

# **BIOCORRIDOR MARTIN SAGRADO REDD+ PROJECT**

## **Summary of the Project Design Document**

**Reduced Emissions from Deforestation and Forest Degradation  
San Martin Department, Peru**

*A Community Forestry Initiative for Carbon and Biodiversity Conservation and Poverty  
Reduction*



**Version 3.0 – January 2012**

**PROJECT DEVELOPER**



**TECHNICAL PARTNER  
FOR IMPLEMENTATION**

**AMAZONIA**



**VERDE**

## I. EXECUTIVE SUMMARY

### Historical Context

Peru has the third largest extent of tropical rainforests in the world, after Brazil and the Democratic Republic of Congo. These forests are some of the richest in the world, both in terms of biological diversity and natural resources (timber, energy, mineral resources).

Peruvian forests are under great pressure. About half of Peru is forested. Of this, more than 80 percent is classified as primary forest, the most biodiverse and carbon-dense form of forest. The FAO estimates that the country loses around 269 000 hectares of forest per year, giving it an annual deforestation rate of 0.4 percent (1990-2000). An estimated 3.1% of its forest cover or around 2,164,000 ha has already been lost between 1990 and 2000.



In contrast, during this same period the Department of San Martin, in the Amazon part, lost about 28% of its forested area (GRSM & IIAP, 2005). The actual rate of deforestation in the region is 40 ha per day. Most of this deforestation is the result of subsistence agriculture, which can largely be attributed to the migration of farmers from the highlands taking advantage of Peru's land-tenure law which allows people to own land by occupying it for five years.

Deforestation and degradation are also increasingly the result of development activities, especially logging, commercial agriculture, mining, gas and oil operations, and infrastructure construction.

A growing number of organizations in the department have been trying to protect the remaining natural forests as community forestry areas, but they all lack of financial means. Project sites include large tracts of healthy closed-canopy forests, as well as degraded forests suitable for restoration and assisted natural management.

**TABLE 01: Peru Forest Figures**

<b>Forest area</b>	
Total forest area, 2000	65,215,000 ha
% of land area	50.9%
Area per capita	2.6 ha
Forest plantations	640 000 ha
<b>Forest cover change, 1990-2000</b>	
Annual change in forest cover	-269 000 ha
Annual rate of change	-0.4%
<b>Forest types, volumes and biomass</b>	
Forest types (% of country's forest area)	Tropical 100%
Wood volume in forests	158 m <sup>3</sup> / ha, i.e. 10 304 million m <sup>3</sup> in total
Wood biomass in forests	245 tonnes / ha, i.e. 15 978 million tonnes in total
<b>Number of tree species in IUCN Red list</b>	
Number of native tree species	2,500

Critically endangered	33
Endangered	14
Vulnerable	54
<b>International Conventions and</b>	<b>Agreements</b>
Ratification as of 1 December 2004	CBD, UNFCCC, Kyoto Protocol, CCD, CITES, Ramsar Convention, World Heritage Convention

*Source: State of the World's Forests, FAO, 2005*

### **The “Biocorridor Martin Sagrado” REDD+ Project**

The Biocorridor Martin Sagrado Project for Reducing Greenhouse Gas Emissions from Deforestation (“Biocorridor Martin Sagrado” REDD+ Project) aims to address deforestation and its resulting emission of greenhouse gases (GHG) in an area of the Department of San Martin, which is under great land use pressure. Its implementation is consistent with the ZEE strategy (Zonificación Económica Ecológica) planned and initiated by the Regional Government of San Martin to halt deforestation and promote sustainable development in San Martin, based on giving value to the environmental services provided by its standing forests (CDC\_UNALM 2002,2003). The local legislation provides the entire legal framework necessary to implement REDD projects in the San Martin department.

The objectives of creating the “Biocorridor Martin Sagrado” project area were to protect forests with high conservation value while also improving the quality of life of the communities that live in these areas. The project seeks to maintain and increase carbon stocks in the area, preserve the hydrological cycle, as well as conserve biodiversity and endangered species. The project area completes a major role in the connectivity between the Abiseo River National Park and the “Bosque de Protección Alto Mayo”, part of the Conservation Corridor for Abiseo - Condor - Kutukú, considered as high priority for conservation and nucleus of one of the centers of high diversity (“Biodiversity hotspots”) in the Tropical Andes.

The creation and effective implementation of the project result from PUR PROJET, ACOPAGRO, and Fundación Amazonia Viva initiatives, with the objective to leverage a financial mechanism generating a financial compensation for activities reducing emissions from deforestation (REDD+). The project started in January 2010, as a complementary strategy to the Alto Huayabamba reforestation project, in which PUR PROJET and ACOPAGRO are committed since 2008, with a plan to replant more than 2,000,000 trees by 2013.



This Biocorridor Martin Sagrado project supports sustainable forest management, agro-forestry, non-timber activities and livelihood development in the reserve by providing financing through carbon credits generated from forest protection and regeneration. The project will also create a 80-year income stream that will directly enhance household livelihoods and natural resource management capacity.

Carbon financing will be used to support rural communities to develop a range of livelihood activities including non-timber forest products (NTMP), improved agro-forestry activities and productivity intensification, community-based ecotourism infrastructure, micro- credit and communication walkways development as well as other economic, social, cultural and environmental activities. The additional resources raised from the sale of these credits will allow the communities to implement all of the measures necessary to control and monitor deforestation within the project site, enforce the law, and improve the welfare of local communities

From the start of the project, mobilization of the community to protect forests has demonstrated effectiveness in halting deforestation and degradation in community forestry areas. ACOPAGRO and APAHUI members, and communities in the Huayabamba river basin have expressed strong interests in

developing activities to better preserve their land and avoid deforestation. All of them have been consulted with regards to project design and objectives, and have been included in decision process. They have listed the projected activities they are wishing to develop with the support of Pur Projet. These activities have been prioritized and discussed with Fundacion Amazonia Viva and Pur Projet during the visits of the area. The project was designed through a transparent process involving participatory workshops and exterior consultations in order to guarantee the involvement and commitment of all the local stakeholders.

The project implementers will provide investors and donors with a guarantee that the execution and completion of the project will be done in a manner that complies with all of the relevant legal, governmental and regulatory structures.

## **II. Main Actors**

### **The Amazonia Viva Foundation**

The Amazonia Viva Foundation is a Peruvian non-profit foundation created at Pur Projet's initiative. It is constituted by the associations and cooperatives involved in reforestation and forest conservation projects in San Martin region. It is operated by an assembly of representatives from each member organization, and works with a management team responsible for planification of activities, daily coordination of activities, and management of funds.

Bringing together organizations and projects dedicated to the community preservation of forest in San Martin Region in Peru, the foundation has been created to support and coordinate the efforts of each organization, to reach a higher level of effectiveness and recognition. The San Martin Foundation is a way of increasing support from local, national and international authorities, and larger public or private funds to finance community activities for the preservation of the environment.

Within the scope of REDD+ project, the Amazonia Viva Foundation coordinates project activities with member organizations, implements a global scheme for project management and a prioritization of activities, and manages the allocation of funds. The Amazonia Viva Foundation is in charge of implicating every community in the project zone, through visits to communities with collection of data, feedback and suggestions, and organizations of regular general assemblies for all communities involved in the REDD+ project

#### **Main objectives**

- Preserve and protect the fragile ecosystems of the Peruvian Yungas in San Martin, on the watersheds and river basins, procurement sources for the local population and San Martin
- Protect wildlife, particularly vulnerable or endangered species
- Protect scenic or landscape heritage to promote economic activities, recreation and environmental education
- Preserve and ensure the continuous flow of environmental goods and services especially fixing greenhouse gases and water regulation

#### **Secondary objectives**

- Democratic participation of communities to the carbon credits sales, managing their community forests and creating conservation areas.
- Promote political cooperation at all levels of management: national government, regional and local to ensure adequate legal framework and the sustainability of long-term projects with economic results that encourage conservation and reforestation of the areas

*Further information will be provided in section XI "Project Proponents".*

## **ACOPAGRO Cooperative**

On top of local communities and community associations of local producers, the project is developed with a strong partner, owner of the Martin Sagrado concession within the project area: the ACOPAGRO cooperative

ACOPAGRO cooperative was created in 1997, as part of a United Nations program to substitute coca plantations with cocoa and other alternative crops in the San Martin region. It now counts 2000 members, small-scale producers of cocoa and sugar cane having 5 hectares of land each, with an average 2.2 ha of cocoa fields. Most of the farmers were coca planters in the past.



The organization is FLO and Organic certified (standards EU et NOP) and is very successful, both on its commercial activities (ACOPAGRO has become in ten years Peru's first cocoa exporter) as well as towards its compliance to fair trade principles. ACOPAGRO can be considered as a model organization and has been certified under Alter Eco Gold Standards in 2009 by SGS. 3 000 hectares of cocoa fields have already been planted and are harvested, the equivalent of 3 million cocoa trees.

To help the farmers to achieve these objectives, ACOPAGRO and PUR PROJET set up a reforestation program in 2008 called Alto Huayabamba. The plantation started in April 2008 and the project is now fully operational with 1 million trees planted (December 2011) and was validated according to the VCS standard. The objective is to plant 2 million trees over 2300 hectares (depending on plantation of models between agro-forestry and forestry only plantations), of degraded land and cultivated land, practicing agro-forestry combining native trees species with cocoa trees and forestry plantations. The project is funded via the sales of environmental services (trees certificates) and of ex-ante carbon credits (VCUS).

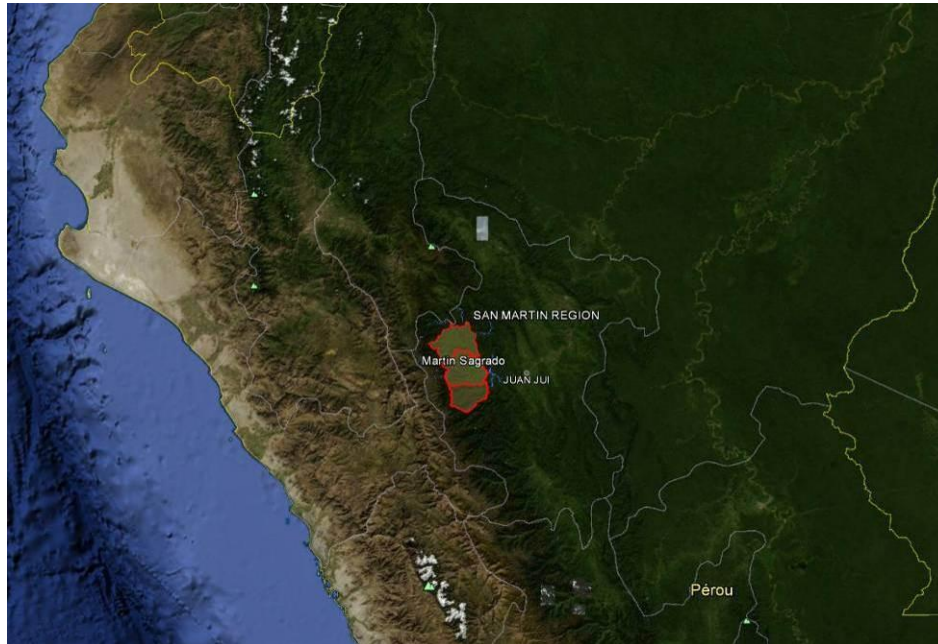
ACOPAGRO has already proved its capacity to plant and secure a sustainable plantation. The need of the area is very large, both for coca producers, and much as for the damaged environment of the region.

### III. Location of the project

#### General location

The project is located in Northern Peru, in the western part of the San Martin province. The province of San Martin is located in the Amazonian Andes, tropical region of Peru at the transition between the high Andes and the lower Amazon basin. The Martin Sagrado project zone can be reached by boat the town of Juanjui (3 hours).

***Figure 1 : General location of the project***

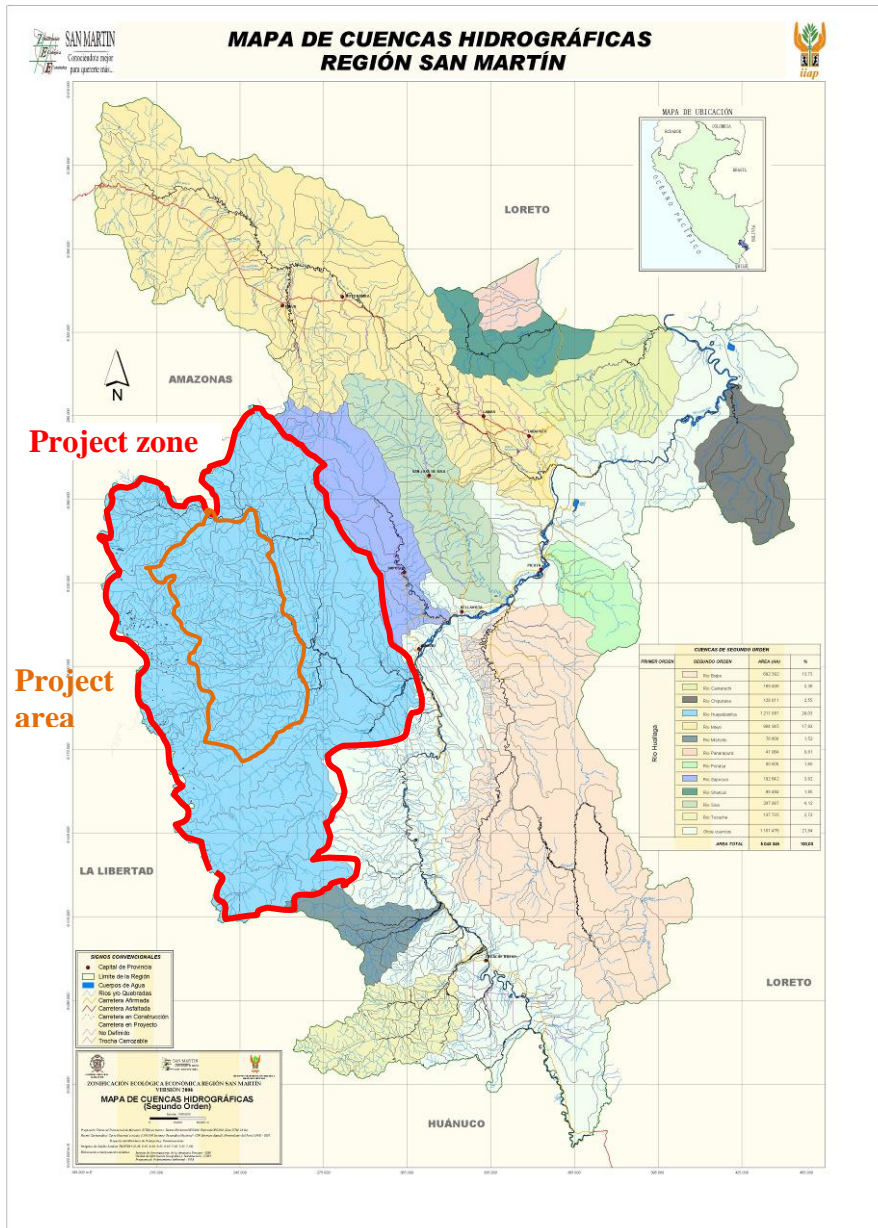


#### Project zone

The project zone is constituted by the river basin of the Huayabamba River, delimited on the Western and Northern side by the Andes and the frontier with Amazonas and La Libertad provinces, to the East by the hills chain between Huayabamba and Saposoa valleys, on the South East by the Huallaga river.

The project zone is relatively homogeneous in terms of climate, soils, vegetation, and socio-economic conditions.

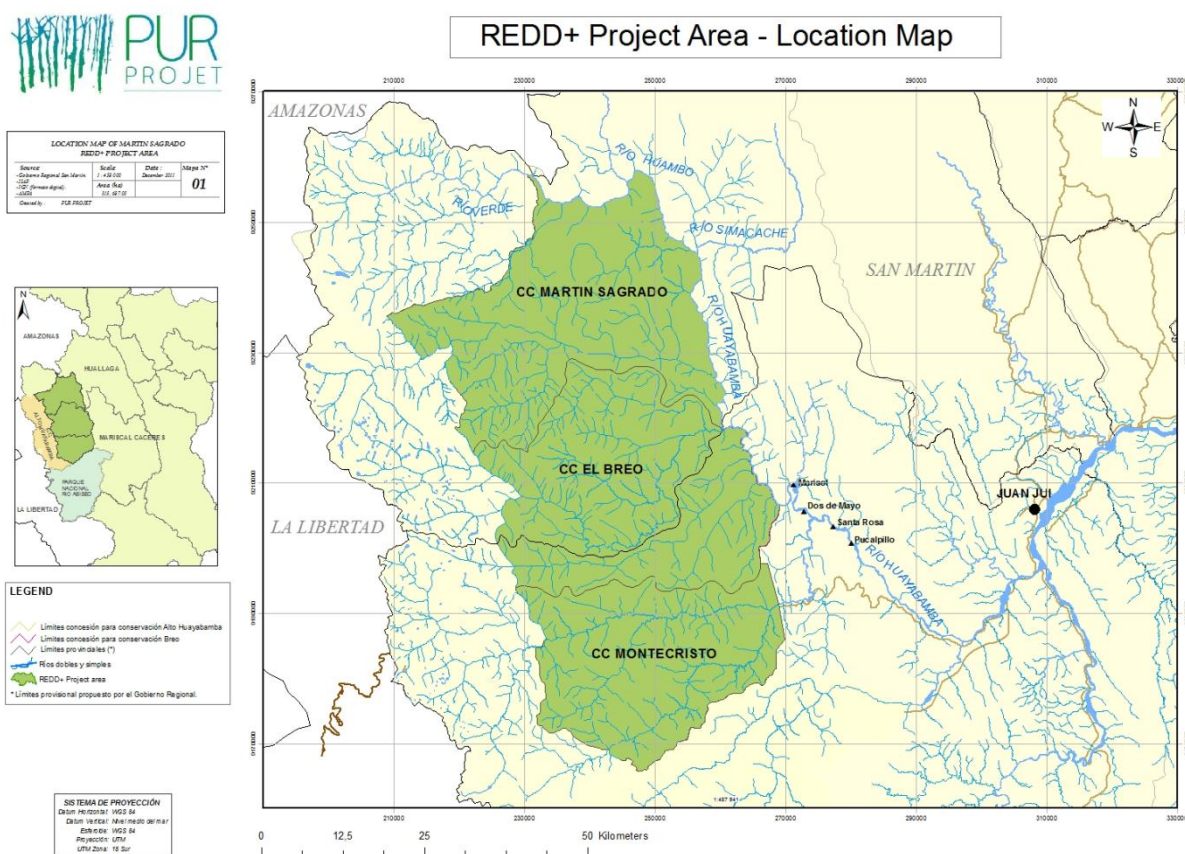
**Figure 2 : Location of the project zone**



**Project area:**

The project area encompasses 313 687 hectares, and is constituted by three concessions with conservation purposes: Martin Sagrado, El Breo, and Monte Cristo. It is constituted by primary forest at more than 97%; only 3 small communities live inside the project area.

**Figure 3: Location of the project area**



Boundaries are defined as follows:

Northern limit	Frontier with the Amazonas region, Rio Verde river
Southern limit	Frontier with National Park Rio Abiseo
Eastern limit	Huayabamba river
Western limit	Frontier with the concession Alto Huayabamba (Andes)

- The Association de Proteccion de bosques Comunes Dos de Mayo (EL BREO) owns the concession title of the concession El Breo.
- ACOPAGRO cooperative has solicited the concession Martin Sagrado, which is currently under attribution.
- The Asociacion de Productores Agropecuarios de Huicungo (APAHUI) is in the process of soliciting the concession Monte Cristo.

The xml file of project area is available upon request.

## IV. Community information

### Presentation of the participating communities

#### ***Communities within the project area***

There are three communities living within the project area: La Morada, Canaan, and Anazco Pueblo. They mainly rely on livestock and coffee farming. As fuel they only use wood for cooking and mostly candles for light (70 to 95%) while solar energy is developing.

The three communities are typical examples of towns founded by a group of migrants, who originally came from the mountains to the jungle. The early years after establishment have been dedicated to the exploration of the environment, without interest for the protection of biodiversity. They slowly built up over 5 to 10 years some experience on the impact of mismanagement of resources.



They are located in the Eastern Andes, in the department of San Martin, on the slopes of the mountains oriented northeast above the river Huabayacu. However they depend politically on Chuquibamba in the department Amazonas. There are no roads to the villages, only paths from the district of Chuquibamba (2 to 3 days), and from the province of Bolivar (2 days). There is a proposal for the construction of a road by the Regional Government of Cajamarca, in order to facilitate the transport of forest products from Saposoa in the province of Huallaga, department of San Martin to Celendín department of Cajamarca.

- **La Morada**

Gathering 80 families, there are 150 students in the village, a kindergarten, a primary and secondary school. La Morada activity is based on livestock with a herd of about 500 animals. Community health is ensured by a medical post, a nursery and medicinal plants.

- **Canaan**

There is a kindergarten, a primary and a secondary school, 130 families and as many students in this village, 3 days walk away from the closest town. Their main income depends on livestock and coffee with 100 hectares of cocoa cultures and 400 animals. Both coffee and livestock products are sold outside of the village. Community health is also ensured by a medical post, a nursery and medicinal plants.

- **Anazco Pueblo**

Smallest community of the area, Anazco Pueblo gathers 15 families, representing 70 people in total, 22 students and 1 professor. There is only a primary school. Also relying on cocoa cultures and livestock, their herd is smaller with 100 animals and 20 hectares for farming. Community health is ensured only by medicinal plants.

Additional information on these 3 communities, collected during field trips to Chuquibamba, is available on request.

### **Communities within the project zone, in the provinces of Mariscal Cáceres and Huallaga**

#### *Major partners for REDD project:*

- **Dos de Mayo** is the most populated village (898 inhabitants). They are considered as a “minor populated center” and have a delegated mayor. 59% of the inhabitants are men and 41% are women. 48% of the area (680 ha) are dedicated to cocoa production, with an average yearly production of 700kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 100 cattle animals. 10.34% of the villagers are illiterate, 48.28% have a primary education, 34.48% have a secondary education and 6.9% have a higher education. There is a medical center in the village. A technical study is under process to evaluate the opportunity to implement a drinking water system. The Association de Proteccion de bosques Comunales Dos de Mayo owns the concession El Breo and is strongly involved in the REDD project since the beginning
- **Santa Rosa:** on the bank of the Huayabamba river, Santa Rosa is constituted by ~40 cocoa farmers, majority of the area is dedicated to cocoa production, with average yields of 1200 kg/ha. As part of the REDD project, they are developing a botanical garden to value floral biodiversity, and want to develop a guesthouse for visitors to come and visit the conservation area. Strongly involved in the project since the beginning, Santa Rosa is now soliciting a concession for conservation of 10 000 ha.
- **Pucalpillo:** located a little more downstream on the bank of Huayabamba river, 30% of the area (60 ha) are dedicated to cocoa production, with an average yearly production of 800kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 40 cattle animals. 56% of the inhabitants have a primary education, 36% have a secondary education, 6% are illiterate and 2% have a higher education (no university). There is no medical center in the village. Strongly involved in the project since the beginning, the asociacion de productores agropecuarios de Pucalpillo (APAP) is now soliciting a concession for conservation of 20 000ha.
- **Huicungo :** located on the banks of the Huayabamba river, only 10km before the junction with Huallaga river, it is a major populated centers, with a municipality. Major incomes come from cocoa production, with some farmers members of ACOPAGRO cooperative, while others (~130 farmers) are joining the newly created Asociacion de Prodcutores Agropecuarios de Huicungo (APAHUI), whose aim is to develop as a complete cocoa cooperative. APAHUI is the organization soliciting the concession for conservation Monte Cristo, part of the project area.

#### **Other communities of the project zone :**

- **Marisol** is the last populated community upstream on the banks of the Huayabamba River, on the historical and natural path to the inner areas of the project area. They mostly rely on cocoa production. There is primary education in the village and use hydroelectrical (mainly) and solar power for electricity generation.
- **Pizarro:** 35% of the area (80 ha) are dedicated to cocoa production, with an average yearly production of 400kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 60 cattle animals. 2% of the villagers are illiterate, 68% have a primary education, 24% have a secondary education and 6% have a higher education (no university). There is a medical center in the village.
- **Mojarras:** 32% of the area (70 ha) are dedicated to cocoa production, with an average yearly production of 400kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 30 cattle animals. 84% of the villagers have a primary education (complete) and 16% have a higher education. There is no medical center in the village.
- **Santa Ines:** 29% of the area (70 ha) are dedicated to cocoa production, with an average yearly production of 400kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have

around 100 cattle animals. 2% of the villagers are illiterate, 76% have a primary education, 20% have a secondary education and 2% have a higher education. There is a medical center in the village.

- **Gran pajaten:** 25% of the area (10 ha) are dedicated to cocoa production, with an average yearly production of 400kg/ha. The villagers also cultivate corn, plaintain, and cotton and have around 20 cattle animals. 10.35% of the villagers are illiterate, 48.27% have a primary education, 34.48% have a secondary education and 6.90% have a higher education. There is no medical center in the village.
- **San Juan de Pajaten:** 7% of the villagers have a higher education, 73.33% have a primary education, 13.34% have a secondary education and 6.33% of the villagers are illiterate. There is no medical center in the village.
- **Nueva Esperanza:** 25% of the area (25 ha) are dedicated to cocoa production, with an average yearly production of 400kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 30 cattle animals. 73% have a primary education, and 20% have a secondary education, 6.67% of the villagers are illiterate. There is a medical center in the village.
- **Primavera:** 31% of the area (45 ha) are dedicated to cocoa production, with an average yearly production of 700kg/ha. The villagers also cultivate corn, plaintain, cotton and oranges and have around 30 cattle animals. 4.08% of the villagers have a higher education, 81.64% have a primary education, and 14.28% have a secondary education. There is no medical center in the village.
- **Luz del Oriente:** located at the northern tip of Martin SAgrado concession, at the border with Amazonas region, Luz del Oriente is a community depending on Rodriguez de Mendoza in Amazonas region. It is accessible by dust road from Mendoza up to 10km from the community.

#### **Communities outside the project zone, though related to the project**

- **Chuquibamba,** municipality located in Amazonas region, in the Andes, is the access point and political center for the 3 communities located within the Martin Sagrado project area (Canaan, La Morada, Anazco Pueblo). As such, it is implicated in the conservation project. It is accessible by dust road coming along the Marañon river bed.
- **Comunidad Campesina de Leymebamba,** located in Leymebamba, Amazonas region, in the Andes. Leymebamba is another access point to the 3 communities located within the Martin Sagrado project area (Canaan, La Morada, Anazco Pueblo). Also, the Community has solicited a concession for conservation in Amazonas region whose demarcation goes up to Martin Sagrado project area. As such, coordination with this community is interesting for the sake of both conservation projects.

## **V. Biodiversity information**

### **Terrestrial Ecological Systems – SETs**

The Data Center for Conservation - UNALM & TNC (2006), using biophysical models from different inputs and different methods, identifies and describes the terrestrial ecological systems (SET) of the Peruvian Yungas.

At coarse filter level (ecosystem level), within the Peruvian Yungas Ecoregion, the CDC-UNALM identified 18 SETs as conservation targets (CDC-UNALM and TNC, 2006). The SETs are defined as "groups of plant communities that tend to co-occur in the landscape due to its relationship with common factors and determinants and ecological processes, substrates and / or environmental gradients" (Josse et al., 2007:11). The use of SETs to evaluate the effectiveness of conservation has many advantages because it combines in one system: ecological, dominant vegetation and landforms.

These units synergistically complement those already included in the Abiseo River National Park and the Concession for Conservation "Alto Huayabamba," forming a more robust and resilient block to global climate changes to come.

### **Tree species**

Peru is the third largest extent of tropical forest in the World, after Brazil and the Republic of Congo. It counts 2500 species of native tree species of which 33 are critically endangered, 14 endangered and 54 vulnerable. (Source: Mongabay.com, 2010)



### **Fauna within the project zone**

Diverse species of mammals, birds, reptiles and amphibians are observed, as well as numerous species of invertebrates. Within the project zone over 160 mammal species, 324 bird species, 26 butterfly species, 106 reptile species, 123 amphibian species exist, as well as many other species of invertebrates have been identified.

### **Threatened species**

In the project area, we have a list of 21 species found in any of the lists of threatened species nationally and internationally, or are listed in the Appendices to CITES. Although, these species have some level of protection in places like the Rio Abiseo National Park, has always been calling for the extension of the protection zones of these endemic species (CDC-UNALM and TNC, 2006). We believe the project addresses this need for expansion of habitat for these species are endemic.

### **High Conservation Values (HCVs) and description of the qualifying attributes**

The World Wild Fund for Nature has delineated three yungas ecoregions along the eastern side of the Andes. San Martin Region is located in the northernmost one (Peruvian Yungas). These yungas ecoregions are transitional zones between the Andean highlands and the eastern forests. The yungas forests are extremely diverse, ranging from moist lowland forest to evergreen montane forest and cloud forests. The terrain is extremely rugged and varied, contributing to the ecological diversity and richness. A complex mosaic of habitats occurs with changing latitude as well as elevation. There are high levels of biodiversity and species endemism throughout the yungas regions. Many of the forests are evergreen,

and the South Andean Yungas contains what may be the last evergreen forests resulting from Quaternary glaciations.

Within the different forest types there are areas of High Conservation Value (HCV), divided into areas of biological and cultural significance. Biological HCV areas include the primary forest of the project area, composed primarily of evergreen forest. Due to the presence of several IUCN listed threatened species in the project area (see previous section), the project area can be designated as a biological HCV area.

### **Protected areas**

The National Park Rio Abiseo is the major protected area in the project zone. It encompasses 274520 hectares of rainforest. The National Park was established in 1983; UNESCO pronounced it as Natural and Cultural Heritage of Humanity (World Heritage Site) in 1990. The park is home to a large number of species of flora and fauna, as well as the location of over 30 pre-Columbian archaeological sites. Since 1986, the park has not been open to tourism due to the fragile nature of both the natural and archaeological environment.

Other conservation areas include the Concession for Conservation Alto Huayabamba, attributed to the NGO AMPA in 2006. Located on the most western part of San Martin Region, in the highest part of the Andes, it encompasses 143 928 hectares of mostly high Andean ecosystems.

Just outside the project zone, to the north of San Martin region, across the border with Amazonas region is the “Bosque de protection Alto Mayo”, a forest conservation area created in 1987, encompassing 182 000 hectares of forest.

The project area completes a major role in the connectivity between the Abiseo River National Park and the “Bosque de Proteccion Alto Mayo”, and as part of the more global Conservation Corridor for Abiseo - Condor - Kutukú, considered as high priority for conservation and nucleus of one of the centers of high diversity ("Biodiversity hotspots") in the Tropical Andes

**MAPA DE POTENCIAL TURÍSTICO  
REGIÓN SAN MARTÍN**

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Project zone

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LORETO

AMAZONAS

LA LIBERTAD

HUÁNUCO

**INVENTARIO DE RECURSOS TURÍSTICOS**

LUGAR	TIPO	VALOR	N.º
San Martín	Ciudad	100	1
San Martín	Ciudad	100	2
San Martín	Ciudad	100	3
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San Martín	Ciudad	100	6
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## VI. Baseline Projections



### Presentation of the Most Likely Land-use Scenario in Absence of Project

#### Context and history of deforestation

“One of the worst problems about global warming is that mankind in the last 500 years has destroyed 50 percent of forests on the planet and that is a very serious problem indeed,” Antonio Brack, Environment Minister of Peru, (Rhett A. Butler, mongabay.com, August 03, 2009).

Peru has historically had one of the lowest annual deforestation rates in the Amazon basin, but forest loss has been increasing in recent years due to illegal logging, mining, agriculture, and expansion of road networks, including the paving of motorways that provides access to a remote and biologically-rich regions.

In 2005 — the most recent year for which data is available — at least 150,000 hectares of forest was lost, while a similar area was degraded through logging and other activities.

According to the Regional Government of San Martin, about 26% of the Region San Martin was deforested in 2004<sup>1</sup>, and the annual deforestation rate was about 1.17%, which represents 57221 hectares per year (Source : IIAP 2004).

Latest non public figures (preliminary results) from the San Martin regional roundtable on REDD “Mesa REDD San Martin” indicate that deforestation rate could have been reduced in the last years from 2006 to 2010, lowering to an average annual rate of 0.50%.

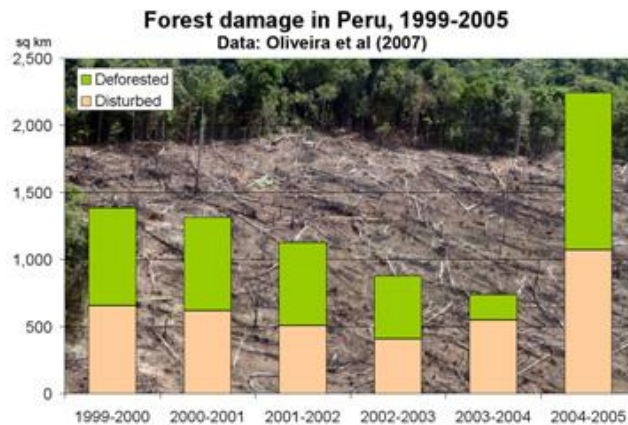
More than 70 percent of the Peruvian Amazon is now under foreign concession. Deforestation and land use change accounts for roughly 70 percent of Peru's greenhouse gas emissions, according to the Carbon Dioxide Information Analysis Center (CDIAC). Spanning a variety of ecosystems, including the dry coastal region, the tropical Amazon, and the high Andes, the country is particularly vulnerable to climate change. The Peruvian government estimates that the country's glaciers have shrunk by more than 20% in

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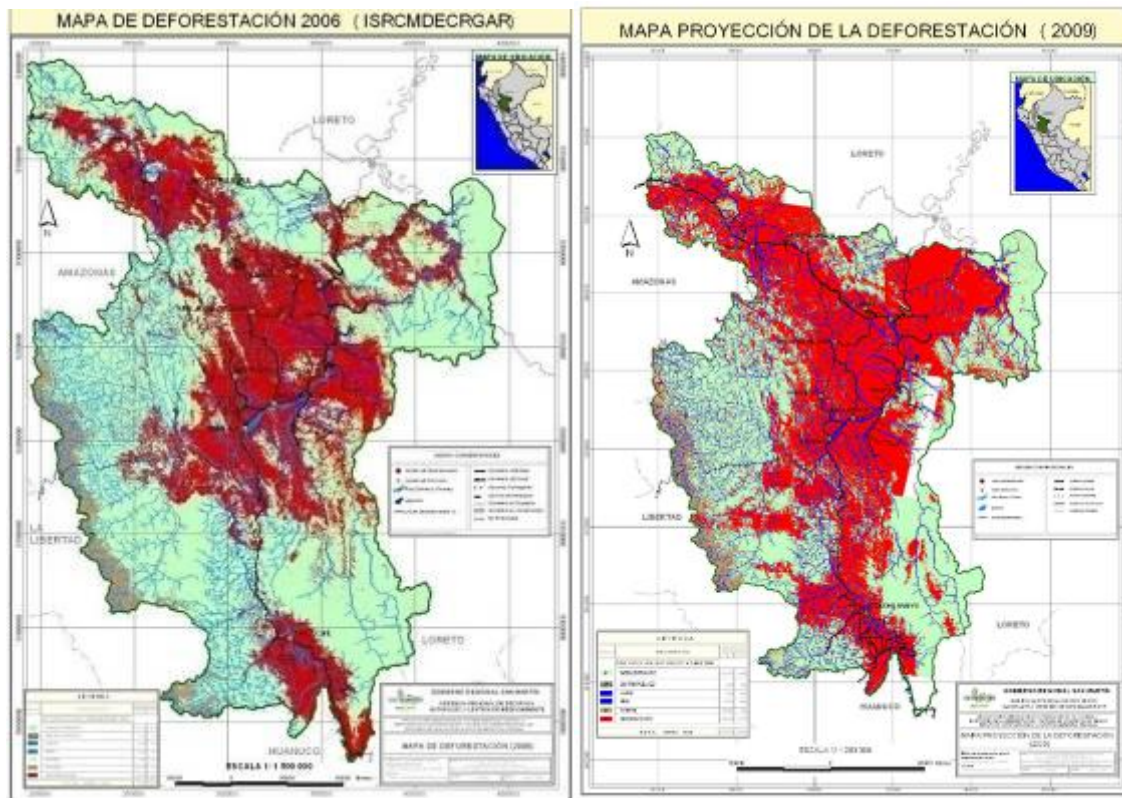
<sup>1</sup> F. REATEGUI REATEGUI, P. MARTINEZ DAVILA. Gobierno Regional de la Region San Martin. “Zonificación Ecológica Económica de la Region San Martin.” Informe Temático Forestal. Dec 2004.

the past 30 years and expects them all to disappear by 2040. The loss of glaciers, which are the source for as much as 50 percent of the water in the upper Amazon, could have a significant impact on agriculture and urban water supplies as well as the Amazon rainforest. Indigenous communities are believed to be especially at risk from climate shifts. (Source: Rhett A. Butler, mongabay.com, August 03, 2009).

**Figure 5 : Forest Damage in Peru, 1999-2005**



**FIGURE 6: Deforestation map in San Martín Region (2006; and 2006 projection for 2009)**



Source: Regional Government of San Martín  
(Red area is deforested area)

In absence of the project, it is likely that deforestation in the province will continue, and **a conservative annual rate of deforestation of 0.50% can be used for baseline projections** (This rate will be refined upon completion of the baseline scenario of the Mesa REDD San Martin in 2012)

### **Drivers and agents of deforestation**

Project assessments, interviews and participatory rural appraisals indicate that at least nine drivers of deforestation and six agents of deforestation have been and continue to be active in the San Martin Province, presented in the below table, displaying the agents' implication in the deforestation drivers (Table 8: drivers and agents of deforestation).

Note that the identified active drivers of deforestation are not, by any means, an exhaustive or complete representation of the deforestation threat in Peru or even within the San Martin Province. These drivers represent the most prevalent drivers that have been active in the past and will continue to be active in the future.

***TABLE 2: Drivers and agents of deforestation***

Drivers - deforestation and degradation practices / Land-Use	Agents of deforestation						Total
	Local communities	Migrants	Mine/Oil dealers	Illegal dealers	Loggers	Government	
1. Conversion to croplands, pastures and housing	17%	28%		25%			70%
2. Conversion to settlements / infrastructure (Roads, water and electricity)	5%	7%				3%	15%
3. Selective logging of high-value species for commercial sales	1%	1%			8%		10%
4. Timber harvesting for local use (housing and infrastructures)	0,5%	0,5%					1%
5. Fuelwood gathering	0,5%	0,5%					1%
6. Uncontrolled fires	1%	1%					2%
7. Intentional fires (Paths opening and fires for hunting)	0,5%	0,5%					1%
8. Mining and Hydrocarbon activities encroachment			0%			0%	0%
9. Economic land concession (timber and agriculture)						0%	0%
<b>Total</b>	<b>25,5%</b>	<b>38,5%</b>	<b>0,0%</b>	<b>25,0%</b>	<b>8,0%</b>	<b>3,0%</b>	<b>100%</b>

### **1. Forest clearing for conversion to croplands, pastures and housing**

**Causes:** Population density increase (demography + immigration), Good revenues from agriculture, development of cocoa industry in San Martin Region, Soil fertility, Historical use of cattle as patrimony. Improved accessibility through the opening of roads, paths is a major cause leading to migration and increased deforestation. Road construction is one of the most important underlying threat for the area sustainability, as road construction will damage the forest and open the zone to easier illegal invasions.

**Underlying Causes:** Lack of economic activities in the mountains, population pressure, lack of clear land property and titles, country infrastructure development.

### **2. Conversion to settlements / infrastructure (Roads, water, electricity, buildings)**

**Causes:** Demographic growth implies the need for new and more infrastructures (schools, roads, electricity, football fields, cocoa modules, etc.)

**Underlying causes:** Population pressure on environment, lack of clear land tenure, development of the country's infrastructures, lack of education on environmental stakes, a lack of financial means and/or alternatives

### **3. Selective logging of high-value species for commercial sales**

**Causes:** There is no economic alternative to date more profitable than timber sales of high value species.

### **4. Timber harvesting for local use (housing and infrastructures)**

**Causes:** The demographic growth due to natural population increase and immigration leads to timber harvesting by local stakeholders, conducted to accumulate building materials for construction of lodging and basic infrastructure in settlements. Considering the limited number of families in the area and their very large forests, this driver is marginal, but could increase with the years if population increases and if neighboring communities or additional migrants settle in the area.

**Underlying causes:** Population pressure and high prices of other construction materials.

### **5. Fuelwood gathering**

**Underlying causes:** Demographic pressure, and lack of efficient alternative to fuelwood for cooking.

### **6. Uncontrolled fires due to slash and burn practices**

**Causes:** due to agricultural activities performed by farmers (which are not part of the project)

### **7. Intentional fires (Paths opening and fires for hunting)**

**Causes:** Forest fires are occasionally started to flush out wild game (wild pigs, turtles, monitor lizards etc.) from heavily forested areas and concentrate the game into smaller parcels, where they are easier to catch. The burning of bunches of leaves and small branches is also practiced with the purpose of producing smoke to drive bees away from their hives to facilitate the collection of honey. Occasionally, this practice is the source of forest fire. Moreover, in the mountain communities, a local belief according to which provoking fires would lead to increased rainfalls may encourage this practice, although it is very limited.

**Underlying causes:** Game animals are typically hunted for subsistence. Increased urbanization, and demand for exotic meat may increase pressures on hunting lands and stimulate the use of hunter-induced forest fires to concentrate animal populations. It is important to consider it as a danger to the forest as it would be hard to prevent a fire to spread to the project area. Migrants may also induce this practice where they settle.

### **8. Mining and Hydrocarbon activities**

Given the current position of the government on the attribution of new oil and mining concessions in the San Martin province, this driver is considered to have a nil impact on baseline deforestation.

**Causes:** In case of oil exploitation, we can envision a driver of 33 % for deforestation and degradation potential of the area, with the complimentary development of such activities (blasts for additional seismic studies road and settlement constructions, additional migration of population, etc...). Former cases have proven heavy direct and indirect impacts on the environment after installing such activities. The very rapid expansion of oil concessions: multiplied by 6 since 2003, up to 41 % of forest area in Peru in 2009 and bound to reach 70 % of forest areas in Peru, justifies this Driver as being the main one.

**Underlying causes:** Large economical stakes for the Peruvian government, on a national and international scale. In that sector, lobbying is extremely strong, as well as direct or indirect international pressures, which could lead to a change in the government's policy.

#### **9. Economic Land Concession (timber and agriculture)**

Considering the current position of the government on the attribution of ELCs, this driver is considered to have a nil impact on baseline deforestation.

**Underlying causes:** Some government planners maintain that underutilized lands need to be developed to generate revenues for the state however critics argue that past timber and other leases have produced minimal income for the country. Large ELCs are being criticized, for a failure to follow through on their commitment to implement management plans. There is some speculation that some business interests seek ELCs simply to harvest high value luxury wood, with no intention or financial capacity to invest in the development of their land.

#### **Description of How the 'Without Project' Scenario Would Affect Communities**

Without the project it is likely that the **communities of the area will increasingly lose control over the forest**. These communities depend on the forest for a wide range of products including foods, house construction, fuel-wood, timber, medicinal plants and seeds.

Loss of access to these resources will create **economic hardships for local communities** and undermine the achievements of the Millennium Development Goals. Encroachment of these forests by private corporations and migrants will also likely generate **social conflicts** in the area. Not only will forest cover be lost and environmental services weakened (including biodiversity and hydrological functions, especially for crops), local communities will experience diminishing access to forest resources. This will lead to social and economic marginalization and possible displacement of these rural families, and potentially create conflict between concessionaires, migrants, and local populations.

An additional component of the non-project scenario is the deterioration of hydrological services essential to the lives of rural families. They depend on water for domestic supplies and their agriculture is rain fed, the forest ensures good levels of rainfalls and water stocking. The clearing of forests will adversely impact water resources, including possible change to micro-climate. Since agriculture is almost exclusively rain-fed, declining rainfall and soil moisture will likely cause declines in family farm productivity. Without revenues from carbon sales, including agricultural intensification, water resource development, or NTFP processing, activities geared to enhance community livelihood will not take place.

**Without the project, land degradation will be more extensive; there will be greater soil erosion and reduced water infiltration and aquifer recharge.**

#### **Description of How the 'Without Project' Scenario Would Affect Biodiversity**

In the absence of the project it is likely that forest habitat in the project area will be reduced by 15% in the next 40 years through land clearing, illegal logging and slash and burn practices. In addition, forest degradation will reduce the density of the understory vegetation and disrupt the natural age distribution of trees, leading to a substantial loss of habitat.

The reduction of key habitat will place pressure on already-stressed flora and fauna. Without the project, community efforts to control poaching and regulate hunting will not be implemented. High market prices and growing demands for luxury hardwoods (often originating from endangered and slowly growing tree species) in Peru have placed growing pressures on forests, with much of this valuable timber harvested illegally. Logging bans and the decline of natural forest resources in Brazil have increased the pressure on Peru's forests. Many of the species with the highest value are already listed on the IUCN threatened species list. As these trees and forests are depleted, so too are important indigenous sources of seed, reducing the potential for regeneration. In addition, hunting and poaching are common, resulting in an increasing number of endangered fauna species. Finally, the clearing of forest for commercial agriculture

is rapidly reducing the habitat for many flora and fauna species, and reducing biodiversity. The rampant deforestation will almost certainly lead to the extinction of the last feline population in Peru (pantera onca in particular).

In Peru, occurrences of extreme climatic conditions including heavy rainfall during extended periods, flooding, as well as extended droughts are increasing in frequency. Extended dry periods are also exacerbating forest fires, resulting in fires burning larger areas with more intensity compared to the past. This pattern of increasing climatic variability will likely affect the project area by decreasing forest cover and exacerbating deforestation.

In the absence of the project forest cover will be decreased, increasing ground fuels, and subsequently fire frequency and intensity. Forest fires will likely burn into any existing forests further decreasing biodiversity. As fires initiate forest clearing for agriculture, climate change will likely exacerbate land use change to agriculture, with poor results due to intensified drought, and worsened weather patterns.

## **VII. Project Goals**

### **Project Lifetime**

The project's lifetime is 80 years, including the 12 months project preparation period (2010 : Year 1) that involves stakeholder consultations, PRAs, mapping, boundary demarcation, community training and initial livelihood activities, and negotiations with brokers, and buyers.

The first 3 years of the project (i.e. Years 1-3) represent the project establishment period. The goal of this period includes:

- stabilizing project boundaries;
- controlling drivers of deforestation and degradation in the project areas;
- developing community project management institutions;
- building REDD and A/R project development and management capacity;
- regenerating degraded forest lands within the project boundaries;
- Instituting monitoring and measurement systems for carbon accounting, biodiversity, and livelihood generation.

During Years 4-80, the project will move into the maintenance period during which the management will be supported by the project communities, the Amazonia Viva Foundation and local NGOs.

The project lifetime was designed to allow sufficient time to:

- Stabilize threatened forest cover;
- Restore degraded forests;
- Build enduring community forest management institutions. These encourage livelihoods activities that support the long term conservation of the area.

### **Climate Objectives**

The project is designed to mobilize the communities in the project zone, to avoid further deforestation and degradation, as well as facilitate the natural regeneration of Martin Sagrado and neighbouring forests. This will lead to an avoided emission net impact of **28 259 000 Tons of CO<sub>2</sub> eq** (before leakage), over the first 40 years of the project. The project will develop and demonstrate a carbon finance mechanism to reduce greenhouse gas emissions, contribute to economic and social development, and conserve biodiversity over the next 40 years.

Principle project strategies include building the capacity of local communities, and of ACOPAGRO and APAHUI managers, field workers to conserve community forests, as the primary managers of REDD project forests, creating a strong coalition of stakeholders who are committed to achieving the project goals including supporting villagers to improve the quality of forests, maximizing benefits flows to local communities participating in the project, and studying and developing additional REDD projects.

Operationally, the success of the project depends on strengthening community capacity to protect local forests through legal recognition and technical and financial support. The institutional, logistical, and political support of the Amazonia Viva Foundation and local government may as well enhance the effectiveness of community efforts to protect forests. Community managed assisted natural regeneration, enrichment planting activities and agro-forestry following agro-ecological practices are planned to enhance carbon sequestration in degraded forests and reduce soil erosion, while improving forest livelihoods and local employment opportunities. The emphasis on community involvement will maximize the longevity of the sequestered carbon, and minimize the risk of losing the carbon assets. In addition, by increasing biodiversity in these forests, especially the number of birds, reptiles, and amphibians, the risks of farm pests will be reduced. Through supporting and documenting the role communities play in forest carbon conservation and sustainable management, Amazonia Viva and Pur Projet seek to provide “proof of concept” to the Government of Peru and to the donor community that will encourage the replication of this strategy as a national program.



The long-term goals of this project are to sequester carbon, contribute to the devolution of forest management rights to communities, and demonstrate the viability of utilizing carbon offset credits to finance the national forest management program.

### **Community Objectives**

The project seeks to ensure the security of families in the project community and to assist them by increasing employment opportunities and livelihood on a sustainable basis from their natural resources. The project will strengthen community leadership, organizational and financial capabilities, improve relationships with local government, help resolve resource conflicts, and educate farmers and neighbouring communities on forest management and biodiversity. Community bookkeeping and project management skills will be developed as a major goal of the project, while project funds will be used to build capital reserves.

In addition, new micro-finance groups will be created to help manage non-timber forest product enterprises. Training, technical support, and funding for forest-based livelihood activities (such as the sustainable extraction of non-timber forest products) and the extension and adoption of more productive and sustainable agricultural practices will also be provided by the project (namely agro-forestry). Community eco-tourism activities will be encouraged too and economic development via micro-credit activities.

### **Biodiversity Objectives**

This project will contribute to the protection and conservation of Peru endangered flora and fauna in tropical rainforests by supporting the engagement of rural communities as resident managers. Forest regeneration will be facilitated with enrichment planting of endangered species to increase the quantity and quality of available habitat. Project staff will facilitate community dialogues and provide technical guidance regarding effective practices for conserving flora and fauna. Project communities will also

conduct regular monitoring of biodiversity with support from the project staff. High Conservation Value areas mentioned before will not be negatively affected.

Though the project area consists only of the three concessions Martin Sagrado, El Breo, and Monte Cristo, the surrounding area and neighbouring communities will be positively affected by project implementation.

## VIII. Project activities

### Description of Each Project Activity

The project aims to prevent the deforestation through the implementation of the following categories of activities:

**1. Legal:** Formalization of project area will be conducted through the **attribution, registration, and maintenance of concessions** for conservation at regional government level, as well as registration at higher international level. In combination, **financing of legal actions** will help to fight illegal intrusions, encroachment and logging in the area. The project will also help developing **forest management plans** in a collaborative fashion. The project will support the communities in developing land and water resource development plans in a participatory and democratic manner and by making large investments in the work of the environmental protection infrastructure and staff and the land titling agencies.

Formalizing and reinforcing legal land-tenure of the area directly affects migrant encroachment and the concession-type deforestation drivers. **It is clear from previous analysis that community respect and acceptance of legal status and laws is absolutely essential in the success of the project.**

**2. Control & Surveillance: Construction and maintenance** of control points, demarcation of area **boundaries**, improvement of **walkways**, and **patrolling/forest guarding** are essential elements to effectively prevent uncontrolled deforestation. Also, increasing legitimacy of patrol groups and strengthening relationships with the local Forestry Administration will help creating a unified group of stakeholders that can prevent further forest encroachment, illegal logging, uncontrolled migration and other threats to forest integrity.

**3. Sensibilization and Communication:** Sensibilization of communities on conservation stakes will be done through local promoters, communication material, and implication of communities in the activities. Visits of the area will be conducted to **raise awareness on forest's richness and environmental services**. Education centres will be constructed to train and transmit scientific information to local communities in conservation efforts as well as to provide opportunities for the training of professionals specializing in biology, forest management, environmental education, etc.

**4. Non timber forest valuation:** community organization and training will be combined to improve the local capacity in forest management and forest product extraction such as **seeds** or **medicinal plants**. Research and development of new technologies will allow innovations in the quality and types of products local communities produce. Furthermore, market development activities such as **eco-tourism** will be undertaken to improve market access. This combination should also enhance the production of forest products from the local communities involved in the project.

**5. Scientific and Inventory:** Inventories of **biodiversity** and **carbon stocks** will be conducted to improve knowledge on high conservation values species, on environmental services rendered by the forest in the whole region. Inventories will also contribute to monitoring of deforestation and conservation impacts on

species conservation. Alongside, other scientific studies will investigate onsite the relationships between forest and water, food resources and food sovereignty, living conditions, wellbeing.

**6. Renewable Energy:** Even minor contributor, the development of renewable energy and equipment to **lower fuelwood** is a key component to make people aware of the **need to develop alternative sources** of energy.

**7. Reforestation:** Development in the buffer zone of the project area, where community lives, of agroforestry programs to plant native timber trees in the farmers parcels. This reforestation activity aims at **lowering the pressure of agriculture** on surrounding forest (yield increase), provide alternative source of fuelwood and timber to the communities, as well as raising communities awareness on forests. The project will build upon Pur Projet's experience in reforestation programs in the region. The project will also conduct Assisted Natural Regeneration within the project area to **re-enrich degraded areas** with native species.

**8. Expansion, training and empowerment of communities:** Empowerment of the communities on conservation, sustainable agriculture, resources management, and coordination with other neighbouring communities is very important **to secure the sustainability of the project** and limit leakage and risks from outside of the project area. It will also help promote the project in the whole region of San Martin.

**TABLE 3 : Summary of Project Activities Categories and their effectiveness on each driver**

	Contribution DF (d)	Effectiveness (a,d) :								
		Relative reduction in the impact of driver due to activities (%)								
Drivers of deforestation / Activities	Relative importance of driver to total deforestation (%)	Legal	Control & Surveillance	Sensibilization & communication	Non Timber forest valuation	Scientific & Inventory	Renewable Energy	Reforestation in agroforestry models	Coordination, Expansion & Transmission	Total
1. Conversion to croplands, pastures and housing	70%	10%	20%	15%	15%	5%		10%		75%
2. Conversion to settlements / infrastructure (Roads, water and electricity)	15%	15%	25%	20%		5%	5%		15%	85%
3. Selective logging of high-value species for commercial sales	10%		30%	20%	15%	5%		5%		75%
4. Timber harvesting for local use (housing and infrastructures)	1%			50%			10%	10%	20%	90%
5. Fuelwood gathering	1%			20%			30%	10%	10%	70%
6. Uncontrolled fires	2%		30%	40%					20%	90%
7. Intentional fires (Paths opening and fires for hunting)	1%		30%	15%	30%	5%			20%	100%
8. Mining and Hydrocarbon activities encroachment	0%	40%			40%				20%	100%
9. Economic land concession (timber and agriculture)	0%	50%			50%					100%
Effectiveness of activity on total deforestation		9,3%	21,7%	17,2%	12,3%	4,8%	1,2%	7,7%	3,2%	77,2%

To optimize the efficiency of the project activities, these activities are incrementally implemented, with reinforcement of land-tenure status being the first project activity. Because of this incremental implementation, the total benefits accrued from the project of the project activities will increase gradually over time. This is explicitly taken into account into the carbon calculations.

**Figure 7 : Overview of project activities and estimated budget**

		2010-2015	2015-2050
Activity category	Activity	Budget (€)	Budget (€)
TOTAL		1 843 951	26 706 486
1 - Legal	Elaboration of maps Martin Sagrado	1 081	-
	Registration of Martin Sagrado concession	892	-
	Demarcation and registration of Monte Cristo concession	10 811	-
	Delimitation and elaboration of maps concessions Pucalpillo & Santa Rosa	2 703	-
	Registration of Pucalpillo and Santa Rosa Concession	5 405	-
	Elaboration and revision of Management plans ("Plan de manejo") to maintain concession rights	54 054	189 189
	Legal assistance (lawyers) to get court decision on migrants invasion in conservation area	-	81 081
	Activation and Monitoring of unique registers of associations	6 757	108 108
2 - Control & Surveillance	Construction and maintenance of 6 control checkpoints at entry points of the project area	27 027	324 324
	Land demarcation and landmarks construction, maintenance, and replacement	5 405	40 541
	Sub-Landmarks construction, maintenance, and replacement	4 865	216 216
	Forest guarding. 12 forest guards	116 757	2 043 243
	Boat and equipments for patrolling (Purchase, maintenance, replacement)	16 216	162 162
3 - Sensibilization & Communication	Painting of 15 boats to the colors of conservation and Fundacion San Martin Verde	5 541	54 054
	T-shirts Fundacion San Martin Verde for all communities involved and surrounding communities ( 2000 T-shirts)	11 843	94 595
	Installation , improvement, extension, and maintenance of Community radios	541	10 811
	Radio host and programmation for Radios	1 622	56 757
	Local promotional and education material	8 108	121 622
	Educational field visits for schools in conservation area	13 514	121 622
	Local external communication especially via local transport companies and agencies.	-	135 135
	Compensations for local promoters and trainers of the program HEM	40 541	324 324
4 - Non timber forest valuation	Design, creation, and management of Botanical Garden to value flora biodiversity present in the forest and sell plants extracts locally	10 811	216 216
	Medicinal plants: seeds extraction and tre nursery activities to sell	4 054	108 108
	Seeds extraction activity and elaboration of tree nurseries	6 757	108 108
	Construction, expansion, and maintenance of base centers in neighbouring communities (Santa Rosa, Huicungo, La Morada, etc.) to facilitate access to the concession and develop activities : eco-tourism, scientific and press trips, showroom of the concession activities	40 541	540 541
	Ecoturism activities: tours to discover landscape, fauna and flora inside the concessions	16 216	121 622
	Equipment and developpement of conservation area for ecoturism : paths, miradors, etc.	40 541	540 541

5 - Scientific & Inventory	Elaboration of the technical study (Expediente tecnico) for all concessions area	32 432	-
	Inventory management : monitoring of biodiversity	10 811	216 216
	Specific scientific studies: link with water, food security and sovereignty, cocoa yields, etc.	10 811	162 162
	Reporting to regional, national and international authorities and institutions, research publications.	-	27 027
6 - Renewable Energy	Implementation of distribution channel for solar panels and solar lamps and coordination	2 703	40 541
	Implementation of improved cookstoves in communities	2 703	135 135
7 - Reforestation in agroforestry models	Plantation of timber trees in agroforestry systems in surrounding communities	324 324	1 621 622
8 - Local Project management and coordination. Expansion, training, and empowerment of communities	Supervision of conservation activities, management of San Martin Verde Foundation, and coordination with government.	28 541	397 297
	Coordination of all legal and administrative processes. Expansion and empowerment of communities.	21 405	249 730
	Training and assistance of farmers and community members in conservation activities	48 000	749 189
	Management of conservation activities by forestry engineers	14 270	499 459
	Construction, Expansion and maintenance of offices buildings in concessionaires communities.	54 054	162 162
	Empowerment of Asociacions members of San Martin Verde and contractualization of procedures	486	18 919
9 - Coordination with local authorities	Implication and participation in Mesa REDD San Martin	405	1 351
	Meeting and coordination with regional government (ARA) for formalization of concessions	676	4 054
	Field visit of Regional Government's representants	1 351	6 757
10 - Project certification	External forestry expertise and technical assistance in monitoring (ONFI)	5 000	200 000
	Certification costs CCBA	25 000	250 000
	Certification costs VCS	30 000	300 000
11 - External partners and network for project strengthening, distribution and promotion	Field visit of partners, prospective clients; base camp installation in the concession for welcoming the partners	4 054	27 027
	Project presentation and promotion (European and US network), PPA (Pure Planet Alliance), and Consortium. Lobbying, Media, advertising, partnership and conferences.	13 514	189 189
	International promotion and recognition (UNEP, IUCN, UNESCO, Bio Fund)	13 514	405 405
Other unplanned activities	Other unplanned activities to fight new deforestation threats		5 405 405
Provisions for local risks (activities)	Provisions for miscellaneous risks (equipment breakdowns, landmarks destructions, fires, flooding, etc.). This provision is allocated to future project expenses of the first crediting period and released in case of damages on project activities or materials or unexpected exceptional expenses.	60 811	1 081 081
Provisions for future project local expenses (activities)	Project long term future expenses (crediting periods 2016-2050). Provision made to cover future verifications at each crediting period end, and minimum monitoring requirements for the project follow-up until project end.	60 811	1 081 081
Provisions for taxes	Provision for payment of government taxes on sales of environment services	162 162	1 621 622
Insurance	Insurance policy	13 514	135 135
Project Management Pur Projet	Project implementation and management Pur Projet on site. Preparation for validation, monitoring, technical assistance	450 000	6 000 000

## **IX. Consultation of local populations**

### **On-going Stakeholder Consultation during Project Implementation**

The project ensures regular community feedback through discussions between the AMAZONIA VIVA Foundation and the implementing communities, and Pur Projet. The Amazonia Viva Foundation will meet quarterly to review experience and best practices to identify innovations for extension. These practices will receive special attention for inclusion in the coming year's work plan. AMAZONIA VIVA Foundation will also organize quarterly broader assemblies where all community members will be able to participate to give their feedback on the project. Given the lack of accessibility of some communities, AMAZONIA VIVA Foundation staff will also conduct regular field visits to all communities involved to collect their feedback. The AMAZONIA VIVA Foundation will play an active role in distributing key project documents to affected community members and key stakeholders as well as publicizing community events/meetings.

In addition, monitoring of socio-economic and environmental impacts will be conducted on a continuous basis, through the use of surveys. A sample of farmers in the participating communities will be surveyed every 2 years to monitor the impact of conservation activities and collect their feedback on the project.

Periodic focus group discussions will be used to document how key activities are progressing and identify problems and issues. Case studies will be written by project staff and consultants to ensure lessons are captured.

Quarterly meetings of the provincial working group and the AMAZONIA VIVA Foundation will be used to inform local government representatives regarding project achievements and experiences.

Project documents and biodiversity and community monitoring data will be collected and processed by Pur Projet, and put at disposal of the communities and the cooperatives.



Annual work plans and budgets are developed each year based on feedback from the previous year's operations. The goal of this annual review by the AMAZONIA VIVA Foundation is to enhance the impact of project resources on carbon storage and sequestration, as well as livelihood and biodiversity goals. While an overall budget and strategic plan is provided in the Project Development Document (PDD) and related documents, the AMAZONIA VIVA Foundation together with project implementing organizations and community participants will have the flexibility to modify their annual strategies and budgets based on experiences from the previous years and emerging development priorities.

### **Public Comment Period**

Parallel to the publishing of the English-version of the PDD on CCBA website, this present simplified english-version of the document will also be posted on ACOPAGRO and Pur Projet's websites for a 30-day public comment period.

A printed version of the document will be distributed in the participating communities for free consultation.

In addition, Amazonia Viva will also organize a series of community sessions to present the document. All Spanish comments will be centralized by one person within the AMAZONIA VIVA Foundation, and translated into English, and sent to Pur Projet before the end of the public comment period. Pur Projet will then submit the comments from local communities and other stakeholders to the annex of this PDD.

## **X. Project proponents**

### **Specific roles of each of the project partners**

**Members of the Amazonia Viva Foundation**, as the main local implementing organizations and partners have extensive experience in designing and implementing community development projects in rural areas, as well as practical and technical field knowledge. The foundation is managed by Roldan Rojas Paredes, who ran a few times the municipals and was a counselor of Acopagro in cooperativism. He has a large experience and knowledge of the region, its communities and the various stakeholders. The Amazonia Viva Foundation management team also includes an agronomist engineer with previous extensive experience in community reforestation project, an economist with strong experience of relationship with local authorities, legal issues, and community management. Acopagro cooperative also has experienced agronomists, forestry and community specialist, as well as many field technicians who have a strong knowledge of the communities.

The Amazonia Viva Foundation was created at Pur Projet's initiative, in order to coordinate and support reforestation and conservation activities in the San Martin region. The foundation gathers ACOPAGRO and ORO VERDE cooperatives, and 4 local community associations: APAHUI, Asociacion de Proteccion de Bosques Comunales Dos de Mayo, APAP (Asociación de Productores Agroforestales Pucallillo), APAPMASAR (Asociación de Productores Agropecuarios y Protectores del Medio Ambiente Santa Rosa). The foundation members have been implicated in Project design and implementation since the beginning. The constitution and formalization of the foundation came up in 2011 after the beginning of the first project activities, in order to facilitate and optimize local management of the project.

Within the scope of REDD+ project, the foundation assists Pur Projet with coordination of project actions, including implementation, management and monitoring of the project and participates in project design. They facilitate the communication between various stakeholders, ensuring accountability, transparency in use of revenues, and good governance. Support with training of local communities, stakeholder consultation and integration. Designing and conducting social appraisals, and support with conducting forest inventories. Support forest protection and enforcement, capacity building for local communities, stakeholder consultation and conducting forest inventories. Daily administration of all project activities.

In addition, the project will be supported by the **local Forestry Administration** staff that will provide technical and custodial support to local Amazonia Viva Foundation.

**Pur Projet** is the project developer. Pur Projet has been present in San Martin region and in the project zone since 2008, starting with the development of community reforestation programs. Pur Projet which was at the initiative and designed the REDD+ project in 2010, is responsible for the general coordination of the project, and in charge of the commercialization of the carbon credits issued by the project.

As a private organization based in Paris, France, and specialized in the development and marketing of community forest carbon credits, Pur Projet has supported the development of all carbon market preparatory work and will ensure that buyer-seller negotiations are conducted in an efficient manner and that carbon measurement and submission to registries are successfully completed. Pur Projet completed the project design document and facilitates negotiations between the communities and the foundation to ensure a smooth transition as field activities are initiated.

Pur Projet has a portfolio of 8 other afforestation/ reforestation projects in tropical countries (Indonesia, Ghana, Thailand (4), Honduras, Peru) developing agroforestry and afforestation with small-scale farmers (cocoa, rice, coffee), 3 REDD+ projects (Peru, Brazil) with native communities, and 5 additional plantation projects (Philippines, Morocco, South Africa, Brazil). Pur Projet is at the initiative of the creation of Amazonia Viva consortium.

Pur Projet's founders have 12 years of experience (Tristan Lecomte, Alexis Kryceve, Mathieu Senard, Edouard Rollet, Ilse Keijzer) in grass roots development projects through their experience at Alter Eco (they co-founded Alter Eco in 1998, leading Fair Trade company in France). They developed long term partnerships and development projects (combining Fair Trade and Organic) with over 60 cooperatives of small-scale farmers in more than 40 countries.

**Reforesta Peru** is a Peruvian tree nursery company and a project partner with heavy expertise in forestry, seedlings sourcing for reforestation activities and combination of forestry with agriculture (forestry and agronomists experienced engineers). Reforesta Peru has been involved in reforestation projects with the same communities as Acopagro for the last 4 years, and has extensive knowledge on the local forest characteristics, tree species, combination with agricultural systems, markets for timber, etc. They also provide trainings on forestry aspects and forests management.

**ONF International (ONFI)** is an international, environmental consulting and expertise bureau specializing in sustainable ecosystem management (notably forest related) and the fight against the greenhouse effect. ONFI is also a technical partner assisting in carbon calculations, development of Project Design Documents, creation of management system to gather monitoring data, design of forest stocks inventory plan.

**Other participating communities (in project area and in project zone):** All participating communities were included in the project design and the decision process and the choice of activities. The communities are responsible for the implementation and monitoring of project activities in the field.



## XI. Climate impacts

### Expected Changes Due to Project Activities

#### **Net Change in Carbon Stocks due to a Decrease in Deforestation Rate :**

The carbon calculations are based on the VCS VM0006 methodology for REDD. Every project activity is designed to reduce one or more deforestation drivers to some extent. The calculation is based on the effectiveness of each project activity to reduce every driver of deforestation and the relative contribution of each driver to the total deforestation. The net change in deforestation rates under the project scenario are calculated by multiplying the relative reduction in deforestation due to project activities with the absolute deforestation rates under the baseline scenario.

The full impact of the REDD project is reached after 5 years, after which it is estimated that the deforestation rate is about 12 % of the deforestation rate under baseline conditions.

The project has a positive net climate impact of about 28,3 million TCO<sub>2</sub>e that are generated during its first 40 years duration before considering Leakage and Buffer.

For more detailed information please consult the PDD.



***Table 5 : Relative Reduction in the Impact of Each Deforestation Driver due to the Different Project Activities (Effectiveness of activity a on driver d)***

Drivers of deforestation / Activities	Contribution DF (d)	Effectiveness (a,d) : Relative reduction in the impact of driver due to activities (%)								Total
		Legal	Control & Surveillance	Sensibilization & communication	Non Timber forest valuation	Scientific & Inventory	Renewable Energy	Reforestation in agroforestry models	Coordination, Expansion & Transmission	
1. Conversion to croplands, pastures and housing	70%	15%	20%	20%	20%	5%		10%		90%
2. Conversion to settlements / infrastructure (Roads, water and	15%	15%	25%	20%		5%	5%		15%	85%
3. Selective logging of high-value species for commercial sales	10%		30%	20%	15%	5%		5%		75%
4. Timber harvesting for local use (housing and infrastructures)	1%			50%			10%	10%	20%	90%
5. Fuelwood gathering	1%			20%			30%	10%	10%	70%
6. Uncontrolled fires	2%		30%	40%					20%	90%
7. Intentional fires (Paths opening and fires for hunting)	1%		30%	15%	30%	5%			20%	100%
8. Mining and Hydrocarbon activities encroachment	0%	40%			40%				20%	100%
9. Economic land concession (timber and agriculture)	0%	50%			50%					100%
<b>Effectiveness of activity on total deforestation</b>		<b>12,8%</b>	<b>21,7%</b>	<b>20,7%</b>	<b>15,8%</b>	<b>4,8%</b>	<b>1,2%</b>	<b>7,7%</b>	<b>3,2%</b>	<b>87,7%</b>

### **Demonstration that Climate Change Impact Community Well-being and Biodiversity**

Many farmers within the project areas depend on rain-fed crops, and extended droughts present the biggest problems to these communities. Farmers are already affected by drought in the neighbouring communities and continuing climate change will exacerbate these conditions.

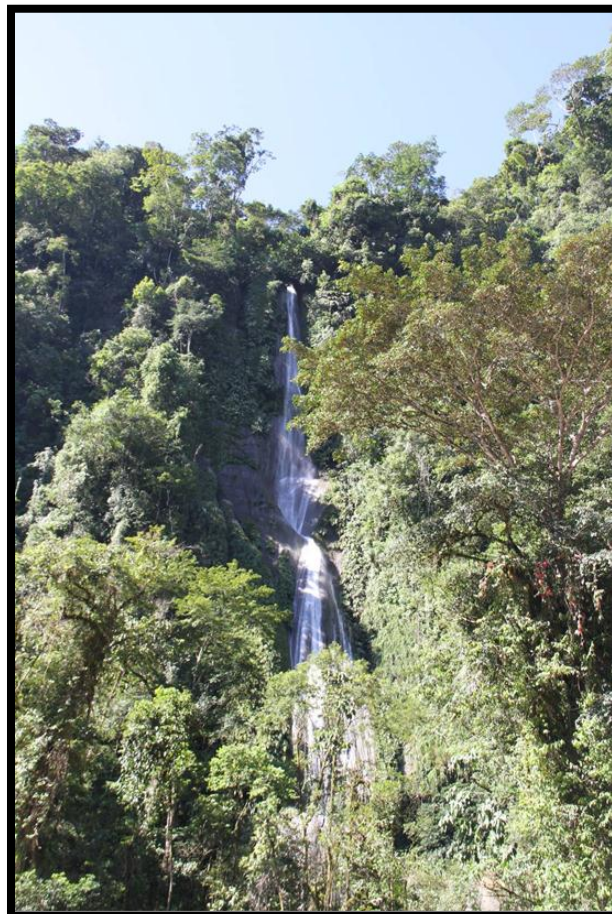
Farmers in the project zone are mainly cocoa producers. The comparison of cocoa yields between communities located upstream on the banks of Alto Huayabamba, where area is still quite forested, and communities located in the deforested plain around Juan Jui, shows that cocoa yields are 5 to 7 times higher in the forested areas (1.5 to 2 tons per ha vs. 300kg per ha), with the same crop and same

cultivation techniques. The farmers in the deforested area around Juan Jui suffer from lack of shade and water, especially in the dry season. They are also more threatened by propagation of fires.

Forest fire frequency and intensity is expected to increase with droughts, and will also greatly affect communities. Increased fire will destroy forest, and associated products from food crops to timber. Increased fire intensity may also destroy homes and settlements as many communities are in close proximity to forests.

The project team is developing strategies to respond to more severe weather conditions that may emerge in the project area as a result of climate change. The project will focus on retaining maximal forest cover to minimize micro-climatic change and ensure slowed water run-off and optimal ground water recharge as ways to mitigate drought. The project will provide small grants to participating communities for develop agro-forestry and agro-ecological practices to ensure crop protection during climate change educed droughts. The potential devastating impact of forest fires will be minimized by educating local people (and hunters) on the importance of preventing forest fires. The project will also support the development and improvement of the walkways one of the most necessary needs expressed urgently by the local community. Assisted Natural Regeneration of degraded forest patches will ensure that forest restoration is based on native species that can adapt to local soil, water, and climatic conditions.

Reforestation activities with project communities will also be developed to guide the restoration of degraded forests each year. The project will result in the enrichment planting of indigenous trees in forest gaps and deforested areas, which will help reduce erosion and slow water run-off. The Community Forestry Management Committee will also be trained and supported to implement better firefighting techniques including the establishment and management of village fire brigades, and the establishment of stronger fire prevention regulations.



## **XII. Community impacts**

### **Positive Community Impacts**

Pur Projet and Amazonia Viva have identified three major project goals that will benefit forest dependent communities:

- improve the quality of the forests;
- maximize benefit flows to the local communities participating to the project
- develop new REDD project sites that will benefit other forest-dependent communities.



### **The project will directly benefit communities by:**

- engaging with local communities in the design and development of the project;
- providing training and support to local village organizations to build forest management capacity and develop agro-forestry and agro-ecological practices;
- Promoting to the Peruvian Government recognition of local communities forest management rights;
- generating carbon revenues that the community will use for forest restoration employment, improving farming systems, establishing micro-finance organizations, and capitalizing small livelihood enterprises;
- maintaining the access and use rights of local communities to continue harvesting NTFPs for customary use from the project area forests.

Based on project budget projections, direct support for community forest protection and restoration will create job opportunities for local communities, and support local police officers and Forest Administration, while small grants for NTFP development and agricultural organic intensification will also create employment.

### **The project strategy includes the following activities:**

- **Improve the Quality of the Forest**

A substantial portion of project carbon revenues will be utilized to improve the quality of the forests, largely through supporting community protection and restoration efforts. Conserving and improving forests will enhance environmental services including microclimate stability, NTFP productivity and other benefits of importance to local communities. Leaders and members of communities will receive training in forest management, agro-forestry as well as in resource planning, forest restoration, eco-tourism, microfinance, and small enterprises.

In years 3 through 80, aside from support for forest protection, this REDD+ project will secure carbon credits through forest management activities allowable under REDD+.

Forest management will focus on assisted natural regeneration and enrichment planting of degraded forest land, agro-forestry and agro-ecological practices. The project target will target 10,000 hectares of degraded forests (within the project area and in the leakage area and neighbouring communities) for regeneration during the first 20 years. Funds for the ANR activities will be directed to project communities primarily for labor and materials. According to the project planners' estimations, the project could provide approximately 10 person days of employment per hectare, meaning 5 000 workman days each year (500 ha each year during the first 20 years). Community members would be employed mainly during the

agricultural off-season, meaning approximately an average 40 people employed for a period of 6 months every year.

**On the whole, the project will provide full time jobs opportunities to the communities**, for a total of 1 500 household, meaning social impact is very important.

This will strengthen the project since all families will benefit directly from project activities.

- **Maximize Benefits to Local Communities**

The project will provide small grants to the communities associations to undertake:

- NTFP development activities
- Project promotion activities
- NRA and social development activities
- Agroforestry development activities



The project implementation team and partners will continue to provide training in bookkeeping and assist project participants to strengthen community institutions and accounts. Small grants are likely to include capital investment in NTFP enterprises including seed collection, medicinal plants planting and processing as well as NRA and social development projects including English speaking classes, cultural classes on traditional crafts and dances, school support and health, according to community priorities.

To reduce leakage and increase food security in the project area, support will also be provided to innovative local farmers who agree to conduct farming system trials. The project will facilitate access to technical extension services regarding promising methods for organic intensifying farming systems in a sustainable manner through the use of better water, green fertilizer, seed, and cultivation techniques. This will be linked to an ACOPAGRO program to improve agricultural and agro-forestry resources, with a focus on small grants and agricultural trials.

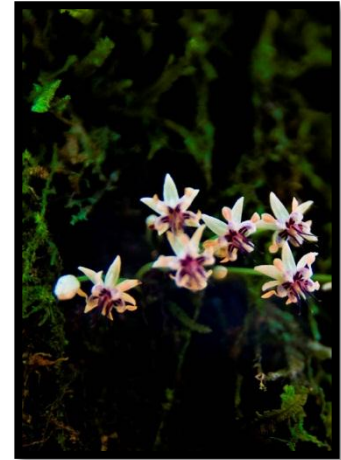
The project will train community groups in project communities in managing forest protection, reforestation operations, enrichment planting, and project management. This will include project planning, budgeting, bookkeeping, reporting, and technical techniques. The project seeks to build the community capacity not only to staff, but to manage project activities. Community members have been involved in project preparation work since the beginning. Any activities developed with the community groups will naturally involve the hiring of project community members. Technical support will be provided largely by ACOPAGRO staff, who are residents within the province.

The Project Design Team has relied substantially on the knowledge that the ACOPAGRO staff works with some of the poorest communities. This has given the Project Design Team a better understanding of local culture and adapting project strategies to blend well with local values and beliefs. Those whose livelihood depends on the forest will have the best local knowledge of common forest practices, local ecology and traditional customs.

The project will support such traditions by protecting sacred groves and areas with high cultural values, and integrating them with biodiversity conservation strategies. The locations of these areas will depend on local knowledge and create employment for the poorest communities who depend on forest resources. Local cultural traditions include the protection of burial forests, spring forests, and spirit forests which will be integrated into the conservation and management plan for the area. Important rituals and beliefs, as well as local knowledge will help mold the project and link activities wherever possible. Because such importance has been given to poorest community input, these community members' livelihoods are expected to benefit greatly.

### **XIII. Biodiversity impacts**

The main goal of the project is to ensure the conservation of key habitat for threatened flora and fauna over 313 000 hectares and avoid the deforestation and degradation of 53 000 hectares, constituted by rich and threatened flora and fauna ecosystems. The project seeks to conserve and regenerate forest ecosystems through improved protection from illegal logging, fire, and through assisted natural regeneration activities and agro-forestry practices. This strategy would restore unique habitat for amphibians, reptiles, mammals, and birds, while restoring high value and endangered tree. The project will also create greater awareness among local communities regarding the value of biodiversity, as well as build monitoring, patrolling, and habitat restoration skills, which will result in better controls over hunting, poaching, and damage to critical habitat. Mobilizing the communities committees to engage in biodiversity conservation will also result in the community establishing rules and sanctions prohibiting hunting and regulating non-timber forest products collection to sustainable levels.



Under the with-project scenario forest cover will increase and forest ecosystems will be enhanced. Native species to the project area are expected to flourish with the project. Overall the project will have a net positive benefit to biodiversity in the project area.

#### **Project activities are likely to enhance water and soil resources**

The appropriate conservation measures within the Martin Sagrado area and its buffer areas will allow the forests and rivers to remain in their natural state. This is key for maintaining the natural hydrological cycles, the quality and quantity of the water and soil conservation.

#### **Improvement of water and soil resources**

One of the consequences of the conversion of the Amazon forest into pasture will be a decline in rainfall in the Amazon and adjacent regions, considering that these rains comes from the water that is recycled through evapotranspiration (FEARNSIDE, 1997).



Undisturbed forest has very low rates of soil and sediment loss. Deforestation generally increases rates of soil erosion by increasing the amount of surface runoff. The effect is considerably less than that which would exist with the presence of leaf litter, stems and branches. Roots increase the permeability of soil, increasing the absorption and infiltration of water. Forests also contribute to terrestrial evaporation and regulate the humidity of the soil through transpiration. Leaf litter and other organic residues transform the physical properties of the soil, increasing its capacity to hold water and nutrients. Deforestation can change the quantity of water present on the surface and underlying soil layers as well as the humidity in the atmosphere. Furthermore, these processes influence the rates of erosion and availability of water for ecological processes and for the maintenance of environmental services.

The creation and implementation of the Martin Sagrado project will protect not only the biodiversity of forests, but also the quality of life of the local inhabitants, and the climate. It will conserve the quality of soil and water, and the equilibrium of key processes like local hydrological cycles.

Through project implementation many endangered and vulnerable species will potentially be protected and populations enhanced. The project will directly help IUCN endangered indigenous tropical hardwoods by planting the species within the project area. The project will also directly affect IUCN endangered, threatened and vulnerable wildlife that use the project area or the services they provide.

