Mai Ndombe REDD+ Project

Distinctive features

The Mai Ndombe REDD+ Project area is a part of western DRC that had been allocated for a logging concession in natural forest. As a REDD+ project, the project aims to avoid emissions from logging and eventual deforestation by managing the area as a conservation concession. The primary agents of deforestation in the project area are the commercial logging conglomerate, SOFORMA. This company is a legally operating timber outfit that has been operating in the Mayombe Forest since the beginning of the reference period and beyond. The secondary agents of deforestation are local people who use the old logging roads to move into the forests once the logging is completed for subsistence agricultural practices and fuel wood/charcoal use.

The Mai Ndombe Project was jointly operated by Wildlife Works and Ecosystem Restoration Associates (ERA). Wildlife Works is a REDD project development and management company, while ERA is a Canadian-based company involved in forest restoration and conservation-based carbon offset projects. Wildlife Works has bought out ERA's 50% stake becoming sole manager of the project.

In 2008, following a governmental revision of the DRC National Forest Code, 91 of 156 logging contracts were suspended in an effort to address corruption in the sector. Minimum legal and environmental standards were not being met, which resulted in severe environmental damage. Two timber concessions extending along the western shore of Lake Mai Ndombe were among those suspended for review. In February 2010, ERA submitted a formal request to the DRC government to manage these concessions for the purpose of protecting the area from destructive logging practices, legal and illegal, using carbon revenues to promote sustainable development. In March 2011, a Memorandum of Understanding was signed between the Ministry of Environment, Conservation of Nature, and Tourism (MECNT) and ERA, in which any carbon rights resulting from the development of the project would be assigned to ERA.

The project activities are focused on four main themes: Stopping planned legal and reducing unplanned illegal logging; Agricultural improvement activities; Village-centred capacity building through Local Development Committees; Infrastructure and socio-economic development activities. The project activities were selected in consultation with the local communities as well as other stakeholders and officials from all levels of government. In return for the carbon rights, ERA is obligated to: build a minimum of 20 schools; construct health care centres in 5 villages; repair and extend secondary hospitals in 2 villages; assist transportation to off-concession

markets for agricultural and other products; provide a network of rural canteens; improve agricultural production techniques; and recruit employees from local communities.\

	Heading	Explanation
	Locational factors	
	Location	Located in the central part of the Congo River basin of the Democratic Republic of Congo
	Spatial boundaries	Project area: 299,640 ha
		Reference area: 3,388,193 ha of forest, one non-forest land cover type (comprising 2,268 ha) (used for analysis of historical land use change)
		Proxy Area (contains only non-forest areas) (used as representation of the likely "end state" of the baseline case for the project area)
		Leakage monitoring area: None
		Leakage management area: None
	Land cover	▪3 types: vegetation associated with semi-deciduous terra firma (upland) forests; vegetation associated with swamp (inundated and seasonally inundated forests); grassland savannahs.
		▪Land cover is 93% forest
	Agents and drivers of forest cover change	▪Agents: Commercial logging companies, primarily SOFORMA; Local villagers
		▪Underlying drivers: Ease of transport/travel (infrastructure); Proximity to major river; Proximity to major market; Access to deforestation tools
		▪Proximate causes: Logging; Villagers converting heavily degraded forest into agriculture
	Basic project features	
	Objectives	*Climate objectives:*
		▪Reduce CO_2 emissions from the project area through stopping planned legal, and reducing unplanned illegal logging, charcoal production, and slash and burn agriculture.
		Community Objectives:
		▪Enhance livelihoods and food security for communities in the project area
		▪Increase local administrative and governance capacity through support of existing traditional and contemporary governance structures
		▪Enhance the sustainable use of natural resources
		▪Improve access to, and quality of, health and education
		▪Improved access to, and quantity of, potable water

		▪Improve community well-being ***Biodiversity Objectives:*** ▪Retain intact forests and ecosystem integrity at the landscape level ▪Retain and promote recovery of habitat as well as native flora and fauna ▪Retain rare and ecologically valuable species ▪Increase local and outside knowledge of the area's biodiversity values
	Proponent/s	▪Initially: ERA–WWC Joint Venture, a joint venture between ERA (Ecosystem Restoration Associates Inc) and Wildlife Works Carbon LLC. ▪Currently: Wildlife Works Carbon (WWC) LLC has bought out ERA's 50% stake becoming sole manager of the project.
	Actors involved in project design and implementation and their roles	▪ EcoPartners – supported technical components of the Mai Ndombe Project (works with project developers, forest owners and verification bodies to build forest carbon offset projects)
	Tenure and Carbon rights holder/s	Tenure: Democratic Republic of Congo is the sole owner of the project area lands. Carbon rights: Ecosystem Restoration Associates (ERA) holds exclusive rights to sell carbon credits for carbon generated by the project area. This contract is effect for 25 years (can be renewed) and applies to the 299,640 ha project area.
	Upfront financing	WWC LLC is sufficiently capitalized to ensure completion of the project.
	Start date	14 March 2011
	Crediting period	30 years, 14 March 2011 - March 13, 2041
Baseline emissions		
	Methodology	VM0009 Methodology for Avoided Deforestation version 2.0
	Reference data (unplanned deforestation/degradation)	Not applicable
	Reference data (planned deforestation/degradation)	Reference period: 29 April 1987 to 13 March 2011 Types of data used: Plots in proxy areas provided data on C stocks; www.africover.org, 2000-2001 imagery; Landsat 4, 5 and 7 satellites
	Stratification of project area	*Only one forest stratum*
	Deforestation rate and location	**Historical** *Deforestation data from reference area for the reference*

period was fitted to a logistical function

Projected

Baseline projected from species and their related minimum DBH authorised for commercial logging (i.e. commercial biomass within the project inventory)

Likely baseline scenario

Continuation of pre-project land-use activity, i.e. commercial logging

Modelling procedure

▪Reference area selected because it experienced planned commercial harvest similar to what would have occurred in the project accounting area in the baseline scenario. The analysis of historical deforestation utilized Landsat imagery. Visual interpretation of 1,572 points for each of 6 years analysed conducted.

<u>Assumptions</u>

▪The removal of merchantable biomass from the project accounting area is assumed to be evenly distributed across 25 years of logging activities in the baseline scenario.

▪Above-ground merchantable trees (AGMT): AGMT is assumed to be removed and converted to long-lived wood products by commercial logging agents. Residual AGMT biomass remaining in the baseline scenario is limited to those merchantable trees which are below the minimum diameters specified in the logging concession, and which are conservatively assumed to remain standing after the logging event.

▪Above-ground non-merchantable trees (AGOT): AGOT are assumed to be removed, burned or converted to fuel wood in the baseline scenario.

▪Following completion of commercial activity, below-ground biomass is conservatively assumed to decay over time.

▪Soil organic carbon (SOC): SOC is assumed to deplete to 56.99 tCO_2e/ha.

▪All harvest wood is assumed to be used for sawnwood. Using a milling wood waste fraction of 0.24 for developing countries, a long-lived wood fraction of 0.8 and an oxidation fraction of 0.1, the amount of tCO_2e sequestered in wood products after 100 years is estimated to be 668,092 tCO_2e.

▪The secondary deforestation agent (local people) is assumed to follow the primary deforestation agent (commercial logging) after 5 years.

Carbon pools	**Carbon pools included** ▪Aboveground tree biomass ✓ ▪Belowground tree biomass ✓

		▪Non-tree woody biomass ✗
		▪Litter ✗
		▪Dead wood ✗
		▪Soil ✓
		▪Wood products ✓
		Estimation method
		Within the accounting area, 463 sample plots were randomly generated for each of the three strata. At each point a nested circular plot of 15-m radius was used for the upper canopy, and a 5-m radius plot was used for understory vegetation.
	Carbon stock changes	*See Modelling Procedure under Deforestation Rate and Location*
	GHG emissions	Methane (CH4) and nitrous oxide (N2O) are conservatively excluded from the project
	Net emissions without project	220,922,762 tCO2e

Project GHG emissions reduction strategy		
	Scope	Avoid planned deforestation
	Activities	*Management and enforcement*
		▪Manage former timber concession as a conservation concession and halt proposed legal logging extraction
		▪Establish plantations to provide fuel wood to communities in project area
		▪Local administration of extraction activities and prevention of logging
		Agricultural improvement
		▪Demonstration of agroforestry techniques for use by communities in the project area (establish nursery and demonstration plots
		▪Demonstration garden to promote agriculture diversification
		▪Assistance to farmers to commercialise their products
		Community-led capacity building
		▪Establish local development committees in villages
		▪Run education workshops on sustainable management of forest resources and on climate change
		Social service infrastructure
		▪Construct 20 schools; establish mobile medical unit; skill training, including English language
	Leakage mitigation strategy	▪ Because there is no forested area (except for the project area) that is accessible to the secondary agents within the range of their mobility, these agents are unable to shift their deforestation activity to nearby forests, and therefore activity-shifting leakage would not

		occur. ▪ Market effects leakage is also not applicable.
	Non-permanence risk mitigation strategy	▪Civil or Political Instability: the project does not depend logistically on government; state presence in the Mai Ndombe region is very limited; strong local support for project. ▪Land Tenure: The proponent plans to maintain a close, collaborative relationship with communities which will minimise any risk of consent to land use being put in jeopardy. ▪Illegal Activities: Any significant logging activity is easily monitored and detected. The Mai Ndombe project will work with timber concession holders remaining in the area to minimise the risk that their activities will trespass onto the conservation concession. ▪Fire, Disease, and Other Natural Risk: The Mai Ndombe REDD project's protection of intact forests and landscape-scale ecosystem integrity is the best available means for mitigating the impacts of climate change and reducing the risk of fire.
	Additionality	▪Most likely baseline scenario selection: Most likely land use scenario is the continuation and proliferation of logging activities which had begun under the terms of the logging concession: In this scenario, a cascade of degradation would have been initiated by planned commercial harvest. ▪Investment / barrier analysis: The analysis demonstrated that the scenario with the greatest financial returns would be the granting of a logging concession to a timber company for commercial harvest. The VCS AFOLU project generates no financial or economic benefits other than VCS-related income. ▪ Common practice analysis: There are no activities similar to the activities proposed by this project that are underway in the geographic area of the project.
	With-project emissions	
	Effectiveness of measures	Assumed 100% effective as commercial logging completely avoided by changing status from logging concession to conservation concession
	Carbon stock changes	As for baseline calculations
	GHG emissions	Methane (CH_4) and nitrous oxide (N_2O) are conservatively excluded from the project
	Leakage	**Types** Activity shifting: Activity-shifting leakage is not applicable to this project. Market effects: Market effects leakage is not applicable

		to this project. **Deduction** *Not applicable*
	Non-permanence risk	**Buffer** Risk rating for non-permanence is 25%
	Ex-ante estimated net greenhouse gas emissions reductions	**Total over crediting period:** 175,820,011 tCO2e **Annual average:** 5,860,667 tCO2e **Annual average per ha:** 19.6 tCO2e
	Monitoring of carbon stock changes and emissions	**Parameters** ▪ i. Perimeter of project area ▪ ii. Biomass ▪ iii. Disturbance ▪ iv. Log production **Methods** ▪ i. Patrol team inspects perimeter of project area ▪ ii. Plot measurement: Sampling teams visit a portion of plots in project, proxy, and leakage areas ▪ iii. Inspection of remote sensing products or aerial videography, with ground inspection when necessary ▪iv. Inspection of records **Frequency** ▪ i. Twice per year ▪ ii. Once a year ▪ iii. Once every 2 years ▪iv. Reporting each verification ▪The monitoring plan contains a plan for all MRV activities associated with the Mai Ndombe Project, including a full sampling protocol for the Project Accounting Area and Proxy Area, a soil sampling protocol, Identification of Disturbance protocol and a description of data collection, storage and QA/QC procedures. ▪Plots will be re-measured every 5 years, with 20% of the plots visited each year
	Stakeholder identification and engagement	
	Stakeholders identified	*Not listed as such, but PDD mentions local communities and Rural Development Communities. 23 communities signed the TOR (Cahier de charges) for ERA to manage the conservation concession.*
	Identification process	Initial consultations undertaken to become familiar with potential stakeholder communities
	Full and effective participation	

	Access to information and consultation	Initial consultations with potential stakeholder communities conducted from June – Nov. 2010. Initial visits consisted of introductions to concepts such as carbon cycles and REDD, introductions of project staff, and an initial project proposal. Lengthy question periods followed and were transcribed. Initial visits and question periods typically lasted between 2 and 4 hours. Each visit received at least one follow-up visit on a subsequent day. Over a period of weeks, communities were given opportunities to ask questions and discuss the project internally (while project proponents were not present).
	Participation in design and implementation	Stakeholder engagement has occurred through the following process: ▪Initial Consultations – villages in the project area were approached and the project introduced ▪Negotiation of Terms of Reference – villages negotiated terms for support on infrastructure such as schools ▪Participatory Rural Appraisal Process - capturing extensive socioeconomic information about the villages ▪Land Chief Participatory Mapping Process – chiefs of the villages met to map out and clarify traditional territories ▪Community Workshops Discussing Climate Change and Ecosystems – held in 9 villages ▪LDC Building Process – establishment of local development committees (LDC) in villages ▪Local Development Plan Process – each community will submit a plan for development to the Mai Ndombe project
	Feedback and grievance redress procedures	Two types of issues are accounted for in the grievance process: ▪Issues or conflict between the Community and ERA Congo ▪Concerns regarding worker rights, work practices, and worker safety raised by ERA employees or contractors ▪Where complaints cannot be solved immediately and written complaints are received ERA will attempt to resolve all reasonable grievances raised and provide a written response to grievances within 30 days.
	Worker relations and safety	All employee rights and employer regulations and responsibilities in the DRC are covered by the Code du Travaille.
	Communities	
	Without-project scenario	Assessed as follows: ▪Problem Flow Diagram for Access to Quality Education & Health Care ▪Problem Flow Diagram for Access to Potable Water

	▪ Problem Flow Diagram for Food Security and Economic Alternatives Description: ▪Extreme underdevelopment of the communities within the project area could be expected to continue with the continuation of timber harvesting. While the government is adopting new regulations regarding indigenous and rural land-user rights to forest resources (both timber and non-timber forest products), it currently lacks the capacity to monitor the sustainable exercise of these rights. Even though the former logging company was extracting highly valuable trees in the concession and therefore making substantial profit from this activity, the return for the community was insignificant at best. ▪Without the project, an ongoing chronic lack of resources would keep education and healthcare infrastructure and delivery capacities at the presently very low level. ▪Access to clean drinking water is not expected to increase because there is no well digging equipment present in the Inongo territory or evidence of efforts to improve the current situation. ▪A heavy reliance on one subsistence crop, cassava, which is mainly starch with very low levels of vitamins and protein, and declining fish stocks in the area often result in food shortages and a high level of malnutrition across all ages.
With-project scenario	**Expected net benefits** Over the long term, impact is improved community wellbeing through improved governance, education, health and agriculture. **Possible negative impacts on other stakeholders and mitigation strategy** ▪Off-site stakeholder impact risks include ▪Change in volume of resources extracted from the project area that may result in reduced employment or access to these resources outside of the project area. Project activities create sufficient employment to offset this impact. ▪Competition due to increased quality and/or quantity of agricultural products exported from the project area. Project products are expected to be shipped out of the local area and will not compete at local markets.
Impact monitoring	**Monitoring variables** Workshops; Facilitation; LDCs established; local development plans; schools built; students attending; mobile medical clinic established; new & repaired healthcare centres; establishment of tree nursery; agroforestry demonstration plots; domestic animal

		enclosures
		Methodologies
		The theory of change method, also known as the causal model, was chosen to estimate the impacts of project activities on the community.
		Frequency
		Not applicable as project examines the outputs completed rather than on-going changes

Biodiversity and ecosystem services		
	Without–project scenario	Assessment discusses the following variables: canopy gap opening size, regeneration, logging roads, species, plant communities
		Description
		▪The project area is 93% forested, with dense semi-deciduous terra firma forest (also referred to as upland forest) representing half of the total area. Swamp forests (permanently inundated or seasonally inundated forests) represent 45% of the total forested area, or 41% of the project area. Terra firma (upland) forest is dominated by large deciduous tree species that shed their leaves during the dry season, mixed with evergreen species in the upper canopy layer. Swamp forests are dominated by large, mostly evergreen trees, many of which have extensive stilt root systems. The ecology of the project region is very poorly known.
		▪The anticipated sequence is as follows: selective logging; a resultant increase in the unplanned extraction of forest resources (charcoal, fuel wood, local construction materials, non-timber forest products, bushmeat) due to increased access; swidden agriculture leading to a permanently deforested state; irreversible degradation of soil productivity due to loss of forest cover and unsustainable agricultural practices. The expected result of this sequence with respect to biodiversity and ecosystem integrity is forest fragmentation (i.e., a loss of landscape connectivity), a decrease in or extinction of species, loss of habitat, loss of soil nutrients, and sedimentation of wetlands.
	With-project scenario	**Expected net benefits**
		Ecological integrity of the area is protected at the landscape scale.
		Possible negative offsite impacts and mitigation strategy
		Offsite impacts to biodiversity not expected
	Impact monitoring	**Variables**
		Assignment of forest concession contract and carbon rights; workshops; introduction of alternate livelihood options; locally consulted strategies to reduce hunting

pressure; flora and fauna surveys

Methodologies

The theory of change method, also known as the causal model, was chosen to estimate the impacts of project activities on biodiversity

Frequency

Not information given

	Progress	
	Validation	VCS validation report issue date: 6 December 2012 CCBA validation report issue date: 6 December 2012 (Gold Level)
	Verification	VCS verification period and report issue date: 14th March 2011 to 31st October 2012; 6 December 2012 CCBA verification period and report issue date: 14th March 2011 to 31st October 2012; 6th December 2012
	Credits issued	Number: 1,140,000 As of: 21 January 2015

Further information

- Wildlife Works:

http://www.wildlifeworks.com/redd/

- VCS Database:

https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=934&lat=-1.659042&lon=17.893816&bp=1

- CCBA Database:

http://www.climate-standards.org/2012/09/03/mai-ndombe-redd-project/

Documents reviewed

From VCS and CCBA project databases: PD, PDD, monitoring reports