratum <i>k</i> . |
| Source of data: | Measurement. |
| Description of measurement methods and procedures to be applied: | Carbon stock is measured using a diameter tape according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v1.xls', which are the primary databases and calculators for the tree measurement and shows that the values estimated for $Y_{INTACT,j,k}$. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: GPS unit, diameter tape and field metric measurement tape. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $Y_{DECAYED,j,k}$ |
| Data unit: | Tonnes CO ₂ e • ha ⁻¹ |
| Description: | Carbon stock in standing dead trees in decay class II, plot <i>j</i> , stratum <i>k</i> . |
| Source of data: | Measurement. |
| Description of measurement methods and procedures to be applied: | Carbon stock is measured using a diameter tape according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf'. |
| Frequency of monitoring/recording: | 20% of biomass plots are measured annually, so that 100% of plots are measured once every five years. |
| Value monitored: | Please see the individual ranch carbon models, e.g. 'Amaka Ranch carbon model_M=3 v2.xls', which are the primary databases and calculators for the tree measurement and shows that the values estimated for $Y_{DECAYED,j,k}$. |

| | |
|---------------------------------|--|
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Forest Inventory v2.8_2012-11-12.pdf', the following equipment is utilized: GPS unit, diameter tape and field metric measurement tape. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $C_{AGLT}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in above-ground large trees at monitoring period [m]. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 9,055,863.95 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.5.1 of the methodology. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $C_{AGNT}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in above-ground non tree biomass at monitoring period [m]. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 522,908.46 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.5.3 of the methodology. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $C_{BGLT}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in below-ground large tree biomass at monitoring period [m]. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 3,622,345.58 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.6.1 of the methodology. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $C_{BGNT}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in below-ground non-tree biomass at monitoring period [m]. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 209,163.38 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.6.3 of the methodology. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $C_{SDW}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in standing dead wood at monitoring period [m]. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |

| | |
|------------------------------------|---|
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 87,273 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.7 of the methodology. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $C_{SOIL}^{[m]}$ |
| Data unit: | Tonnes CO ₂ e |
| Description: | Estimated carbon stock in soil carbon at monitoring period $[m]$. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | N/A |
| Frequency of monitoring/recording: | Updated at the monitoring period, at least every 5 years. |
| Value monitored: | 75,324,155 |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | Value calculated using the procedures described in Section 13.9 of the methodology VM0009. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $m_{burned,i}$ |
| Data unit: | Tonnes |
| Description: | The mass of wood burned during the i^{th} event. |
| Source of data: | Records of biomass burned and charcoal production in the project area. |
| Description of measurement methods and procedures to be applied: | N/A. This variable is not monitored as there is no biomass burning or charcoal production within the project area. |
| Frequency of monitoring/recording: | N/A |
| Value monitored: | N/A |
| Monitoring equipment: | N/A |
| QA/QC procedures to be applied: | N/A |
| Calculation method: | N/A |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $o_i^{[m]}$ |
| Data unit: | Proportion |
| Description: | Degradation proportion observation taken in each leakage plot i^{th} sample point at monitoring period m . |
| Source of data: | Measurement. |
| Description of measurement methods and procedures to be applied: | Leakage sampling point degradation is measured using ocular methods according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Leakage v1.0_01_01_2011.pdf'. |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | Please see Section 9.4 for a table displaying the leakage data that was measured at this monitoring period. |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - Leakage v1.0_01_01_2011.pdf', the following equipment is utilized: Compass, metric tape measure, and handheld GPS unit. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $\bar{o}^{[m]}$ |
| Data unit: | Proportion |
| Description: | Average of state observations taken in the leakage area for monitoring period $[m]$. |
| Source of data: | Measurement. |
| Description of measurement methods and procedures to be applied: | Leakage sampling point degradation is measured using ocular methods according to the procedures detailed in the SOP: 'Standard Operating Procedure Kasigau - Leakage v1.0_01_01_2011.pdf'. |
| Frequency of monitoring/recording: | Updated at every monitoring period. |
| Value monitored: | 0.4056 |
| Monitoring equipment: | As stated in the Biomass monitoring SOP 'Standard Operating Procedure Kasigau - |

| | |
|---------------------------------|--|
| | Leakage v1.0_01_01_2011.pdf, the following equipment is utilized: Compass, metric tape measure, and handheld GPS unit. |
| QA/QC procedures to be applied: | Procedures applied according to the SOP: 'Quality Control Procedure v1.6.pdf'. |
| Calculation method: | N/A. |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | F_{LE} |
| Data unit: | Proportion |
| Description: | Proportion cumulative deforestation and degradation predicted by the leakage model. |
| Source of data: | Calculated. |
| Description of measurement methods and procedures to be applied: | N/A. |
| Frequency of monitoring/recording: | Predicted from the model at each monitoring period. |
| Value monitored: | 0.5023 |
| Monitoring equipment: | N/A. |
| QA/QC procedures to be applied: | N/A. |
| Calculation method: | Calculated from a model, see Equation 8 in the methodology. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | $\hat{r}_{LE}^{[m]}$ |
| Data unit: | Proportion |
| Description: | The estimated leakage factor as a proportion of baseline emissions. |
| Source of data: | Calculated |
| Description of measurement methods and procedures to be applied: | Estimated based on the difference between the observed deforestation in the reference area and predicted deforestation in the reference area as described in Section 10.4. |
| Frequency of monitoring/recording: | Updated at each monitoring period. |
| Value monitored: | 0 |
| Monitoring equipment: | N/A. |
| QA/QC procedures to be applied: | N/A. |
| Calculation method: | Value calculated using the procedures described in Section 10.4 of the methodology. |
| Any comment: | |

| | |
|--|--|
| Data Unit / Parameter: | N_p |
| Data unit: | Count |
| Description: | Total number of possible plots in project area. |
| Source of data: | Calculated. |
| Description of measurement methods and procedures to be applied: | GIS analysis at the time of stratification. |
| Frequency of monitoring/recording: | Updated whenever stratification of the project area is updated. |
| Value monitored: | 1,697,650.03 |
| Monitoring equipment: | Supervised classification of the project area was accomplished using commercial software to perform Land-use/Land-cover classification, as well as to perform QA/QC procedures. Wildlife Works used a common software package to perform this stratification. ArcGIS software is used for area measurement of the project area and strata. |
| QA/QC procedures to be applied: | <p>QC: Wildlife Works' VP Carbon Development checks the accuracy of the stratification with sample plot information sourced from the inventory data and also with other available geographical datasets.</p> <p>QA: The accuracy of the classification is also checked partially by the CEO of Wildlife Works Carbon and by the other staff in the Carbon Development department, all of who possess GIS and remote sensing expertise.</p> |
| Calculation method: | Calculated with the Equation $N_p = \frac{a_{project}}{a_{plot}}$ |
| Any comment: | |

| | |
|--|---|
| Data Unit / Parameter: | $N_{p,k}$ |
| Data unit: | Count |
| Description: | Total number of possible plots in stratum k . |
| Source of data: | Calculated. |
| Description of measurement methods and procedures to be applied: | GIS analysis at the time of stratification. |
| Frequency of monitoring/recording: | Updated whenever stratification of the project area is updated. |

| | | |
|-----------------------|--|------------|
| Value monitored: | Total number of possible plots | |
| | Stratum name | |
| | Dense Acacia / Commiphora forest | 152,648.5 |
| | Medium Acacia / Commiphora forest | 521,778.15 |
| | Light Acacia / Commiphora forest | 471,655.41 |
| | Sparse Acacia / Commiphora forest | 441,204.65 |
| | Grassland / sparse shrubs | 96,943.12 |
| | Low montane forest | 5,571.24 |
| Monitoring equipment: | Supervised classification of the project area was accomplished using commercial software to perform Land-use/Land-cover classification, as well as to perform QA/QC procedures. Wildlife Works used a common software package to perform this stratification. ArcGIS software is used for area measurement of the project area and strata. | |
| | QA/QC procedures to be applied: | |
| | <p>QC: Wildlife Works' VP Carbon Development checks the accuracy of the stratification with sample plot information sourced from the inventory data and also with other available geographical datasets.</p> <p>QA: The accuracy of the classification is also checked partially by the CEO of Wildlife Works Carbon and by the other staff in the Carbon Development department, all of who possess GIS and remote sensing expertise.</p> | |
| Calculation method: | Calculated with the Equation $N_{P,k} = \frac{a_k}{a_{plot}}$ | |
| Any comment: | | |

Include parameters for assessing anticipated and actual impacts (positive and negative) on communities and biodiversity resulting from the project activities (see CM3 & B3).

The following data metrics assess net-positive impacts on community and biodiversity as reported to the CCB standard previously in the Project Implementation Report (PIR).

CCB Community and Biodiversity Metrics

Social Impact Assessment

As described during the last monitoring period (m2), as Social Impact Assessment is held annually to assess any changes in stakeholder livelihoods attributable to the REDD project. The following tables indicated the results of this year's SIA:

Community Indicators

The following metrics are applied to the project activities that provide net-positive impact on the communities within the sphere of influence of the project.

Organic Greenhouse Project

Indicator - Number full time jobs

- Wildlife Works employees
- Total including in community (screen printing, etc.)

| Number of full time employees | | | | |
|-------------------------------|--------------------|--|--|--|
| | WW employee | | | |
| 2010 | 8 | | | |
| 2011 | 15 | | | |
| 2012 | 23 | | | |

Indicator – Local Employment

- How many employees come from project area communities?
- How many employees come from outside project area communities?

| Local employment | | | | |
|------------------|--|---|--|--|
| | Number employed from project area | Number employed from outside project area | | |
| 2010 | 8 | 0 | | |
| 2011 | 19 | 0 | | |
| 2012 | 23 | 0 | | |

Indicator – Financial Investment/Return

- Monies invested in capital expense (CAPEX) for new greenhouse / greenhouse expansion since REDD project began, 1st Jan, 2010.
- Annual operating expenses since REDD project began, 1st Jan, 2010.

| Financial | | | | |
|-----------|--|--|--|--|
| | | | | |

| Investment/Return | | | | |
|---|---------------------|--|--|--|
| Monies invested in capital expenses (CAPEX) for new greenhouse / greenhouse expansion | | | | |
| | KSH | | | |
| 2010 | 0 | | | |
| 2011 | 566,000 | | | |
| 2012 | 140,120.00 | | | |
| Annual operating costs | | | | |
| | KSH | | | |
| 2010 | 756,491 | | | |
| 2011 | 547,400 | | | |
| 2012 | 3,025,805.50 | | | |

Indicator – number of new greenhouse locations implemented

Indicator – number of trees propagated in greenhouse(s)

- total - all species
- fruit and agroforestry/fuelwood trees
- Indigenous trees for reforestation projects

| Number of greenhouse locations implemented | | | | |
|--|---------------------------|---------------|------------|-------------------|
| WW | 1 | | | |
| Amiran | 2 | | | |
| Jojoba | 1 | | | |
| Number of trees propagated in greenhouse | | | | |
| | Total number of seedlings | Fruit /agro | Indigenous | Number of species |
| Inventory 2010 | | | | |
| Inventory November 2011 | 11,655 | 2,448 | 9,217 | 36 |
| Inventory April 2012 | 33758 | 12,423 | 21,335 | 37 |
| Inventory December 2012 | 11,238 | 11,125 | 113 | 35 |

Indicator - Project Results

- Tree Survival Rates
- Total Trees Planted

Results for this project were primarily measured using tree survival rates. The following table summarizes survival rates for the current monitoring period. Note that we track survival rates for

seeds planted the previous year, so the following table indicates measurement made in 2012 for seeds planted in 2011. The Grand total (average) seedling survival rate for seeds planted in 2011 was **58%**:

Seedling Survival

| Outplanting Location Name | 2011 |
|---------------------------|------|
| A. Mwagunga | |
| ACK Bughuta | |
| ACK Marungu | 82.8 |
| ACK Talio | |
| AIC Maungu | 75.0 |
| Bughuta Dispensary | |
| Bughuta Primary | 92.7 |
| Bughuta Secondary | 68.4 |
| Bungule Primary | |
| Cafgem Primary | |
| Camp Kenya | 80.0 |
| Chiefs Office (Maungu) | 15.6 |
| Esmili Chari | |
| Gari Simba | |
| Gideon Mosi Primary | 62.4 |
| Holiday Villa | 2.1 |
| Ian Pesa | 81.0 |
| Itinyi Community | |
| Itinyi Primary | 61.8 |
| Jaffery Primary | |
| James Mboga | |
| Jamie WW | |
| JKUAT | |
| Joana Maiden | |
| Jora Primary | |
| Kajire Primary | 61.6 |
| Kajire Secondary | |
| Kale Poa Kiosk | 32.5 |
| Kale Primary | 76.8 |
| Kale Youth Bunge | 48.4 |
| Kamkunji Itinyi Committee | 85.9 |
| Kasigau Girls | |
| Kibaoni Site | 78.8 |
| Kileva Primary | 16.6 |
| Kirumbi Primary | 50.4 |
| Kisimenyi Primary | 72.9 |

| | |
|-------------------------------|------|
| Kisimenyi Primary & Community | |
| Kiteghe Primary | 47.0 |
| Klever Primary | |
| Kwa Jumaa | |
| Kwa Mwakala Mboga | 85.9 |
| KWS HQ | |
| MacKinnon Community | |
| MacKinnon Secondary | |
| Makwasinyi | |
| Makwasinyi Primary | |
| Malewa Trust | 61.4 |
| Mama Alex | |
| Marasi Primary | 56.5 |
| Marungu Dispensary | 62.8 |
| Marungu Hill | |
| Marungu Primary | 50.6 |
| Marungu Secondary | 58.0 |
| Marungu Secondary | |
| Mbele Primary | 51.3 |
| Mercy Joshua | |
| Miasenyi Chiefs Camp | |
| Miasenyi Community | 76.9 |
| Miasenyi Dispensary | |
| Miasenyi Primary | 57.0 |
| Miasenyi Sec | |
| Mkamenyi & Community | |
| Mkamenyi Primary | 61.2 |
| Mlondo Primary | |
| Moi High School | 53.0 |
| Msharinyi Primary | 69.2 |
| Mwakaramba Tank | |
| Mwambiti Polytechnic | |
| Mwambiti Primary | |
| Mwambiti Secondary | |
| Mwanangao Hill | |
| Mwanangao Hill & Community | |
| New Kisimenyi Primary | |
| New White House Academy | |
| Ngambenyi Primary | |
| Old Kisimenyi Primary | |
| Pastor Mwawasi | |

| | |
|------------------------------|-------------|
| Pump House | 51.2 |
| R. Mwangala | |
| Research Centre | |
| Rukanga Primary | 76.6 |
| Sagalla Primary | |
| Sasenyi Primary | |
| Sasenyi Primary & Community | |
| Sowa Primary | 64.2 |
| St. Joseph Girls Sec | 2.7 |
| Staff Individuals Collection | |
| Taita Village | 13.7 |
| Talio Primary | |
| Wangala Pre School | |
| Wangala Primary | |
| Wangala Youth Group | |
| Westermans Camp | |
| Winnie Mkalisha (Itinyi) | 60.8 |
| Wray Primary | |
| Zaire Water Pan | |
| Grand Total | 57.9 |

The following indicates total seeds planted by project type, a grouping of all locations by location type. A list of all locations and corresponding seed planting totals is available upon request in the carbon office:

Total seeds planted by site type

| Project Site | 2010 | 2011 | 2012 | Total Planted |
|-----------------------|--------------|--------------|--------------|---------------|
| Communal area | 4500 | 22020 | 4119 | 30639 |
| Private non-residence | 20 | 3037 | 289 | 3346 |
| Private residence | 2500 | 4067 | 1355 | 7922 |
| Ranch boma | | | 7000 | 7000 |
| School | 8920 | 26120 | 7547 | 42587 |
| Grand Total | 15940 | 55244 | 20310 | 91494 |

Jojoba/Dryland Farming Project

Indicator - Number full time jobs

- Wildlife Works employees
- Total including in-community

Indicator – Local Employment

- How many employees come from project area communities

- How many employees come from outside project area communities?

Indicator – Financial Investment/Return

- Monies invested in capital expense (CAPEX) since REDD project began, 1st Jan, 2010
- Annual operating expenses on Jojoba Project since REDD project began, 1st Jan, 2010
- Income generated from Jojoba Project since REDD project began, 1st Jan, 2010.

| Number of full time employees | | |
|---|-----------------------------------|---|
| | WW employee | |
| 2010 | | |
| 2011 | 1 | |
| 2012 | 1 | |
| Local employment | | |
| | Number employed from project area | Number employed from outside project area |
| 2010 | | |
| 2011 | 1 | 0 |
| 2012 | 1 | 0 |
| Financial Investment/Return | | |
| Monies invested in capital expense (CAPEX) since REDD project began, 1st Jan, 2010 | | |
| 2010 | 0 | |
| 2011 | 0 | |
| 2012 | 0 | |
| Annual operating expenses on Jojoba Project since REDD project began, 1st Jan, 2010 | | |
| | KSH | |
| Jan - Dec 2010 (paid by government) | 72000 | |
| Jan - June 2011(paid by government) | 36000 | |
| July 2011 - Dec 2011 (paid by WW) | 36000 | |
| Jan 2012 - April 2012 (paid by WW) | 92000 | |
| Income generated from Jojoba Project since REDD project began, 1st Jan, 2010. | | |
| 2010 | 8000 | |
| 2011 | 8000 | |
| 2012 | 8000 | |

Ecotourism in Project and Reference Areas

Indicator - Number full time jobs

- WW employees
- Total including in-community (Camp Kenya, etc.)

Indicator – Local Employment

- How many employees come from project area communities?
- How many employees come from outside project area communities?

Indicator – Financial Investment/Return

- Monies invested in capital expense (CAPEX) since REDD project began, including bursaries for local youth to complete Eco training
- Annual operating expenses since REDD project began, 1st Jan, 2010.

Indicator – Number of local youth put through Eco training Guide Training (course date, name, age, address, successful completion y/n)

| Number of full time employees | | |
|--|-----------------------------------|---|
| | WW employee | Total included in-community (Camp Kenya) |
| 2010 | | |
| 2011 | | |
| 2012 | 0 | 9 |
| Local employment | | |
| | Number employed from project area | Number employed from outside project area |
| 2010 | | |
| 2011 | | |
| 2012 | 6 | 3 |
| Financial Investment/Return | | |
| Monies invested in capital expense (CAPEX) since REDD project began, including bursaries for local youth to complete Eco training | | |
| 2010 | 0 | |
| 2011 | 0 | |
| 2012 | 0 | |
| Annual operating expenses since REDD project began, 1st Jan, 2010. | | |
| 2010 | 0 | |
| 2011 | 0 | |
| 2012 | 0 | |

Community Projects

1. Educational Bursaries

Indicator – Number bursaries for local children each year

- paid by WW
- paid by Kelimu, other
- Student name, village, age, primary school, secondary school/college/university, results

Indicator – \$ invested in school construction and maintenance

- Fund amount, date, where used, number of children housed, outcome

| Number of bursaries for local children each year | | | | | | | | | |
|--|----------------------------|-------------|------------------------|------------|-----------------------|-------------|--------------------------|-------------|--------------------|
| Year | Source Of Funds | Second ary | Amount Secondary (KSH) | Terti ary | Amount Tertiary (KSH) | Unive rsity | Amount Universit y (KSH) | Over al INo | TOTAL Amount (KSH) |
| 2011 | Kelimu Trust | 72 | 2,880,000 | 3 | 297,000 | 4 | 200,000 | 79 | 3,377,000 |
| | WWCT Bursary Scheme | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | CDF | 1171 | 3,766,780 | 185 | 1,345,500 | 193 | 1,289,000 | 1549 | 6,401,280 |
| | Equity Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2012 | Kelimu Trust | 59 | 2,360,000 | 2 | 198,000 | 4 | 200,000 | 65 | 2,758,000 |
| | WWCT Bursary Scheme | 1184 | 7,616,560 | 291 | 1,687,000 | 132 | 1,552,000 | 1607 | 10,855,560 |
| | CDF | 112 | 40,600 | 12 | 61,000 | 10 | 60,000 | 134 | 161,600 |
| | Equity Bank | 40 | 1,600,000 | 0 | 0 | | 0 | 40 | 1,600,000 |

| Year | Location | Total No University | Total No Tertiary | Total No Secondary | Total students sponsored |
|------|----------|---------------------|-------------------|--------------------|--------------------------|
| 2012 | Marungu | 13 | 19 | 160 | 192 |
| | Sagalla | 40 | 128 | 339 | 507 |
| | Mwachabo | 32 | 51 | 286 | 369 |
| | Mwatate | 32 | 47 | 241 | 320 |
| | Kasigau | 15 | 46 | 158 | 219 |
| | | 132 | 291 | 1184 | 1607 |

Wildlife Works Bursary Scheme (WWCT)

| Year | Location | Total Amount University (KSH) | Total Amount Tertiary (KSH) | Total Amount Secondary (KSH) |
|------|----------|-------------------------------|-----------------------------|------------------------------|
| 2012 | Marungu | 156,000 | 165,000 | 2,048,560 |

| | | | |
|--------------------|------------------|------------------|-------------------|
| Sagalla | 480,000 | 604,000 | 1,343,000 |
| Mwachabo | 416,000 | 328,000 | 1,233,000 |
| Mwatate | 320,000 | 298,000 | 1,480,000 |
| Kasigau | 180,000 | 292,000 | 1,512,000 |
| | 1,552,000 | 1,687,000 | 7,616,560 |
| Grand Total | | | 10,855,560 |

2. School Construction and Maintenance

2012 Total \$ Invested in School construction and maintenance

| Location | Specific Area/Site | Project Type | Brief description | Status | Projected Cost | Already Spent | Final Cost | Output/ Outcome |
|----------|--------------------|--------------|---|-----------|----------------|---------------|------------|--|
| Kasigau | Moi SS | Furniture | Constructing desks, tables and double desks | Completed | 720,000 | 630,000 | | There is enough furniture for students |
| Kasigau | Zungulukani | Building | Classroom construction | On-hold | | | | |
| Mwachabo | Mngama PS | Building | Classroom construction | Completed | 759,000 | 645,150 | | Reduced congestion of classes |
| Mwachabo | Mwemba PS | Building | Classroom and Office | Ongoing | 1,682,015 | 1,429,713 | | Reduced distance to get to school |
| Sagalla | Talio Youth Poly | Building | Classroom construction | On-hold | | | | |
| Sagalla | Marie PS | Building | Construction of staff houses | On-hold | | | | |
| Sagalla | Mwambiti PS | Building | Completion of two classrooms | On-hold | | | | |
| Sagalla | Mchanninga Nursery | Building | Classroom construction | On-hold | | | | |
| Sagalla | Kileva PS | Building | Classroom construction | On-hold | | | | |
| Mwatate | Mwatate SS | Building | Classroom construction | Ongoing | 800,000 | 680,000 | | Better learning condition for students |
| Mwatate | Mzwanenyi PS | Building | Classrooms' repair (floor & roofing) | On-hold | | | | |

Other metrics, such as student success rates are available upon request.

3. Water Projects

The following projects are supported by the WWCT:

Water Projects

| Year | Location | SpecificArea/Site | Project | | Brief description | Status |
|------|----------|-------------------|----------|------------------|--|-----------|
| | | | Category | Project Type | | |
| 2011 | Marungu | Itinyi-Zaire | Water | Pipeline | Construction of gravity pipeline with 5 selling points | On-hold |
| 2012 | Kasigau | Jora | Water | Water tank | Tank construction | Completed |
| 2012 | Kasigau | Buguta | Water | Water pan | Expanding pan | On-hold |
| 2012 | Kasigau | Makwasinyi | Water | Pipeline | Pipeline repair | On-hold |
| 2012 | Kasigau | Makwasinyi | Water | Water tank | Tank construction | Completed |
| 2012 | Kasigau | Rukanga | Water | Water tank | Tank construction | On-hold |
| 2012 | Mwachabo | Ngangu | Water | Pipeline | Rehabilitating old line; Constructing two new lines to schools | Completed |
| 2012 | Sagalla | Kirumbi | Water | Building | Construction of cattle trough and fencing around | On-hold |
| 2012 | Mwatate | Maili kumi PS | Water | Water harvesting | Construction of roof catchments and storage tanks | Ongoing |
| 2012 | Marungu | Sasenyi | Water | Water harvesting | Construction of Sasenyi rock catchment | Ongoing |
| 2012 | Marungu | Marungu | Water | Water harvesting | Guttering at Marungu Health Centre | Completed |

4. Other WWCT Projects

Other Projects funded by the WWCT during the current monitoring period (m₃)

| Year | Location | SpecificArea / Site | Project Category | Project Type | Brief description | Status |
|------|----------|---------------------|------------------|--------------|---|-----------|
| 2012 | Sagalla | Bamako Dispensary | Health | Building | Construction of a clinic room & pit latrine | On-hold |
| 2012 | Mwachabo | Mwatate town | Other | Building | Construction of CBO's Office | Completed |

| | | | | | | |
|------|---------|----------|-------|----------|---|-----------|
| 2012 | Mwatate | Mwatunge | Other | Building | Construction of CBO's Office | Completed |
| 2012 | Sagalla | Kanyanga | Roads | Road | Road rehabilitation at Sagalla upper zone | On-hold |

Indicator - # children in each school

- total
- average number of children per classroom
- highest number kids per classroom

Indicator – grades of children in national exams and position in district by school

Indicator – number of children securing places in secondary school from each school

Soap Factory

The soap factory was in full swing this monitoring period. We reported the soap factory as a Project Activity last monitoring period, but it was in a fledgling state, and we therefore had no indicator data. This monitoring period, the following indicators were reported. As of mid-2012, the soap factory is currently in the process of being moved into a new building, and has therefore been on a production hiatus (toward the end of 2012). Production is scheduled to start back shortly.

Indicator - # of full-time Employees

Indicator - # of local employees

Indicator - Financial Investment / Return

| Soap factory Indicators | | |
|-------------------------------|-----------------------------------|---|
| Number of full time employees | | |
| | WW employee | Total included in community |
| 2010 | 1 | 0 |
| 2011 | 1 | 0 |
| 2012 | 1 | 0 |
| Local employment | | |
| | Number employed from project area | Number employed from outside project area |
| 2010 | 1 | 0 |

| | | | |
|--|------|---------|---|
| | 2011 | 1 | 0 |
| | 2012 | 1 | 0 |
| Financial Investment/Return | | | |
| Monies invested in capital expense (CAPEX) since REDD project began, 1st Jan, 2010 | | | |
| KSH | | | |
| | 2010 | 0 | |
| | 2011 | 0 | |
| | 2012 | 99,900 | |
| Annual operating expenses on Soap Project since REDD project began, 1st Jan, 2010 | | | |
| KSH | | | |
| | 2010 | 86,400 | |
| | 2011 | 115,920 | |
| | 2012 | 4,389 | |
| Income generated from Soap Project since REDD project began, 1st Jan, 2010. | | | |
| KSH | | | |
| | 2010 | 80,750 | |
| | 2011 | 46,750 | |
| | 2012 | 0 | |

Biodiversity Indicators

As mentioned and examined in detail previously in Section 2.2.4 *Wildlife Works' Biodiversity and Social Monitoring Plan*, Wildlife Works conducts a yearly assessment / analysis of the state of biodiversity and socioeconomics in the project's sphere of influence. For the sake of brevity, and to avoid redundancy, the biodiversity and social indicators listed in section 2.2.4, which include a full results complement, will not be repeated here. However, we have chosen to consider all ranger data (including incidents, arrest, flora & fauna sightings, etc.) in this section. The following sub-sections address the highly respected Wildlife Works rangers and their activities over the past calendar year (m₃). Also, we choose to report human resources data in this section, as it tends to fit with the ranger statistics quite well, and we have always coupled these two sections together in the past:

Indicator – Overall Project Incidents

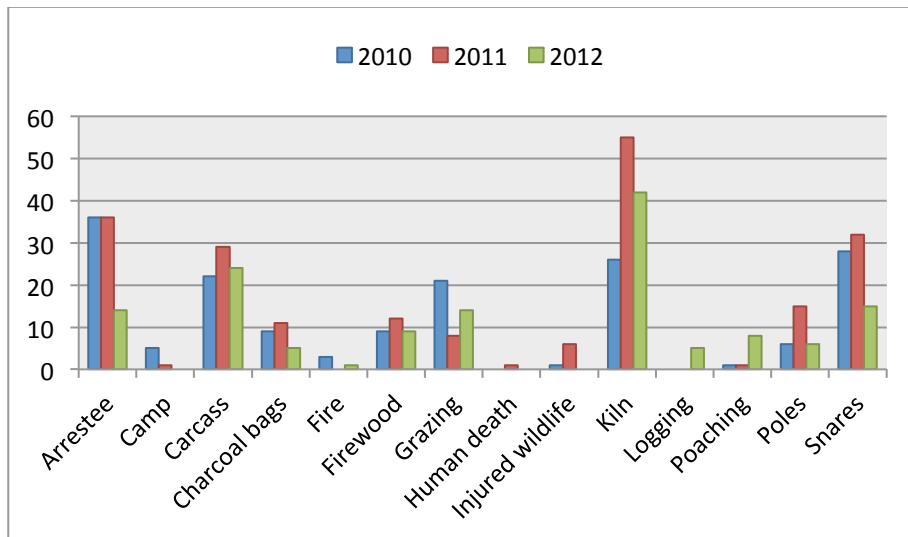
Overall Project Incidents

| Project Incidents | | | | |
|---------------------|------|------|------|-------------|
| Number of Incidents | 2010 | 2011 | 2012 | Grand Total |
| Arrestee | 36 | 36 | 14 | 86 |
| Camp | 5 | 1 | | 6 |

| | | | | |
|--------------------|------------|------------|------------|------------|
| Carcass | 22 | 29 | 24 | 75 |
| Charcoal bags | 9 | 11 | 5 | 25 |
| Fire | 3 | | 1 | 4 |
| Firewood | 9 | 12 | 9 | 30 |
| Grazing | 21 | 8 | 14 | 43 |
| Human death | | 1 | | 1 |
| Injured wildlife | 1 | 6 | | 7 |
| Kiln | 26 | 55 | 42 | 123 |
| Logging | | | 5 | 5 |
| Poaching | 1 | 1 | 8 | 10 |
| Poles | 6 | 15 | 6 | 27 |
| Snares | 28 | 32 | 15 | 75 |
| Grand Total | 167 | 207 | 143 | 517 |

Animal Incidents / Poaching

| Incidents | Details | 2010 | 2011 | 2012 | Grand Total |
|--------------|-----------------|-----------|-----------|-----------|-------------|
| type | Buffalo | 2 | 1 | | 3 |
| | Common Zebra | | 1 | | 1 |
| | Dik dik | 3 | 4 | 2 | 9 |
| | Eland | 1 | | | 1 |
| | Elephant | 12 | 19 | 21 | 52 |
| | Gerenuk | | 1 | | 1 |
| | Giraffe | 1 | | 1 | 2 |
| | Impala | 1 | 1 | | 2 |
| | Lesser Kudu | 2 | 1 | | 3 |
| | Warthog | | 1 | | 1 |
| Total | | 22 | 29 | 24 | 75 |



Phase II Recorded Incidents throughout the Project Area

Ranger Recruiting / Expenses

This monitoring period, new rangers were extracted from existing recruitment lists. No new recruiting events were held, but 9 new rangers were added to the workforce.

Species Sightings

Please see Section 2.2.5 *Biodiversity and Social Monitoring Plan* for detail.

Project Human Resources

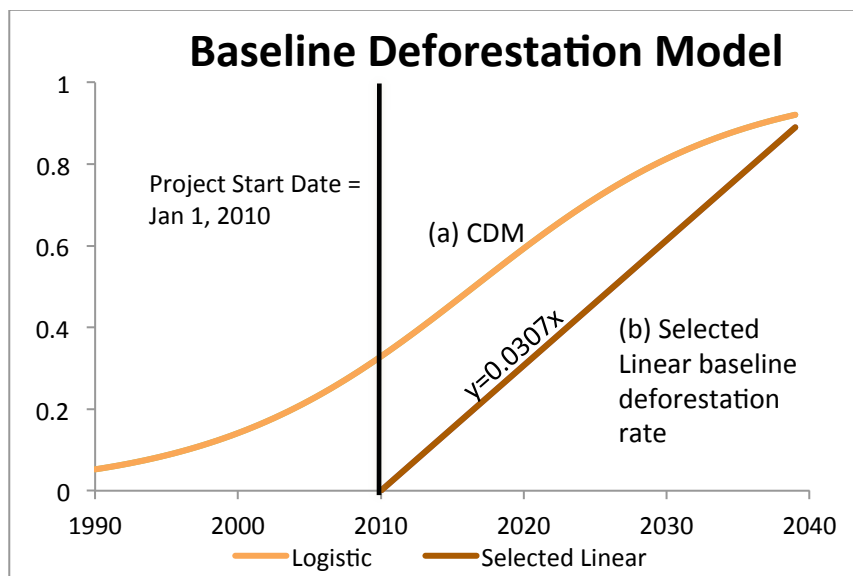
An overall human resources plan has been fully implemented over the past year (m₃). Please find below a detailed list of HR metrics. The following key indicators are used to measure the efficacy of Wildlife Works' program:

6 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS (CLIMATE)

6.1 Baseline Emissions (G2)

Baseline emissions for the current monitoring period (m₃) are calculated as follows:

The same Cumulative Deforestation Model (CDM) curve is used for the current monitoring period as was used for the previous period. The CDM (baseline) will be re-evaluated at the 10-year mark, but not before. As stated in last monitoring period's report, Wildlife Works chose a conservative linear baseline prediction for baseline emissions, based on historical deforestation observations and modeled with a logistical deforestation curve. This linear deforestation rate follows the stipulation in VM0009 V1.0, section 6.4.8 Linear Prediction of Deforestation. Both the logistical CDM and chosen conservative linear deforestation rate are depicted in the chart below.



The cumulative gross and net emission reductions (January 1, 2010 to December 31, 2012) are as follows, by year:

| Monitoring Period | 2010 (m ₁) | 2011 (m ₂) | 2012 (m ₃) | Cum. TOTAL |
|--|------------------------|------------------------|------------------------|------------------|
| Baseline deforestation % | 3.07% | 6.14% | 9.2% | – |
| Gross emission reductions | 1,253,588 | 1,538,732 | 1,351,146 | 4,143,466 |
| Percent of ERs to VCS pooled buffer account | 20% | 15% | 15% | – |
| Buffer tonnes to VCS | 250,718 | 211,938 | 202,672 | 665,328 |
| Net issued NERs | 1,002,871 | 1,200,981 | 1,145,474 | 3,352,325 |

Quantify the baseline emissions and/or removals (See G2.3)

For soil carbon, we must use a different model, as unlike with forest carbon, complete soil carbon loss does not occur in the baseline scenario. We again followed the VCS methodology VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0 for soil carbon, which dictates a decay curve which eventually settles on a mean loss value for soil carbon lost through clearing of agricultural land. We measured soil carbon in a number of proxy sites immediately adjacent to the project area, on farmland with identical soil, rainfall and climate, that in all cases had been forest less than 20 years before. The sampling methodology was identical to that used for the soil carbon estimates within the project area: 1m pits dug in two lifts, 0-30cms and 31-100cms and samples from each layer were thoroughly mixed, bagged and sent to an independent soil testing lab for bulk density and soil organic matter (SOM) analysis. The results obtained are included in the supporting file Kasigau Corridor Phase II 1m Soil Analysis.xlsx.

This analysis yielded a mean difference in soil carbon between the “with-project” and “without project” of 222 tonnes GHG per ha converted to farm land under annual crops, or a 49% reduction

in soil carbon value on conversion.

Summarizing for all pools the GHG loss in Baseline is:

| Pool | Total GHG | Loss in Baseline over 30 years |
|---|----------------------|--------------------------------|
| Aboveground and Belowground forest biomass (trees, shrubs, grasses) | 13,497,555.11 | 12,427,390 |
| Soils | 75,324,154.78 | 33,919,329 |
| Total | 88,821,709.89 | 7,624,712 |
| Average Annual loss over 30 years (m.t. GHG) – GROSS NERs | | 1,544,891 |

6.2 Project Emissions

Quantify project emissions and/or removals.

Project emissions are estimated as follows:

- All carbon eligible carbon pools fell under the *de minimus* limit as described in the MED, section 9 Project Emissions and in VCS 2007.1;
- There were no significant fire events in this monitoring period (m₃). If a significant fire event were to occur, Wildlife Works would be required to produce a map of the boundaries for the fire prior to the subsequent monitoring period, as stipulated in VM0009 V1.0;

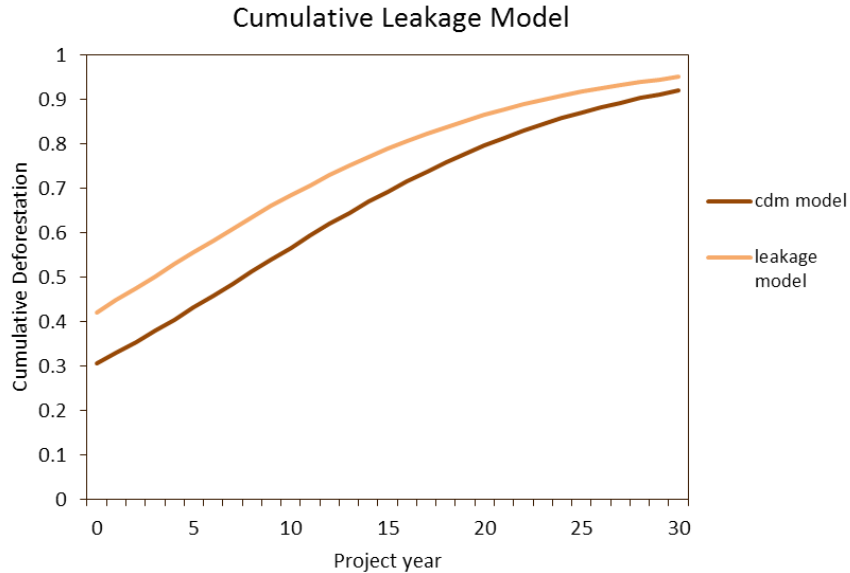
Burning of woody biomass (see VM0009, section 9 Project Emissions) in the project area falls below the *de minimus* threshold for this monitoring period (m₃).

6.3 Leakage

Quantify leakage emissions.

During the second monitoring period (m₁), the leakage lag period, $\hat{\delta}_{LE}$, was measured using empirical leakage plot data. The leakage model was built from this data (see below), and used to measure adjustments for leakage in the current and subsequent monitoring periods, until baseline reevaluation. Leakage was calculated and deducted from gross emission reductions as follows:

$$\hat{\delta}_{LE} (t=0) = -0.5046009$$



For this monitoring period, $\hat{\delta}_t$ is measured as the estimate of cumulative deforestation and degradation in the leakage plots:

$$\hat{\delta}_2 = -0.4413$$

And compared to the cumulative leakage model at time t=3, per VM0009 V1.0, equation [33]:

$$\hat{r}_{LE}^{[3]} = 0\%$$

We then calculate leakage for the current monitoring period, per VM0009 V1.0 equation [32]:

$$C_{LE}^{[3]} = \hat{r}_{LE}^{[3]} C_{BE}^{[3]} = 0 \cdot 1,351,146 = 0$$

6.4 Summary of GHG Emission Reductions and Removals (CL1 & CL2)

Quantify the net GHG emission reductions and removals. Include net change in carbon stocks (see CL1.1-1.4 and CL2.3).

Specify breakdown of GHG emission reductions and removals by vintages where the intent is to issue each vintage separately in the VCS registry system.

Net emissions reductions to date are quantified from the components shown in the table below, which include estimated gross emissions reductions, any uncertainty deductions, deductions for leakage and deductions for the risk of reversal buffer pool. Error analysis for the current monitoring period m_3 is also included below. It should be noted that the error analysis was performed on the full set of plot monitoring data, with the re-measured plots being pooled with the data from the previous monitoring period for the plots not selected for re-measurement at the m_3 monitoring period (20%, randomly selected):

| Component | Value |
|---|----------------|
| Baseline deforestation percentage, m ₃ | 9.2 |
| Uncertainty Deduction | 0 |
| Project Emissions, m ₃ | 0 |
| Emissions from Leakage, m ₃ | 0 |
| Gross emissions reductions, m ₃ | 1,351,146 |
| NERs to Buffer Pool, (15%), m ₃ | 202,672 |
| Net emissions reductions NERs, m ₃ | 206,892 |
| Standard error | 3,730,361.15 |
| Error percentage | 8.23% |

6.5 Climate Change Adaptation Benefits (GL1)

For projects that included this optional criterion in the project description, describe how project activities are assisting communities and/or biodiversity to adapt to the probable impacts of climate change (see GL1.1-4).

Identify Likely Climate Change impacts

We believe there is overwhelming evidence in the literature that there will be significant negative climate change and climate variability impacts on the communities in the project area, as they are heavily dependent traditionally on subsistence agriculture in an area which in the best of times was highly marginal for agriculture. In fact almost everyone in the community will tell you that the rains have failed far more frequently in recent years, and even when they have come they are unpredictable which leads to missed opportunities to plant at the right time in the season to ensure a harvest even in good rain seasons. We believe this problem will only increase with increasing likelihood of more severe climate change impacts in the future. The impact of poor food security is not to force people to leave the area though. It just means they keep moving, clearing more land in the hopes that they will find the perfect plot on which the variable and highly localized rains will fall, so in the Baseline scenario, we anticipate even higher deforestation rates in the future. The other impact of failed crops is that it triggers an increase in poaching on bush meat, and even though native wildlife populations are drought specialists, they will already be further stressed by even lower rainfall and higher median temperatures in the future, and populations may be less able to withstand further stress from poaching.

A partial list of publications addressing the impact of Climate Change on Kenya specifically is presented below, as recent as last year and stretching back to 1991:

The Economic Impact of Climate Change on Kenyan Crop Agriculture: A Ricardian Approach Fredrick K. Karanja University of Nairobi, Jane Kabubo-Mariara University of Nairobi, August 1, 2007 World Bank Policy Research Working Paper No. 4334

CLIMATE CHANGE AND AFRICAN AGRICULTURE Policy Note No. 12, August 2006, CEEPA Centre for Environmental Economics and Policy in Africa (CEEPA)

Omenda, T.O., J.G. Kariuki, and P.N. Mbuti, 1998: Vulnerability and Adaptation to Potential Impacts of Climate Change in Kenya: Summary for Policy Makers. Kenya Country Study Project, Ministry of Research and Technology, Nairobi, Kenya

Okoth-Ogendo, W.H.O. and Ojwang, J.B. (ed.), A Climate for Development: Climate Change Policy Options for Africa. ACTS press, Nairobi, 1995, p. 264.

Ottichilo, W.K., Kinuthia, J.H., Ratego, P.O. and Nasubo, G., Weathering the storm: Climate Change and Investment in Kenya, ACTS Press, Nairobi, 1991, p. 91.

Identify Risks to Project's CCB Benefits from Climate Change

Climate change in this area of Kenya is very likely to increase average temperatures, to produce more frequent and prolonged drought, and to reduce the productivity of the traditional subsistence crops grown by local farmers who have low variability and diversity of crops, high reliance on subsistence agriculture due to low skills and knowledge of other income generating activities etc.. Lower food productivity if left unmitigated would put increased pressure on poaching of biodiversity. We are working hard to mitigate this risk by providing alternative livelihoods and diversification of income sources to those not dependent on agriculture, such as in our factory, in our Carbon project and by researching drought tolerant cash crops that the local farmers can intercrop with their maize to provide a cash crop even in drought, such as jojoba.

It is also possible that severe prolonged drought could lead to the degradation of natural food sources, such as grazing and forage for the wild animals, although most species in this area are already drought specialists, not requiring to drink water for months or in some cases ever, as they acquire their water for survival through the browse they eat (giraffe, kudu, oryx, gazelles) or through combination of browse and physiological design (gerenuk). The tree species present in the Dryland Forest are also drought specialists, with Commiphora, Spp. having the unique ability to photosynthesize through their bark, so they drop all their leaves during the dry season to prevent loss of water through transpiration. Acacia spp. drop 95% of their leaves for the same reason but as they cannot photosynthesize through their bark they must keep 5% of their leaves even during drought to stay alive, although the leaves that remain fold in on themselves at night again to minimize surface area for transpiration.

Predators generally maintain during drought by living off the blood of their prey, and though territorial have large territories and will follow their prey over large distances if necessary.

For those wildlife species that do require water during drought, such as elephant, buffalo, eland, common zebra the fact that we are providing a safe corridor for wildlife to migrate between Tsavo East and Tsavo West National Parks means that we are allowing for wildlife to move hundreds of kilometers to seek food in times of drought. We have also made the management decision to provide water at water points throughout the sanctuary, to make up for the fact that the permanent natural water points in the project area have been monopolized by humans and wildlife is now excluded from use of these water points. The source of our water is the main water pipeline from Mzima Springs, which despite recent dry years is still flowing at record rates, enough to provide for the drinking water needs of the inhabitants of the City of Mombasa with enough left over to keep the Tsavo River as a permanent river.

Availability of graze for those species that require it to eat could be further reduced during prolonged drought by the invasion of illegal cattle grazers, mostly Somali in search of grass for their cattle. This has been experienced from time to time historically on Rukinga, and much more often both legally and illegally in the project area for Phase II, but this is now an illegal act of trespass by tribes from outside the project area, with no support from community or administration and as such with adequate funding for patrolling, we believe we can mitigate this risk. Recent drought has dramatically reduced herd size for the Somali commercial cattlemen, making it more likely that they will be able to find adequate grazing for their herds elsewhere. There is also the possibility that the geopolitical situation in Somalia that lead to the original use of the project area for fattening Somali cattle being walked from Somalia and Northern Kenya

to be shipped from Mombasa to the Gulf will improve, allowing for the export of cattle from Somalia directly to the Gulf, removing the need for large herds to travel south through this part of Kenya. As this is an Avoided Deforestation project, with no climate benefits being claimed for net carbon stock increase from year to year in the with project scenario, we do not anticipate any negative impacts on the emissions benefits of this Project. Afforestation and reforestation projects would definitely face the risk of lower carbon stock increases if rainfall levels were further reduced as climate change continues, but we do not believe that the levels of unpredictability will have a significant impact on the survival of the mature indigenous Dryland Forest that forms the basis of our Carbon project.

Demonstrate Current or Anticipated Climate Change impacts

The climate change impacts mentioned above are all equally applicable to the project area and project zone (including reference area); please refer to sections GL1.1 and GL 1.2 above.

Demonstrate that Project Activities Will Mitigate Climate Change impacts

Wildlife Works approach in the face of this threat has been since the beginning of our project to search for economic development opportunities that are sustainable and NOT dependent on the dry land forest. Our first initiative was to build a factory and teach the local women how to sew, a radical departure from traditional conservation thinking, but an approach designed to wean the community off the dependence on slash and burn agriculture.

The expansion of our project to include carbon revenues from protection of the Dryland forest under this Project will increase the options for non land based job creation, allowing us to employ more community members in our non-agricultural activities.

In addition we intend to use carbon funding to expand our dryland farming scheme, where we are exploring the use of Jojoba and chili pepper and citrus trees as cash crops that can survive in very arid conditions with little or no watering and are much more productive per hectare than maize or annual crops traditionally grown by the community. As these crops require much less land, they can be realistically irrigated from the pipeline which the government has now extended down into the project area villages in the event that natural rains fail for an extended period, and the income they provide will justify the farmers expense of irrigation. This cannot be said for Maize which is not a valuable enough crop to justify irrigation from the pipeline.

7 COMMUNITY

7.1 Net Positive Community Impacts (CM1)

Explain the justification of net positive community impacts (CM1.1-2):

Project Impact on Communities

From the start of this project, Wildlife Works has focused on methods bring benefit to the local communities from the conservation of natural resources, both forest and biodiversity. The measures of success within the community are both traditional. (e.g. number of employees, funds invested in the community, socio-economic improvement within the communities), and non – traditional, (e.g. presence or absence of significant poaching by local community members, presence or absence of land pressure on the boundaries of the project area). We have every reason to report that by all measures, traditional or non-traditional; our project has had huge net-

positive impacts on the community. Wildlife Works is not a typical NGO; we are a conservation business, and therefore do not have the skills, nor the impartiality to test this contention ourselves, but we have had numerous groups pass through Rukinga over the years to observe our model, and numerous surveys have been conducted. The most comprehensive study to date, conducted in August 2007, by an independent student researcher from the Netherlands, Marit Rietveld, is available upon request and another study conducted by a Swiss PhD student is available for perusal.

- *Describe the impacts on communities (positive and negative), including all constituent socio-economic or cultural groups such as indigenous peoples, resulting from project activities and show that the net impacts are positive for the social and economic well-being of all community groups.*

In the spirit of brevity and non-redundancy, details concerning net-positive community impacts are discussed at length in Section 5.3 *Data and Parameters Monitored*, Section 2.2 Description of the Project Activity.

- *Demonstrate that no High Conservation Values related to community well-being have been negatively affected.*

Demonstration of no Negative Impacts on High Conservation Values

There are no negative impacts by Wildlife Works project on HCV flora and fauna. On the contrary, we believe we have demonstrated net-positive impact on endangered species habitat and wildlife populations. Furthermore, in regards to the community and the HCV species of Mt. Kasigau, which is certainly the most important HCV area, we have an effective plan, provided to the validator (the Mt. Kasigau Reforestation Plan) to reforest the slopes of Mt. Kasigau. We will work closely with community groups, who will receive financial rewards for planting and sustaining 20,000 trees over a 3 year period. We are confident that this plan, which includes de-snaring and biodiversity monitoring by a community based organization, the Kasigau Development Trust (KDT), will result in a significant improvement to the HCV species of Mt. Kasigau. Details are described in the "Kasigau Biodiversity Monitoring Plan", and "Kasigau Biodiversity Survey Report", also provided to the validator.

7.2 Negative Offsite Stakeholder impacts (CM2)

Describe any negative offsite stakeholder impacts the project activities have caused and show that the project does not result in net negative impacts on the well-being of other stakeholder groups. Describe the implementation of measures to mitigate negative offsite social and economic impacts of the main stakeholders (see CM2.1-3).

Identify any Potential Negative Impacts on Offsite Stakeholders

We believe strongly that there are no net negative impacts on offsite stakeholders whatsoever, as there was no legal harvest of resources from the project area as the tree species are non-commercial and only used in the local area by communities within the project area. On the contrary we believe that Wildlife Works has had a very positive impact on offsite stakeholders, both certainly regionally where we have encouraged the set aside of more threatened land for conservation, nationally where we are recognized within Kenya as an innovative approach to balancing the needs of communities with the needs of wildlife, and internationally as ours is a

conservation project that has elevated the idea of community based sustainable conservation to a new level on the global stage, and has been copied by many of the large conservation organizations, as evidenced by the popularity of the Wildlife Friendly Enterprise network (www.wildlifefriendly.org) of which we were a founding member.

However based on feedback from local communities during Phase I of this Project, a few areas of potential negative impact were identified and need to be addressed. These are:

- A potential increase in human-wildlife conflict as the wildlife populations return to Kasigau Corridor.
- An exclusive dependence on Wildlife Works for livelihood.
- A need for grazing within the community, now that community cattle are excluded from grazing in the 13 ranches.
- A need for alternative livelihood for charcoal burners previously active on the Phase II Ranches.

Plans to Mitigate Negative Impacts on Offsite Stakeholders

1. Potential increase in human-wildlife conflict

While there has certainly been a substantial increase in the amount of biodiversity the project area, we believe that it has not resulted in a negative impact on the community for the following reasons:

- Prior to our arrival, even though the permanent population of wildlife in the area was much lower than today, there was always human-wildlife conflict, as elephants did not have a safe habitat or areas of sanctuary, and were forced into the communities to graze and raid crops. Furthermore, elephants often utilized community water points, and would damage or destroy pipes and taps to access water there.
- Wildlife Works has actively mitigated the potential negative impact of increased wildlife populations in several ways;
 - i. First and foremost, the fact that the project area will become safe habitat for wildlife, and that we protect the natural resources, and that we provide water for the elephants during the dry season, means that the wildlife has less reason to enter communities in the first place.
 - ii. Our Rangers patrol the community boundary during those nights when the likelihood of elephant crop raiding is high, (e.g. when crops are nearing harvest time). They are on-call to assist the community at any other time of year, as needed. They use “thunderflashes” to scare the elephants from the boundary farms, and back into project areas. This positive activity was acknowledged during the community surveys conducted by Marit Rietveld, an independent Dutch researcher in 2007.
 - iii. We have provided the community with literally tens of thousands of free chili pepper bushes, grown in our organic greenhouse that provide the farmers with a cash crop that is repellent to elephants for planting as a barrier at the edge of their farms. These facts are based on research performed by Dr. Loki Osborn of ElePepper in Zambia, and is an effective deterrent provided the farmers maintain the chili pepper bushes.
 - iv. We plan to introduce another non-conflict cash crop, Jojoba (see project activities section above), into the communities along our boundary during the first five years of

the project. Elephants do not, nor any other animals, have an interest in eating Jojoba, so it is the perfect cash crop for farmers in a potential conflict area.

- v. Many members of the community are benefiting financially from the presence of wildlife in the project area and as carbon funding expands to all the areas, additional jobs will be created through tourism and at Wildlife Works. The income they are receiving will provide an alternative to subsistence-farming of high-conflict crops like maize.

We believe that these mitigation activities have already proven to be successful over the years, and that with additional funding under the carbon program, their effectiveness will only increase. We therefore do not believe that our project will create a net negative impact on human-wildlife conflict.

2. An exclusive dependence on Wildlife Works for livelihood

It is certainly true that Wildlife Works is the only significant employer in the community, but it is hard to construe that as a net negative impact, as we have not displaced any other employers or forms of employment within the community. Furthermore we have only employed 150 people to date, and will probably only ever employ a maximum of 300 from communities of over 100,000. However, we are aware of the issue, and we are constantly looking for ways to bring more jobs into the community. For example, the leasing of Rukinga to Camp Kenya, the ecotourism providers, diversifies the employment base within the community, the expansion of the organic greenhouses to the community, the promotion of the Jojoba farming scheme planned under our Project Activities, all are attempts to spread the employment to areas that reduce the dependence on Wildlife Works. We therefore do not believe that our project will create a net negative impact in over dependence on Wildlife Works for jobs.

3. Need for grazing within the community

Livestock rearing is an unsustainable lifestyle in this dry country, where there is no permanent water source, other than expensive and rare piped water. We believe that the local community understands this, and these are not tribes with a strong cultural attachment to cattle, like the Maasai or Samburu. As a result, the local Taita and Duruma cattle herds are very small. Furthermore, the lack of grazing has far more to do with the constant presence of large and totally unsustainable herds of Somali cattle, overgrazing all of the community land brought in by local community ranch owners who are desperate for income, but who had no resources to monitor the Somali herds to ensure they did not overstock the ranches and overgraze the resources. If Wildlife Works were not present, it is certain that these large herds of Somali cattle would also invade the Kasigau Corridor project area in the short term, so that the grazing would not be available to the community then either. In order to manage incursions onto the ranches from these illegal Somali cattle, we have implemented a uniform policy against grazing of any cattle in Rukinga. The grass is not unused on Rukinga however, and it is critical to the presence of elephants and other species, which are the very wildlife on whose presence the success of all of our activities depends. In Phase II, we have had to take a more patient approach, as most of the ranch owners want the Somali cattle to leave, but have to wait for carbon funding before they can afford to let go of even the small income they receive from these cattle. We are actively mitigating against the potential negative impacts of loss of grazing in the following ways;

- a. Assisting the community to diversify away from cattle as an asset class which has proven to be a liability in times of drought again and again in this dry area;
- b. By bringing carbon revenues to the surrounding community ranch owners, allowing them

to wean themselves from the dependence on Somali cattle income, so that they can allow their own lands to heal, and have plenty of grazing for their well managed herds in the future. A small amounts of well- managed grazing of local cattle is perfectly consistent with management of these surrounding ranch lands for REDD carbon revenues, and even for biodiversity and ecotourism, provided sensible zoning is conducted to prevent cattle herds from competing with wildlife for resources, or damaging the tourism experience for international visitors, who come thousands of miles to see wildlife, not cattle;

- c. By assisting the local communities to legally expel the illegal Somali cattle herds that have severely degraded the community lands, using ranger patrols and the courts to legally prohibit the continued exploitation of the local community by these large scale commercial Somali cattle operations.

We believe that these mitigation activities will prove to be successful in the coming years, and that with additional carbon funding, their effectiveness will only increase, and therefore we do not believe that our project will create a net-negative impact in reduction of cattle grazing.

Demonstrate no NET Negative Impacts on other Stakeholder Groups

Please see the above section, in which plans for mitigation are laid out, and a case is clearly made that there are no net negative impacts to any stakeholder groups as a result of our project activities.

7.3 Exceptional Community Benefits (GL2)

For projects that included this optional criterion in the project description, describe how the project is explicitly pro-poor in terms of delivering benefits to globally poorer communities and the poorer, more vulnerable households and individuals within them (see GL2.1-5).

Kenya is surprisingly just above the threshold for Low Development Countries with an HDI of 5.21 vs. a < 5.0 limit for Low Human Development Countries. As a result we have not claimed gold status for this criteria, although in all likelihood the project is in an extremely rural area that qualifies under the 50% below the poverty line clause.

8 BIODIVERSITY

8.1 Net Positive Biodiversity Impacts (B1)

Explain the justification for net positive biodiversity impacts (B1.1-5):

- *Describe the impacts on biodiversity (positive and negative) as a result of the project and show that the net impacts on biodiversity are positive.*

Impacts on Biodiversity

Since the beginning of the project in the project area many years ago, Wildlife Works has focused on methods of stopping the rampant killing of wildlife in the Kasigau Corridor by bush meat poachers, and protect the habitat for the wildlife to return. When we arrived at the project area over twelve years ago there were very few large mammals remaining. Our rangers used to say they saw nothing larger than a Dik Dik, a very small antelope the size of a rabbit. After a year of

protecting the habitat, the wildlife began to return, beginning with the elephants, and as they cleared out the thick shrubs that had grown in their absence, the other species followed. We have been keeping a database of wildlife sightings and in fact report flora and fauna sightings in a yearly Biodiversity and Social Impact report. It is obvious by observing the lack of wildlife in community lands and the low sightings on the project in the first year we were there, that under the “without-project” or baseline scenario, there would be practically no wildlife left. Now, after many years of protection, the community ranches represent a well-balanced ecosystem. Because the project area is semi-arid, the density of wildlife will always be relatively low. With carbon funding, we have been able to establish a formal Biodiversity monitoring team and build a monitoring camp for the express purpose of tracking and monitoring the conservation of biodiversity that can be directly attributed to the protection of the ecosystem, of course funded through the sale of carbon credits.

However, formal scientifically accurate wildlife counts are incredibly difficult anywhere in the world, especially in forest. Usually, biodiversity health is measured simply by presence or absence of species, and by evidence of obvious poaching. An official count of elephant in the Tsavo ecosystem is conducted every other year, by the Kenya Wildlife Service. The project area is included in this count, and in fact Rob Dodson, our project manager is a key participant in the count itself. This inclusion supports the fact that the project area is a key area for elephant in the Tsavo area, and the Kasigau Corridor is a valuable dispersal area for the overall health of the ecosystem.

In addition, Wildlife Works has initiated many activities within the project area to foster broader conservation efforts outside the project area, and there are endemic species of high conservation value on Mt. Kasigau and the Taita Hills. Many of these species, however, persist in small and highly isolated (sub) populations. Consequently, a high proportion are of immediate conservation concern as is reflected by the list of 34 Taita animal and plant species currently categorized as vulnerable, endangered or critically-endangered by IUCN Red List Criteria (Luc Lens et al, 2002). That said, some are benefitting directly from increased conservation awareness such as Klassen’s aloe, found at the Southern end of the project area.

Identification of Species Used by Project

This is not applicable, as we are a 100% conservation project with no offtake of any kind. Our leakage mitigation reforestation efforts use only slow growing native hardwood species in wildlands, and agroforestry species are used only within the confines of the community, and are selected for their non-invasive characteristics (reference search engine at <http://www.issg.org/database>), and for having been present within the communities already, e.g. Neem, Moringa. Citrus. Detailed species lists of tree nursery projects follows;

The indigenous tree species to be planted are:

- | | | |
|----|------------------|----------------------------------|
| 1. | Mkwachu | Tamarindus indica |
| 2. | Kirumbutu | Melia Volkensii |
| 3. | Mchemeri | Acacia nilotica (Egyptian Thorn) |
| 4. | Acacia Robusta | |
| 5. | Kiburabura (swa) | Prunus africana |
| 6. | Mshogoreka | Terminalia brownii |
| 7. | Iti | Acacia tortilis |
| 8. | Chariso | Boscia coriacea |

| | | |
|-----|----------------|--------------------------------|
| 9. | Mzwana | Berchemia discolor |
| 10. | Mbokoi | Melita Oblata |
| 11. | Mwarara(swa) | Acacia brevispica (Wait a bit) |
| 12. | Kikwata | Acacia melifera |
| 13. | Gum arabica | Acacia arabica |
| 14. | Mwasina | Kigelia africana |
| 15. | Umbrella Thorn | Acacia abyssinica |
| 16. | Mshigha | Lannea schweinfurthii |
| 17. | Mhina | Lawsonia inermis |
| 18. | Mlamba | Adansonia digitata |

The non-native tree species used in the jojoba project are:

1. Simmondsia chinensis Jojoba

Jojoba is being grown for the valuable seeds to provide a cash crop for the local farmers. It is very slow growing, takes approximately 5-8 years to produce seed and the seedlings require a lot of support in the early growth phase, due to the dry climate in the area. Over the years Wildlife Works has been present, we have seen no examples of Jojoba self-sowing. Jojoba is not eaten by any animals or birds due to the appetite suppression qualities of the seeds, so it carries no threat of natural seed dispersal. There are no native equivalents to Jojoba.

The non-native tree species used in the greenhouse project are:

1. Morabaini, Neem Azadirachta indica

Neem was introduced to East Africa from India long ago, and is widespread within Kenya, as it has many valuable uses. It has been planted by farmers and communities for a very long time. Its Swahili name means "40 uses", which include insect repellent, dietary supplement, medicinal tea etc. There are no native equivalents to Neem. Neem is also non-invasive.

2. Moringa Moringa oleifera

Moringa is considered native to Kenya, but in fact was introduced to East Africa from India a long ago. It is now widespread within Kenya, and has many valuable uses, and as such has been planted by farmers and communities for a very long time. Moringa is non-invasive.

3. chili-pepper Capsicum chinense
4. mango Mangifera Indica
5. orange(pixie, mineola, Washington navel etc.) Citrus sinensis var. grafted onto Citrus jambhiri Lush. (rough lemon) rootstock
6. Papaya Carica papaya
7. Passion Fruit Passiflora edulis SIMS

Wildlife Works grows greenhouse citrus fruit trees on native rough lemon rootstock, using grafting techniques. Rough lemon rootstock is drought resistant, termite resistant and deep rooted. They are then out planted in community farms as a cash crop, or in the case of the chili pepper, as a barrier to elephant crop-raiding as well as a cash crop. The climate in the Kasigau corridor is too dry for any of these species to self-sow in the wild; they all take quite a lot of maintenance in the

early going to survive to out planting stage, and therefore they cannot be considered invasive. The citrus species cannot survive drought at all, and must be watered regularly by the farmer, but produces a valuable cash crop to offset water costs. The chili-pepper is quite drought tolerant, but very short lived, with bushes living no more than four years in this area. Both Mango and Citrus can be considered naturalized, as there are records of the first sweet oranges known to the western world being given to Vasco da Gama in 1499 in Milindi at the Kenyan Coast. Mango trees have also been present in East Africa for hundreds of years. None of these species have any recorded entries in the global invasive species database (<http://www.issg.org/database>). Passion Fruit was introduced commercially to Kenya in 1933, but large plantations were devastated several times by easily spread diseases and pests. It became necessary to abandon them in favor of small and isolated plantings, which could be better protected. Papaya has been extensively grown for centuries in Kenya, probably arriving with Portuguese trading ships, and we plant the local varieties of these as well as Mango. There are no native equivalents to these valuable cash crops. While they do introduce potential human-wildlife conflict, it is much easier for the community to defend a fruit tree, than a field of maize.

Describe Invasive Species Used by Project

None. Ref: global invasive species database (<http://www.issg.org/database>).

- *Demonstrate that no High Conservation Values related to biodiversity have been negatively affected. Describe all species used by the project and show that no known invasive species have been introduced or increased.*

Demonstration of no HCVs Negatively Impacted

Once again, protecting project HCV species are the core of our activities on the project area, so none will be adversely effected by the project. On the contrary, our primary aim is to protect biodiversity, both flora and fauna alike. The conservation of biodiversity is our mission.

- *Describe any adverse effects of non-native species used by the project, and guarantee that no genetically modified organisms (GMOs) have been used to generate GHG emissions reductions or removals.*

No GMO Guarantee

We guarantee that no GMOs are used ever in the course of Wildlife Works projects, and therefore would never be used to generate emissions reductions or removals.

8.2 Negative Offsite Biodiversity Impacts (B2)

Describe any negative offsite biodiversity impacts that the project activities have caused. Describe the implementation of measures to mitigate negative offsite biodiversity impacts (see B2.1-3).

The project does not have any negative offsite biodiversity impacts. As described earlier our project has had significant positive impact on any dimension that could be analyzed where biodiversity is concerned.

8.3 Exceptional Biodiversity Benefits (GL3)

For projects that included this optional criterion in the project description, describe how the project is conserving biodiversity at sites of global significance for biodiversity conservation (see GL3.1-2.4).

Demonstration that the Project Area Includes a site of High Biodiversity Conservation Priority

The project area meets these criteria under the CCB vulnerability criteria for the following reasons:

- Taita has a resident population of Grevy’s zebra (*Equus grevyi*) which is IUCN Red List – Endangered - in fact the project area may have 3% of the global population estimated at 750 in 2008
- The project area is part of the home range of a pack of African Hunting Dogs (*Lycaon pictus*) - which is IUCN Red List – Endangered, that have been photographed on Rukinga sanctuary, and observed by Rangers in Kasigau Ranch, and at other locations within the project area
- The project area has a significant resident population of both cheetah (*Acinonyx jubatus*) and lion (*Panthera leo*) that are IUCN Red List – Vulnerable and we believe are greater than 30 individuals
- The project area is part of the Eastern Arc Mountain Global Hot Spot as defined by Conservation International, and in the project area outside the project area are several other qualifying species such as;
- Taita Apalis (*Apalis fuscigularis*) – IUCN Critically Endangered
- Taita Thrush (*Turdus helleri*) – IUCN Critically Endangered

9 ADDITIONAL INFORMATION

May include any raw data from monitoring, additional information used in the monitoring plan, documentation of activities conducted from the monitoring plan, diagrams, etc

9.1 List of Allometric Equations used for Carbon Inventory

$f_{sp}(\cdot)$ Allometric equation for species *sp*. For trees, this equation generally is based on *dbh* and possibly height to biomass.

All Equations follow the following format:

- If the tree DHB is less than 35cm, the following format is used

$$B_i = a \cdot DBH^b$$

where B_i is the Biomass of the tree calculated by the allometric equation;
 DBH is the Diameter at Breast Height for the corresponding tree and
 a and b are the allometric constants listed in the table below.

These power equations are based on regression of DBH vs. Biomass data obtained through a destructive harvest conducted by Wildlife Works at Rukinga HQ, but outside the project area.

- If the tree DBH is greater than or equal to 35cm, the following format is used

$$B_i = c \cdot DBH - d$$

where B_i is the Biomass of the tree calculated by the allometric equation;
 DBH is the Diameter at Breast Height for the corresponding tree and
 c and d are the allometric constants listed in the table below.

These linear equations are based on the slope of a line drawn at the tangent of the all-species curve at 35cm DBH. For more information regarding the allometric model applied to this project, please see the VCS PD, Section 13 Monitoring. Note that a CAR was issued for Phase II of the Kasigau Corridor project resulting in the wholesale changing of the allometric model to incorporate linear models that are to be employed if a tree is measured greater than 35cm DBH. This change was then applied to the Phase I Project as well (this project). The details of this change can be found both in the Phase II CARs (Phase II CAR 13) as well as the VCS Phase II PD, Section 13 Monitoring.

Table of Allometric Constants

| Species | < 35cm | < 35cm | > 35cm | > 35cm |
|--------------------------|----------|----------|----------|----------|
| | constant | constant | constant | constant |
| | A | B | C | D |
| Acacia bussei | 3.380 | 1.642 | 80.292 | 1056.633 |
| Acacia etbaica | 1.142 | 1.995 | 80.292 | 1251.187 |
| Acacia hockii | 0.685 | 2.182 | 80.292 | 1205.526 |
| Acacia mellifera | 1.142 | 1.995 | 80.292 | 1251.187 |
| Acacia melifera | 1.142 | 1.995 | 80.292 | 1251.187 |
| Acacia nilotica | 1.362 | 1.951 | 80.292 | 1228.467 |
| Acacia senegal | 1.142 | 1.995 | 80.292 | 1251.187 |
| Acacia thomasii | 1.142 | 1.995 | 80.292 | 1251.187 |
| Acacia tortilis | 2.606 | 1.618 | 80.292 | 1274.403 |
| Acacia zanzibarica | 1.142 | 1.995 | 80.292 | 1251.187 |
| Albizia anthelmintica | 0.341 | 2.302 | 80.292 | 1551.378 |
| Albizia harveyi | 0.341 | 2.302 | 80.292 | 1551.378 |
| Balanites aegyptiaca | 0.341 | 2.302 | 80.292 | 1551.378 |
| Balanites pedicellaris | 0.341 | 2.302 | 80.292 | 1551.378 |
| Boscia angustifolia | 0.341 | 2.302 | 80.292 | 1883.692 |
| Boscia coriacea | 0.203 | 2.365 | 80.292 | 1883.692 |
| Boswellia neglecta | 1.303 | 1.833 | 80.292 | 1994.440 |
| Cassia abbreviata | 0.341 | 2.302 | 80.292 | 1551.378 |
| Cassia siamea | 0.341 | 2.302 | 80.292 | 1551.378 |
| Cassipourea celastroides | 0.341 | 2.302 | 80.292 | 1551.378 |
| Commiphora africana | 0.629 | 1.946 | 80.292 | 1622.071 |
| Commiphora baluensis | 0.105 | 2.665 | 80.292 | 1250.566 |
| Commiphora campestris | 0.068 | 2.816 | 80.292 | 1015.801 |
| Commiphora confusa | 0.115 | 2.663 | 80.292 | 1360.983 |
| Commiphora edulis | 0.105 | 2.665 | 80.292 | 1250.566 |
| Commiphora eminii | 0.105 | 2.665 | 80.292 | 1250.566 |
| Commiphora holtziana | 0.105 | 2.665 | 80.292 | 1250.566 |
| Croton pseudopulchellus | 0.341 | 2.302 | 80.292 | 1551.378 |
| Delonix elata | 0.341 | 2.302 | 80.292 | 1551.378 |
| Diosporus consolatae | 0.341 | 2.302 | 80.292 | 1551.378 |
| Diospyros consolatae | 0.341 | 2.302 | 80.292 | 1551.378 |
| Erythrina abyssinica | 0.341 | 2.302 | 80.292 | 1551.378 |
| Euphorbia bussei | 0.341 | 2.302 | 80.292 | 1551.378 |
| Euphorbia quinquecostata | 0.341 | 2.302 | 80.292 | 1551.378 |
| Euphorbia tirucalli | 0.341 | 2.302 | 80.292 | 1551.378 |

| | | | | |
|---------------------------------|-------|-------|--------|----------|
| Haplocoelum foliolosum | 0.341 | 2.302 | 80.292 | 1551.378 |
| Lanea alata | 0.560 | 2.103 | 80.292 | 1148.344 |
| Lanea rivae | 0.149 | 2.642 | 80.292 | 1058.718 |
| Lanea schweinfurthii | 0.329 | 2.323 | 80.292 | 1127.474 |
| Manilkara mochisia | 0.341 | 2.302 | 80.292 | 1551.378 |
| Manilkara sulcata | 0.341 | 2.302 | 80.292 | 1551.378 |
| Melia volkensis | 0.341 | 2.302 | 80.292 | 1551.378 |
| Melia volkensis | 0.341 | 2.302 | 80.292 | 1551.378 |
| Mellia volkensis | 0.341 | 2.302 | 80.292 | 1551.378 |
| Newtonia hildebrandtii | 0.341 | 2.302 | 80.292 | 1551.378 |
| Pittosporum viridiflorum | 0.341 | 2.302 | 80.292 | 1551.378 |
| Platycelyphium voense | 0.341 | 2.302 | 80.292 | 1551.378 |
| Salvadora persica | 0.341 | 2.302 | 80.292 | 1551.378 |
| Sterculia africana | 0.341 | 2.302 | 80.292 | 1551.378 |
| Teclea divinorum | 0.341 | 2.302 | 80.292 | 1551.378 |
| Terminalia prunoides | 0.341 | 2.302 | 80.292 | 1551.378 |
| Terminalia spinosa | 0.341 | 2.302 | 80.292 | 1551.378 |
| Vepris simplicifolia | 0.341 | 2.302 | 80.292 | 1551.378 |
| Zanthoxylum chalybeum | 0.341 | 2.302 | 80.292 | 1551.378 |

9.2 Mass-equivalent bulk density of fine portion of soil sample, ρ_{soil}

| Kasigau Group Ranches | | | Reference Area | | |
|-----------------------|--|--|---------------------|--|--|
| Project Area plot | bulk density (g/cm ³) 0-30cm | bulk density (g/cm ³) 31-100cm | Reference area plot | bulk density (g/cm ³) 0-30cm | bulk density (g/cm ³) 31-100cm |
| CH01 | 1.29 | 1.30 | Mzungu | 1.57 | 1.42 |
| CH04 | 1.29 | 1.31 | Nemu | 1.43 | 1.36 |
| CH07 | 1.42 | 1.32 | Nzangi | 1.31 | 1.29 |
| CH10 | 1.35 | 1.30 | Ndaro | 1.53 | 1.38 |
| KT01 | 1.33 | 1.32 | Ngome | 1.57 | 1.36 |
| KT04 | 1.21 | 1.38 | Maziko | 1.45 | 1.41 |
| KT07 | 1.16 | 1.22 | Jira M | 1.43 | 1.38 |
| KT10 | 1.20 | 1.44 | Kazungu | 1.43 | 1.31 |
| T64 | 1.35 | 1.30 | Kamau | 1.69 | 1.52 |
| T52 | 1.30 | 1.32 | Walter | 1.5 | 1.47 |
| T58 | 1.43 | 1.40 | Kivuva | 1.51 | 1.37 |
| T42 | 1.38 | 1.34 | Mwanjila | 1.5 | 1.43 |
| T29 | 1.37 | 1.33 | Marungu Primary | 1.52 | 1.42 |
| T61 | 1.33 | 1.26 | J Mkala | 1.58 | 1.46 |
| T45 | 1.45 | 1.36 | Alima | 1.48 | 1.42 |
| T48 | 1.35 | 1.30 | Mwikali | 1.53 | 1.39 |
| T55 | 1.52 | 1.40 | Nicholus | 1.56 | 1.41 |
| T51 | 1.25 | 1.28 | M Ngele | 1.33 | 1.57 |
| KB10 | 1.38 | 1.47 | Kibarangoma | 1.57 | 1.5 |
| KB12 | 1.32 | 1.35 | F Kamau | 1.59 | 1.5 |
| KB14 | 1.38 | 1.34 | Mwanyuma | 1.54 | 1.29 |
| KB15 | 1.26 | 1.28 | Chimanga | 1.56 | 1.38 |
| KB16 | 1.40 | 1.40 | Mwadule | 1.34 | 1.28 |
| KB20 | 1.18 | 1.35 | Lomitir | 1.51 | 1.45 |
| KB25 | 1.36 | 1.36 | M Mtima | 1.55 | 1.44 |
| KB33 | 1.52 | 1.40 | | | |
| KB35 | 1.42 | 1.40 | | | |
| KB39 | 1.33 | 1.30 | | | |
| mean | 1.34 | 1.34 | | 1.50 | 1.41 |

9.3 Mass-equivalent bulk density of fine portion of soil sample, ρ_{soil} .

| Ruking a plot | Carbon fraction (0-30cm) | Carbon fraction (31-100cm) |
|---------------|--------------------------|----------------------------|
| CH01 | 1.470 | 0.790 |
| CH04 | 1.210 | 0.750 |

| | | |
|--------------|-------------|-------------|
| CH07 | 0.920 | 0.480 |
| CH10 | 1.090 | 0.690 |
| KT01 | 1.070 | 0.250 |
| KT04 | 0.800 | 0.420 |
| KT07 | 0.510 | 0.430 |
| KT10 | 0.960 | 0.370 |
| T64 | 1.732 | 1.099 |
| T52 | 1.341 | 0.648 |
| T58 | 1.436 | 1.216 |
| T42 | 1.341 | 0.880 |
| T29 | 1.543 | 0.900 |
| T61 | 1.484 | 0.687 |
| T45 | 1.218 | 0.674 |
| T48 | 1.166 | 1.019 |
| T55 | 0.915 | 0.715 |
| T51 | 1.578 | 0.868 |
| KB10 | 1.417 | 0.804 |
| KB12 | 1.186 | 0.854 |
| KB14 | 0.867 | 0.781 |
| KB15 | 1.428 | 0.781 |
| KB16 | 0.731 | 0.819 |
| KB20 | 1.673 | 0.884 |
| KB25 | 1.599 | 0.636 |
| KB33 | 1.001 | 0.897 |
| KB35 | 1.215 | 0.883 |
| KB39 | 1.540 | 1.294 |
| mean: | 1.23 | 0.77 |

9.4 Degradation proportion observation taken in each leakage plot i^{th} sample point at monitoring period m , $o_i^{[m]}$.

| Plots | Point X | Point Y | Degradation % Dec, 2010 (t=0) | Factor 2010 | Degradation % Nov, 2011 (m ₂) | Factor 2011 | Degradation % Nov, 2012 (m ₃) | Factor 2012 |
|-------|----------|-----------|-------------------------------|-------------|---|-------------|---|-------------|
| L01 | 462290.6 | 9566407.4 | 0-20 | 0.2 | 61-80 | 0.8 | 20-40 | 0.4 |
| L02 | 459730.6 | 9572807.4 | 41-60 | 0.6 | 81-100 | 1 | 60-80 | 0.8 |
| L03 | 458450.6 | 9583047.4 | 21-40 | 0.4 | 61-80 | 0.8 | 40-60 | 0.6 |
| L04 | 464850.6 | 9584327.4 | 0 | 0 | 41-60 | 0.6 | 60-80 | 0.8 |
| L05 | 469786 | 9572839 | 21-40 | 0.4 | 61-80 | 0.8 | 20.1-40 | 0.4 |
| L06 | 464287 | 9584462 | 61-80 | 0.8 | 81-100 | 1 | 60-80 | 0.8 |
| L07 | 466596 | 9583913 | 21-40 | 0.4 | 0-20 | 0 | 20-40 | 0.4 |
| L08 | 460305 | 9572376 | 61-80 | 0.8 | 41-60 | 0.6 | 40-60 | 0.6 |
| L09 | 460640 | 9572657 | 61-80 | 0.8 | 61-80 | 0.8 | 60-80 | 0.8 |
| L10 | 472530.6 | 9602247.4 | 0-20 | 0.2 | 0-20 | 0 | 0.1-20 | 0 |
| L11 | 457170.6 | 9603527.4 | 61-80 | 0.8 | 81-100 | 1 | 40-60 | 0.6 |
| L12 | 472530.6 | 9603527.4 | 0-20 | 0.2 | 0-20 | 0 | 0.1-20 | 0 |
| L13 | 486859.7 | 9593065.8 | 0-20 | 0.2 | 0-20 | 0 | 20-40 | 0.4 |
| L14 | 482453.6 | 9592769.8 | 21-40 | 0.4 | 21-40 | 0.4 | 0.1-20 | 0 |
| L15 | 485034.1 | 9591786.5 | 41-60 | 0.6 | 0-20 | 0 | 20-40 | 0.4 |

| | | | | | | | | |
|-----|----------|-----------|-------|-----|---------|-----|---------|-----|
| L16 | 461010.6 | 9611207.4 | 41-60 | 0.6 | 81-100 | 1 | 0.1-20 | 0 |
| L17 | 448210.6 | 9612487.4 | 21-40 | 0.4 | 81-100 | 1 | 40-60 | 0.6 |
| L18 | 479344.8 | 9595139.2 | 20-40 | 0.4 | 61-80 | 0.8 | 40.1-60 | 0.6 |
| L19 | 457170.6 | 9618887.4 | 0-20 | 0.2 | 41-60 | 0.6 | 60-80 | 0.8 |
| L20 | 443090.6 | 9640647.4 | 0 | 0 | 41-60 | 0.6 | 20.1-40 | 0.4 |
| L21 | 441810.6 | 9648327.4 | 0 | 0 | 0-20 | 0 | 0.1-20 | 0 |
| L22 | 481307.2 | 9593867.3 | 0-20 | 0.2 | 21-40 | 0.4 | 0.1-20 | 0 |
| L23 | 481598.5 | 9594812.8 | 21-40 | 0.4 | 41-60 | 0.6 | 20.1-40 | 0.4 |
| L24 | 484344.9 | 9592969.2 | 0-20 | 0.2 | 0-20 | 0 | 20.1-40 | 0.4 |
| L25 | 484231.9 | 9593633.8 | 21-40 | 0.4 | 0-20 | 0 | 20.1-40 | 0.4 |
| L26 | 487579.8 | 9593521.9 | 0-20 | 0.2 | 0-20 | 0 | 20.1-40 | 0.4 |
| L27 | 486771.0 | 9594064.8 | 0-20 | 0.2 | 0-20 | 0 | 0.1-20 | 0 |
| L28 | 448401.6 | 9613947.0 | 61-80 | 0.8 | 81-100 | 1 | | |
| L29 | 446810.4 | 9609307.4 | 61-80 | 0.8 | 81-100 | 1 | MISSING | |
| L30 | 446012.1 | 9612379.7 | 41-60 | 0.6 | 61-80 | 0.8 | MISSING | |
| L31 | 449457.4 | 9613888.1 | 21-40 | 0.4 | 61-80 | 0.8 | 60-80 | 0.8 |
| L32 | 470359.3 | 9573125.2 | 61-80 | 0.8 | 81-100 | 1 | 40.1-60 | 0.6 |
| L33 | 471130.8 | 9572882.0 | 41-60 | 0.6 | MISSING | | 20.1-40 | 0.4 |
| L34 | 465491.1 | 9583961.7 | 21-40 | 0.4 | 21-40 | 0.4 | 0.1-20 | 0 |
| L35 | 465407.2 | 9584618.5 | 21-40 | 0.4 | 21-40 | 0.4 | 20-40 | 0.4 |
| L36 | 464821.6 | 9585006.8 | 0-20 | 0.2 | 41-60 | 0.6 | 40-60 | 0.6 |
| L37 | 470989.6 | 9573694.4 | 41-60 | 0.6 | 81-100 | 1 | 20.1-40 | 0.4 |
| L38 | 470380.8 | 9573910.4 | 21-40 | 0.4 | 61-80 | 0.8 | 0.1-20 | 0 |

Annex 1 Annual Human Resources Report

| Year | Quarter | Month | Management | Office | Eco-factory | Rangers | Workshop | Security (watchmen) | Greenhouse | Housekeepers | Soap Factory | Carbon Sampling | Jojoba Project | Total Permanent | No Locals | No Non-local | Payroll Cost | No Casuals | Casuals Cost | Total Employees | Total Salaries |
|------|---------|-----------|------------|--------|-------------|---------|----------|---------------------|------------|--------------|--------------|-----------------|----------------|-----------------|-----------|--------------|--------------|------------|--------------|-----------------|----------------|
| 2010 | 1 | January | 5 | | 22 | 18 | 2 | 11 | 4 | 2 | 1 | | | 65 | 64 | 1 | 6550 | 9 | 4730 | 74 | 702379 |
| | 1 | February | 5 | | 22 | 18 | 2 | 11 | 4 | 2 | 1 | | | 65 | 64 | 1 | 79 | 11 | 6100 | 76 | 715808 |
| | 1 | March | 5 | | 22 | 18 | 2 | 11 | 4 | 2 | 1 | | | 65 | 64 | 1 | 6548 | 8 | 4120 | 73 | 725941 |
| | 2 | April | 7 | 2 | 8 | 27 | 2 | 7 | 4 | 2 | 1 | | | 60 | 59 | 1 | 6847 | 12 | 5560 | 72 | 948567 |
| | 2 | May | 7 | 2 | 8 | 27 | 2 | 7 | 4 | 2 | 1 | | | 60 | 59 | 1 | 41 | 13 | 6812 | 73 | 953907 |
| | 2 | June | 7 | 2 | 8 | 27 | 2 | 7 | 5 | 2 | 1 | | | 61 | 58 | 3 | 8929 | 13 | 6670 | 74 | 945499 |
| | 3 | July | 7 | 2 | 8 | 27 | 2 | 10 | 5 | 2 | 1 | | | 64 | 61 | 3 | 87 | 12 | 6035 | 76 | 973461 |
| | 3 | August | 7 | 2 | 8 | 27 | 2 | 10 | 5 | 2 | 1 | | | 64 | 61 | 3 | 90 | 14 | 7327 | 78 | 1055795 |
| | 3 | September | 7 | 2 | 10 | 27 | 2 | 10 | 5 | 5 | 1 | | | 69 | 66 | 3 | 8787 | 17 | 9956 | 86 | 1054584 |
| | 4 | October | 7 | 2 | 13 | 66 | 3 | 9 | 9 | 5 | 1 | | | 115 | 112 | 3 | 9131 | 15 | 7635 | 130 | 1693047 |
| | 4 | November | 7 | 2 | 14 | 66 | 3 | 10 | 8 | 5 | 1 | | | 116 | 113 | 3 | 1616 | 18 | 1070 | 134 | 1690772 |
| | 4 | December | 7 | 3 | 15 | 66 | 3 | 10 | 8 | 5 | 1 | | | 118 | 115 | 3 | 703 | 23 | 1288 | 141 | 1811021 |
| 2011 | 1 | January | 7 | 3 | 15 | 66 | 3 | 10 | 8 | 5 | 1 | | | 118 | 115 | 3 | 1721 | 24 | 1373 | 142 | 1858486 |
| | 1 | February | 7 | 4 | 17 | 65 | 3 | 10 | 8 | 5 | 1 | | | 120 | 116 | 4 | 096 | 32 | 4106 | 152 | 2192088 |
| | 1 | March | 7 | 4 | 18 | 73 | 3 | 10 | 8 | 5 | 1 | | | 129 | 125 | 4 | 1781 | 34 | 4381 | 163 | 2323213 |
| | 2 | April | 7 | 6 | 18 | 73 | 3 | 10 | 8 | 5 | 1 | 11 | | 142 | 138 | 4 | 1885 | 40 | 5114 | 181 | 2562729 |

| | | | | | | | | | | | | | | | | | | | | | |
|-------------|-----------|-----------|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|------|------|-----|-----|---------|---------|
| | | | | | | | | | | | | | | | | 277 | 52 | | | | |
| | | | | | | | | | | | | | | | | 2070 | 3212 | | | | |
| 2 | May | 7 | 6 | 18 | 73 | 3 | 10 | 9 | 5 | 1 | 11 | 1 | 144 | 140 | 4 | 928 | 41 | 00 | 185 | 2392128 | |
| | | | | | | | | | | | | | | | | 1988 | 3269 | | | | |
| 2 | June | 7 | 6 | 18 | 73 | 3 | 10 | 16 | 5 | 1 | 11 | 1 | 151 | 147 | 4 | 045 | 99 | 18 | 250 | 2314963 | |
| | | | | | | | | | | | | | | | | 2888 | 5452 | | | | |
| 3 | July | 8 | 9 | 19 | 72 | 14 | 10 | 15 | 6 | 1 | 11 | 1 | 166 | 163 | 3 | 771 | 41 | 65 | 207 | 3434036 | |
| | | | | | | | | | | | | | | | | 2870 | 6082 | | | | |
| 3 | August | 8 | 9 | 21 | 72 | 19 | 10 | 15 | 6 | 1 | 11 | 1 | 173 | 170 | 3 | 434 | 131 | 57 | 304 | 3478691 | |
| | | | | | | | | | | | | | | | | 2896 | 5944 | | | | |
| 3 | September | 8 | 10 | 21 | 72 | 19 | 10 | 15 | 6 | 1 | 10 | 1 | 173 | 170 | 3 | 699 | 129 | 91 | 302 | 3491190 | |
| | | | | | | | | | | | | | | | | 3040 | 6277 | | | | |
| 4 | October | 8 | 10 | 21 | 72 | 19 | 10 | 15 | 6 | 1 | 10 | 1 | 173 | 170 | 3 | 069 | 92 | 96 | 265 | 3667865 | |
| | | | | | | | | | | | | | | | | 3837 | 4122 | | | | |
| 4 | November | 9 | 11 | 22 | 72 | 15 | 10 | 15 | 6 | 1 | 11 | 1 | 173 | 168 | 5 | 544 | 92 | 53 | 265 | 4249797 | |
| | | | | | | | | | | | | | | | | 4106 | 4564 | | | | |
| 4 | December | 9 | 11 | 25 | 72 | 15 | 14 | 15 | 6 | 1 | 11 | 1 | 180 | 175 | 5 | 658 | 90 | 61 | 270 | 4563119 | |
| | | | | | | | | | | | | | | | | | | | | | |
| 2012 | 1 | January | 9 | 11 | 26 | 72 | 15 | 14 | 15 | 6 | 1 | 11 | 1 | 181 | 178 | 3 | 069 | 123 | 75 | 304 | 4143744 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 1 | February | 9 | 12 | 29 | 73 | 16 | 12 | 15 | 6 | 1 | 11 | 1 | 185 | 182 | 3 | 494 | 118 | 31 | 303 | 4548325 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 1 | March | 9 | 12 | 28 | 75 | 16 | 12 | 15 | 6 | 1 | 11 | 1 | 186 | 183 | 3 | 851 | 115 | 00 | 301 | 4562951 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 2 | April | 9 | 8 | 36 | 73 | 16 | 14 | 13 | 4 | 0 | 15 | 1 | 189 | 185 | 4 | 886 | 116 | 69 | 305 | 3961055 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 2 | May | 9 | 9 | 30 | 73 | 17 | 15 | 13 | 4 | 0 | 15 | 1 | 186 | 182 | 4 | 301 | 117 | 481 | 303 | 4252782 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 2 | June | 10 | 11 | 62 | 73 | 18 | 18 | 15 | 4 | 0 | 15 | 1 | 227 | 223 | 4 | 759 | 121 | 05 | 348 | 4341864 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 3 | July | 10 | 10 | 64 | 75 | 18 | 16 | 15 | 4 | 0 | 16 | 1 | 229 | 225 | 4 | 419 | 79 | 81 | 308 | 4699800 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 3 | August | 11 | 12 | 66 | 76 | 22 | 16 | 15 | 8 | 0 | 15 | 1 | 242 | 238 | 4 | 275 | 74 | 04 | 316 | 5467179 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 3 | September | 13 | 12 | 62 | 81 | 23 | 18 | 23 | 15 | 0 | 19 | 1 | 267 | 263 | 4 | 872 | 90 | 20 | 357 | 6834792 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 4 | October | 13 | 12 | 61 | 81 | 24 | 19 | 24 | 15 | 0 | 15 | 1 | 265 | 260 | 5 | 134 | 134 | 91 | 399 | 7225225 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 4 | November | 14 | 13 | 66 | 81 | 24 | 19 | 23 | 16 | 0 | 16 | 1 | 273 | 268 | 5 | 660 | 152 | 415 | 425 | 7840075 |
| | | | | | | | | | | | | | | | | | | | | | |
| | 4 | December | 14 | 12 | 66 | 81 | 27 | 21 | 23 | 16 | 0 | 16 | 1 | 277 | 272 | 5 | 175 | 117 | 65 | 394 | 7773140 |

