



Reduction of deforestation and degradation in Tambopata National Reserve and Bahuaja-Sonene National Park



Distinctive features

The project will be developed in the area comprised by Tambopata National Reserve and the sector of Bahuaja-Sonene National Park, with a combined area of 541,620.14 hectares, located in Madre de Dios region, Peru.

The project proponent is Asociación para la Investigación y Desarrollo Integral – AIDER. AIDER is a Peruvian NGO focusing on issues related to REDD and CDM projects. AIDER is the executor of the Partial Administration Contract in the Tambopata National Reserve and Bahuaja – Sonene National Park sector, which it signed with the Peruvian Government in October 2008. By signing Administration Contracts with non-profit entities, the State seeks to improve the management of protected areas and overcome the problem of its low presence and institutional limitations.



Although Madre de Dios has had a low historical rate of deforestation, the improved access by the recently paved South Inter-oceanic Road is increasing migration and thus land use change and forest degradation. The project proposes to reduce pressure for change land-use at the national protected areas (NPAs) Buffer Zone by promoting sustainable economic activities and establishing conservation agreements at previously identified critical areas. The REDD mechanism will allow the financing of biological monitoring and investigation, actions of control, surveillance and monitoring of human activity impacts, as well as promotion of sustainable economic activities in the buffer zone, which will allow the local population to improve their standard of living without degrading the environment. Technical support will be given to the regional forest authority and to the Servicio Nacional de Áreas Naturales Protegidas por el Estado – SERNANP (National Service of Protected Areas) for environmental and forest governance in Madre de Dios region, promoting the presence of Peruvian State in the Protected Areas and optimizing the coordination and collaboration between authorities and local populations in protected area management.

	Heading	Explanation
Locational factors		
	Location	Tambopata National Reserve and the sector of Bahuaja-Sonene National Park, Madre de Dios region, Peru
	Spatial boundaries	<p>Project area: 541,620.14 ha</p> <p>Reference area: Madre de Dios is the reference region for rate of deforestation and location and includes project area and leakage belt</p> <p>Leakage monitoring area: 263,552 ha</p> <p>Leakage management area: [size not given in VCS PD]</p>
	Land cover	<ul style="list-style-type: none"> - Bosque pluvial Subtropical bp-S (Subtropical rain forest) - Bosque húmedo subtropical bh-S (Subtropical humid forest) - Bosque muy húmedo subtropical (transicional a bp-S) bmh-S/bp-S (very humid Subtropical forest- transitional to bp-S) - Bosque muy húmedo subtropical bmh-S (very humid Subtropical forest)
	Agents and drivers of forest cover change	<p>Agents: Resident in the reference region or immigrants</p> <p>Underlying drivers:</p> <p>Paving of the interoceanic highway leads to greater migration, in turn leading to higher demand for food products, which drives conversion of forests to farms. Also, farming becomes more attractive as paving of the highway reduces transportation costs. The migration is mainly internal and especially from Puno and Cusco highlands, but migration of large commercial ranchers from the neighbouring Brazilian State of Acre is also taking place. In the buffer zone the sale and resale of areas with forest cover, even when there are no property rights over them, has become common. Deforestation and forest degradation increase the likelihood of forest fires. Illegal gold mining, which devastates the forest cover, pollutes streams and leaves soils in a state where forest cannot regenerate, is also likely.</p> <p>Proximate causes:</p> <p>Conversion of forests for settlements, agricultural or cattle production, without reaching the size of large-scale industrial agricultural activities (each owner/ landholder/ occupant has a maximum of 60 ha)</p>
Basic project features		
	Objectives	<ul style="list-style-type: none"> ▪To prevent the emissions of greenhouse gases (GHG) caused by deforestation and forest degradation, contributing to the fight against global climate change ▪To maintain and improve the welfare of populations in the project area

	<ul style="list-style-type: none"> ▪To maintain the biodiversity in the project area ▪To contribute to the financial sustainability of the Tambopata National Reserve and Bahuaja - Sonene National Park –Madre de Dios sector ▪To promote better governance of natural resources in the project zone
Proponent/s	Asociación para la Investigación y Desarrollo Integral – AIDER – a Peruvian NGO focusing on issues related to REDD and CDM projects
Tenure and Carbon rights holder/s	<p>Tenure: The project area is constituted by 2 Natural Protected Areas, which, according to NPA Law, is part of the Heritage of the Nation and cannot be awarded in property to private entities. The lands are the property of Peruvian State – National Service of Natural Protected Areas (SERNANP).</p> <p>Carbon rights: The project area is under AIDER administration, by virtue of the contract subscribed with the Peruvian State, which is the owner of the carbon rights</p>
Actors involved in project design	<p>AIDER – the project proponent; is the Executor of Partial Administration Contract on RNTAMB and PNBS; Responsible for project design, implementation and monitoring.</p> <ul style="list-style-type: none"> ▪National Service of Natural Protected Areas (Servicio Nacional de Áreas Naturales Protegidas - SERNANP) is in charge of conducting the management of the National System of Natural Protected Areas (Sistema Nacional de Áreas Naturales Protegidas por el Estado – SINANPE); the headquarters of the Tambopata National Reserve (RNTAMB) and the Bahuaja-Sonene National Park (PNBS) are part of that System ▪Bosques Amazónicos S.A.C. – a private Peruvian company that aims to develop projects that promote the potential of the Peruvian Amazon Biodiversity through access to carbon markets and other environmental services payments mechanisms to help restore degraded lands and preserve the nature in a financially sustainable way ▪Pontifical Catholic University of Peru (PUCP) – an autonomous institution designed to provide higher education, promote research and projects to the community
Upfront financing	No information
Start date	1 July 2010
Crediting period	20 years (July 01, 2010 – June 30, 2030)

Baseline emissions



Methodology	VM0007, REDD Methodological Modules (REDD-MF) version 1.1
Reference data (unplanned deforestation/degradation)	Reference period: 2000 - 2008 Imagery: Landsat 5
Reference data (planned deforestation/degradation)	Not applicable
Stratification of project area	Mixed aguajal Floodable alluvial Strong steep-high hill Soft steep-high hill Strong steep-low hill Soft steep-low hill High terrace Low terrace Strongly dissected terrace Softly dissected terrace
Deforestation rate and location	<p>Historical (unplanned deforestation) <i>Annex that might hold this information is not available in VCS Project Database</i></p> <p>Projected 0.22% (first 10-year verification period)</p> <p>Likely baseline scenario Mainly pre-project land use continuation, i.e. unplanned frontier deforestation and degradation, starting principally from the Interoceanic highway and moving towards the project area</p> <p>Modelling procedure The projection of deforestation is based on an opportunity costs analysis, both for deforestation rates assessment and location of new road destinations. Tendency and most probable spatial distribution were evaluated, for which, firstly, characteristics of each deforestation agent and number of people of each one of them were determined. Subsequently, the current and predictable future development of population size for the reference region agents group was estimated. In this way, estimation of annual areas under unplanned deforestation at the baseline scenario in the project area and leakage belt was done. Dinamica EGO Software was used.</p>
Carbon pools	<p>Carbon pools included ✓ ✗</p> <p>▪Aboveground tree biomass ✓</p>

	<ul style="list-style-type: none"> ▪Belowground tree biomass ✓ ▪Non-tree woody biomass ✓ ▪Litter ✗ ▪Dead wood ✗ ▪Soil ✗ ▪Wood products✗ <p>Estimation method</p> <ul style="list-style-type: none"> ▪Stratified random sampling with nested circular sample plots was the basic sampling approach. 108 plots were located proportionately across the strata. Plots were temporary with a circular nested shape of 5, 16 and 30 meters ▪All types of woody vegetation with diameter at chest height equal or more than 5 cm (broadleaf species, palm trees, vines, ceticos, others) were measured. The data collected at each plot were: <ul style="list-style-type: none"> - Steepness - Diameter at Breast Height (DBH) - Bole height (trees) - Total height (palm trees and other type of vegetation) - Common name - Physiography - Vegetation type <p>For biomass calculation formulas were from Cairns et al (1997, quoted by Pasa, 2008), Frangi and Luyo (1985, quoted by Brown, 1997), Brown and Schroeder (1999, quoted by Pearson et al, 2005), Putz (1983, quoted by Pearson et al, 2005) and Pearson et al (2005). To estimate carbon stock in the below-ground tree biomass, allometric equations were applied with information obtained from above-ground biomass. An additional methodology of paca or bamboo destructive sampling was developed to create an aboveground biomass equation, which allows quantifying carbon of paca existing in the project area.</p>
Carbon stock changes	Post deforestation strata are agricultural activities, mining activities, urban areas and roads. Carbon stock of the agricultural activities is included in the accounting. The other post deforestation land uses are assumed to have zero carbon stock.
GHG emissions	None
Net emissions without project	5,387,678.80 tCO ₂ e

Project GHG emissions reduction strategy

Scope	Avoided unplanned deforestation
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<p>Activities</p>	<ul style="list-style-type: none"> ▪ Conservation agreements: These consist in offering tangible and periodic benefits to local settlers in exchange of real conservation commitments; uses a methodology developed by Peru Conservation International ▪ Productive activities promotion: Financial resources, technical and commercial assistance will be assigned for promoting sustainable productive initiatives among families from farmhouses and communities settled at leakage belt; likewise, technologic innovations will be introduced for traditional activities, reducing their environmental impacts. These activities are: <ul style="list-style-type: none"> - Agroforestry - Aquaculture - Low-impact gold mining - Sustainable forest management for timber - Processing and marketing of Chestnut - Management and conservation of palm trees ▪ Surveillance and control: Involves technical support for community surveillance committees, park rangers training, and also improvement of infrastructure and equipment at checkpoints ▪ Forest governance: This component promotes agreements between institutions and is related to responsibilities that allow a better governance of resources within the project area and leakage belt
<p>Leakage mitigation strategy</p>	<ul style="list-style-type: none"> ▪ “Conservation agreements” and “Productive activities promotion”
<p>Non-permanence risk mitigation strategy</p>	<p>No information</p>
<p>Additionality</p>	<ul style="list-style-type: none"> ▪ Alternative land use scenarios: 3 possible scenarios were considered - i. Continuation of the pre-project land use, ii. Project activity on the land within the project boundary performed without being registered as the VCS AFOLU project, iii. Activities similar to the proposed project activity on at least part of the land within the project boundary. Scenario i is considered most plausible, as ii faces financial limitations and iii is affected by absence of articulated proposals with inter-sectoral coordination. ▪ Investment analysis: Investment comparison analysis was the approach used and Investment Rate of Return (IRR), Net Present Value (NPV) and cost benefit ratio were calculated. The indicators showed that without incomes from VCUs sale, the project is not cost-effective.

▪Barrier analysis: Financial barriers, institutional barriers (institutional weakness of the Peruvian state), traditional barriers (low economic value of traditional land use), ecological barriers (Brachiaria genus, an alien species, often colonises deforested areas and inhibits forest regeneration), social barriers (potential conflict between miners and indigenous people and lack of organisation of local people), and tenure barriers (rights can only be granted if the forest is removed and land developed) were identified.

▪Common practice analysis: Individual project activities can be seen in other initiatives, but the project improves on other initiatives and provides long-term support.


With-project emissions




Effectiveness of measures	No information
Carbon stock changes	Emissions produced by the project activity have been considered insignificant
GHG emissions	None
Leakage	<p>Types</p> <p>Activity shifting: Project expected to result in activity shifting leakage. <i>Annex that explains how this is calculated was not available on VCS Project Database</i></p> <p>Market leakage: Not expected</p> <p>Deduction</p> <p>810,176.3 tCO₂</p>
Non-permanence risk	<p>Buffer:</p> <p>13 %</p>
Ex-ante estimated net greenhouse gas emissions reductions	<p>Total over crediting period: 4,577,502.5 tCO₂e (over first 10 years)</p> <p>Annual average: 457,750.25 tCO₂e</p> <p>Annual average per ha: tCO₂e</p>
Monitoring of carbon stock changes and emissions	<p>Parameters</p> <ul style="list-style-type: none"> i. Forest cover and deforested area in project area and leakage belt ii. Parameters for illegal timber extraction iii. Parameters for degradation iv. Parameters for fire v. Forest cover in reference region <p>Methods</p> <ul style="list-style-type: none"> i. Analysis of Landsat 5 imagery, with points collected with GPS in the case of field verifying ii. Park Rangers reports about illegal timber extraction. Landsat 5 imagery; Degradation sample plots iii. Procedures specified in M-MON Module

	<p>iv. Fires will be located in the project area and leakage belt with GIS software</p> <p>Frequency</p> <p>i., ii., iii, Annually</p> <p>iv. Monthly</p> <p>v. 5-yearly</p>
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Stakeholder identification and engagement

	<p>Stakeholders identified</p>	<p>Populations, government agencies and conservation actors in the project area</p>
	<p>Identification process</p>	<ul style="list-style-type: none"> ▪ Populations in the project area were identified from secondary data and field observations of the native communities, populations centres and producer associations in the buffer zone

Full and effective participation

	<p>Access to information and consultation</p>	<ul style="list-style-type: none"> ▪ Resident communities were first consulted in August 2009, focusing on their needs and problems. From the identification of the native communities and population centres in the area project, a process of communication with the authorities, leaders and villagers began. PRA workshops were held and incorporated information dissemination and consultation (<i>the PRA methodology is explained in an annex of the project design for CCBA</i>). ▪ REDD was not explicitly mentioned in the consultations as there is a lot of misunderstanding and negative reaction to the concept. Delegates at meetings of the Committee of Management RNTAMB, which groups representatives of the different populations of the buffer zone and corresponding to the project area, have discussed salient aspects of the REDD mechanisms. ▪ The project aims to develop a communication and information plan on the REDD project for the communities in the project area that takes into account the principles of free prior informed consent. ▪ A REDD information campaign will be conducted and will employ comics, posters, photo boards, radio, social dramas, etc.
	<p>Participation in design, implementation and monitoring</p>	<ul style="list-style-type: none"> ▪ Economic activities promoted by the project will be subject to prior and informed consultations. ▪ Biological monitoring system will be based on conservation objectives prioritized in a participatory manner
	<p>Feedback and grievance redress procedures</p>	<ul style="list-style-type: none"> ▪ A diagnosis will be made to size, assess and classify the different conflicts social groups experience, which will also show the level of prior knowledge that the actors show to handle these conflicts ▪ Rather than employing a punitive mode to deal with conflicts, a "bottom up" mechanism characterized by

	<p>aspects of awareness, human rights, participation, consultation and information will be used. The first process is to emphasize local capacity and skills to meet their demands; the conciliatory role is the responsibility of the Management Committee of RNTAMB, which will promote an open and democratic space. The second process involves brokering by the formal institutions, including the Ombudsman.</p>
Worker relations and safety	<ul style="list-style-type: none"> ▪The project will comply with ILO conventions and employees will be informed about their labour rights as part of their training ▪Risks are associated with travel (using rivers, etc.) and natural conditions (rain, proximity to forest). AIDER has developed and provided training on a security plan, which covers data collection in forests and population areas, and project work in villages.

Communities



Without-project scenario	<ul style="list-style-type: none"> ▪Contamination of water resources by uncontrolled increase in small-scale gold mining will cause deteriorating health ▪Reduction in chestnut harvests ▪Reduction in tourism and resulting opportunities ▪Potentially increased common crime, slave labour in mining and sexual exploitation ▪Increased conflicts
With-project scenario	<p>Expected net benefits Improve livelihoods through technical assistance and income generation</p> <p>Possible negative offsite impacts and mitigation strategy <i>Difficult to interpret as CCBA project design document is in Spanish</i></p>
Impact monitoring	<p>AIDER commits to develop a full monitoring plan within 12 months of project design validation</p> <p>Indicators Income level and stability, Property security, Family mobility and demographic pressure, Pollution and environmental health, Family and local leadership, Skills and local knowledge of forest management, Perceptions of forest families, Participation and commitment of local organisations</p> <p>Methodologies Site observation, participant observation, secondary data analysis, monitoring of participation in activities and number and types of activities, surveys</p> <p>Frequency</p>

Monitoring actions will be carried out on an ongoing basis and reports will be issued once a year

Biodiversity and ecosystem services



Without-project scenario

- Migration is associated with degradation, fragmentation or total conversion of habitats, such as riparian forest, clay licks, lakes, river systems and beaches.
- Mining cause degradation of habitats such as river and lentic systems, alter the channels and contaminate the water, affecting ecological processes and food chains
- Decline in biodiversity, the disappearance of characteristic large trees and other original vegetation and reduced biomass

With-project scenario

Expected net benefits
 Improved protection of the area
 Maintenance of natural forest dynamics
 Net gain in biodiversity

Possible negative impacts on other stakeholders and mitigation strategy
 Strengthening forest governance and investment in sustainable economic activities for local populations is expected to mitigate negative offsite impacts

Impact monitoring

Development and implementation of an integrated monitoring system (Biological Monitoring and Impact of Economic Activities) is planned

Indicators
 Monitoring plan will be based on components that reflect the state of biodiversity, taking into account: threatened endemic species and invasive species; ecosystems and key habitats; key abiotic resources, such as clay licks; conservation objectives of the national forest parks; uses permitted in the parks; resources currently used by the local populations

Methodologies
Difficult to interpret as CCBA project design document is in Spanish

Frequency
 Will depend on items selected for monitoring. Can vary from one month to one year.

Progress



Validation

VCS validation report issue date: 21 June 2012
 CCBA validation report issue date: 21 June 2012

Verification

VCS verification period and report issue date:
 01 July 2010 – 30 June 2011; 9 April 2013
 01 July 2011 – 30 June 2013; 26 May 2015,

	CCBA verification period and report issue date: 01/07/2010 - 30/06/2013; 29 May 2015 01/07/2013 - 30/06/2014 ; 16 November 2015
Credits issued	Number: 170,805 As of: 02 February 2016

Further information



- VCS Project Database:
http://www.vcsprojectdatabase.org/#/project_details/1067
- CCBA Projects: <http://www.climate-standards.org/?s=Tambopata>

Documents reviewed

- VCS Project Description,
<http://www.vcsprojectdatabase.org/services/publicViewServices/downloadDocumentById/12550>
- VCS Validation Report,
<http://www.vcsprojectdatabase.org/services/publicViewServices/downloadDocumentById/12550>
- CCBA project design document (English summary),
https://s3.amazonaws.com/CCBA/Projects/Proyecto_Reducccion_de_la_deforestacion_y_degradacion_en_la_Reserva_Nacional_Tambopata_y_en_el_Parque_Nacional_Bahuaja_Sonene_del_ambito_de_la_region_Madre_de_Dios_en_Peru/Validated+PDD/PDD-CCBA+Tambopata+Summary.pdf
- CCBA validation report,
https://s3.amazonaws.com/CCBA/Projects/Proyecto_Reducccion_de_la_deforestacion_y_degradacion_en_la_Reserva_Nacional_Tambopata_y_en_el_Parque_Nacional_Bahuaja_Sonene_del_ambito_de_la_region_Madre_de_Dios_en_Peru/AIDER+CCB+valid+12.pdf