# VCS VERIFICATION REPORT/ VERIFICATION STATEMENT

# KASIGAU CORRIDOR REDD PROJECT PHASE I – RUKINGA SANCTUARY

Verification Period:
01 January, 2005 to 31 December, 2010

REPORT NO. 2011-9042

REVISION NO. 01

VCS PROJECT VERIFICATION REPORT

| | |
|---|---|
| Date of first issue:<br>3 February, 2011 | Project No.:<br>PRJC-285203-2011-CCS-USA |
| Approved by:<br>Miguel Rescalvo<br>Regional Manager. North Americal | Organizational unit:<br>Sustainability and Innovation<br>Climate Change Services USA |
| Client:<br>Wildlife Works Inc. | Client ref.:<br>Jeremy Freund |

DET NORSKE VERITAS (U.S.A.) INC.
*Climate Change & Environmental Services*
One Bush Street, 12th Floor
San Francisco, CA 94104
Tel: +1 415-318-3900
Fax: +1 415-318-3901

http://www.dnv.com

**Assessment Status**

Det Norske Veritas U.S.A, Inc. (DNV) has performed the verification of the emission reductions reported for the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary."

The verification was performed on the basis of Voluntary Carbon Standard Association (VCSA) criteria for the VCS, as well as criteria given to provide for consistent project operations, monitoring and reporting. The verification consisted of the following four phases: a) desk review, b) site visit, c) follow-up interviews and the issuance of verification findings, and d) the resolution of outstanding issues and the issuance of the verification report and verification statement.

In our opinion, the GHG emission reductions reported for the project in the monitoring report 02 February, 2011 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved VCS methodology VM0009 (version 1.0), and the monitoring plan contained in the VCS Project Design of 31 January, 2011 and meets all relevant VCS 2007.1 requirement

DNV is able to certify with a reasonable level of assurance that the emission reductions from the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" during the period 01 January, 2005 to 31 December, 2010 amount to 1 160 263 tonnes of $CO_2$ equivalent after a 20% buffer pool deduction amounting to 290 066 tonnes $CO_2$ equivalent.

| Report No.: | Date of this revision: | Rev. No. |
|---|---|---|
| 2011-9042 | 3 February, 2011 | 01 |

Report title:
VCS Verification Report – Wildlife Works Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary (1 January 2005 – 31 December 2010

Work carried out by:
Sam Stevenson
Gordon Smith

Work verified by:
Guy Pinjuv
Misheck Kapambwe

Key words:
VCS
Verification
REDD
Wildlife Works

☒ No distribution without permission from the Client or responsible organizational unit
☐ Limited distribution
☐ Unrestricted distribution

## Abbreviations

| | |
|---|---|
| AFOLU Guidelines | Agriculture, Forestry and Other Land Uses section of Guidelines for National Greenhouse Gas Inventories 2006 |
| CAR | Corrective Action Request |
| CL | Clarification Request |
| $CO_2e$ | Carbon Dioxide Equivalent |
| DNV | Det Norske Veritas (U.S.A.) Inc. |
| EB | Executive Board |
| FAR | Forward Action Request |
| GHG | Greenhouse Gas(es)s |
| GPG LULUCF | Intergovernmental Panel on Climate Change's Good Practice Guidance for Land-Use Land Use Change and Forestry |
| GWP | Global Warming Potential |
| MED | Methodology Element Documentation |
| NER | Net Emission Reduction |
| PD | Project Document |
| REDD | Reduced Emissions from Deforestation and Degradation |
| VB | Verification Body |
| VCS | Voluntary Carbon Standard |
| VCSA | VCS Association |
| VCU | Voluntary Carbon Unit |
| WBCSD | World Business Council for Sustainable Development |
| WRI | World Resources Institute |

# TABLE OF CONTENTS

**1 INTRODUCTION ..... 3**

1.1 OBJECTIVE ..... 3
1.2 SCOPE AND CRITERIA ..... 3
1.3 VCS PROJECT DESCRIPTION ..... 3
1.4 LEVEL OF ASSURANCE ..... 4

**2 METHODOLOGY ..... 4**

2.1 REVIEW OF DOCUMENTATION ..... 5
2.2 SITE VISIT ..... 5
2.3 REPORTING OF FINDINGS ..... 6

**3 VERIFICATION FINDINGS ..... 7**

3.1 REMAINING ISSUES, INCLUDING ANY MATERIAL DISCREPANCY, FROM PREVIOUS VALIDATION OR VERIFICATION ..... 7
3.2 PROJECT IMPLEMENTATION ..... 7
3.3 COMPLETENESS OF MONITORING ..... 7
3.4 ACCURACY OF EMISSION REDUCTION CALCULATIONS ..... 9
3.5 QUALITY OF EVIDENCE TO DETERMINE EMISSION REDUCTIONS ..... 10
3.6 MANAGEMENT AND OPERATIONAL SYSTEM ..... 10
3.7 *AFOLU NON-PERMANENCE RISK ANALYSIS AND BUFFER DETERMINATION* ..... 11
3.8 NET EMISSION REDUCTIONS ..... 17

**4 VERIFICATION CONCLUSION - CERTIFICATION STATEMENT ..... 18**

**REFERENCES ..... 19**

Appendix A: Resolution of Corrective Action and Clarification Requests

# 1 INTRODUCTION

Wildlife Works, Inc. (Wildlife Works) has commissioned Det Norske Veritas (U.S.A.), Inc. (DNV) to carry out the verification of emission reductions reported for the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" (the project) for the period 01 January, 2005 to 31 December, 2010. This report contains the findings from the verification and a verification statement for the verified emission reductions.

## 1.1 Objective

Verification is the periodic independent review and *ex post* determination by an accredited verification body (VB) of the monitored reductions in greenhouse gas (GHG) emissions that have occurred as a result of the registered VCS project activity during a defined verification period.

A verification statement is the written assurance by a VB that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and provide a verification statement of emission reductions reported for the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" (the project) for the period 01 January, 2005 to 31 December, 2010.

## 1.2 Scope and Criteria

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that reported emission reductions are complete and accurate in order to be verified.

## 1.3 VCS Project Description

| | |
|---|---|
| Title of project activity: | *Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary.* |
| VCS registration No: | *The verification report will be submitted together with the validation report for the same project.* |
| Baseline and monitoring methodology | *VM0009 (version 1.0).* |

Location of the project activity: *Rukinga Sanctuary, Kenya.*
Project's crediting period: *01 January, 2005 to 31 December, 2034.*
Period verified in this verification: *01 January, 2005 to 31 December, 2010.*

The "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" has been developed by Wildlife Works Inc. a project proponent based in California, USA. The project is implemented on land known as the Rukinga Sanctuary, wholly owned by the Rukinga Ranching Co., Ltd. The leasehold on the title will be due for renewal in 2038, at which point it can be renewed once again for up to 99 years under Kenyan law.

The project proponent is Wildlife Works, Inc. and the project developer is Wildlife Works Carbon LLC. DNV has confirmed that Wildlife Works, Inc. has the right to all and any reductions generated during the period 1 January, 2005 – 31 December, 2010./**12**/.

The project is 30 169 hectares with an average canopy cover of 39%, and with mature tree heights ranging from 5-10 meters, and therefore conforms with the latest VCS definition of 'forest'.

The main project activity is to prevent deforestation caused by subsistence farming activities. The objective of the project activity is to prevent the conversion of forest to cropland for annual crops, typically maize that ultimately results in net GHG emissions into the atmosphere.

The project start date is 1 January, 2005, which is the date Wildlife Works assumed financial responsibility for the project area and began specific GHG mitigation activities.

## 1.4 Level of Assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

# 2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- The emission reduction calculations and the relevant data records.
- The calibration of the Cumulative Deforestation Model and records for the standard operating procedures for measurement.
- The management systems to support the project operation and monitoring.

**Table 1. Verification Team**

| ***Role*** | ***Last Name*** | ***First Name*** | Administrative | Desk review | Site visit / Interviews | Reporting | Technical review | Expert input |
|---|---|---|---|---|---|---|---|---|
| Project manager (Trainee) | Stevenson | Samuel | ✓ | ✓ | ✓ | ✓ | | |
| VCS Verifier / VCS REDD AFOLU Expert | Smith | Gordon | | ✓ | ✓ | ✓ | | ✓ |
| Technical reviewer | Pinjuv | Guy | | | | | ✓ | |
| AFOLU Technical Area Competence | Kapambwe | Misheck | | | | | | ✓ |

***Duration of Verification***

Preparations: *4 January, 2011 to 9 January, 2011*

On-site verification: *10 January, 2011 to 14 January, 2011*

Reporting, calculation checks and QA/QC*: 17 January, 2010 to 31 January, 2011*

## 2.1 Review of Documentation

The basis for the verification has been the monitoring report (version 1.0 of 02 February, 2011) from the project for the period 01 January, 2005 to 31 December, 2010 **/1/**, the VCS project document (VCS PD) **/2/**, and the approved VCS methodology applied by the project, VM0009, version 1.0 **/13/**. The project proponent has provided the verification team with spreadsheets of all data necessary for verification of the emission reductions **/4/ /5/ /6/ /7/ /8/ /9/ /10/ /11/**.

## 2.2 Site Visit

During the site visit of 10 January, 2011 – 14 January, 2011, the following personnel were interviewed or assisted the verification team:

**Table 2. Participants at Project Site (Rukinga, Kenya)**

| Name | Position | Organization |
|---|---|---|
| Mike Korchinsky | President | Wildlife Works, Inc. |
| Jeremy Freund | VP, Carbon Development | Wildlife Works Carbon LLC |
| Rob Dodson | General Manager | Wildlife Works, Inc. |
| Patrick Kabatha | Biodiversity Specialist | Wildlife Works, Inc. |
| Hassan Sachedina | VP, Conservation Enterprise | Wildlife Works Carbon LLC |
| Laura Crown | Office Manager | Wildlife Works, Inc. |

The interview topics included:

- The data collection and recording and transcription.
- Sampling and stratification guidelines and procedures.
- The emission reduction calculations.
- The quality assurance and control processes.

During the site visit, the following tasks were completed: 1) the data presented in the monitoring report was assessed by reviewing the additional project documentation and records, 2) interviews were held with personnel on-site, 3) observation of established monitoring and reporting practices was conducted by assessing the implementation of the stratification and sampling procedures. This enabled the verification team to assess the accuracy and completeness of the reported monitoring results and to verify the correct application of the approved VCS methodology (VM0009) and the determination of the reductions in emissions.

Field observations by DNV reviewers included:

- Wildlife Works field staff performing tree measurements, soil sampling, and quantifying deforestation and degradation on a leakage plot.
- Vegetation cover within much of the project area, both by walking on the ground and observing from high hills.
- Implementation of leakage mitigation activities.
- Ongoing deforestation in the reference area.

## 2.3 Reporting of Findings

A corrective action request (CAR) is issued, where:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient.
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions.
- Issues identified in a forward action request (FAR) during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A FAR is issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

Five CARs and one CL were identified. All outstanding issues have been closed, with the proper responses provided by the project proponent.

# 3 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions reported for the project for the period 01 January, 2005 to 31 December, 2010.

## 3.1 Remaining Issues, Including any Material Discrepancy, from Previous Validation or Verification

This is the first periodic verification. There are no remaining issues from the validation.

## 3.2 Project Implementation

During the site visit, by observing, reviewing operation records and interviewing relevant staff (see **Table 2.**), DNV was able to verify that the project has been implemented and operated as described in the VCS PD **/2/** for the project.

The procedures to estimate the total carbon stock in selected pools within the project area and the uncertainty of the estimate at a given point in time have been implemented sufficiently. Allometric equations have been used appropriately and the soil sampling methods are sufficient. Carbon stocks for all strata have been estimated as per the requirements of the methodology (VM0009).

## 3.3 Completeness of Monitoring

During the site visit, through observation, record review and interview, it could be confirmed that the monitoring arrangement is in line with the monitoring plan in the VCS PD **/2/** and the applied VCS methodology **/13/**. All of the necessary parameters have been properly monitored to ensure the emission reduction calculations. Details for all the measured parameters are listed in Table 3.

**Table 3 Assessment of All the Measured Parameters**

| | Assessment/Observation |
|---|---|
| Data / Parameter: | |
| Definition of project area boundary. | Observed control of land appears to match mapped boundaries. |
| Vegetation cover stratification. | Vegetation cover types observed when traveling the project area were checked against mapped cover types for general correspondence. |
| Biomass plot cover type stratification. | Cover types of a subsample of vegetation plots were assessed using SPOT imagery and potential discrepancies referred to project staff for checking/correction. |
| Tree/shrub diameter measurement. | Reviewers observed Wildlife Works staff making measurements and then checked the measurements and assured that the measurements were within accuracy requirements. Reviewers also checked a sample of original tree measurements and found that, adjusting for likely growth, recorded tree measurement data corresponded to measurements made by DNV, with the caveat that some trees were not relocated with certainty as elephants had torn out a plot center monument. |
| Tree/shrub species identification. | Reviewers observed consistent species identification by Wildlife Works staff. |
| Soil sampling depth. | Depth of soil sampling was measured and found to be consistent with the protocol. |
| Soil carbon proportion and bulk density. | Soil carbon proportion and bulk density are measured by a prominent laboratory in the region. Lab reports were checked. |
| Historical forest state classification. | A subsample of historical forest state classifications were checked by observing satellite imagery and found to be reasonable. |
| Leakage degradation and deforestation. | Wildlife Works staff were observed making degradation/deforestation assessments and the results were reasonable. A sample of deforestation/degradation data was field checked and the data appears plausible, but exact checking was not possible as additional deforestation appears to have occurred since the data were collected. |

## 3.4 Accuracy of Emission Reduction Calculations

The calculations of the emission reduction in the spreadsheet and the monitoring report for the monitoring period were checked by DNV and found to be correct, as detailed below:

- The project area was quantified using commercial GIS software that has been shown to be reliable.
- Vegetation cover typing was performed using two different methods and any differences were reconciled.
- Stratified sampling of vegetation cover types was performed. DNV independently re-measured a subsample of tree measurements and, where trees could be relocated, re-measurements corresponded to the data, adjusting for growth since the original measurement (some trees would have been difficult to relocate because elephants had removed plot center monuments and tree number tags, and these trees were dropped from the re-measurement subsample).
- Sampling of soil carbon was performed, with carbon content and bulk density measured for the 0-30 cm depth and 31-100 cm depth.
- Soil carbon and bulk density measurements were performed by an independent laboratory.
- Destructive sampling was performed and weights of trees measured by species and diameter, and this data was used to construct allometric equations that estimate biomass as a function of species and diameter. Various groupings of species and various equation forms were analyzed. Equations were selected that had high $R^2$ values and that give conservative estimates of biomass.
- Statistical analysis of the variability of vegetation and soil carbon stocks was performed and sampling uncertainty was found to be less than +/- 15% of the mean estimate with 95% statistical confidence, which is required by the methodology and VCS AFOLU guidance to avoid an uncertainty deduction.
- The reference area encompasses lands as similar as possible to project lands, given that lands scheduled to be in Phase 2 of the project are not eligible for inclusion in the reference area.
- The baseline rate of deforestation and the logistic curve describing the rate of deforestation through time were calculated from imagery spanning a 22-year time period, and forest state was observed at 2 000 points using the written image classification protocol.
- The project proponent searched for points that were classified as having more than one change between forest and non-forest condition, the sequence of observations was reviewed for each point, and inconsistencies were removed.
- DNV reviewed coding of software that calculates weights of each forest state observation, and found that the calculation procedures conform to the methodology.

- The logistic deforestation curve was calculated using commercial software that has been shown to be reliable.
- Statistical uncertainty of the logistic deforestation curve was calculated and was within the required confidence level.
- The linear deforestation rate selected by the project proponent remains below the logistic curve for the life of the project.
- Calculations that go from field measurements of soil and vegetation to per-hectare carbon stocks were reviewed in detail.
- DNV found no significant project emissions to be included in the calculations.
- DNV performed an independent risk rating and selected the risk buffer proportion used by the project.
- Calculations of net emission reductions were reviewed in detail and were found to use proper inputs and coefficients, and the calculations are being performed correctly.

The transfers of data used in the calculation of emission reduction are checked by reviewing relevant documents **/10/ /1/ /9//3/**, with no remaining issues outstanding.

## 3.5 Quality of Evidence to Determine Emission Reductions

The project performed several kinds of project-specific measurements to ensure that amounts and relationships used in calculations were appropriate to project lands. Tree and shrub biomass equations were developed from trees in the area, rather than using equations developed elsewhere. Land cover image archives were searched and images gathered and assessed such that each land cover observation point had data for vegetation cover classification at a minimum of two different times.

Multiple strategies were used to obtain data quality and accuracy of numbers. Forest state observations were performed by two staff that coordinated with one another to make consistent observations. Contractors with specialized expertise were engaged when the project participants did not have necessary expertise on staff. Quality assurance and quality control procedures exist and were used to check and clean data. All calculations were checked by a minimum of two people.

## 3.6 Management and Operational System

The quality assurance and quality control procedures in terms of sampling, stratification, maintenance and data reporting are appropriate.

An independent Quality Control team not involved in the original plot sampling of each plot is given coordinates for the plot centers for 5% of the original plots. The Quality Control team returns to headquarters with the data sheets and this is analyzed by an

analyst that has not been involved with the plots. If discrepancies are found, the Monitoring Team Lead and/or senior carbon staff determines whether a plot needs to be revisited.

The emission calculations and reporting are also completed properly with a third-party specializing in the relevant services, such as soil sample analysis.

## 3.7 *AFOLU Non-Permanence Risk Analysis and Buffer Determination*

DNV conducted a risk rating of the project using the most recent VCS risk rating tool, dated 18 November, 2008 **/17/**, as revised by program updates dated 13 April, 2010 and 8 September, 2010 **/18/**.

**Table 4 Risk Rating: Risk Factors Applicable to All Project Types.**

| Project Risk | |
|---|---|
| Risk of unclear land tenure and potential for disputes. | Low<br><br>Rukinga Ranching Company, Ltd., owns clear legal title to all of the land known as Rukinga Wildlife Sanctuary, which is also all of the land constituting the Project Area. The land is officially titled by the Kenyan government.<br><br>There are 46 shareholders of Rukinga Ranching Company, Ltd. The shareholders have twice voted to approve the carbon project, including transferring rights to carbon credits to Wildlife Works, authorizing sale of carbon credits, and agreeing to a specified division of carbon credit revenues. The overwhelming majority of shares are owned by Michael (Mike) Korchinsky, who serves as Managing Director.<br><br>Mike Korchinsky is the majority shareholder of Rukinga Ranching Co., Ltd and is also the major shareholder in Wildlife Works, so it is unlikely that this carbon agreement will be challenged. |

| | |
|---|---|
| Risk of financial failure. | Low<br><br>The land is owned free and clear by the shareholders. The main project costs are for staff. Until the next scheduled verification of offsets, these costs can be entirely paid through offset revenues. Implementation of the sustainable charcoal program can be paid for by revenue from charcoal sales. Materials for the clothing factor are paid for by sales of finished clothing. School bursary costs are largely covered by donations. |
| Risk of technical failure. | Low<br><br>Wildlife Works has demonstrated technical expertise in several years of managing the project lands, developing relationships with nearby communities, developing VCS Approved Methodology VM0009, performing remote sensing analysis, and conducting carbon inventories and baseline analysis. |
| Risk of management failure. | Low<br><br>Wildlife Works is majority owned and managed by Mike Korchinsky, a former management consulting company owner, with nearly 30 years of experience at all levels of running enterprises. Rob Dodson, Vice President of African Field Operations has nearly 20 years in the role of Site Manager, and is experienced in all dimensions of running a professional business venture in the African bush. DNV observed Mr. Dodson managing project staff and interacting with local community members and noted a high degree of effectiveness in achieving agreements and results. |

| | |
|---|---|
| Economic Risk | |
| Risk of rising land opportunity costs. | Low<br><br>The project is located two hours drive from the nearest major city. There is no water supply to support agriculture. The trees that can grow on the property are not suitable for lumber or paper. There are few prospects for any sort of economic value of the land. Over the long term, there could be value from the land for wildlife viewing and ecotourism because of the proximity of Tsavo National Park. However, this use would enhance, not threaten, the carbon project. |
| Regulatory and social risk | |
| Risk of political instability. | Low<br><br>The project is located in Africa, but Kenya has been one of the most stable democracies in Sub-Saharan Africa over the past 30 years, including the most recent election, which was a national referendum on a new Constitution. |
| Risk of social instability. | Low<br><br>Kenya has no significant history of tribal violence at any scale, and locally within the Project Area there has never been any tribal or social unrest. The local economy appears to be growing. |
| Natural disturbance risk | |
| Risk of devastating fire. | Low<br><br>Grass fires are relatively common (3 in 10 years) but always occur in the dry season when the fire load is very low, and always move through too quickly to do any damage to the tree or shrub biomass. DNV observed no evidence of stand replacing fires, and the wide spacing between tree canopies means that forest crown fires cannot spread. |

| | |
|---|---|
| Risk of pest and disease attacks. | Low<br><br>This ecosystem is extremely old and has a very robust suite of pests and diseases. However, the trees are very well adapted and have no trouble growing despite the pests and diseases. The main disturbance agent in the region is elephants. It is likely that elephant-caused tree mortality limits stress on remaining trees by limiting competition for water and nutrients, and probably contributes to the fact that there is little evidence of insect-caused tree mortality or disease. Given the significant human population in the area, we think it is unlikely that the elephant population could grow so large as to threaten the project forest. |
| Risk of extreme weather events. | Medium<br><br>This area is prone to drought, but the natural ecosystem is adapted to handle extended drought, so no significant threat to the natural forest occurs as a result of drought. |
| Geological risk. | Low<br><br>The area is geologically stable and most of the project area is flat. |

**Table 5 Risk Rating: Risk Factors Applicable to REDD projects.**

| Land ownership/land management | |
|---|---|
| Privately owned land. | Low-Medium (Low)<br><br>A conservation easement is held by Wildlife Works Carbon, LLC, which limits the landowner, Rukinga Ranching Co. Ltd, from taking actions incompatible with conservation. |
| Technical capability of developer. | Very low<br><br>The project developer has more than a decade of experience implementing sustainable livelihood activities in the region. The sustainable charcoal program appears to have the possibility of being financially self-sustaining. |

| | |
|---|---|
| Net revenues to stakeholders. | Low<br><br>Wildlife Works, Inc. is a conservation organization. One third of its revenues are dedicated to the shareholders of Rukinga Ranching Co,. Ltd. The shareholders of Rukinga Ranching Co., Ltd had never received any financial distributions in the over 25 years of land title ownership prior to the arrival of Wildlife Works. They should receive over USD $1 million in royalties in 2011 alone.<br><br>One third of the revenues are dedicated to community benefit projects, administered by Wildlife Works. A significant component of community activities is building and operating schools, and paying school fees. Education gives local residents options other than subsistence agriculture. The project also supports a local women's center, which is successful in obtaining other grants for development activities. |
| Infrastructure and natural resources | |
| Low likelihood of new roads. | Low<br><br>Kenya's main highway passes very close to the project area, and the route has been the country's main transportation corridor for a century. There is no reason to think that a new highway will be built. |
| Population | |
| Population increasing but population density less than 50 people/$km^2$. | Low<br><br>The population in the reference region is around 50 people per $km^2$ and is increasing. However, the only other rating specified for areas with increasing population is for areas with greater than 150 people per $km^2$, so this project gets a low. |

| Incidence of crop failure | |
|---|---|
| Frequent. | Medium-High (Medium)<br><br>Since the project start, there have been several crop failures due to drought, but these crop failures have not led to deforestation within the project boundary. The project lands are just as ill suited for farming as the lands outside the project boundary. The local population relies on international food aid to avoid starvation. |
| Financial plan | |
| Legal easement for ongoing protection. | Very Low |

VCS requires that projects be given the overall risk rating of the rating of the highest rated risk factor. The highest risk rating of all the risk factors is “medium,” thus DNV assigns the project a “medium” risk rating.

VCS specifies a risk buffer range of 10-30% for medium risk avoided unplanned mosaic deforestation and degradation projects. VCS further specifies that the highest buffer proportion shall be applied unless justification for a lower withholding percentage can be justified. The “medium” ratings were given because of drought and crop failures. However, ongoing drought and multiple crop failures have not resulted in encroachment onto project lands. DNV believes that less than the maximum risk withholding is justified. However, there remain risks from rising population and the long-term financial future of protection of project lands. The project is very heavily dependent on offset revenues. While this dependence makes the project additional, this dependence also adds risk. If offset prices decline, demand for offsets declines, or the project fails to generate more offsets because of leakage, it is not clear how project activities can be paid for. However, until the next scheduled verification in five years, offset revenues at the existing contracted sale price are sufficient to fund the project, and for this verification period, DNV judges the financial risk to be low. Also, the project is scheduled to generate substantial amounts of further offsets in coming years. If current risks increase or new risks arise, VCS rules require verifiers to account for these higher risks at future verification times.

To date, no REDD projects have received credits through VCS and there is no actuarial record on which to assign a reversal risk for this project. Because there are population and long-term financial risks, and no track record of other projects, DNV does not think the lowest risk rating, 10%, is justified. In the absence of data, DNV elects to double the lowest possible risk rating and assign the project a 20% risk buffer rating.

## 3.8 Net Emission Reductions

The project area, net of excluded developed areas (roads, watering facilities, and Camp Kenya) is calculated to have 14 466 917 metric tonnes $CO_2e$ in biomass and the top meter of soil. Over the 30-year project life, the current baseline projects that just over half of this carbon—7 542 945 metric tonnes $CO_2e$—would be emitted as a result of deforestation that likely would occur in the absence of the project.

Applying the calculated project baseline emissions, and the fact that recent assessment shows no deforestation within the project boundary, avoided emissions are calculated using the inputs and methods stated in the project document, and achieved emission reductions are as stated in Table 6. As per VM0009, leakage is measured post project start date from the shifted leakage curve. As there is no shifted curve until the first monitoring period, there can be no leakage until the second monitoring period and thus for this verification period, the leakage rate is zero.

**Table 6 Net Emission Reductions (NERs), Metric Tonnes $CO_2e$.**

| Year | NERs | 20% Buffer Withholding | NERs Issued |
|---|---|---|---|
| 2005 | 202 774 | 40 555 | 162 219 |
| 2006 | 238 580 | 47 716 | 190 864 |
| 2007 | 249 290 | 49 858 | 199 432 |
| 2008 | 252 494 | 50 499 | 201 995 |
| 2009 | 253 452 | 50 690 | 202 762 |
| 2010 | 253 739 | 50 748 | 202 991 |
| **Total** | **1 450 329** | **290 066** | **1 160 263** |

# 4 VERIFICATION CONCLUSION - CERTIFICATION STATEMENT

*Det Norske Veritas (U.S.A) Inc. (DNV) has performed the verification of the emission reductions that have been reported for the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 01 January, 2005 to 31 December, 2010. The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project. It is DNV's responsibility to express an independent verification statement on the reported GHG emission reductions from the project.*

*DNV conducted the verification on the basis of the monitoring methodology VM0009 (Version 1), the monitoring plan contained in the validated VCS Project Document dated 31 January, 2011, and the monitoring report dated 02 February, 2011. The verification included: a) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied, and b) the collection of evidence supporting the reported data.*

*DNV's verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.*

*The project proponent is Wildlife Works, Inc. DNV has confirmed that Wildlife Works, Inc. has the right to all and any reductions generated by the Project during the period 1 January, 2005 – 31 December, 2010.*

*In our opinion the GHG emissions reductions of the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 01 January, 2005 to 31 December, 2010 are fairly stated in the monitoring report dated 02 February, 2011. The GHG emission reductions were calculated correctly on the basis of the approved VCS methodology VM0009 (version 1.0) and the monitoring plan contained in the validated VCS Project Document of 31 January, 2011.*

*DNV is able to verify with a reasonable level of assurance that the emission reductions from the "Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 01 January, 2005 to 31 December, 2010 amount to 1 160 263 tonnes of $CO_2$ equivalent after a 20% buffer pool deduction amounting to 290,066 tonnes $CO_2$ equivalent.*

# REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project have been used as direct sources of evidence for the periodic verification conclusions, and are usually further checked through interviews with key personnel.

Following is the list of documentation that was assessed during the validation:

**Documents Provided That Relate Directly to the Project**

/1/ Wildlife Works Carbon Inc., *VCS First Monitoring Report for* Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" Version 1, 2 February, 2011.

/2/ Wildlife Works Carbon Inc., VCS Project Document for Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" with VCS template and supporting document, Version 9, 31 January, 2011.

/3/ Logistic regression model for deforestation (as of 14 January 2011).

/4/ Field measurement protocol – Standard Operating Procedure Biomass (as of 14 January, 2011).

/5/ Field measurement protocol – Standard Operating Procedure Soils (as of 14 January, 2011).

/6/ Soil lab report of measured soil carbon concentrations (Rukinga 1m Soil Analysis, 14 January 2011).

/7/ Forest Biomass Data (Rukinga Carbon trees Shrubs Gass v7.xlsm, 14 January, 2011).

/8/ Forest biomass sampling quality control comparisons (QC report.xlsx, 14 January 2011).

/9/ Data used to develop tree biomass allometric equations (AllometricFormulasPower.xlsx, 14 January, 2011).

/10/ Rukinga return analysis v4.xlsx (27 January, 2011).

/11/ Grid Data RefArea flaggedPointsv2.xlsx (14 January, 2011).

/12/ "Carbon Rights Agreement" between Wildlife Works Inc. and Rukinga Ranching Company – 15 Febuary 2009.

Background documents related to the design and/or methodologies employed in the design or other reference documents are shown below.

/13/ Approved VCS methodology: "VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests version 1.0" 11 January, 2011.

/14/ VCS Association, *Voluntary Carbon Standard 2007.1*, November 2008.

/15/ VCSA, VCS Sectoral Scopes (http://www.v-c-s.org/sectoral_scopes.html).

/16/ VCSA, *Guidance for Agriculture, Forestry and Other Land Use Projects*, 18 November, 2008.

/17/ VCSA, *Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination*, 18 November, 2008.

/18/ VCSA, *Update to the VCS 2007.1: Tool for Non-Permanence Risk Analysis and Buffer Determination*, 8 September, 2010.

/19/ VCS VT0001 *Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities Version 1*, 21 May, 2010.

# APPENDIX A

## CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

**Table 7 Resolution of Corrective Action and Clarification Requests**-

| Draft report corrective action requests and requests for clarifications | | Summary of project participants' response | Final conclusion |
|---|---|---|---|
| **CAR 1**<br>The monitoring report must be a stand alone document from the project documentation. (VCS Program Normative Document: Double Approval Process Version 1.1 Section 6.2.1)<br>Title page should be included with monitoring period (1 January, 2005 – 31 December, 2010), client name, date, name of project, and version number on front cover. | | **Accepted.**<br>Monitoring report broken out as a standalone document. The document is entitled 'VCS Monitoring Report Version 1.0, 2 February, 2011.' | CAR closed. |
| **CAR 2**<br>The table of NERs and uncertainty calculations should be updated in to reflect the amounts and final calculations as verified. | | **Accepted and updated.**<br>The table of NERs now matches the final calculations as verified. | CAR closed. |
| **CAR 3**<br>Equations for baseline emissions are not properly applied in the spreadsheet "Rukinga NER analysis v4.xlsx". The incorrectly applied equations address above and belowground biomass of trees and non-tree vegetation, and soil. The incorrectly applied equations are numbered in the methodology as equations 21, 23, 24, 26, and 26. The error is that when calculating 2006 emissions (column D in the spreadsheet) cumulative emissions as of the prior period are not subtracted from the cumulative emissions of the current monitoring period. The terms in the equations that are missing from the calculations are for monitoring period m-1 (for | | **Alternative Changes Applied**<br>After discussing this CAR with the validators, it was agreed that this CAR is not applicable. However, it lead to some clarifying language in the PD to ensure that a conservative linear deforestation rate was used. | The project baseline is constructed according to the approved methodology. The project proponent elected to use the linear model baseline alternative provided within VM0009. As allowed by the methodology, the project developer elected to be credited according to a linear deforestation rate that is cumulatively less than the logistic model at all times within the |

| Draft report corrective action requests and requests for clarifications | | Summary of project participants' response | Final conclusion |
|---|---|---|---|
| biomass) and i-1 (for soil). Numbers for these terms must be added to the calculations. These terms appear to be properly included and counted in subsequent years, in columns E through AG of the spreadsheet. In the spreadsheet, this error is manifested in cells D24, D25, D28, D29, and D33. | | | project life.<br><br>CAR closed. |
| **CL 1**<br>Please finalize all references to documents including the title, version, and date. | | **Completed.** | CL closed. |