



Rukinga
Ranching Co Ltd

**The Kasigau Corridor
REDD Project
Phase I – Rukinga Sanctuary**
Project Implementation Report



Project Implementation Report (PIR)
For Verification Using the
Climate, Community and Biodiversity (CCB)
Project Design Standards Second Edition – December 2008

Verification Period: January 1st, 2005 through December 31st, 2010

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EXECUTIVE PROJECT SUMMARY

This Project Implementation Report (PIR) is being prepared for the first verification of the Kasigau Corridor REDD Project – Phase I Rukinga Sanctuary. It addresses the major project activities that have commenced since the project start date: January 1st, 2005. Activities in this first verification period include those that could be initiated without the benefit of receipt of any carbon credit revenues from the project, as no credits can be issued prior to VCS verification. Recognizing the vast value of a CCB validation, Wildlife Works now wishes to include CCB certification on the credits generated by this project, and hopes to also do so for future projects. We have initiated selection processes for a Community Investment Fund Committee that will make decisions on how to invest the communities' portion of the carbon funds. Receipt of carbon revenue will ultimately facilitate major decisions on community investment. However Wildlife Works invested significant amounts of funding as advances on income from Phase I of the project, and as a result has already made significant investments in the activities, as outlined below.

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

The objective of the project is to protect in perpetuity those dryland forests that form a wildlife dispersal and migration corridor between Tsavo East and Tsavo West National Parks, to conserve the important biodiversity found in those forests, to provide alternative sustainable development opportunities for the local communities that live adjacent to the forests and to prevent the Emissions that would otherwise occur were those dryland forests to be converted to subsistence agriculture using the Slash and Burn methods typical to this area of Kenya.

This project has also been submitted under the Voluntary Carbon Standard (VCS) REDD AUMDD Standard following the approved VCS methodology VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0. The climate section below will represent carbon reductions calculated for the current monitoring period, according to the carbon accounting procedures described in the VCS MED.

For this first 6 year verification period, the project avoided over a million tonnes of CO₂e across the Carbon Pools of above and belowground biomass, as well as soil carbon.

We will also show that throughout this verification period, the project has contributed to the protection of 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*), African wild dog (*Lycaon pictus*) as well as over 2000 African elephants (*Loxodonta africana*) seasonally.

GENERAL SECTION

G1. Original Conditions in the project area

General Information

G1.1. Project Area Location and Physical Parameters

Please refer to this section in the Project Design Document.

G1.2. Types and Condition of Vegetation at the project area

Please refer to this section in the Project Design Document.

G1.3. Project Boundaries of the project area and the project area

Please refer to this section in the Project Design Document.

G1.4. Carbon Stocks within the project zone

Carbon stocks were measured using the approved VCS methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*. Wildlife Works chose to use this approach, as we are concurrently validating this project with VCS. Additionally, Wildlife Works owns and maintains the VCS methodology referred to above, and therefore has strong experience implementing its procedures and adhering to the methodology's applicability conditions.

Due to an experienced and effective team of Wildlife Works personnel on the ground at the project zone, and because we always focus on local job creation and training whenever possible, we chose to conduct our Carbon Forest Inventory using fixed permanent plot sampling, covering the entire 30,166 hectares with a statistically representative numbers of plots. Please see "Standard Operating Procedure Biomass" and "Standard Operating Procedure Soils" documents, provided to the verifier, for detailed field protocols used throughout this Phase I project.

The project area comprises 30,166 ha of dryland forest located in the southeast of Kenya. Altitudes range from approximately 450m to 1000m (see elevation map in section 6.3 The Reference Region), and the ecosystem encompasses montane forest on the slopes of the higher elevations, transitions through Acacia-Commiphora dryland forest at mid elevations and levels at grassland-dominated savannah at the lowest elevations. In order to most accurately estimate biomass in the Phase I project area, with reasonable time and expense, we divided the entire zone into 7 landcover strata based on ecosystem type, as there is 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. Overall, the 7 strata sum to the total project land area, depicting overall landcover in the Phase I project.

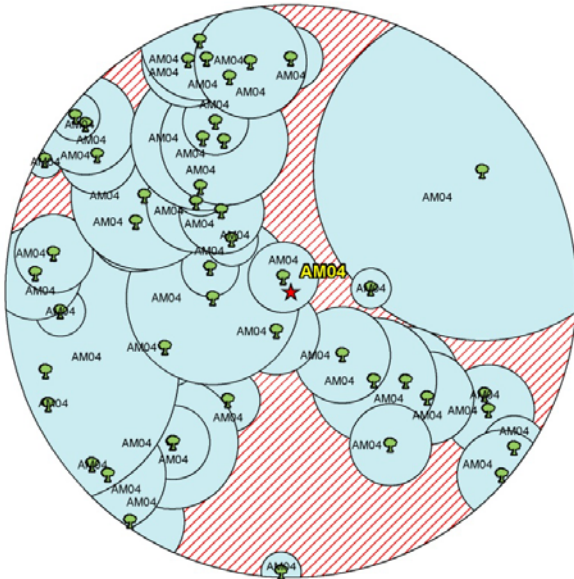
Biomass plot sampling was conducted throughout the monitoring period under the supervision of Wildlife Works VP Carbon Development Jeremy Freund and VP African Field Operations Rob Dodson. All plot sampling was conducted using the same successful, exacting protocol that was used for the Kasigau Corridor Phase I, Rukinga Sanctuary VCS project, and adheres to the methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0* previously referred to. Proper adherence to the SOP was ensured throughout the sampling process.

To most accurately estimate biomass in the sanctuary, within the monitoring period at reasonable cost, we determined that a stratified random plot sampling technique would be best suited to the project area. A total of 115 Plots were overlaid on the Project Area in a fixed rectangular grid configuration, and our Biomass Standard Operating Procedure was used to collect a comprehensive forest inventory, also summarized below.

Soil inventory coordinates were provided to the soil plot sampling teams by our GIS team, at randomly selected forest plot locations, within the ranch, as well as in shambas (farms) adjacent to the project area, in the reference region. They sampled using the following method,

illustrated further in the Soils Standard Operating Procedure provided separately to the validator.

Every REDD project must initially demonstrate that it meets the definition of “forest” under UN IPCC guidelines. This guideline was initially 30% but has been revised down to 15% in Kenya. This involves meeting minimum 15% canopy cover requirements. We field-measured the distance from center of plot, azimuth and canopy diameter for all sampled trees, allowing us to use ArcGIS to calculate canopy percentage for each plot (see plot example below), and then derive an average canopy cover for the project area. The Kasigau Corridor REDD Project Phase I - Rukinga Sanctuary achieved 39.48% average canopy coverage and therefore qualifies as forest under UN IPCC guidelines.



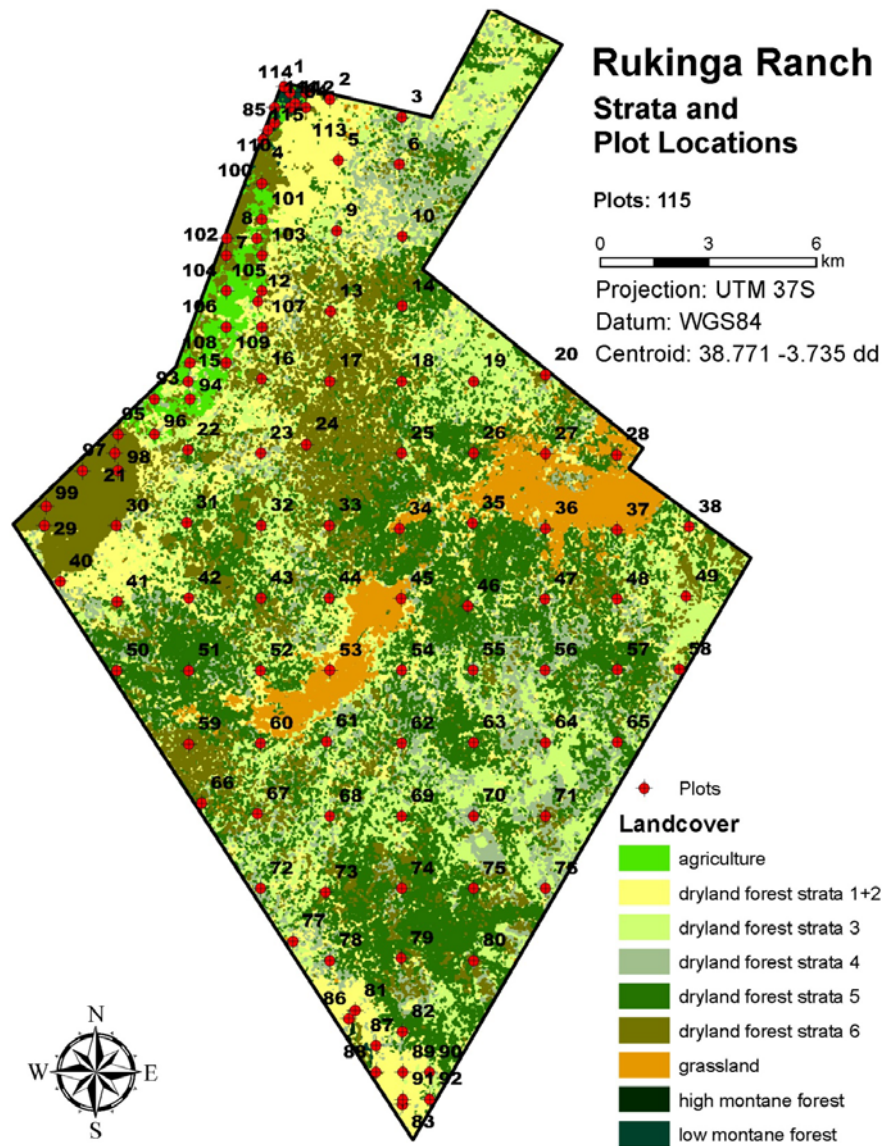
Sample canopy cover GIS analysis plot

We chose to include the following carbon pools in the project, inferring significant contributions to emissions reduction from each:

- Aboveground Biomass – trees
- Aboveground Biomass – shrubs and grasses
- Belowground Biomass – trees
- Belowground Biomass – shrubs and grasses
- Fallen Dead Wood - excluded
- Soil Carbon

We chose not to include:

- Leaf litter - a relatively small pool, and their exclusion would lead to a conservative estimate of carbon stocks.
- Wood Products - we do not permit any harvesting of wood from the project area (planned deforestation / degradation), and virtually no harvesting of wood for long-lived products occurs illegally within the project area.
- Fallen dead wood - we considered its omission from the carbon pools to be conservative.



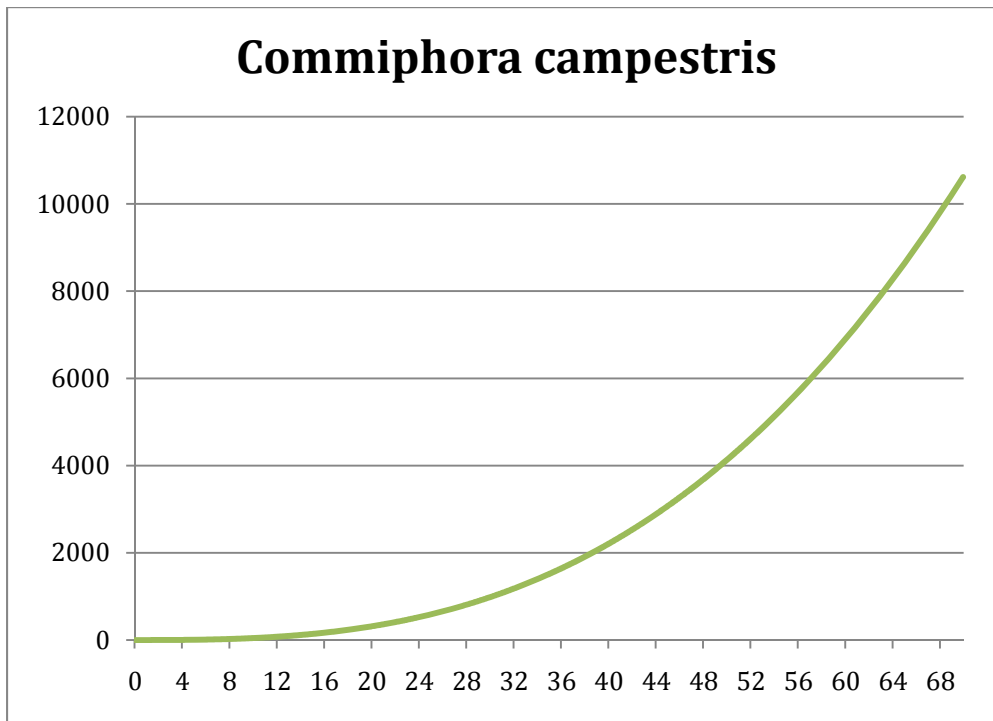
Landcover Strata Boundaries and Plot Locations for Rukinga Sanctuary Carbon Inventory

Aboveground Biomass – trees

We conducted a review of the references in the UN IPCC 2006 GL for AFOLU and could not locate refereed literature focused on dryland tropical forest. As a result, we concluded that average biomass and the allometric equations presented in the UN literature would lead to significant over estimation of the carbon in our forest. Commiphora species are not dense (hard) trees and are therefore relatively light in relation to a given diameter. Furthermore, none of the tree species in Phase II are of commercial value. Consequently, little timber, and therefore very little scientific data, exists for them.

To produce data for the types of species in the project area, we used limited destructive harvesting, cutting and weighing a range of trees at varying dbh. We then derived custom allometry for each of the dominant species present in the project. For rare species, with little

statistical importance to the biomass estimates, we used a mean equation derived from the total of all destructive harvest of all species.



A plot of the most prevalent of the species in the project area, *Commiphora campestris*, is demonstrated above. The standard dbh/G.W. power curve was developed from destructively harvested data

$$Green\ Weight = 0.06774[dbh]^{2.81566}$$

As an additional measure of conservativeness, we opted to use weighted regression to develop the power curves for smaller trees, ensuring that the scarcity of large trees was not excessively biasing the model. Coefficients for all destructively harvested trees are presented below, along with their weighting type:

Species	Weight Type	a	b	N	Max DBH	R ²	\bar{E}
<i>Acacia bussei</i>	None	3.3796	1.6416	8	18	.80	7.82
<i>Acacia hockii</i>	None	0.6850	2.1820	17	23	.93	-2.46
<i>Acacia nilotica</i>	None	1.3615	1.9513	10	23	.86	14.83
<i>Acacia tortilis</i>	None	2.6060	1.6175	9	20	.85	0.13
<i>Boscia coriacea</i>	1/BA	0.2033	2.3647	15	34.2	.77	7.30
<i>Boswellia neglecta</i>	1/BA ²	1.3025	1.8332	18	37	.40	13.87
<i>Commiphora africana</i>	1/BA ²	0.6293	1.9456	17	24	.75	13.17
<i>Commiphora campestris</i>	1/BA ²	0.06774	2.8156	17	40	.83	13.072
<i>Commiphora confusa</i>	None	0.1147	2.6634	18	23	.77	2.912
<i>Lannea alata</i>	DBH	0.5603	2.1027	17	17	.85	13.216
<i>Lannea rivae</i>	None	0.1488	2.6421	22	16	.54	11.7
<i>Acacia sp.</i>	None	1.1421	1.9954	44	23	.85	1.99
<i>Boscia sp.</i>	1/BA	0.2033	2.3647	15	34.2	.77	7.30
<i>Boswellia sp.</i>	1/BA ²	1.3025	1.8332	18	37	.40	13.87
<i>Commiphora sp.</i>	1/BA	0.10527	2.66544	52	40	.87	11.26
<i>Lannea sp.</i>	None	0.3288	2.3233	39	17	.62	11.18
All species (<35 cm DBH)	None	0.3411	2.3016	166	34.2	.74	9.50

Accuracy allometry coefficients for dominant species in Phase II

- Genus-level allometric equations were developed using all trees for each of 5 dominant Genuses in the ecosystem, and these curves were used when species-level equations were not available. In the absence of genus-level curves, the all-species curve was used by default, for those rare trees for which no destructive harvest data was available.

Results for all of the remaining species can be found in the supporting file "AllometricFormulasEXP.xlsx", available to the validator upon request.

These allometric equations were used to calculate aboveground *Green Weight* for each species in each plot in each stratum for each of the ranches in the project zone.

A carbon fraction, cf_{sp} , for all species of 50% was used for trees and shrubs, and 45% for herbaceous vegetation, as per the UNIPCC 2006 GL AFOLU Chapter 3.2, and an average dry weight to green weight of 50% to convert biomass to tonnes Carbon, according to equation [50] in the VCS methodology

$$x_{i,j,k} = \frac{44}{12} \times \frac{1}{1,000} \times f_{sp}(\bullet) \times cf_{sp} \quad [50]$$

Aboveground biomass was aggregated for all tree species within each plot, as per equation [45] in the VCS methodology

$$y_{j,k} = \frac{1}{a_{j,k}} \sum_{i \in \mathcal{X}_{j,k}} x_{i,j,k} \quad [45]$$

where:

$y_{j,k}$ = a quantity estimated for or measured on plot j in stratum k

$a_{j,k}$ = area of plot j in stratum k

$x_{i,j,k}$ = a quantity estimated for or measured for individual i on plot j in stratum k

$\mathcal{X}_{j,k}$ = set of all measurements of a type in plot j in stratum k

Belowground biomass for all vegetation was calculated using a root:shoot ratio of 0.4 (as per the UNIPCC 2006 GL AFOLU Chapter 3.2)

The results of these calculations can be found in the supporting carbon model databases for each ranch, available to the auditor upon request.

The sum of all plots within a strata within each ranch was performed, yielding a total aboveground and belowground biomass aggregate value presented in metric tonnes GHG per strata, per ranch, which was then expanded by the area of each strata to provide a total GHG value for each ranch.

Finally the ranch totals were summed to provide a project area total, measured in m.t.GHG.

The results of these calculations can be found in the supporting carbon model spreadsheet: "*Rukinga Carbon Trees Shrubs Grass v7.xlsm*".

Aboveground Biomass – Shrubs

See Annex 2 for the plot sampling methodology used to capture the data from the field to use to calculate the shrub carbon pool. Shrub biomass was calculated using destructive harvest factors for the dominant shrubs and a miscellaneous shrub category. This was performed for each plot within a stratum within each ranch, and the totals were aggregated across all plots by strata, for each ranch, and then totaled across ranches for a project area total.

Aboveground Biomass – Herbaceous

See Annex 2 for the plot sampling methodology used to capture the data from the field. We harvested grasses from four 1m square plots in quadrants within each of the fixed tree sampling plots. Grass bundles were dried and weighed to obtain sample plot grass weights, and an area expansion factor was applied to calculate plot and strata total carbon biomass in metric tonnes per hectare. We then applied the Carbon Dioxide / Carbon ratio (44/12) to obtain total CO₂e inventory. This was performed for each plot within a stratum within each ranch, and then the totals were aggregated across all plots by strata, for each ranch, and then totaled across ranches for an aggregate project area total.

Soil Carbon

The procedure used to calculate soil carbon was again taken from the VCS methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*. The field sampling methodology utilized is outlined in Annex 2. For this Phase II project, soil samples were taken from randomly selected tree sample plot locations within 3 ranches in the project zone, and then used to calculate unconverted soil carbon stock within the dryland forest, to compare with those values obtained for outside farms cleared at least 10 years prior to start date.

Using equation [61] of the VCS methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*, we calculated soil carbon loss

$$y_{j,k} = \frac{44}{12} \times 10 \times c_{f_{soil,j,k}} \times \rho_{soil,j,k} \times d_{j,k} \times \left(1 - \frac{v_{rf,j,k}}{v_{soil,j,k}}\right) \quad [61]$$

where:

$y_{j,k}$ = soil carbon stock in plot j stratum k

$\rho_{soil,j,k}$ = bulk density of fine portion of soil sample in plot j in stratum k

$c_{f_{soil,j,k}}$ = carbon fraction of soil sample in plot j in stratum k

$d_{j,k}$ = depth of soil sample in plot j in stratum k

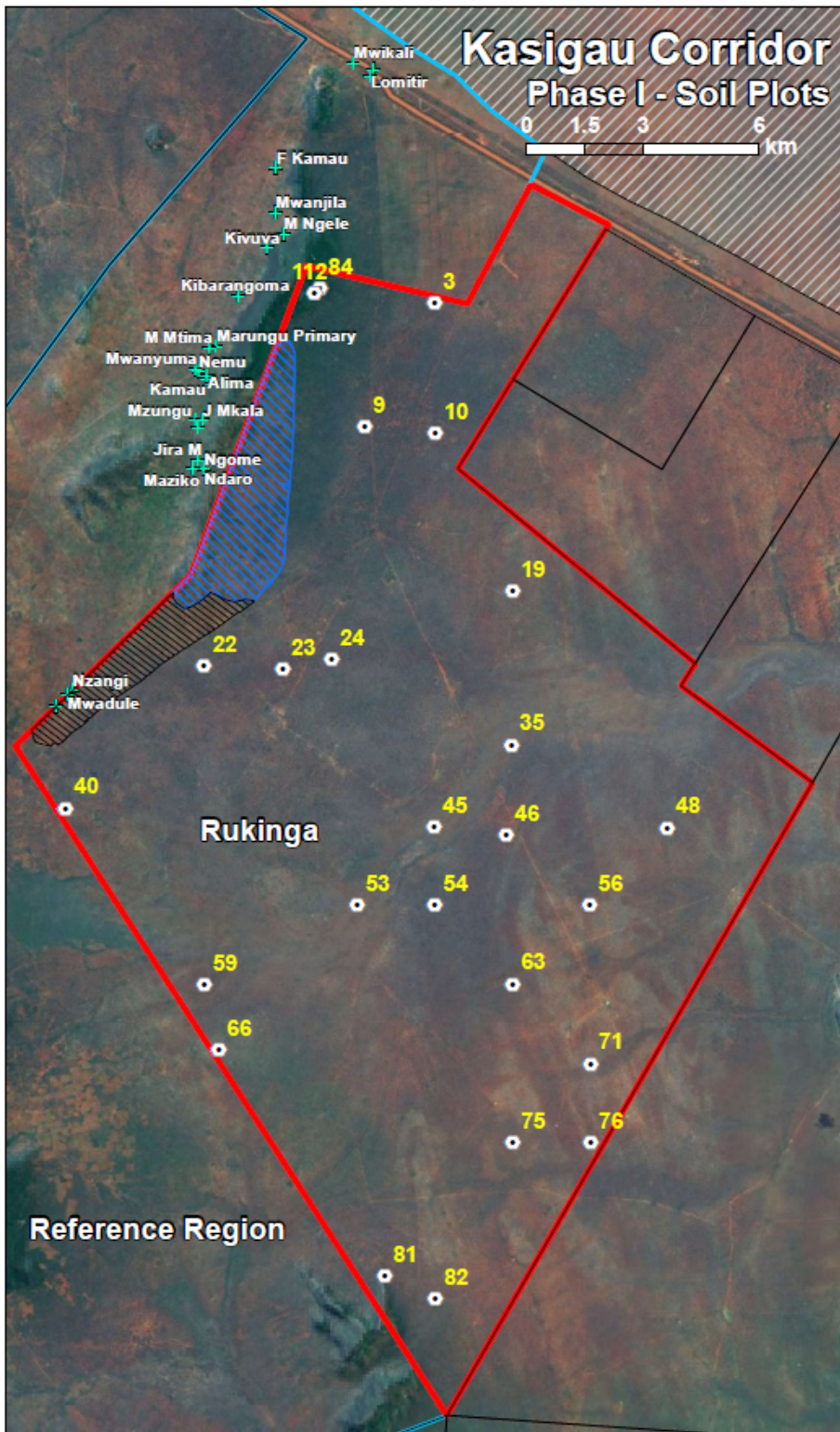
$v_{soil,j,k}$ = total volume of soil sample in plot j in stratum k

$v_{rf,j,k}$ = volume rock fragments (> 2mm) in soil sample taken in plot j in stratum k

A scientifically recognized standard factor of 1.724 (58% SOM=SOC)¹ was used to convert soil organic matter (SOM) as measured in the plot samples by the independent testing laboratory Crop Nutrition Laboratory Services to soil organic carbon (SOC). Bulk density was also calculated by the lab. The Carbon Dioxide / Carbon ratio (44/12) was applied to yield CO₂e.

The soil carbon plots, both within (unconverted) and outside (converted) the project zone are shown in the map below.

¹ Bohn, McNeal, O'Connor. 1979. Soil Chemistry. Wiley – Interscience publication.



Shamba Soil Plots

Shamba	X	Y
Mzungu	468880	9596995
Nemu	468956	9598235
Nzangi	465708	9590061
Ndaro	469081	9595739
Ngome	469081	9595739
Maziko	468799	9595759
Jira M	468945	9595976
Kazungu	468945	9596807
Kamau	469173	9598109
Walter	469162	9598058
Kivuva	470717	9601415
Mwanjila	470931	9602306
Marungu Primary	469404	9598889
J Mkala	469046	9597012
Alima	469173	9598113
Mwikali	472927	9606132
Nicholus	473454	9605990
M Ngele	471145	9601747
Kibarangoma	469975	9600174
F Kamau	470939	9603447
Mwanyuma	468862	9598289
Chimanga	465293	9589662
Mwadule	465581	9589955
Lomitirili	473367	9605797
M Mtra III	469238	9598850

Excised Area: 1392.27 ha

- Non-Forested Ag Encroachment
- Forested Ag Encroachment

Coordinate System

UTM 37S

Datum

WGS84



The results obtained for soil carbon starting inventory for Phase I *within the project zone* are illustrated in the following table:

Sample Number	Farm	Field	Comments	Bulk Density	Carbon
CW019SA0239	Rukinga Ranch	Rukinga 75	0-30cm-X0477067, Y9578494	1.38	0.59
CW019SA0240	Rukinga Ranch	Rukinga 75	31-100cm- X0477067, Y9578494	1.21	1.70
CW019SA0241	Rukinga Ranch	Rukinga 53	0-30cm- X473061, Y9584563	1.23	1.47
CW019SA0242	Rukinga Ranch	Rukinga 53	31-100cm- X0473061, Y9584563	1.33	0.74
CW019SA0243	Rukinga Ranch	Rukinga 40	0-30cm- X0465557, Y9587046	1.34	1.09
CW019SA0244	Rukinga Ranch	Rukinga 40	31-100cm- Xx0465557, Y9587046	1.13	1.90
CW019SA0245	Rukinga Ranch	Rukinga 45	0-30cm- X0475045, Y9586570	1.22	1.49
CW019SA0246	Rukinga Ranch	Rukinga 45	31-100cm- X0475045, Y9586570	1.35	0.69
CW019SA0247	Rukinga Ranch	Rukinga 54	0-30cm- X0475063, Y9584564	1.3	0.59
CW019SA0248	Rukinga Ranch	Rukinga 54	31-100cm- X0475063, Y9584564	1.33	0.83
CW019SA0249	Rukinga Ranch	Rukinga 81	0-30cm- X0473772, Y9575089	1.39	0.61
CW019SA0250	Rukinga Ranch	Rukinga 81	31-100cm- X0473772, Y9575089	1.38	1.10
CW019SA0251	Rukinga Ranch	Rukinga 63	0-30cm- X0477066, Y9582559	1.39	0.38
CW019SA0252	Rukinga Ranch	Rukinga 63	31-100cm- X0477066, Y9582559	1.25	0.72
CW019SA0253	Rukinga Ranch	Rukinga 71	0-31cm- X0479067, Y9580518	1.2	0.52
CW019SA0254	Rukinga Ranch	Rukinga 71	31-100cm- X0479067, Y9580518	1.36	0.60
CW019SA0255	Rukinga Ranch	Rukinga 19	0-30cm- X0477062, Y9592623	1.38	0.44
CW019SA0256	Rukinga Ranch	Rukinga 19	31-100cm- X0477062, Y9592623	1.4	0.80
CW019SA0257	Rukinga Ranch	Rukinga 3	0-30cm-X0475059, Y9599984	1.33	0.40
CW019SA0258	Rukinga Ranch	Rukinga 3	31-100cm- X0475059, Y9599984	1.42	0.85
CW019SA0259	Rukinga Ranch	Rukinga 56	0-30cm- X0479048, Y9584582	1.37	0.65
CW019SA0260	Rukinga Ranch	Rukinga 56	31-100cm- X0479048, Y9584582	1.21	1.28
CW019SA0261	Rukinga Ranch	Rukinga 23	0-30cm- X0471146, Y9590615	1.3	0.65
CW019SA0262	Rukinga Ranch	Rukinga 23	31-100cm- X0471146, Y9590615	1.25	1.05
CW019SA0263	Rukinga Ranch	Rukinga 24	0-30cm- X0472402, Y9590858	1.25	0.69
CW019SA0264	Rukinga Ranch	Rukinga 24	31-100cm- X0472402, Y9590858	1.35	0.98
CW019SA0265	Rukinga Ranch	Rukinga 10	0-30cm- X0475077, Y9596669	1.34	0.52
CW019SA0266	Rukinga Ranch	Rukinga 10	31-100cm- X0475077, Y9596669	1.4	0.72
CW019SA0267	Rukinga Ranch	Rukinga 48	0-30cm- X481050, Y9586554	1.31	0.87
CW019SA0268	Rukinga Ranch	Rukinga 48	31-100cm- X481050, Y9586554	1.34	0.65
CW019SA0269	Rukinga Ranch	Rukinga 22	0-30cm- X0469113, Y9590709	1.38	1.13
CW019SA0270	Rukinga Ranch	Rukinga 22	31-100cm- X0469113, Y9590709	1.52	0.55
CW019SA0271	Rukinga Ranch	Rukinga 112	0-30cm- X0471958, Y9600245	1.44	0.35
CW019SA0272	Rukinga Ranch	Rukinga 112	31-100cm- X0471958, Y9600245	1.33	0.78
CW019SA0273	Rukinga Ranch	Rukinga 76	0-30cm- X0479067, Y9578494	1.22	0.54
CW019SA0274	Rukinga Ranch	Rukinga 76	31-100cm- X0479067, Y958494	1.26	1.39
CW019SA0275	Rukinga Ranch	Rukinga 35	0-30cm-X0477031, Y9588676	1.21	1.19
CW019SA0276	Rukinga Ranch	Rukinga 35	31-100cm- X0477031, Y9588576	1.29	1.12
CW019SA0277	Rukinga Ranch	Rukinga 82	0-30cm- X0475085, y9574499	1.34	0.54
CW019SA0278	Rukinga Ranch	Rukinga 82	31-100cm- X0475085, Y9574499	1.45	0.73
CW019SA0279	Rukinga Ranch	Rukinga 66	0-30cm- X0469494, Y9580862	1.3	0.67

CW019SA0280	Rukinga Ranch	Rukinga 66	31-100cm- X0469494, Y9580862	1.59	0.59
CW019SA0281	Rukinga Ranch	Rukinga 59	0-30cm- X046129, Y9582521	1.5	0.48
CW019SA0282	Rukinga Ranch	Rukinga 59	31-100cm- X0469129, Y9582521	1.36	1.07
CW019SA0283	Rukinga Ranch	Rukinga 9	0-30cm- X0473253, Y9596819	1.39	0.62
CW019SA0284	Rukinga Ranch	Rukinga 9	31-100cm- X0473253, Y9596819	1.45	0.47
CW019SA0285	Rukinga Ranch	Rukinga 84	0-30cm- X0472093, Y9600367	1.36	0.44
CW019SA0286	Rukinga Ranch	Rukinga 84	31-100cm- X0472093, Y9600367	1.28	0.81
CW019SA0287	Rukinga Ranch	Rukinga 63	0-30cm- X0476903, Y9586364	1.24	0.51
CW019SA0288	Rukinga Ranch	Rukinga 46	31-100cm- X0476903, Y9586364	1.26	0.98

A total of all emissions reductions claimed in the project zone for the monitoring period from January 1, 2005 to December 31, 2010 is presented below:

Net Emissions Reductions (NERs) to date are quantified from the following components (tonnes CO₂e) with **290,068** and **1,160,263** tonnes CO₂e to buffer pool and issuance, respectively.

Component	Value
Soil Reduction	951,939
Forest Reduction	498,391
Total Baseline Emissions Reduction	1,450,330
Uncertainty Deduction	0
Project Emissions	0
Emissions from Leakage	0
Gross Total NERs	1,450,330
NERs to Buffer Pool (20%)	290,068
Net Total NERs	1,160,263

Total emissions reductions for the verification period between January 1st, 2005 and December 31st, 2010

Community Information

G1.5. Community Information

Please refer to this section in the Project Design Document.

G1.6. Current Land Use

Please refer to this section in the Project Design Document.

Biodiversity Information

G1.7. Current Biodiversity

Please refer to this section in the Project Design Document.

G1.8. High Conservation Values Evaluation

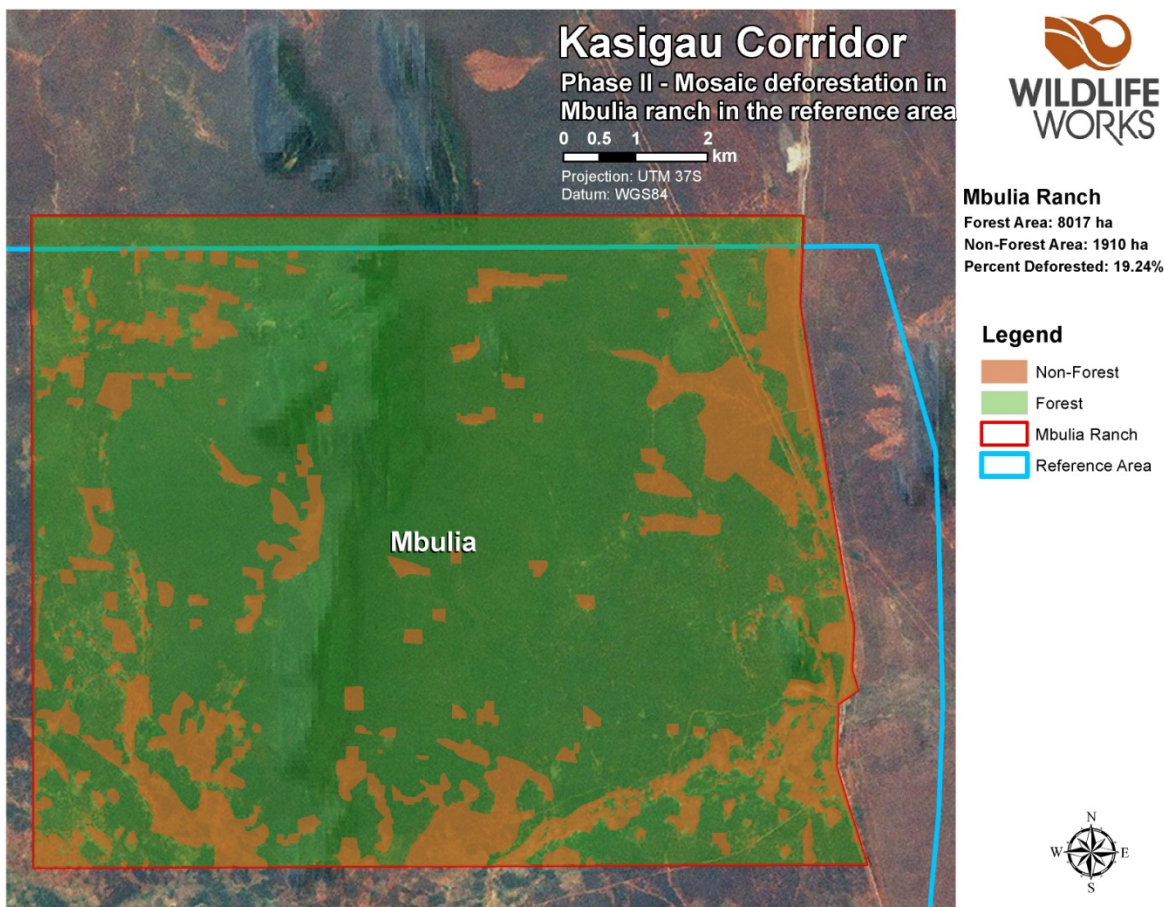
Please refer to this section in the Project Design Document.

G2. Baseline Projections

G2.1 – Most Likely Land Use

Unlike many REDD projects, it was not difficult to identify the baseline scenario for this project, which is rapid deforestation due to unplanned slash and burn agricultural expansion by subsistence immigrants at the frontier of human expansion, as 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 of the project area ceased and alternative livelihoods were not offered: the mosaic pattern of deforestation would certainly expand into the project area.

To further illustrate this point, an evaluation of the reference area (the area from which the baseline scenario, or "without-project" scenario was observed) 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.



Mbulia group ranch in the Kasigau Corridor reference region



Typical deforested area in the Kasigau Corridor reference region. View from the ground and from the air.

The project area has previously been used for sporadic grazing of cattle, and within Taita Ranch, a small ecotourism lodge. Both activities failed due to lack of funds, and cattle ranching is difficult due to a fragile ecosystem and lack of water, which has led the current shareholders to a situation of financial crisis and unsustainability. The heavy losses from the most recent drought have now crippled their activities completely.

Aggressive cutting of trees for the production of charcoal is also another source of land use in the area where a few benefit from the income to the detriment of the actual land owners.

Financial Data for Rukinga – please note that the financial data for the ranch is confidential, but was provided for the Validators.

Aforestation of plantation species and agricultural activities cannot profitably be carried out in this ecosystem due to a lack of water and a fragile ecosystem. We therefore believe that we have demonstrated, through our efforts to attempt many different economic activities, and by the fact that all the group ranches in the area have substantial annual and carry forward operating losses, that there are no credible alternative economic uses for this land that could compete with the project financially, or provide financial sustainability that would otherwise protect it from slash and burn use by the community.

G2.2 – Additionality

Please refer to this section in the Project Design Document.

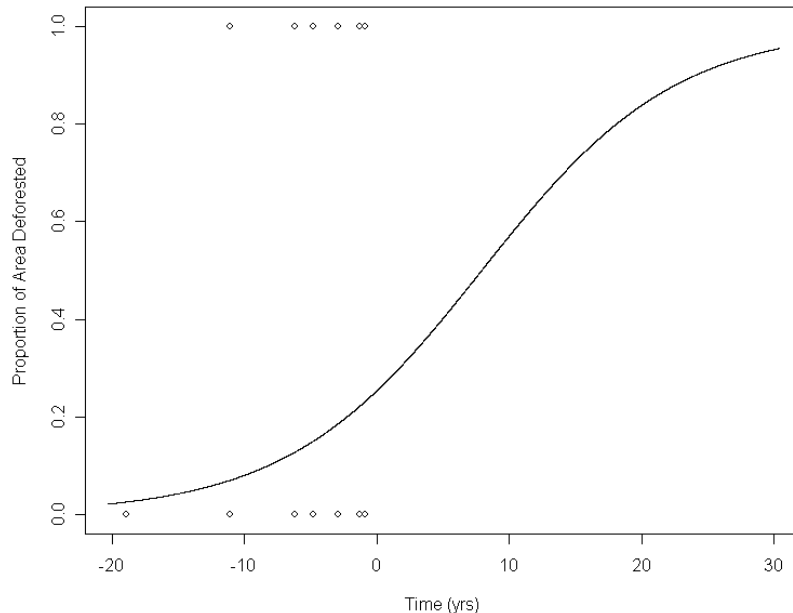
G2.3 – Carbon Stock Changes

The carbon stock change analysis approach used in this project is one based on actual historical deforestation of the project area, that was quantified using the approach described in VCS methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*, which uses historical remote sensing imagery and a grid based classification approach to determine historical deforestation rate in the project area.

This is the process developed by our own VP Carbon Development Jeremy Freund, who has many years of remote sensing experience in the field of natural resource science.

The loss of carbon in the baseline for above and belowground biomass trees, shrubs and grasses was assumed to be 100% of the starting inventory for the deforested area, as allowed under UNIPCC, as the likely scenario in the post deforestation baseline is annual crops.

Therefore, the GHG emission reductions under the project scenario for above and belowground trees, shrubs and grasses in any given year is determined by the Cumulative Deforestation Model derived from the historical logistic deforestation curve shown below;



Cumulative Deforestation Model derived from historical imagery from the reference region, Phase I

The results of this analysis are presented in a VCS Net Emissions Reductions (NERs) spreadsheet provided as a supporting document to the validators. Total net NERs for this verification period are also listed above, in section G1.4.

For soil carbon, we must use a separate 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 that 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 farm land 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 "Rukinga 1m Soil Analysis.xlsx".

This analysis yielded a mean difference in soil carbon between the “with-project” and “without project” of 188 tonnes GHG per ha converted to farm land under annual crops, or a 46% 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)	2,624,569	2,491,955
Soils	11,842,344	5,396,222
Total	14,466,913	7,888,177
Annual loss over 30 years (m.t. GHG) – GROSS NERs		251,432

G2.4 – How Would the Baseline Affect Communities

Please refer to this section in the Project Design Document.

G2.5 – How Would the Baseline Affect Biodiversity

Please refer to this section in the Project Design Document.

G3. Project Design and Goals

G3.1 - Major Climate, Community and Biodiversity Objectives

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

- Prevent the *gross* emission of over 7,000,000 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 (*Panther 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 almost 75,000 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
- to 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 – initializing 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.

G3.2 - Major Project Activities

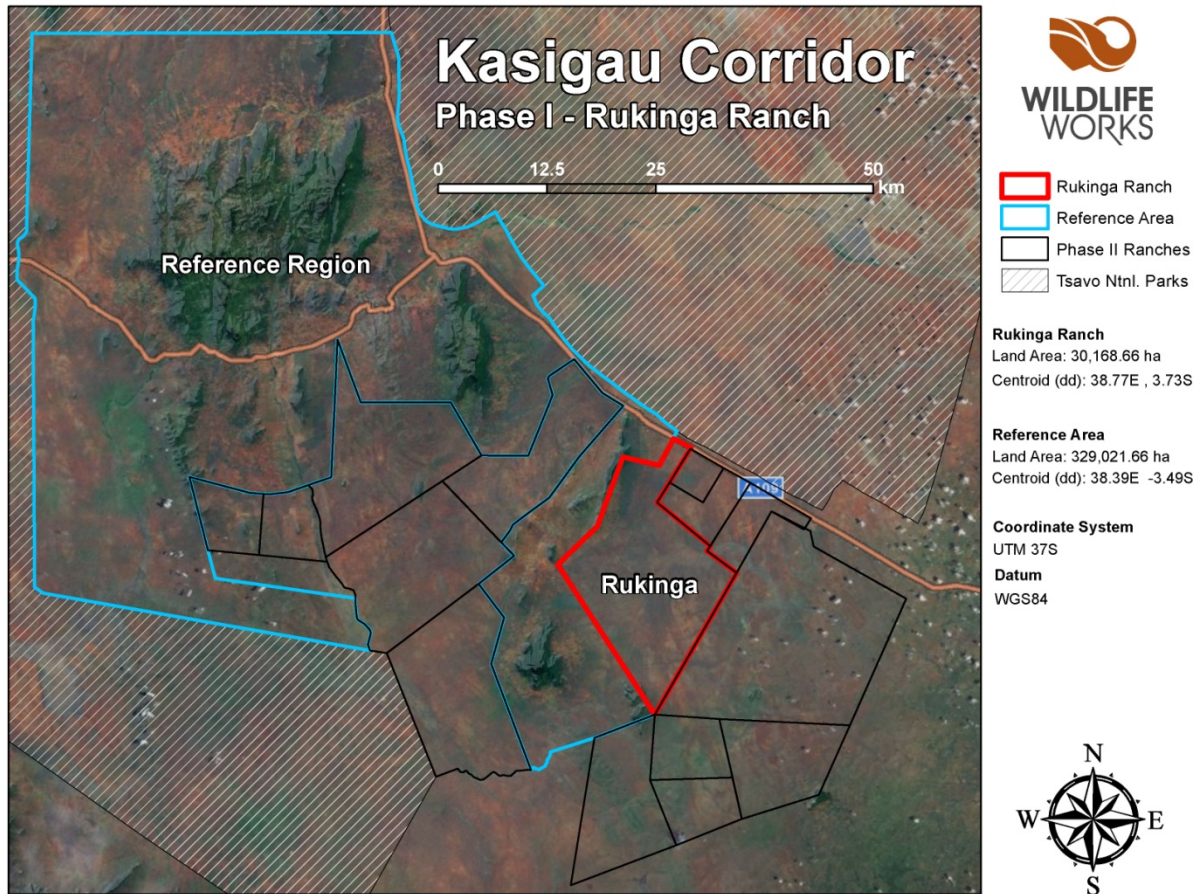
Wildlife Works has been engaged in the project area for over ten years, and unlike NGOs that typically set up projects, leave the area, and pay sporadic visits to "see how things are going", Wildlife Works has had employed a hands-on approach since the very beginning of our presence in Kenya. The company employs over 150 local people in a range of activities that we will continue, and in some cases significantly expand, with carbon financing. Such activities include;

Wildlife Works Sustainable Development Initiatives

Wildlife Works has implemented a wide range of sustainable development initiatives in the project area over the past ten years, and is committing to continue with a new range of innovative co-benefits for the communities that are in the project area upon receipt of funding for Phase II of the carbon project. These initiatives collectively form the basis of our carbon offset leakage avoidance strategy, and an implementation schedule for these Project Activities, with timelines and budgets was shared with the validator. The following is a list of project activities that have been initiated during the first verification period: January 1st, 2005 to December 31st, 2010. These activities have been supported using Wildlife Works investment in anticipation of receiving carbon funds from Phase I of this project. More detailed descriptions of these activities can be found in the respective Climate, Community and Biodiversity sections later in this report.

- EcoFactory Expansion
- Organic Greenhouse
- Financial Aid to Marungu Hill Conservancy Association
- Jojoba propagation & extension into the Community
- Mushroom Farms from Elephant Dung
- Reforestation of Mt. Kasigau
- Wildlife Works REDD Forest and Biodiversity monitoring
- Community Wildlife Scouts
- REDD Carbon Inventory Monitoring
- Ecotourism Projects
- School Construction and Bursary Scheme
- 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

G3.3 – Location of Project Activities



The project area for the Kasigau Corridor REDD project Phase I is illustrated in the map above and in Annex 1; The corresponding group ranch identities are shown above. Remaining dryland forested areas within the scope of the project (project area) include:

Phase I:
Rukinga Ranch

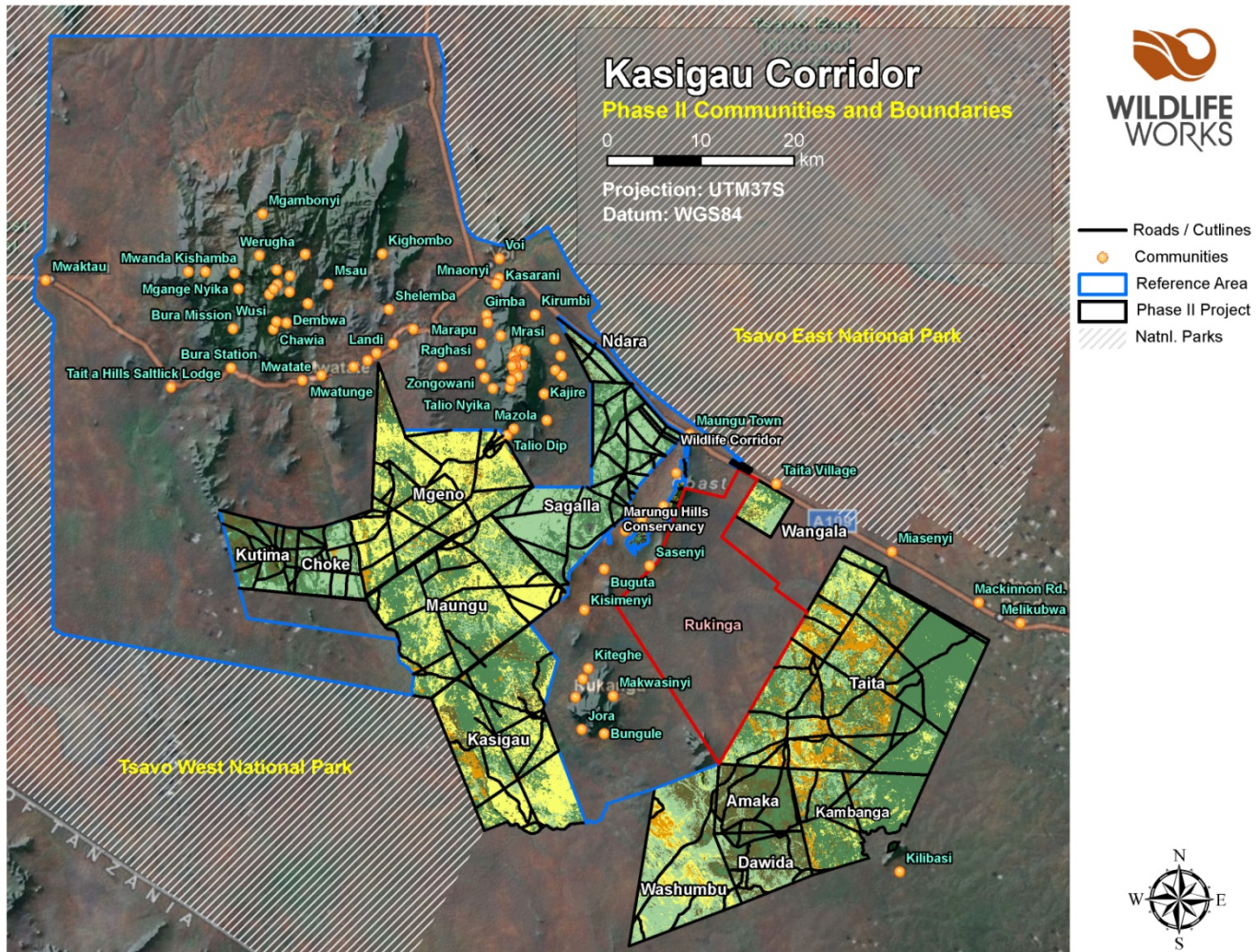
Kutima Ranch
Wangala Ranch
Marungu Hills
Conservation Area
Wildlife Corridor Link

the proper conservation management of the area.

Phase II:
Taita Ranch
Kambanga Ranch
Kasigau Ranch
Maungu Ranch
Mgeno Ranch
Sagalla Ranch
Ndara Ranch
Amaka Ranch
Dawida Ranch
Washumbu Ranch
Choke Ranch

Phase III:
Any other ranches that do not qualify for REDD, but may potentially qualify under new Avoided Grassland conversion methods being developed under VCS by Wildlife Works, which we believe are necessary to ensure

The communities impacted by this Phase I project will be those villages from Maungu south along the Kasigau Road and including the Northern population of Mt Kasigau.



Communities within the scope of influence of both Phase I and Phase II project.

G3.4 – Time Frame and Project Accounting

Please refer to this section in the Project Design Document.

G3.5 – Project Risks and Mitigation Measures

Please refer to this section in the Project Design Document.

G3.6. Maintenance of High Conservation Values

Please refer to this section in the Project Design Document.

G3.7. Measures Taken to Enhance CCB Benefits Beyond Project Lifetime

Please refer to this section in the Project Design Document.

G3.8. Stakeholder Involvement

Please refer to this section in the Project Design Document.

G3.9. Publicization of Public Comment Period

The Kasigau REDD Project, Phase I – Rukinga Sanctuary Project Implementation Report (PIR) has been posted for public comment on the CCBA website (<http://www.climate-standards.org>) and it will be open to comments for 30 days. 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 I, 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.

G3.10. Conflict Resolution

Please refer to this section in the Project Design Document.

G3.11. Project Financial Support

Please refer to this section in the Project Design Document.

G4. Management Capacity and Best Practices

G4.1. Project Proponent

Please refer to this section in the Project Design Document.

G4.2. Technical and Management Expertise

Please refer to this section in the Project Design Document.

G4.6. Employee Safety

Please refer to this section in the Project Design Document.

G4.7. Financial Health of the Implementing Organizations

Please refer to this section in the Project Design Document.

G5. Legal Status and Property Rights

G5.1. Local Laws and Regulations

Please refer to this section in the Project Design Document.

G5.2. Documentation of Legal Approval

Please refer to this section in the Project Design Document.

G5.3. Free, Prior, and Informed Consent

Please refer to this section in the Project Design Document.

G5.4. Involuntary Relocations

Please refer to this section in the Project Design Document.

G5.5. Illegal Activities

Please refer to this section in the Project Design Document.

G5.6. Carbon Rights

Please refer to this section in the Project Design Document.

CLIMATE SECTION

CL1 Net Positive Climate Impacts

CL1.1. Net Change in Carbon Stocks

For a detailed description of loss of carbon stocks due to slash and burn agriculture in the Baseline scenario see Section G2, above. Wildlife Works has been committed to the protection of this dryland forest ecosystem and the wildlife that calls it home, and with the addition of the carbon finance, we will continue our effective protection and expand our activities within the community.

Carbon stock changes are based on the VCS approved methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*. The net changes in carbon stocks for the current verification period (January 1st, 2005 through December 31st, 2010) are summarized as follows:

Stratum	n	Area (ha)	Trees Carbon Mean (tCO ₂ e / ha)	Shrubs Carbon Mean (tCO ₂ e / ha)	Herbaceous Carbon Mean (tCO ₂ e / ha)	Total Strata Mean (tCO ₂ e / ha)	Total Strata Carbon Stock (t CO ₂ -e)
ag active	12	713.7	67.98	23.08	2.88	172.24	122,925.5
dryland forest strata 1+2	26	6883.6	39.98	8.48	1.41	91.42	629,289.1
dryland forest strata 3	16	5651.1	40.75	2.45	0.99	81.01	457,776.5
dryland forest strata 4	11	2773.4	47.51	3.04	0.77	94.09	260,949.1
dryland forest strata 5	18	8133.4	46.23	2.30	2.14	92.89	755,520.4
dryland forest strata 6	23	4345.5	35.87	7.26	2.36	83.39	362,368.4
grassland	4	1610.9	3.05	1.40	4.85	17.06	27,474.3
montane forest	3	57.1	45.56	33.45	0.00	144.86	8,265.6
Total:		30,168.66					2,624,568.9

Total monitored forest carbon in Rukinga

Component	Value
Soil Reduction	951,939
Forest Reduction	498,391
Total Baseline Emissions Reduction	1,450,330
Uncertainty Deduction	0
Project Emissions	0
Emissions from Leakage	0
Gross Total NERs	1,450,330
NERs to Buffer Pool (20%)	290,068
Net Total NERs	1,160,263

Total emissions reductions for the current verification period (January 1st, 2005 through December 31st, 2010)

CL1.2. Net Change in non CO2 emissions

Please refer to this section in the Project Design Document.

CL1.3. Other non CO2 emissions from Project Activities

In the project scenario, a small amount of emissions result from the burning of diesel in patrol vehicles. However in the without-project scenario, this would be more than offset - in our opinion - by the emission from the agricultural practices which would follow conversion of the forest, in which there would be fertilizer, and annual emissions from burning of the agricultural waste.

As a result of comments from the CCB Auditors, we elected to perform a full carbon footprint analysis of the project scenario for this Phase I project (see table below).

Wildlife Works Kasigau Corridor REDD Project Carbon Footprint

<u>Kenyan Power Generation</u>		
	%	kg CO2e per kWh*
Fossil fuels	60%	0.86
Non Fossil Fuels (Hydroelectric, Geothermal)	40%	0
Average		0.52
* from US DOE statistics - no Kenyan stats available		
<u>Kenyan Water Supply</u>		
We are 100% gravity fed from Mzima Springs Pipeline	0	0
Footprint of pumping on site for our purposes included in electric power and generator fuel use footprint		
<u>EcoFactory</u>	<u>Units of consumption/yr</u>	<u>m.t. CO2e/year</u>
Power use (kWh)	9600	4.97
Organic Cotton Products(est. 100,000 units / year)	100000	102
6kg per 12oz garment during total lifecycle		
Estimated 75% post consumer purchase		
Therefore 25% crop to retail = 1.5kg		
Organic Cotton footprint 68% conventional (Sustainable Cotton Project) = 1.02kg		
Carnegie Mellon Economic Lifecycle Analysis	\$500,000	344
Tier 3 GHG Footprinting for Cut and Sew Mfg.		

Carnegie Mellon University Green Design Institute. (2009) <u>Economic Input-Output Life Cycle Assessment (EIO-LCA) US 1997 (491) model</u> [Internet], Available from: < http://www.eiolca.net/ > [Accessed 31 Oct, 2009]		
Note this includes 114 m.t. for power generation which we have accounted for primary consumption elsewhere.		
Also includes 14 m.t. for non cellulosic materials (e.g. synthetics which we do not use) in addition to 5.9 m.t for organic cotton which we do use.		

While we believe there are many flaws in the Carnegie Mellon example as it relates to our project, (e.g. organic cotton use, very low power generation at primary business activities as demonstrated by actual power usage used in this table, etc.) we choose that method for calculating the factory footprint over the sustainable cotton project method above, as it yields a more conservative result. We have provided the validator the full Carnegie Mellon analysis spreadsheet.

	Units of consumption/yr	m.t. CO2e/year
<u>Wildlife Sanctuary</u>		
Ranger Support Petrol/Diesel use (Ltrs/year)	15000	40.04
(note we use some petrol and more diesel so to be conservative we will assume 100% diesel as petrol has lower CO2e 2.7 kg/ltr diesel vs 2.3 petrol)		
CO2e lbs per gallon diesel (US EPA/UNIPCC 2006)	22.2	
CO2e kgs per ltr diesel (US EPA/UNIPCC 2006)	2.7	
<u>Organic Greenhouse and Jojoba Project</u>		
Organic Fertilizer for 7 Greenhouses proposed	21000	0.1456
3000 fruit tree seedlings per year use 200kgs manure*		
500 jojoba bushes on our experimental 10 acres use 200kgs manure per year. If we assume jojoba outplanting on 1000 acres that gives 100x manure use	20000	2.08
We use no fertilizer on the indigenous tree seedlings		
.104 kgs CO2e per kg manure (UNIPCC 2006 at 1.5% Carbon conversion to methane)		
*Note that we make compost tea in sealed container, we do not apply manure directly to crops, so our footprint would be lower		
Also note that the CCB methodology only requires calculation of GHG footprint for use of synthetic fertilizers of which we use none.		
<u>Eco tourism</u>		

Guest house electricity(kWh)	2912	1.51
Water Pump House Electricity (kWh)	2389	1.24
Camp Water Pump Diesel included in Ranger Fuel use		
Misc		
Management Housing Electricity (kWh)	8681	4.50
Management Airline Flights	10	25
2500kgs CO2 e per round trip SFO to Nairobi		
Total		423.49
Percent of Project GHG emissions reductions		0.25%

Positive emissions reductions associated with the trees we will be planting will offset the GHG emissions from other project activities. Table 4.9 of the *UNIPCC 2006 Good Practice Guidance for LULUCF* gives a net annual biomass increment for natural forests in tropical dryland forest types ≤ 20 years old as 2.4 tonnes d.m. / ha / yr.

The density of Rukinga's forest was estimated at 6,000,000 trees covering 30,166 hectares. There are therefore approximately 200 trees per hectare, and the Phase II ecosystem is assumed similar to that of Rukinga, due to its proximity to Phase I (the Phase II ranches surround Rukinga on all sides). Applying this density to the reforestation project on Mt. Kasigau, the 20,000 trees we will plant in the first three years of the project activities represent 100 hectares of forest area, which equates to 2400 tonnes d.m per year. Using the variable 0.47 for the carbon fraction (Table 4.3 of the UNIPCC 2006 Good Practice Guidance for LULUCF – Tropical and Subtropical Forests), and 44/12 to convert to CO₂e, this yields 4,136 m.t. Co₂e per year sequestered by the indigenous trees to be planted under the Mt. Kasigau Reforestation project. This is approximately 10x the emissions calculated in the table above for the entire carbon footprint from project related activities. Adding the sequestration benefits of planting out 20000 joboba bushes and the 20,000 fruit trees, whose fertilizer use was calculated above in negative emissions, the substantial net-positive benefit of the project becomes abundantly clear. We still plan to retire some of our own credits to officially offset the project's carbon footprint.

CL1.4. Net Climate Impact

We estimate this project would avoid an estimated 49MM tonnes of CO₂e over the thirty year life of the project, and therefore has an overwhelmingly positive climate impact. In CL2.3 below, we have laid out an aggressive leakage mitigation strategy with our project activities, and as a result, deemed it unnecessary to deduct for leakage, as in fact our leakage strategy will result in more net positive climate impacts. We will not claim these positive impacts in the with-project scenario. Additionally, this project will account for any activity-shifting leakage identified under the VCS methodology *VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests V1-0*.

CL1.5. Avoid Double Counting

Please refer to this section in the Project Design Document.

CL2 Offsite Climate Impacts

CL2.1. Types of Leakage

Please refer to this section in the Project Design Document.

CL2.2. Mitigation of Leakage

Our activity shifting leakage strategy is fully described in the PDD. For the current verification period, the following components have been implemented;

Indicator – Dry land Forest Acres protected by Wildlife Works Rangers – include Buchuma, LMD, etc. in this figure

- Acres Covered by WW Carbon Easement
- Acres Under other form of agreement

Indicator – \$ paid to community land owners

Wildlife Works REDD Project Phase II Preparation – Carbon Project Leakage Mitigation

As part of our program to prevent leakage from Phase I, we stated in our Phase I PDD that we would use the proceeds of Phase I to launch a second Phase of the Kasigau Corridor REDD Project in which we would sign up as many at-risk community owned forest patches as possible. During 2009 and 2010 we did just that; signing up 13 community owned Group Ranches and a small area from the community trust lands that will be given to the Marungu Hill Conservancy Association, a local CBO. Significant signing fees indicated in the table below were paid to each of the community Group Ranches to generate excitement about the potential of the carbon markets, and to demonstrate Wildlife Works' level of commitment.

<u>Ranch</u>	<u>Size acres</u>	<u>Size Ha</u>	<u>Status</u>	<u>Upfront amount</u>	<u>Payment due</u>
Taita	88000	35612	Signed	\$22,257.68	paid
Kambanga	34486	12948	Signed	\$6,897.23	paid
Kasigau	52329	21186	Signed	\$10,465.88	paid
Maungu	53399	21619	Signed	\$13,511.88	paid
Wangala	5000	2023	Signed	\$1,000.00	paid
Mgeno	52443	21232	Signed	\$10,616.00	paid
Washumbu	35833	14501	Signed	\$7,166.60	paid
Dawida	13000	4046	Signed	\$2,600.00	paid
Amaka	14546	5889	Signed	\$2,909.17	paid
Sagalla	42983	17402	Signed	\$8,596.59	paid
Ndara	4532	1834	Signed	\$906.38	paid
Choke	12538	5076	Signed	\$2,507.54	paid
Kutima	12538	5076	Signed	\$2,507.54	paid
Total Under Carbon Easements	421626	168446		\$91,942.49	
BUCHUMA & LMD	10,000	4,049			N/A

MARUNGU HILL	2,545	1,030	N/A
HIGHWAY WILDLIFE CORRIDOR	386	156	N/A
Total Under Conservation Management Agreements	12,931	5,235	



Signing Carbon Rights Agreement with Kasigau Ranch



Signing Carbon Rights Agreement with Mgeno Ranch

REDD Carbon Inventory Monitoring

For this first verification period, we have just completed 100% sampling of the biomass plots for the validation report for Phase I. Additional sampling will be completed for the next verification period, Jan 1st 2011- December 31st 2011, during which time we will revisit 20% of our forest plots to resample the inventory (to achieve 100% of the plots sampled every 5 years).



Mwololo Muasa, biomass plot team leader, ponders a tree measurement

We have also made a significant investment in equipment by supporting the purchase of a gyrocopter by our VP African Operations, Rob Dodson, which will be used to perform aerial monitoring every week, both for forest health and to prevent loss of biodiversity.

Wildlife Works Eco-Charcoal Production Facility for the Kasigau Corridor REDD Project

Wildlife Works advanced funding for this critically important project activity, enabling work to begin prior to validation and verification and receipt of carbon funds from Phase II. The results of the three phases of work were analyzed and conclusions developed about the best way forward for the production of EcoCharcoal in the Kasigau corridor.

A full budget for implementation of the project recommendations was produced and are included in a supporting document called “Wildlife Works EcoCharcoal Project Activity Design Document” which was provided to the validators.



A batch of ecoCharcoal completed and ready for testing

The Kasigau Corridor REDD project has created an economic incentive for the landowners and communities within the corridor to protect their forest. Wildlife Works is now working with the landowners and local communities to implement forest management plans that exclude the destructive use of forest resources for fuel wood or charcoal, and as a result, the supply of “free” wood for local charcoal use will be greatly reduced.

After surveying hundreds of people at all elements of the value chain, we determined that low impact community based charcoal production can indeed offer a sound alternative to ecologically damaging practices, such as hardwood extraction for lumpwood charcoal from primary forest destruction which is often accompanied by bush meat (hunting of wildlife species).

CL2.3. Unmitigated Negative Offsite Climate Impacts

Please refer to this section in the Project Design Document.

CL2.4. Unmitigated Negative Offsite / Non CO₂ Climate Impacts

See Section CL1.1 for a complete analysis of GHG emissions, both CO₂ and non-CO₂. Non-CO₂ gases account for far less than 5% of emissions, and are easily offset by mitigation activities described in CL1.1.

CL3 Climate Impact Monitoring

CL3.1. Carbon Pools to be Monitored

The following Carbon Pools will be monitored, as specified under the VCS methodology *VM0009 Methodology for Avoided Mosaic 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 our 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 aforementioned VCS methodology. The first is a current carbon inventory of the project area land, conducted using a stratified-random, fixed permanent plot methodology, accepted by all as a more accurate method for forest carbon inventory than remote sensing, and the second being the use of satellite imagery for 12 years prior to the beginning of the project, clearly and empirically demonstrating the deforestation rate in the project area.

For the first model, it is our intention to 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 in this part of Kenya can be considerable. We plan to re-measure diameter at breast height (dbh), height, and status of all the trees originally included in the inventory for each plot. The annual resampling will be rotated so that every five years we have performed a complete resampling of the forest. We will also fund the external auditors of our project to revisit our permanent sample plots on a 5 year timetable.

We have no specific plan for monitoring of the soil carbon pool, as we make the assumption that loss of soil carbon during the project within the project area would follow unplanned deforestation in the project area. Therefore, as long as we are monitoring the aboveground biomass pools, we will be able to calculate the net climate impact of deforestation on the belowground and soil carbon pools, which are in turn directly dependent on the monitoring of above-ground forest biomass.

For the second model, we will continue to use satellite imagery to monitor the presence or absence of further deforestation in the reference area and the leakage belt. Because the type of deforestation occurring in this ecosystem involves total removal of tree cover for slash and burn agriculture, it is simple to observe landcover change with remotely sensed imagery. We will acquire affordable high-resolution imagery to support this monitoring.

The carbon monitoring plan is further described in the Project Design Document as well as the VCS Project Description *The Kasigau Corridor REDD Project Phase I - Rukinga Sanctuary*.

CL3.2. Commitment to Monitoring Plan

Please refer to this section in the Project Design Document.

COMMUNITY SECTION

CM1 Net Positive Community Impacts

CM1.1. Estimate Impacts on Communities

Please refer to this section in the Project Design Document for detailed community impact information.

CM1.2. Demonstrate no Negative Impacts on High Conservation Values

Please refer to this section in the Project Design Document.

Specific details are described in the "Kasigau Biodiversity Monitoring Plan", and "Kasigau Biodiversity Survey Report", also provided to the validator.

CM2 Offsite Stakeholder Impacts

CM2.1. Identify any Potential Negative Impacts on Offsite Stakeholders

Please refer to this section in the Project Design Document.

CM2.2. Plans to Mitigate Negative Impacts on Offsite Stakeholders

Please refer to this section in the Project Design Document.

CM2.3. Demonstrate no NET Negative Impacts on other Stakeholder Groups

Please refer to this section in the Project Design Document.

CM3 Community Impact Monitoring

CM3.1. Develop Plan for Community Monitoring

The following project activities have positively impacted stakeholder communities during this first verification period (January 1, 2005 through December 31, 2010)

Section 1 - Data for which Wildlife Works' activities are directly responsible/accountable

Wildlife Works Sustainable Development Initiatives

Wildlife Works has implemented a wide range of sustainable development initiatives at Rukinga since the project start date, and is committing to continue with a new range of innovative co-benefits for the communities that are in the Project Zone once the funding for the Carbon project begins. These initiatives collectively form the basis of our carbon offset leakage avoidance strategy, and an Implementation schedule for these Project Activities, with timelines and budgets was shared with the project Validator, during Validation.

Organic clothing factory

Our core Consumer Powered Conservationsm project, was the construction of the Ecofactory, just outside the North Eastern boundary of the Project Area, close to the main town in the reference region, Maungu. We employed over 150 people from the community in the construction phase. We then had the EcoFactory gazetted by the Kenyan Government as an Export Processing Zone (EPZ) allowing for duty free export of products to Europe and the US.

The EcoFactory was built using rammed earth construction, an ancient technique that uses soil from the site as 95% of the wall material. The roofing material, Onduline, is made by a French company and uses recycled bitumen. The colors used for the roof and buildings are reds and greens in order to help the building blend with the natural setting. Inside the factory there are fluorescent lights spaced evenly throughout the building. The building also makes use of solar lighting via the skylights. The skylights are not glass but are instead made of a corrugated roofing material that allows light to pass through.

The climate here combined with the heat emitted from sewing machines and irons makes design intended to cool the building very important. Inside the factory there are ceiling fans spaced evenly throughout the building. The factory itself is also designed to take advantage of the wind and natural ventilation. There are windows every few feet around the building to take advantage of the breeze and cross ventilation. The roof overhang is designed to block the windows and the building from direct sunlight, thus helping to keep the temperature lower. Lastly, there is a second roof that is elevated from the first roof. The space between the roofs is screened in. This design feature allows for the heat to rise and escape. Furthermore, breeze can blow through the screens and help carry the hot air out of the building.

After construction, we then trained young women from the community to sew organic cotton clothing. The factory now creates garments under the Wildlife Works label made from only fully organic materials, worked by locally trained, employed and fairly paid members of the communities that border Rukinga. Creating employment for 25 employees also provides a cash alternative to the unsustainable utilization of natural resources that threatens Rukinga today. The garments are mostly exported to the US and Europe for sale on the internet and in fashion boutiques, although we do produce a small quantity for sale locally within Kenya, as allowed under our EPZ status.

First and foremost, supported by the REDD project revenues we plan to continue the level of investment we have been making since the Project Start Date in this ecofactory.

Indicator - Number full time jobs

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

Indicator – Local Employment

- How many employees come from project area communities
- How many employees do not come from Project Area Communities

The Factory employs a total of 22 permanent employees and an additional 3 casual workers in the screen-printing department. The 3 casuals will be offered a permanent position once we have constructed a dedicated and custom designed Printing Factory. So total employment is 25 people of these, 18 staff members come from the immediate communities in the project area, with 7 Kenyan employees who come from further away, as a result of skill needs specific to their position being unavailable in the immediate local communities.

In addition, going forward we have several new Project Activities in this area;

- Adding capacity – we rehired ten women previously trained by Wildlife Works but let go a few years ago due to lack of funding (staffing was down to 12 people prior to beginning the REDD project, now is 22 full time)
- Factory Expansion – Wildlife Works recently signed an agreement with Puma the German Sports Lifestyle brand to produce for Puma, so \$150,000 has been set aside from Phase I carbon revenues to invest in the completion of a second production cell, capable of doubling our capacity for cut and sew goods. The walls for this production cell were built back when the first sewing cell was built, but it needs roofing, flooring, electrification. We are also building a unit to house dyeing and screen printing fabric so that we can manufacture finished goods completely within our complex without having to send out for dye and print. We believe this will make our production capability much more attractive to a wider range of customers, and reduce our production costs. A full budget for this factory expansion was provided to the Validator, and these investments will be made during the next verification period.
- Increase Fabric Inventory and Produce 2010 Collection – we had been unable to produce a new fashion collection from Rukinga for the past two years due to lack of funding, but with the carbon advances we began design and production of a new collection to be delivered in Q1 2011. This new collection will be sold online and will relaunch our brand into the international marketplace, now with 100% of production being done in Rukinga. This is critical to our long term strategy to wean local people away from agricultural employment that conflicts with wildlife, and to introduce elements of sustainability to our model for post carbon finance in 30 years.

Financial Investment/Return on the Eco-Factory

- \$ invested in capital expense since REDD project began

We have purchased US dye machine and screen printing equipment to expand capabilities of factory – shipped to Kenya - Total Investment - \$30,000

In addition we made other minor upgrades to the EcoFactory funded in anticipation of carbon revenues from the REDD project;

- Satellite dish for internet - \$3,000
- 4 Irons -\$1,000
- Fire extinguishers - \$2,300
- Drier machine & Washing machines -\$1,000
- Sewing machines - \$2,000

Indicator – Financial Investment/Return

- \$ annual operating expenses since REDD project began
 - annual factory operating costs since Jan 1st 2005 = \$
- \$ income generated from EcoFactory since REDD project began
 - annual income from EcoFactory since REDD project began = \$

Spreadsheet showing Annual Operating Costs and Income Sales in USD\$

Export Production from Factory

YEAR	COSTS USD\$	INCOME USD \$
2005	76,300.00	48,450.00
2006	59,500.00	51,000.00
2007	75,000.00	57,000.00
2008	35,000.00	32,000.00
2009	98,000.00	54,000.00
2010	102,000.00	22,000.00
Total	445,800.00	264,450.00

Local Kenyan Sales From Factory

Year	Sales From Factory in \$
2005	500.00
2006	1,700.00
2007	3,000.00
2008	5,000.00
2009	6,000.00
2010	200.00
Total	16,400.00

Organic Greenhouse

The organic greenhouse was originally setup in late 2002. It has carried out a variety of different organic growing techniques of various different crops through its earlier periods of operations.

Since 2005 the organic greenhouse has been producing primarily, organically raised, grafted, citrus fruit trees. These provide an income to the greenhouse, and a valuable, drought, pest and wildlife resilient cash crop for local farmers.

Seedlings are raised in a mixture of sandy soils and manure procured from local farmers and old cattle boma sites. They are planted into degradable planting tubes and protected under shade net from the sun.

We are using a locally produced organic pesticide called EM-1 or Effective Micro-organism-1 on the rough-skinned lemon rootstock in order to combat aphid and caterpillar (citrus

swallowtail) attacks. EM-1 is based on photosynthetic bacteria, lactic acid bacteria, baking yeast and molasses. It is then mixed with more molasses and water to activate the bacteria and additional ingredients are added in order to discourage specific pests. EM-1 doesn't kill pests, it simply deters them by coating the plant in a distasteful layer of organic products. The mixture also penetrates the soil and promotes a healthy bacterial environment that assists nutrient release and absorption by the seedlings whilst deterring ground-worm colonization of the grow-bags.

The additional ingredients that we have found most beneficial are: garlic, onion, aloe leaves, Neem tree leaves, mango tree leaves and young fruits. These items are chopped and wrapped in a cloth sack and immersed in the fermenting mixture for a week. The resulting "concoction" is then watered down at a ratio of 20:1 and sprayed on the seedlings twice a week. Since the rains started, we have found it necessary to add a light-oil "sticker" to the mixture to ensure that it isn't leached out of the grow-bags before it has taken effect.

The green house holds approximately 10,000 grafted citrus and mango seedlings, which take approximately 6-8 months of nurturing before they are ready for sale.

Sales are made either to specific farmers orders, or through a roadside sales outlet, and in the past have also been donated to various causes, such as the Itinyi Women's Group.

Indicator - Number full time jobs

- WW employees
- Total including in community

Indicator – Local Employment

- How many employees come from project area communities
- How many employees do not come from Project Area Communities

Total number of permanently employees in the Greenhouse is 8, with an additional 6 Casual employees so total of 14 all of whom are from the local communities in the project area. Volunteers from local communities and all the Kelimu (charity for school fees, initiated by WW's manager Alice Ndiga Owen – see below) sponsored school kids must donate part of their school holidays to assist here. They are regularly encouraged to come and support the greenhouse team and to learn good organic practice from them.

Financial Investment/Return

- \$ Invested in capital expense for new greenhouse/greenhouse expansion since REDD project began, 1st Jan 2005
 - Wheelbarrows - \$500
 - Nettings - \$2,000
 - Equipment: Jembes & Shovels - \$200

Indicator – number of new greenhouse locations implemented – 1 extension

Dry land Farming - Jojoba propagation & extension into Community – a viable Jojoba and essential oil industry

Our most recent project is working with the Kenyan Agricultural Research Institute (KARI) on the Kenya Agricultural Productivity Project, or KAPP, which funded the research, to characterize and commercialize Jojoba as a dryland cash crop with great potential in Kenya's ASAL regions. Wildlife Works was the project partner because part of the conservation area we are managing in the REDD reference region was converted to Jojoba 30 years ago, by a commercial agricultural venture that subsequently failed, and was left to fallow, but in which the Jojoba survived with no maintenance for nearly 25 years, demonstrating the drought tolerance and lack of wildlife conflict (nothing ate the seeds or bushes). As a result this is still the largest plantation in East and Central Africa totaling to 200 ha. as noted by the Kenya Agricultural Research Institute –National Plant Breeding Research Station-Njoro.

Jojoba (*Simmondsia chinensis*) provides a cash crop through its seeds and is extremely drought tolerant, non invasive and has the added critically important benefit that it is not eaten by any wildlife, birds or even insects, so it is the ultimate non-conflict crop.

We recently completed the 2 year KAPP study of the impact of various levels of plant maintenance and irrigation on plant seed and oil productivity, with the idea that we can now provide local farmers root stock to establish their own plants, and they can know how much they can likely make if they are willing to put a certain level of effort into the plant maintenance. There are three specific Project Activities associated with this scheme, and covered in the PDD Project Activity Implementation Schedule, the first of which we have now successfully completed;

The objectives of the project included –

1. Explore whether Jojoba can contribute on a commercial scale to the Kenyan horticultural and industrial crops sub-sector to provide food and nutritional security.
2. Promote the Jojoba industry with a focus on commercialization and productivity, value addition, product/crop diversification, rural ASAL income and employment for improved livelihood.

Progress on the program since its start:

1. Established characterization of the existing bushes
2. Selection of superior bushes
3. Treatment e.g. Irrigation, manure application, water harvesting and manure application.
4. Harvested and performed product analysis through a partner – Natural Aromatics.
5. Conducted market survey through a partner from Cancan International.
6. In one of the meetings it was agreed that the next stage of the project be funded by the REDD project and introduced to the communities within the Kasigau Corridor Zone between Tsavo East and West, in Voi District.
7. Currently we are waiting for results from Kari on the effect of Jojoba on different cultural practices.

Indicator - Number full time jobs

- WW employees
- Total including in community

Indicator – Local Employment

- How many employees come from project area communities
- How many employees do not come from Project Area Communities

JOJOBA/DRYLAND				
FARMING PROJECT	Full time	On Contract	Casuals	Totals
WW Employee	1	0	1	2
Local Employment	1	0	1	2
Non local employees	0	0	0	0

Indicator – Financial Investment/Return

- See below spreadsheet for Operating expenses & Income for Jojoba project:

EXPENSES & SALES USD \$	Expenses	Sales	Profit
2009	750	24000	-450
2010	1265	24000	-965

Way forward for Phase I and the expansion into all the communities in phase II:

1. Do oil test per superior variety selected based on oil content per weight.
2. Do sexing of tissue culture and already germinated seedlings–by Egerton University Njoro in commercializing the existing Jojoba bushes.
3. Increase coverage under Jojoba in farms and establish satellite nurseries for ease of access of seedlings to farmers in Taita/Taveta county and Kenya at large.

In our PDD we also committed to producing a full business plan for an out grower operation within the local farming communities. This business plan was slightly held up due to lack of access to the original data from the 2 year research project, which was being held in a government department, but we have now been able to secure the data, and plan to begin the production of this business plan in the next Verification period.

This Activity also depends on the establishment of Phase II nurseries in order to allow local propagation of the Jojoba and to provide collection points for the farmers to deliver their seed to, and we expect significant activity in the next Verification Period once carbon revenues have been received.

Ecotourism

During this Verification Period, we negotiated a lease agreement with Camps International/Camp Kenya to establish an operation for GAP year students from the United Kingdom to come and spend up to 3 months at Rukinga engaged in community service and learning about the wilderness environment. They have been successfully operating on Rukinga for the past three years now.

We began discussions with several tour operators re establishing a second higher end ecotourism option on Rukinga, to complement the existing youth oriented tourism provided by Camp Kenya.

Kasigau Corridor and Kasigau Wildlife Forum Tourism development

Financial Aid to the Marungu Hills Conservancy

The Marungu Hill Conservancy Association, a local CBO, approached Wildlife Works and asked that their Community Group be a part of the REDD Project. The Communities they represent are the immediate neighbors to Rukinga and Sagalla, and are an essential part of the success and sustainability of the project, so we agreed to explore closer working relationship with this CBO.

We have begun provide limited direct financial support for the Marungu Hill Conservancy Association described above, so that they can provide support and advice to the community on environmental issues.

Mushroom Farms from Elephant Dung

We committed to continuing this activity in partnership with the Itinyi Women's Group, and are just waiting for the next rains to provide them with the dung they need. They currently only grow mushrooms during the rainy season, as water is required to cultivate the humidity and damp conditions needed for the mushrooms to grow. We are looking into assisting the women's group with a resource to help them with year round water for this project so they can produce mushrooms year round.

Wildlife Works/Tsavo Soap Factory

Wildlife Works created the Tsabuni-Tsavo Soap Company in 2005. The project was started to make use of the jojoba oil that we were able to extract from the seeds of the bushes that we found here when we took over the land.

Indicator - Number full time jobs

- WW employees
- Total including in community

Indicator – Local Employment

- How many employees come from project area communities
- How many employees do not come from Project Area Communities

The soap project employs one full time staff member and up to 4 casual/contract workers who we bring in to help during busy periods. Most of our customers are ecotourism camps and lodges who use our soaps in their guest accommodation and sell them in their boutiques.

Our soaps are made using the traditional cold-cure method and only natural base oils, fragrances and essential oils are used in the manufacturing process. We purchase gums and resins like frankincense and myrrh that livestock herders collect from the forest whilst they are grazing their animals.

Indicator – Financial Investment/Return

- \$ invested in capital expense since REDD project began, 1st Jan 2005
- \$ annual operating expenses on Soap Project since REDD project began, 1st Jan 2005
- \$ income generated from Soap Project since REDD project began, 1st Jan 2005

The soap making equipment was bought in 2005 for \$800, from a company that was closing

down. We spent a further \$2000 renovating and completing the partially built premises and \$500 purchasing our initial production materials stock.

- This table shows the income realized from the sale of soaps by year.

Year	Income
2006	\$223
2007	\$377
2008	\$695
2009	\$897
2010	\$1024

Wildlife Works also helped train the Marungu Aloe C.I.G, which is a local Community Based Organisation that makes aloe-vera based soap and beauty products that raise awareness and create wealth that is used to help reduce human-wildlife conflict in the area.

With the REDD income we intend to hire a sales and marketing person, who will be responsible for increasing orders which will allow us to increase the size of the business and employ more people.

Wildlife Works REDD Project Product Sales and Marketing

A job description has been produced and hiring efforts have begun for this important new role at Wildlife Works Kasigau Corridor Project. We expect the hire to be made early in the next Verification period.

School Construction and Bursary Scheme

Upon receipt of carbon funds, we committed to implement two specific Project Activities, as outlined in the Project Implementation Schedule provided to the Validator;

- Provide direct funding to send 5 new students through four-year secondary school programs and four or five a year on to three or four year College/University, should they qualify – this is an annual commitment of \$2000 in the first four years of Secondary School fees and between \$10000 and a year in college/university fees.
- Establish a Wildlife Works School Construction and Maintenance fund. We will hire a dedicated staff person to manage the fund with project management skills and the ability to write grant proposals, and provide \$10,000 per year from Phase I carbon revenues in Wildlife Works funding above and beyond the compensation of the fund manager to seed school construction and maintenance projects in the project area. The Fund Manager will work closely with the local District Education Officer, and the existing school boards in the area to determine which projects should receive funding each year.

What follows is what we have been able to accomplish since the Project Start Date, without the benefit of carbon revenues from Phase I.

The Kelimu Trust was founded and is still managed by Alice Ndiga Owen, Wildlife Works former site manager to channel funding to needy children within Wildlife Works Project Zone so they can afford to pursue higher education. Kelimu Trust has now sponsored more than 85

children. Lenjo Laurian, Wildlife Works Community Relations and Personnel Manager, manages the project and coordinates with Alice Owen and the teachers and students themselves to ensure that the standards set by the bursary scheme are maintained.

The pupil must attain 350 marks and above to qualify for the sponsorship, must come from Marungu of Kasigau location for at least 5 years, should not have repeated a year, and have families that cannot afford further education.

The scheme is proving very successful and a very positive benefit to the Communities in the project area.

Below is a list of students that have been sponsored through Secondary School by Kelimu Trust in collaboration with Wildlife Works. The students were selected because they excelled at Primary School and came from needy families that could not afford to send them on to higher education.

	Name	Primary School	Secondary	Village	Form 2011	Futher Educ
1	Abraham Mwangudu	Kale Pri School	Kenyatta High Schl.	Kale	4	
2	Agnes Ngonyo	Itinyi Pri School	Murray Girls H.Sch.	Itinyi	4	
3	Alfred Mwang'ombe	Marungu Pri School	Kenyatta High Schl.	Marungu	2	
4	Alice Kalekye	Buguta primary	Bura Girls High Schl.	Buguta	3	
5	Alice Muli	Marasi Pri School	Murray Girls H.Sch.	Maungu	3	
6	Ambrose Maundu	Miasenyi Pri School	Voi Secondary	Miasenyi	3	
7	Amos Nzaro	Kale Pri School	Kenyatta High	Kale	3	
8	Beatrice Mghoi	Kale Pri School	Bura Girls High	Kale	4	
9	Christopher Lokale	Marasi Pri School	Kenyatta High	Maungu	4	
10	Chaka Nyae	Marungu Pri School	Kenyatta High .	Marungu	2	
11	Clemence Njoli	Kisimenyi Pri School	Murray Girls High	Kisimenyi	2	
12	Daniel Moshe	Itinyi Pri School	Kenyatta High	Itinyi	2	
13	Daniel Ndurya	Kale Pri School	Kenyatta High .	Kale	3	
14	Dennis Mwakitawa	Miasenyi Pri School	Kenyatta High	Miasenyi	2	
15	Elisha Mtsololo	Kale Pri School	Kenyatta High	Kale	completed	Will go UNI
16	Emmanuel Mulewa	Marasi Pri School	Ribe Boys High	Maungu	3	
17	Faurziah Nyamawi	Kale Pri School	Bura Girls High	Kale	2	
18	Fulgence Mjomba	Marasi Pri School	Kenyatta High	Maungu	completed	Will go UNI
19	Gideon Ngumbau	Kisimenyi Pri School	Kenyatta High	Kisimenyi	3	
20	Harrison Nyuma	Kale Pri School	Kenyatta High	Kale	3	
21	Herman Mwakoro	Marungu Pri School	Voi Secondary	Marungu	4	
22	Isaiah Mwatela	Kale Pri School	Kwale High	Kale	4	
23	Jackline Makazi	Itinyi Pri School	Marungu Sec.	Itinyi	3	
24	Jennifer Mganga	Itinyi Pri School	Bura Girls High	Itinyi	4	
25	Johnson Kamwana	Marungu Pri School	Kenyatta High	Maungu	2	
26	Joseph Mwakoi	Marungu Pri School	Kenyatta High	Marungu	2	
27	Julius Chilio	Marungu Pri School	Kenyatta High	Marungu	3	

28	Julius Mkala	Kale Pri School	Kenyatta High	Kale	3	
29	Justine Zingiri	Makwasinyi Pri Sch	Voi Sec. School	Makwasinyi	3	
30	Khadija Dzombo	Kale Pri School	Bura Girls High	Kale	2	
31	Katumo Ngumbao	Kale Pri School	Kenyatta High	Kisimenyi	3	
32	Lavasia Shali	Marasi Pri School	Murray Girls High	Maungu	completed	Will go UNI
33	Linnet Ruwa	Mkamenyi Pri School	Ribe Girls High	Mkamenyi	2	
34	Lucy Muluu	Marasi Pri School	Bura Girls High	Maungu	4	
35	Michael Mjomba	Marungu Pri School	Kenyatta High	Marungu	4	
36	Milcah Ndeka	Kale Pri School	Bura Girls High	Kale	3	
37	Mildred Obam	Marasi Pri School	Murray Girls High	Maungu	3	
38	Moses Muthwii	Marasi Pri School	Kenyatta High	Maungu	3	
39	Mukai Kilonzo	Kisimenyi Pri School	Bura Girls High	Kisimenyi	2	
40	Nicholas Muinde	Kisimenyi Pri School	Kenyatta High	Kisimenyi	completed	Will go UNI
41	Patrick Mwadeghu	Marungu Pri School	Kenyatta High	Marungu	3	
42	Paul Kombo	Marungu Pri School	Kenyatta High	Marungu	2	
43	Paul Mnyogha	Marungu Pri School	Kenyatta High	Marungu	2	
44	Paul Mwangura	Voi Pri School	Kenyatta High	Voi	4	
45	Ramadhani Nyae	Kale Pri School	Kenyatta High	Kale	2	
46	Revingstone Mwalugha	Sagalla Pri School	Voi Secondary	Sagalla	?	
47	Sabrinah Mnjama	Buguta primary	Mwasere Girls Sec.	Buguta	4	
48	Samson Mwatsaka	Kale Pri School	Kenyatta High	Kale	3	
49	Samson Nyamawi	Itinyi Pri School	Kenyatta High	Itinyi	3	
50	Saumu Lugwe	Sasenyi Pri School	Bura Girls High	Sasenyi	4	
51	Selina Chajembe	Marungu Pri School	Bura Girls High	Marungu	completed	Will go UNI
52	Sikubali Mwambire	Sasenyi Pri School	Kenyatta High	Sasenyi	2	
53	Solomon Makau	Itinyi Pri School	Kenyatta High Schl.	Itinyi	4	
54	Stephen Mwatibo	Marasi Pri School	Kenyatta High Schl.	Marungu	3	
55	Tedorah Mjomba	Marasi Pri School	Bura Girls High Schl.	Maungu	3	
56	Tsuma Nyasi	Kale Pri School	Kenyatta High Schl.	Kale	2	
57	Unice Kaleli	Marasi Pri School	Bura Girls High Schl.	Maungu	3	
58	Zanira Kasyoka	Kale Pri School	Bura Girls High Schl.	Kale	4	
59	Zephaniah Mghanga	Voi primary	Kenyatta High Schl.	Voi	3	
60	Mwakisha Wangio	Marungu Pri School	Marungu Sec. School	Marungu	2	
61	Herman Mwanguo	Marungu Pri School	Marungu Sec. School	Marungu	2	
62	Mohammed Feisal	Marasi Pri School	Dr. Aggrey	Maungu	2	
63	Michael majala	Marapu Pri school	Kenyatta High Schl.	Marapu	2	
64	Allan Gona	Sowa Pri School	Voi Secondary Sch.	Marapu	2	
65	Lawreen Nyae	Buguta primary	Bura Girls High Schl.	Buguta	2	
66	Abeid Berube	Marungu Primary	Kenyatta High School	Marungu	completed	Teachers College
67	Alex Mwakiserere	Itinyi Primary	Kenyatta High	Itinyi	completed	Will go UNI

			School			
68	Beja Ayub	Marungu Primary	Kenyatta High Schl	Marungu	completed	
69	Benjamin Mbithi	Itinyi Primary	Kenyatta High Schl	Itinyi	completed	Will go UNI
70	Catherine Mwalugha	Jora Primary	Bura Girls High Schl	jora	completed	Will go UNI
71	Charles Nzale	Marungu Primary	Kenyatta High School	Marungu	completed	
72	Damaris Aleghwa	Marasi Pri School	Mwasere Girls High	Maungu	completed	Will go UNI
73	Daniel Zuma	Kale Pri School	Kenyatta High Schl	Kale	completed	Will go UNI
74	Emmanuel Mdzomba	Kale Pri School	Kenyatta High Schl	Kale	completed	
75	James Ruwa	Mkamenyi Pri School	Kenyatta High Schl	mkamenyi	completed	AIERDC - now at GAFFA
76	John Mdzomba	Kale Pri School	Kenyatta High Schl	Kale	completed	Volunteer Teacher
77	Lazarus Msafari	Marungu Primary	Kenyatta High Schl	Marungu	completed	Mombasa Coll
78	Manga Mwake	Marungu Primary	Murry Girls High	Marungu	completed	home
79	Muasa Mwololo	Marasi Pri School	Moi High School	Maungu	completed	Carbon plot
80	Mwazo Mwakati	Bungule Pri School	Kenyatta High Schl	bungule	completed	Will go UNI
81	Rajab Kilawa	Kale Pri School	Kenyatta High Schl	Kale	completed	Pwani Uni
82	Rehema Mwavuo	Kale Pri School	Alliance High Schl	Kale	completed	Moi Uni
83	Ronaldo Mawiyoo	Marungu pri School	Kenyatta High Schl	Marungu	completed	Voi
84	Samuel Mbwangi	Marungu pri School	Kenyatta High Schl	Marungu	completed	Voi
85	Sylvester Izaka	Marungu pri School	Voi Secondary Schl	Marungu	completed	Mombasa
86	Mwakuleghwa Mwamba	Marasi Pri School	Kajire Secondary	Marasi	3	
87	Gabriel Beja	Sasenyi Pri School	Moi High School	Sasenyi	1	
88	Monica Masharu	Ray Primary School	Mwakichuchu Sec	Mlondo	1	
89	Umazi Mng'anga	Marungu pri School	Murry Girls High	Marungu	completed	Will go UNI

A total of 89 students have been supported from the local Community – of these 85 have personal sponsors through the Kelimu Trust . The four names in red in the above spreadsheet are directly sponsored by Wildlife Works as part of our Phase I commitment to the bursary scheme. Rajab & Rehema have created such a good relationship with their Kelimu sponsor that their sponsors are also paying for their College education.

The students highlighted in Green are working here at Wildlife Works. Nicholas is doing a placement here at the office entering patrol sheet data and assisting with any administration. He will go to University next year. Catherine has been doing her placement for almost a year and will start her University degree in August 2011. Daniel is assisting in the Maintenance department, training in mechanics – until he goes to College. Muasa Mwololo has a permanent job here as the Leader of our Carbon plot teams and finally Benjamin Mbithi who is waiting for a place at University is at the moment working with Mwololo as a Carbon plot team member.

Indicator – \$ invested in school construction and maintenance:

Money invested in Schools

Year	Amount in \$	School's Involved
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2005	5,000.00	Kale Primary School
		Sasenyi Primary School
2006	10,000.00	Itinyi Primary School
		Buguta Primary School
2007	6,000.00	Marasi Primary School
		Marungu Primary School
2008	8,000.00	Marungu Secondary school
		Itinyi Primary School
2009	7,000.00	Kale Primary School
		Marungu Secondary school
2010	1,250.00	Marungu Secondary school
Total	\$ 37,250.00	

Wildlife Works has been assisting schools in the local area since it began operating in this area. During phase 1 the above projects (see table above) were completed:

1/ In 2005 investment was made to Kale Primary School and Sasenyi Primary School. The funds were used to create 3 new classrooms at those schools (1 at Kale and 2 at Sasenyi). As a result of this, the schools enrolment figures increased allowing more children from the locality of each school, to gain primary school education.

2/ During 2006, investment was made to Itinyi and Buguta primary schools. Buguta Primary School received a new staff room for the teachers, who had no facilities previously, and Itinyi renovated two classrooms that had fallen into dis-repair.

3/ in 2007 Marasi school received investment to buy desperately needed desks for their students, to create a better working environment for the pupils. Marungu Primary was allocated funds to renovate 2 classrooms that were previously made from mud, into large, more substantial and safer buildings.

4/ In 2008, Marungu Secondary School was given funding for the construction of an additional classroom. As one of the very few secondary schools in the phase 1 area, they needed this to afford a higher capacity of admissions to secondary school level. Itinyi Primary School used their funding for an additional new classroom, to improve learning conditions and space for students.

5/ In 2009 Kale Primary School were given funding to renovate a poorly conditioned classroom to a more modern and substantial learning area.

6/ Most recently in 2010, Marungu Secondary School managed to connect to the local electricity grid. They were given funding to convert one of the new classrooms into a computer lab for students, to modernize the school, and provide valuable IT lessons.

Section 2 - General Success Metrics Influenced by but not directly attributable to Wildlife Works

Education

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

Education in the communities of Phase I falls under Voi Districts and more locally within the locations of Kasigau and Marungu.

In the communities of Phase I (Nyangala Zone) there are 14 Primary Schools and 2 Secondary Schools.

We received the following data form the District Education Officers, and plan to analyze the data more specifically for relevance to the Project Area and goals in subsequent verification periods.

Transition rates from standard eight (primary) to form one (secondary) 2010			
BOYS	2.6%		
GIRLS	2.3%		
TOTALS	4.9%		
Break down for form one (secondary) admission – 2010			
TYPE OF SCHOOL	BOYS	GIRLS	TOTAL
NATIONAL	4	4	8
PROVINCIAL	213	216	429
DISTRICT	236	226	462
EXTRA PROVINCIAL	-	-	-
PRIVATE	53	3	56
TOTAL	506	449	955

NYANGALA ZONE Schools:				
S/NO	SCHOOL	ENROLLMENT		
		B	G	T
1	Buguta			977
2	Bungule			247
3	Itinyi			393
4	Jora			315
5	Kale			555

6	Kisimenyi			462
7	Kiteghe			183
8	Makwasinyi			363
9	Marasi			502
10	Marungu			480
11	Mbele			420
12	Miasenyi			213
13	Mkamenyi			398
14	Msharinyi			67
15	Ngambenyi			70
16	Rukanga			371
17	Sasenyi			560
18	Zungulukani			70
	TOTAL			6646

		M/SC	M/GRD	M/SC	M/GRD	DEV.
Voi	115101	5.6446	C	6.074	C	- 0.4294
Bartholomew	115202	5.4468	C-	5.108	C-	0.3388
Moi Kasigau	115301	5.4151	C-	4.591	C-	0.8241
OLOPS	115106	5.0	C-	5.324	C-	-0.324
Mwangea	115102	4.5098	C-	4.095	D+	0.4148
Mwakitawa	115201	4.5	C-	4.217	D+	0.283
Jeansy	115108	3.8824	D+	New		
Mwakichuchu	115105	3.875	D+	3.578	D+	0.297
David Kayanda	115204	3.7813	D+	3.125	D	0.6563
Kajire	115103	3.7391	D+	4.163	D+	- 0.4239
Marungu	115302	3.3077	D	2.545	D	0.7627
Mwambiti	115104	3.2267	D	3.022	D	0.2047
Mwaghogho	115203	3.1975	D	3.416	D	- 0.2185
TOTALS 2010	115	4.5031	C-	4.23	D+	0.2731

These tables show that only 5% of children that complete primary education are able to go on to secondary school. It is the goal of this project to increase this number over time.

At present the mean grade of secondary school leavers in the region is C-, as shown in the table above. It is our objective to improve this grade, by improving the facilities and teaching standards available in secondary schools.

Project Broad Environmental Impact – see survey performed by Marit Rietveld

Indicator – WW Project Popularity in Reference Region

- % community responding favorably to WW presence
- % community directly and indirectly benefiting from WW presence

Household Income - see survey performed by Marit Rietveld

Indicator – Household Income

- Average household income – dry and wet season

Support for Conservation - see survey performed by Marit Rietveld

Indicator – Environmental conservation support from the community

- % community understanding link between environmental protection/wildlife and economic progress

CM3.2. Develop Plan for HCV Monitoring

Please refer to this section in the Project Design Document.

Details are further described in the Kasigau Biodiversity Monitoring Plan, and Kasigau Biodiversity Survey Report, as provided to the validator.

CM3.3. Commit to Plan for HCV Monitoring

Please refer to this section in the Project Design Document.

BIODIVERSITY SECTION

B1 Net Positive Biodiversity Impacts

B1.1. Estimate Impacts on Biodiversity

Please refer to this section in the Project Design Document.

The following project activities have been implemented, provided a positive impact on biodiversity within the project zone:

Wildlife Works REDD Forest and Biodiversity monitoring



Wildlife Works rangers in uniform on daily patrol duties

Wildlife Works Rangers – patrolling and protecting Rukinga Sanctuary:

During this verification period, we've initiated a biodiversity monitoring program, which involves the monitoring of mammals in the project area. We wish to observe trends given the implementation of the project, as one of its main goals is to conserve biodiversity.

Patrick Kabatha manages this project and has begun conducting measurement activities, including line and aerial transects. Phase II will be monitored monthly, and metrics will include animal presence (various species), and this data will be geo-tagged to support spatial distribution analysis. This project will focus on High Conservation Value (HCV) species, including the rare Grevy's zebra, leopard, gerenuk and lions.

Indicator - Number full time jobs

- WW employees
- Total including in community

Indicator – Local Employment

- How many employees come from project area communities
- How many employees do not come from Project Area Communities

As of end December 2010 Rangers in the REDD Project are a total of 66 – all of who are employed from the local community. 34 of those Rangers patrol Rukinga while the remainder were recruited to patrol the Phase II ranches, and are covered in that PIR.

The below spreadsheet shows the growth in numbers employed over the project period.

YEAR	NO. OF RANGERS
2005	21
2006	23
2007	22
2008	21
2009	20
2010	34

Wildlife Works will continue paying for 26 rangers and we also added a new ranger post in the SE corner of Rukinga with one full team of 8 rangers.

We also purchased two new patrol vehicles, Toyota Land Cruisers.



Indicator – Financial Investment/Return

Spreadsheet showing Investment in Capital Expenditure for Rangers:

Year	Capital Item	Amount in \$
2005	Second Hand Land cruiser Vehicle,	24,000.00

	Second Hand Motor bike	1,200.00
2006	Hand held Radio's And Base Station	4,000.00
	Building 55 Camp	6,000.00
2007	Building Green House Camp.	20,000.00
2008	Repairing Roads on Rukinga Ranch	10,000.00
	Scooping Soils From Dam's in Rukinga	5,000.00
2009	Building Mwakaramba Camp	10,000.00
2010	General Repairs on Buildings	5,000.00
	Total	85,200.00

1/ In 2005 a vehicle was purchased to assist rangers in patrolling and biodiversity activities, and likewise a motorbike.

2/ In 2006 a rangers station was constructed along the North East Rukinga boundary, this enabled 8 rangers to be based there to carry out patrols and biodiversity monitoring.

3/ 2007 saw the construction of a rangers station near the greenhouse to accommodate a group of 8 rangers for patrols and biodiversity monitoring

4/ 2008-saw basic infrastructure work and crucial work on some of the waterholes for wildlife.

5/ In 2009 Mwakaramba rangers post was built centrally in Rukinga ranch. This holds 8 rangers and was built to allow a team of 8 rangers to base themselves there for foot patrols and biodiversity monitoring.

6/ In 2010 general repairs and maintenance were carried out on the phase 1 ranger's posts.

Indicator – Financial Investment/Return

- \$ annual operating expenses since REDD project began

PHASE 1	
<u>RANGERS AND ADMINISTRATION</u>	
<u>ANNUAL OPERATING EXPENSES</u>	
<u>FROM 1ST JANUARY 2010 TO 31ST DECEMBER 2010</u>	
Particulars	Amount in \$
Bank Charges	220.00
Donation	2,000.00
Insurance	2,500.00
Licences & Permits	2,500.00
Motor Vehicle Expenses	11,000.00
Motor Vehicle insurance	5,300.00
Fuel & Oils	19,000.00
Motor Vehicle Spare	1,900.00
Motor vehicle hire	165.00
Newspapers	60.00
Office Suplies	3,800.00
Salaries & wages	73,000.00

Printing & Stationery	2,000.00
Legal fees	1,500.00
Secretarial fees	1,500.00
Repairs & Maintenance -Building	10,000.00
Repairs & Maintenance -Equipment	500.00
Security	5,700.00
Staff Expenses	5,800.00
Medical expenses	2,400.00
Telephone Expenses	3,500.00
Traveling Expenses	2,700.00
Electricity Expenses	1,800.00
Water Expenses	1,500.00
Total	160,345.00

Indicator – Species Population Statistics;

- Sightings (date, GPS location, species, #male, #female, #young, seen by)

Indicator – HCV Species Population Statistics;

- Sightings (date, GPS location, species, #male, #female, #young, seen by)

Rangers have been capturing patrol data since the beginning of the REDD project, which is stored in an Access database.

Here is an example of the data being collected for one of our HCV species, Cheetah.

Species	Date	Year	Quantity	Location	Comments	Patrol Team	FirstName
Cheetah	16-Mar-05	2005	1	Dimbwini Area	Resting	5-3	Evans
Cheetah	22-May-05	2005	2	Mnago Area	Hunting	5-5	Evans
Cheetah	09-Jun-05	2005	5	Swale ghuru	Resting	5-5	Jacob
Cheetah	22-Jun-05	2005	3	Punda Dam	Resting	5-5	Jacob
Cheetah	19-Aug-05	2005	3	Jojoba Plain	Feeding	5-5	Evans
Cheetah	24-Aug-05	2005	4	pipeline Area	Resting	5-5	Evans
Cheetah	26-Aug-05	2005	2	Mnago Area	Hunting	5-3	Daudi
Cheetah	08-Nov-05	2005	2	Makwasiny i	Resting	5-3	Daudi
Cheetah	08-Nov-05	2005	3	Jojoba Plain	Hunting	5-5	Evans

We are also capturing data on 31 species, including African elephant, Lion and Grevy's zebra, our other HCV species. This data is too voluminous for inclusion in this report but was made available to the verifiers.

The Rangers have recently (March 2011) undergone full GPS training, in order to be able to geotag species sightings within the project area. The GPS located data will be included in our next verification period PIR. Each Ranger team has been filling out daily patrol logs and that data is being captured in an MS Access database and will be processed early in 2011 to be included on our next verification period PIR.

B1.2. Demonstrate no HCVs Negatively Impacted

Please refer to this section in the Project Design Document.

B1.3. Identify Species Used by Project

Please refer to this section in the Project Design Document.

B1.4. Describe Invasive Species Used by Project

Please refer to this section in the Project Design Document.

B1.5. No GMO Guarantee

Please refer to this section in the Project Design Document.

B2 Offsite Biodiversity Impacts

B2.1. Identify Potential Negative Offsite Impacts on Biodiversity

Please refer to this section in the Project Design Document.

B2.2. Document How to Mitigate Potential Negative Offsite Impacts on Biodiversity

Not applicable.

B2.3. Evaluate Potential Negative Offsite Impacts on Biodiversity

Not applicable.

B3 Biodiversity Impact Monitoring

B3.1. Develop Plan for Biodiversity Monitoring

Please refer to section B1.1. above for a description of Wildlife Works recently implemented biodiversity monitoring program

B3.2. Develop Plan for HCV Monitoring

The Kasigau Corridor is unlike most REDD project, as Wildlife Works rangers monitor the wildlife populations in the project area on a daily basis, and maintain a daily log of all wildlife sightings. We can monitor the health of the Phase I ecosystem, and the populations of the endangered species. However, with carbon finance, we propose to expand on the reporting we have been able to do on this important collection of research data, in three ways, outlined above in G3.2 Major Project Activities;

- improve our ability to monitor the HCV species in the project area by adding a dedicated Ranger Patrol, the HCV Ranger Team – this has been done in the form of the hiring of Patrick Kabatha as HCV Monitoring Specialist.
- improve monitoring of HCV species, by establishing a GIS center of excellence at Rukinga HQ to capture, process and report on wildlife data collected by the project. This center has been established at Rukinga HQ.
- 3 year reforestation and monitoring project on the slopes of HCV Mt. Kasigau (see documents Mt. Kasigau Reforestation Plan, Kasigau Biodiversity Monitoring Plan, and Kasigau Biodiversity Survey Report submitted to validator). This program has started in earnest during the current verification period (see section Climate Section CL2.2 Mitigation of Leakage).

B3.3. Commit to Plan for Biodiversity Monitoring

Wildlife Works completed a full detailed monitoring plan within twelve months of validation against the CCB standards and after the first Verification period, we will now make that plan available to the public on the internet. We will also communicate the plan to local community groups for dissemination to the wider community, as has been our approach to all communication throughout the project lifetime.

Indicator – Number of poaching incidents

- Number of snares or traps found (GPS location, date, type, Qty)
- Number of dead animals captured (GPS location, date, species, Qty)
- Number of poaching arrests made (date, perpetrator name, arresting Ranger, offense)

Indicator – Number of cattle grazing incursions

- Number of charcoal, fuelwood or construction material incursions

Indicator – Acres deforested in project area and Zone

The table below represents snares recovered, Cattle incursions (per head of cattle), poaching incidents, Elephants killed, dead animals found, and charcoal firewood incursions in Rukinga Sanctuary, Phase I project area. 2008 and 2009, show very high figures related to the countrywide, severe drought, over that period, in particular a massive influx of pastoralists from the north of Kenya searching for grazing for their cattle.

PHASE I		Poaching	Cattle Incursions	Elephants	Dead	Charcoal &
Year	Snares	Incidents	(per head)	Killed	Animals	Firewood
2005	850	78	585	0	105	262

2006	1060	180	1050	0	165	320
2007	980	105	1600	1	112	275
2008	1150	85	1250	0	180	340
2009	1355	220	21250	1	202	840
2010	1105	870	960	9	105	1260

Indicator – Acres deforested in project area – Zero (0)

Indicator – Acres deforested in project zone – will be reevaluated at year 10 when the Baseline is reevaluated.

Indicator – Acres reforested in community land

- number of indigenous trees successfully outplanted in Villages of project area
 - number outplanted by species
 - number surviving to year 2 by species
 - number surviving to year 3 by species
- number of indigenous trees successfully outplanted on Mt. Kasigau
 - number outplanted by species
 - number surviving to year 2 by species
 - number surviving to year 3 by species
- \$ invested in reforestation capital expense – new greenhouses, equipment
- \$ annual reforestation operating expenses – salaries and community seedling payments

Project-Indigenous Tree Nursery Construction, Rukinga Ranch:

In our Phase I PDD we committed to expanding our core greenhouse at Rukinga HQ. In May 2010 we completed expansion of our core Greenhouse at Rukinga HQ to add a second Shade house and more than double our capacity. The new nurseries can hold up to 50,000 indigenous tree seedlings and the proven construction method will be used as a model and replicated in community areas as part of Phase II. The cost of the expansion was \$16,000.



Left: Organic Tree Nursery Shade House / Right: Sylvester gathering seedlings for out planting

Indicator – number of trees propagated in greenhouse(s)

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

Indicator – number of seedlings sold (species, qty, customer, date, price)

- \$ revenue
- \$ profits

Financial Investment/Return

- See below spreadsheet for the \$ Annual operating expenses & income since REDD project began, 1st Jan 2005 until 31st December 2010

	OPERATING	INCOME
YEAR	COSTS USD\$	USD \$
2005	304.00	670.00
2006	1,275.00	1,081.00
2007	1,541.00	1,550.00
2008	1,270.00	1,195.00
2009	1,280.00	1,425.00
2010	9,450.00	700.00

2010 saw the expansion of the greenhouses to incorporate the indigenous tree seedling program. Similar soils and soil preparations are made as with the citrus, however no pesticides of any sort are required. Indigenous trees typically stay in the nursery for approximately 6 months before they are ready for planting.

Indigenous Seedling Collection & Reforestation Community Land Program:

The Kasigau Corridor REDD project has now created an economic incentive for the landowners and communities within the corridor to protect their forest. Wildlife Works Carbon will be working with the landowners and local communities to implement forest management plans that exclude the destructive use of forest resources. In the green house project local communities are encouraged to raise indigenous tree seedlings in their own home made nursery in different containers and will be purchased by wildlife works carbon for nurturing them to the right size then they will be taken back to the communities to be planted in the denuded land and in their farms (based on the agriculture policy on 10% tree cover in farm area) for the purpose of increase tree cover which will help to reduce forest degradation. In this the community will have double benefit of economic empowerment and reforestation their land.

Indigenous Tree Seedling Collection from the Local Communities in Phase I:

We advise the community to raise tree seedlings in different containers and we (Wildlife Works) will purchase their seedlings at a rate of Kshs 5/= to Kshs15/= depending on the species.



This is for economic empowerment of the local the community. Last year we succeeded in purchasing from Phase I communities in our project area as follows:

Species name	November 2010	December 2010
A.robusta	5699	3814
M.volkensii	158	406
L.schweinfuehii	275	4
Leaucena spp.	5785	
A.tortilis	104	255
A.nilotica	2574	972
D.elata	417	
T.indica	2996	979
Albizia spp.	6913	15733
Manilkara spp.	87	
C.megalocarpus	1	
B.aegyptica	299	392
A.mellifera	1593	2184
P.voense	244	2129
Mshari		94
Mvomo		3
Moringa	155	
N.hulderbrandtii	65	202
Glicidia	9	
syzygium cuminii	28	
Pawpaw	78	11
C.Apple	2	

A.zanzibarica	1	
T.Brownii	16	380
T.stan		219
T.emetia	35	
S.birrea	0	36
B.discolor	3	186
TOTALS	27537	27999

Indigenous Tree Seedling Distribution:

In our reforestation activities we concentrated on community land in the reference region which are denuded due to various activities but mostly human influence (Charcoal burning and browser grazing). We succeeded to give out for planting more than 15,000 tree seedlings outside schools, homesteads and on community land.

Summary of tree seedling distribution in the community

Date	Location	Place distributed	Total tree seedlings distributed
9/11/2010	Marungu	James Mboga	500
9/11/2010	Marungu	Kale Primary	500
9/11/2010	Marungu	Westerman	20
20/11/2010	Marungu	Marungu sec	200
20/11/2010	Marungu	Itinyi primary	900
20/11/2010	Marungu	Mercy Joshua res	2000
21/11/2010	Marungu	Mwanangao Hill	4500
22/11/2010	Kasigau	Kiteghe Primary	500
22/11/2010	Kasigau	Kisimenyi Primary	850
22/11/2010	Kasigau	Bughuta Primary	1600
22/11/2010	Kasigau	Mkamenyi Primary	810
22/11/2010	Marungu	Kale Primary	1000
23/11/2010	Marungu	Mbele Primary	910
23/11/2010	Marungu	Miasenyi Primary	600
23/11/2010	Marungu	Misharini Primary	200
23/11/2010	Marungu	Marungu Primary	850
TOTALS			15940

Tree planting exercise we managed to plant 15,940 tree seedlings in the villages and community land. The below table shows the species planted in the community land. Acacia Robusta was planted the most and Croton Megalocarpas was the least.

Species name	Quantity
Albizia	889
A.mellifera	276
A.nilotica	2094
A.robusta	6165
A.tortilis	738
A.Zanzibarica	261

B.aegyptica	2174
Afzelia species	90
C.megalocarpus	25
Lannea.S	1064
Leauceana L	1348
M.volkensii	200
Majidea	234
T.indica	248
T.brownii	134
TOTALS	15940

SURVIVAL RATE IN THE COMMUNITY

Number surviving in the community after three month of planting.

The survival rate was 70% of 15,940 seedlings planted in the community

The seedlings are now six months old.

Community benefits

We also spent a significant amount of money purchasing seedlings from the local communities which we then grow in our greenhouse until ready for outplanting (see photo of seed collection from Kiteghe, and call for seedlings from the communities below). A full budget for this activity has been provided to the Validator. This activity was completed during 2010.

The below table shows how the community has benefited from the green house project. Marasi community got the highest benefits with \$908 and the least was Maungu community who managed \$22.

Community	Amount in Kshs	Amount in USD
Marasi	72605	907.5625
Bondeni	21855	273.1875
Marungu	53435	667.9375
Bungule	48235	602.9375
Jora	66940	836.75
Kiteghe	11000	137.5
Kasigau	129390	1617.375
Buguta	4125	51.5625
kisimenyi	18140	226.75
Lokichogio	6500	81.25
Maungu	1760	22
Makwasinyi	53385	667.3125
Totals	487370	6092.125



CALL FOR PARTNERSHIP

Wildlife Works Carbon, in conjunction with the Ministry of Agriculture and The Marungu Hill Conservancy Association, are inviting groups or individuals to collect and propagate indigenous tree species wildings and seedlings.

To register and receive details of the terms and conditions of the project, please come to either the Marungu Hill Conservancy Office in Maungu, on Monday 12th of April between 9am and 4pm, or the Kasigau Conservation Trust Office in Rukanga on Tuesday 13th of April between 9am and 4pm.

TOGETHER-WE CAN MAKE A DIFFERENCE.



Terms of Reference.



Wildlife Works Carbon wish to buy up to 20,000 small tree seedlings off members of the community in the Maungu, Marungu, Kasigau area. This will provide some small but much needed income to the people who live around Rukinga and will allow us to build up a stock of seedlings in preparation for stocking the new Wildlife Works Carbon greenhouses.

The seedlings, or wildings, should be at least 6 inches (15cm) tall, and can be presented to us in any type of container..... old water bottles, old plastic bags or even half a coconut shell are fine!

We will collect the seedlings from the Marungu Hill Conservancy Association office on Monday 28th of June, The Marungu Health Centre on Tuesday 29th of June, Buguta Library on Wednesday 30th of June and the Kasigau Conservation Trust office on Thursday 1st of July.

We will pay 10 Shillings per healthy seedling on the day, for the species listed below:-

Newtonia hildebrandtii (Mukami)
Melia volkensii (Mukurumbutu)
Acacia tortillis (Mwaguba)
Acacia robusta (Mugunga)
Acacia nilotica (Mchemeri)
Acacia zanzibarica (Mrera)
Manilkara spp (Mnago)
Brachylaena huillensis (Maribongo)
Delonix elata (Mwarangi)
Warburgia ugandensis (Msinduri)
Lannea shweinfurthii (Mshigha)
Albizia spp (Mporozi)
Terminalia spinosa (Msaghano;Maungo)
Terminalia brownii (Mkungu)
Terminalia prunoides (Mshoghoreka)
Balanites aegyptica (Mwaghani)

And we will pay 5 Shillings per healthy seedling on the day, for the species listed below:-

Majidea spp
Croton pseudopulchellus (Ng'omiyani kubwa)
Leucaena leucocephala (Lusina; Lukina)
Tamarindus indica (Mukwaju)

Reforestation of Mt. Kasigau

We planned to plant thousands of trees on Mt. Kasigau to create a buffer and sustainable fuelwood / building material source for the future, so the communities no longer needs to damage the cloud forest, which is their water tower for the 5 villages surrounding the mountain. This project will also alleviate pressure on the hardwood stocks in the project area.

We have planted more than 20,000 seedlings out in the Kasigau Corridor to date.



Outplanting in the Mt. Kasigau Corridor

Wildlife Works established 5 permanent vegetation plots on Mt. Kasigau in 2005. We will continue to monitor those plots, observing any deforestation or regeneration. We will utilize plots in nearby project areas to monitor the same metrics within the project area to determine project effectiveness (i.e. ensure that leakage from the mountain has not occurred).

This project began in December 2006. Organic tree nursery management training was carried out in January 2007; the community groups established their nurseries in March 2007 with equipment that had been supplied to increase their tree propagation capacities. The first planting out of the trees was in November 2007.

This 3-year project was working towards building the capacity of 9 Kasigau community tree nursery groups to manage organically propagated indigenous tree seedlings and reforest selected denuded areas, as well as planting agro forestry trees and fruit trees in the farmlands as soft cash crops.

	Species	Local Name	Total per tree sp.
1	<i>Acacia bussei</i>	Mngololi	2
2	<i>Acacia melifera</i>	Iti va naunae	1018
3	<i>Acacia nilotica</i>	Mchemeri (Egyptian)	4084
4	<i>Acacia senegal</i>	Iti va wasi	1400
5	<i>Acacia tortillis</i>	Mwacuba	300
6	<i>Acacia robusta</i>	Mahunaa	966
7	<i>Adansonia digitata</i>	Mlamba (Baobab)	453
8	<i>Albizia anthelminta</i>	Porozzi	413
9	<i>Allophylus rubifolius</i>	Mnanauma	200
10	<i>Azadirachta indica</i>	Mkilifi	983
11	<i>Balanite aegyptica</i>	Mwachani	389
12	<i>Bauhinia</i> spp.	Kikwata/Iti va kizunau	345
13	<i>Berchemia discolor</i>	Msona	1130
14	<i>Boscia coriacea</i>	kikorio/chariso	80
15	<i>Brachylaena huillensis</i>	Maribonoo	850
16	<i>Cassia siamea</i>	Msaii/Mlezeni	553
17	<i>Cassia abbreviata</i>	Mkiaondo	224
18	<i>Cassuarina</i>		89
19	<i>Cissus rotundifolia</i>	shambalaka	1
20	<i>Cola greenwavi</i>	Maima/Mkalamania	891
21	<i>Commiphora baluensis</i>	Mwagare	250
22	<i>Cordia goetzei</i>	Maarawa	181
23	<i>Croton pseudopulchellus</i>	Naombi vani	6
24	<i>Dalbergia microphylla</i>	seneka	160
25	<i>Delonix elata</i>	Muaranci	157
26	<i>Delonix regia</i>	Mkrismasi	193
27	<i>Diospyros mespiliformis</i>	Mkulu	38
28	<i>Ficus svcomorus</i>	Mkuvu	8
29	<i>Gravellia</i>		300
30	<i>Jatropha</i>	Mbonukoma	995
31	<i>Lannea schweinfurthii</i>	Mshigha	163
32	<i>Leaucana</i>		228
33	<i>Manilkara mochisia</i>	mnao	129
34	<i>Melia volkensii</i>	mkurumbutu	123
35	<i>Morinda oreifera</i>	moringa/mkimbo	557
36	<i>Newtonia hildebrandtii</i>	Mkame	10
37	<i>Ocotelea lanceolata</i> (African saddle)	kiiulu	80
38	<i>Prostris phyllanthoidea</i>	Mnvaqandenda	5
39	<i>Sclerocarya birrea</i>	Mnvesha vua	4

40	<i>Sterculia africana</i>	Mwenia	404
41	<i>svyqium guineense</i>	Mzambarao	26
42	<i>Tamarindus indica</i>	Mkwachu	910
43	<i>Terminalia brownii</i>	Mkungoo	29
44	<i>Terminalia prunioides</i>	Mshogoreka	3
45	<i>Trichilia emetica</i>	Mkalamania	60
46	<i>Uvaria acuminata</i>	Mnganganvi	1
47	<i>Vepris glomerata</i>	kikondekonde	21
48	<i>zanthoxvillum challvbeum</i>		1
49	<i>ziziphus mucronata</i>	Mwalakule	17
50	<i>ziziphus pubescens</i>	Mnvodo	223
51		Mastafeli	5
52		Gombian	50
53		Mbambara	16
54		Mbunduki	8
55		Mpondaponda	1250
56		Mtandara	106
	Total		21,088

SURVIVAL RATE ON MOUNT KASIGAU

Year 2

The survival rate was 60% of 21,088 seedlings planted

Year 3

The survival rate in year 3 was 55% of 21,088 seedlings planted

Financial Investment/Return

- See below spreadsheet for the \$ Annual operating expenses since Reforestation project began, 1st Jan 2005 until 31st December 2010

\$ Annual reforestation operating expenses – salaries and community seedling payments

Annual reforestation expense			
Year	Amount in Kshs		Amount in USD
2005	24,393		304.91
2006	101,995		1274.93
2007	123,282		1541.02
2008	101,643		1270.53
2009	102,323		1279.03
2010	756,495		9456.18

GOLD LEVEL SECTION

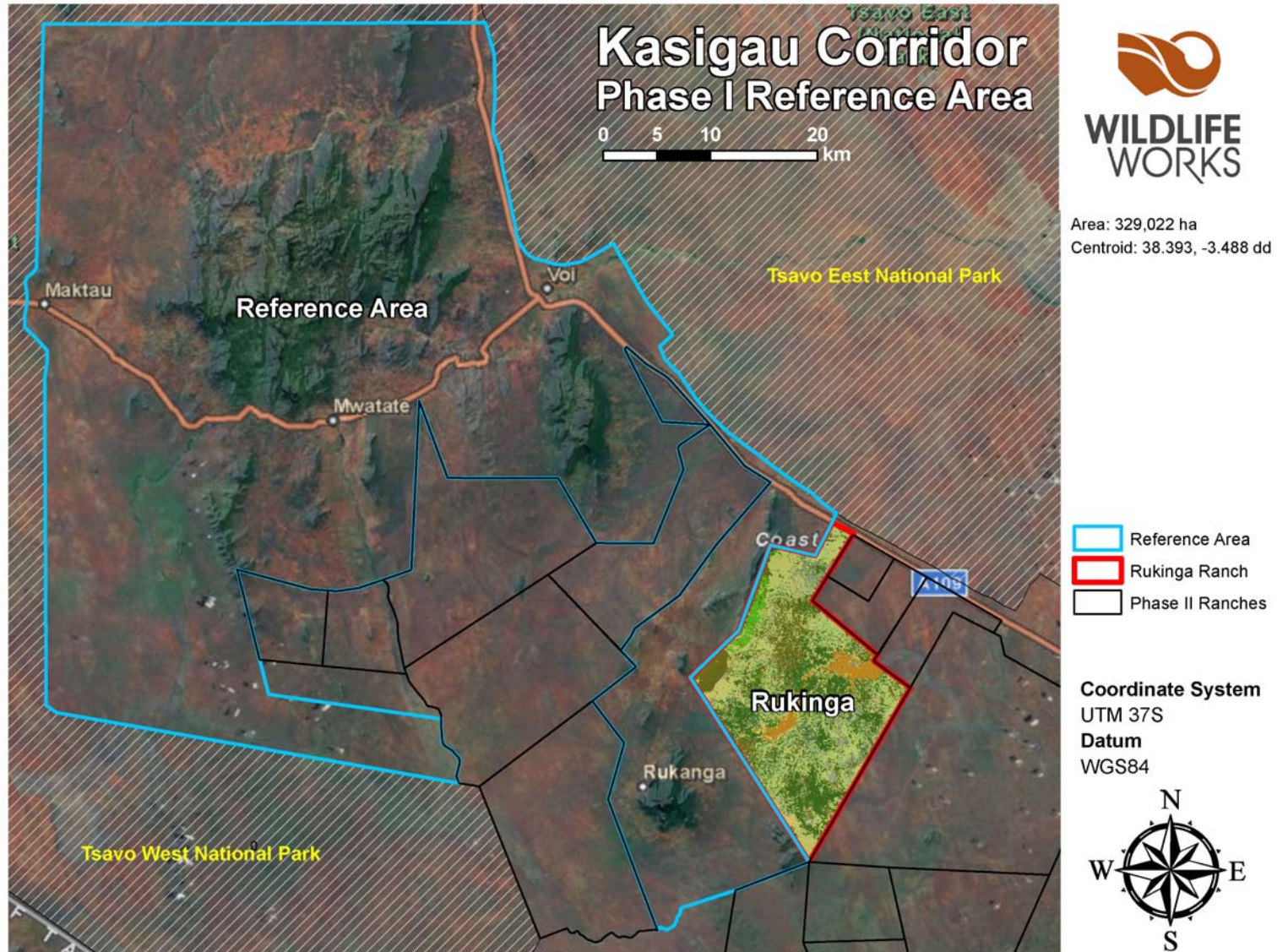
GL1. Climate Change Adaptation Benefits

GL1.1. Identify Likely Climate Change impacts

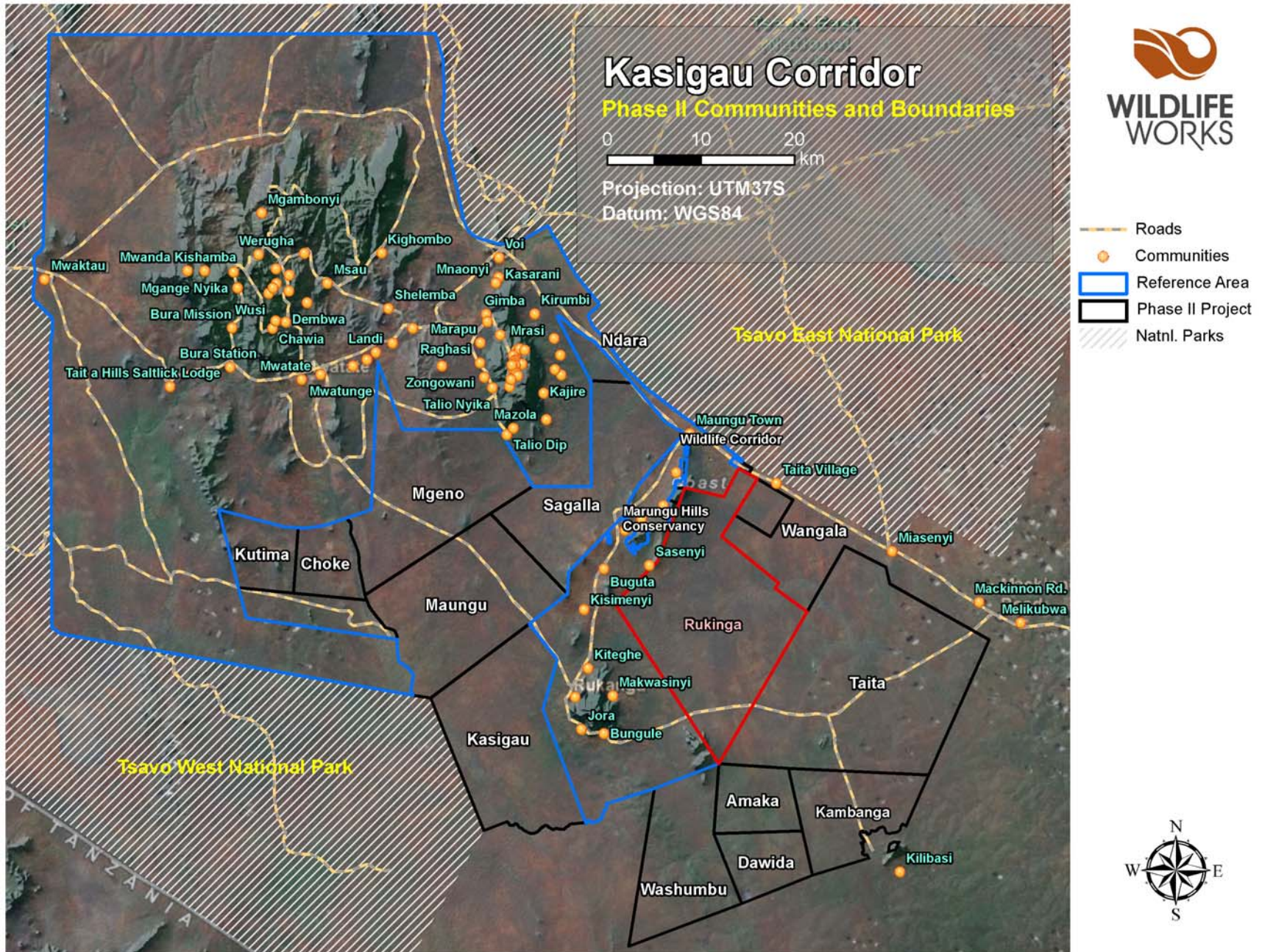
Please refer to this section in the Project Design Document.

ANNEXES

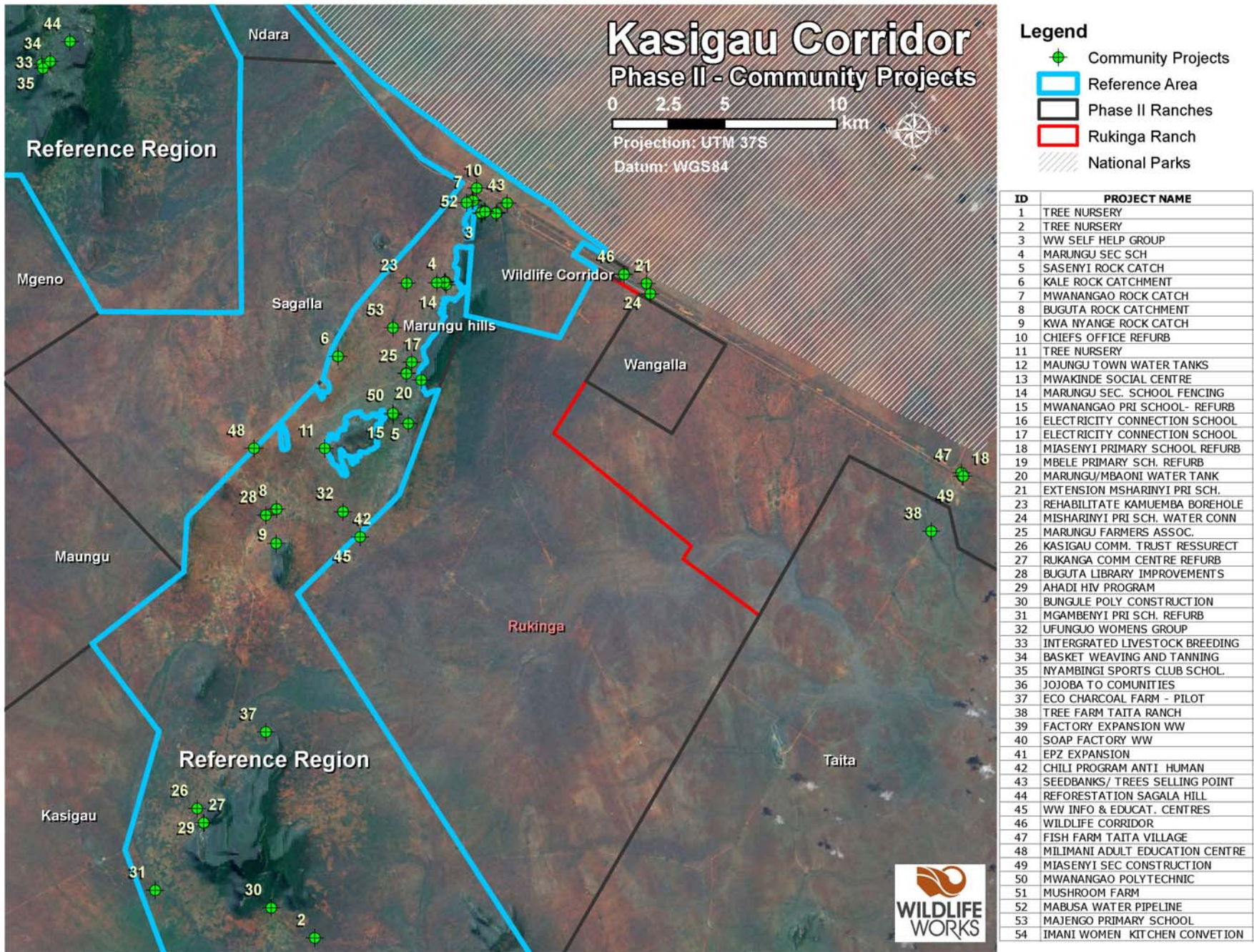
Annex 1 Maps of project area



Project area boundary – Kasigau Corridor REDD Project Phase I - Rukinga Sanctuary



Project communities, internal roads and cutlines - Kasigau Corridor Phase I and Phase II Sphere of Influence



Community Projects - Kasigau Corridor REDD Projects Phase I and Phase II