

Project Title
Aprosacao Reforestation Project: community reforestation and agroforestry with small-scale cocoa farmers in Honduras.
Gold Standard ID
Project ID: GS5012
Type of Certification
Initial Certification      Performance Certification      New Area Certification      Annual Reporting

For each item listed below, please provide a general description in the corresponding box. In total, this document shall not exceed 5 pages. Be aware that carbon market specific terms may not be appropriate for the readers of this summary. The formatting requirements provided in chapter 7.4 must be followed.

## 1. Key Project Information

### (a) Project activities

The Aprosacao Reforestation Project is a community project implemented in small-scale farms in Olancho region, Honduras. It aims at bringing multiple social and environmental benefits by restoring forest cover in pastures and degraded areas. The project area is close to the poor buffer zone of the biodiversity hotspot: the Patuca National Park. The farmers will plant timber trees on their own land, following various models (agroforestry with cocoa, pure stand, sylvopasture), and will benefit from trees' sustainable products (timber and others NTP when possible) and ecosystems services (as soil enrichment, water regulation, limitation of erosion, beneficial insects, humidity, etc.). The Aprosacao cooperative project team will deliver seedlings free of charge, assist farmers with trainings, monitoring, maintenance, timber value chain development, market access, plantation registration and access to land ownership.

### (b) Organisations that are involved in the project (project participants)

Pur Development Pte. Ltd. (336 Smith Street, #07-302, New Bridge Center, Singapore 050336) is the project developer and the project owner, hereinafter referred to as "Pur Project". Pur Project designed the project and is responsible for the implementation of quality control and assurance procedures (trainings, monitoring, registration, georeferencing, etc.), trainings on agroforestry and timber management, regular improvement of the procedures, development of long-term timber value chain, and in charge of Gold Standard and FSC certifications and carbon credits sales.

The Aprosacao cooperative is the core local implementer organization, putting into effect project procedures. The farmers voluntarily decide to participate in the project by planting trees on their own land and allowing monitoring and quality control procedures. Its staff is composed by an engineer specialized in agroforestry systems and technicians.

The Helvetas Foundation Honduras (FHH) is a NGO that has been working with the Aprosacao Cooperative since its foundation in 2008, with the support from "Chocolat Halba" company (chocolate manufacturer of Coop Switzerland) and Coop Sustainability Fund. The consortium is highly engaged in the development of the cocoa cooperative Aprosacao with social-environmental sustainability goals. As such, they are informed of the project evolvments and follow-up but are not operational entities for this project.

At the local level, all implementing parties have regular contacts and exchanges with local authorities (ICF, SERNA Ministry of environment), universities (Universidad Agraria Catacamas). The latter are also informed of the project follow-up on a regular basis and support the project owner for key decision-making.

## (c) Communities involved in the project

The project aims at working in priority with Aprosacao farmers, before extending to other farmers included in the same area. The number of members of the cooperative is growing every year and it is therefore impossible to include a definitive participants list. The farmers are located in various small remote communities grouped in 5 different sectors.

Sectors	N° of producers APROSACAO	N° of participants
CUYAMEL	104	38
DULCE NOMBRE DE CULMI	0	2
PONCAYA	82	48
RIO BLANCO	113	56
RIO TINTO	43	26
<b>TOTAL</b>	<b>342</b>	<b>170</b>

*Annex document 2.1 - Participating communities*

## (d) Location of the project area and the planting area

The project is located in eastern Honduras, close to the Nicaraguan border, south-eastern Honduras. It is being planned on parcels that belong to farmers affiliated to the Aprosacao cooperative, close to the city of Catacamas, main town of the municipality of Catacamas, department of Olancho, Honduras.

*Annex document 2.2.4 – Location of project area*

*Annex document 2.2.3 – Map Project Area*

Cocoa parcels, degraded land and pastures are the dominant land cover observed in the project area, together with remnant patches of native forest (primary and self-regenerated). The latter are assumed to be representative of the past natural vegetation cover in the project area, as the same flora can be found in the Patuca National Park.

The Project Area corresponds to the municipalities of La Union, Concordia, San Francisco de Becerra, San Esteban, Juticalpa, Campamento, Patuca, Catacamas, Santa Maria del Real and Dulce de Culmi of the Olancho department. The Planting Area is the sum of planted areas delimited in 2012, 2013, 2014 and 2015.

*Annex document 2.4.3 – Map of the planting area*

The information relative to these parcels are recorded in the Aprosacao plantation registry. Every parcel and lines planted with participating farmers are recorded in the Shape called “planting area”.

*Annex Document 2.4.1 – Plantation Registry 2012-2015*

*Annex document 2.4.2 – Shape Planting Area 2012-2015*

The activities of the Aprosacao Reforestation Project are implemented in private lands, therefore, no land rights and use conflicts can be observed. Furthermore, a strong communication is kept in between project staff and local communities in order to prevent activities on important cultural sites.

The Local National Parks and Corridors are locally well known and are the basis of the implementation of measures for natural capital protection. Such areas are managed by conservation NGOs and other civil society supportive groups interested by the local exceptional flora and fauna. That said, both project owner and implementer are in contact with the Patuca NGO of the Patuca National Park for the coordination of project activities in the area.

*Annex Document 2.7.2 - Shape Protected Areas*

## (e) Size of the project area and the planting area

Project area (comprising La Union, Concordia, San Francisco de Becerra, San Esteban, Juticalpa, Campamento, Patuca, Catacamas, Santa Maria del Real and Dulce de Culmi municipalities) representing 1'733'817 ha. The total Planting area for the registration is 320.67 ha.

Models	Planting Area (hectares)
Model 1: Linear	68.77
Model 2: Agroforestry	135.89
Model 3: Mixed Stand	88.73
Model 4: Silvopasture	27.29
<b>TOTAL</b>	<b>320.67</b>

## (f) Risk of change to the project area (during the crediting period)

The project area corresponds to the 10 municipalities mentioned above, that are located in the perimeter of action of APROSACAO (as defined in its statutes). The risk would be that the government of Honduras decides to change the boundaries of the municipalities of Olancho region which is not very likely.

## (g) Risk of change to the project activities (during the crediting period)

The strong presence of technical team and formal engagement of farmers reduces considerably the risks of tree loss and land cover changes. Frequent visits are made by the technical team on planted parcels, with a standard process of implementation:

- 1) A pre-registry is made through a 1<sup>st</sup> field visit before signing the "Plantation Contract" (signed in between each participating farmer and the cooperative);
- 2) A 2<sup>nd</sup> and 3<sup>rd</sup> field visits are made 3 and 6 months after the plantation respectively;
- 3) After the 1<sup>st</sup> year (3 field visits), an annual monitoring of the parcel is completed.

Also, it is important to stress out that the reforestation project is deeply integrated within the cooperative processes (general assembly, signed contracts, etc). The signed agreement mention that farmers must maintain trees, respect plantations models and harvesting plans. The cooperative leaders and other active members see the project as a great opportunity for their organisation, which creates a healthy and sustainable perspective, reducing the risks of farmers' withdraw.

Add to that, the present project also includes the plantations certification by the ICF (Honduran National Forestry Authority) that is conducted through visits and grouped meetings. Like this, such certification secures their land rights and market access, and in consequence, their future income from timber and other forestry products harvest. Logically, farmers have a strong interest in ensuring trees growth.

Finally, the project is extremely relevant and adapted to the local context, as it offers several planting models, including sylvopastural in order to inverse the extensive cattle ranching model in the area. Like this, the project won't put pressure upon remnant forest lands. Through technical assistance and trainings, the project aims to raise awareness and to help producers to improve cattle farming management.

## (h) Timeframe for the project activities

### Plantations:

July 2012: First wave (First year of plantation)

July 2013: Second wave

July 2014: Third wave

July 2015: Forth wave

Plantations will continue until 2018.

### Timber management:

## (h) Timeframe for the project activities

The development of timber management plans in compliance with the FSC standard requirements will start at the second semester of 2016.

2018-2022: Transition period where the cooperative is expected to start making profit on timber harvest. The objective is to reach the financial equilibrium in 2022.

2022-2062: Monitoring of plantations, timber management and sales, plantations and recurrent GS verifications.

### Crediting Period

The crediting period for the plantations included in the present document (2012, 2013, 2014, 2015) will be 50 years starting in 15th June 2012 (date of the first plantations as below).

	Date
First LSC	07.2011
First plantation	15. 06.2012

## (i) Number of (predicted) CO<sub>2</sub>-certificates

Total amount of predicted CO<sub>2</sub>-certificates is 64'845 tCO<sub>2</sub>e and 51'876 tCO<sub>2</sub>e with a 20% buffer.

## (j) Land-use history and current situation of the project area

The project area and surroundings were fully forested 50 years ago (with tropical broadleaf forest). Successive immigration movements from southern parts of the country were provoked by the mining activities that are taking place there. This led to heavy deforestation rates in the Olancho region as clear cutting is the only option for farmers for the recognition of their land rights. The land is then usually converted in pasture.

*Annex Document – Typical landscape of deforestation, Río Blanco, Olancho, Honduras*

In 1996, the department was classified as the one with the most livestock and pastures (Sunderlin et al. 1996). Political instability and complex economic context of the country supported the development of illegal logging value traders. The Eligible Planting Area was not forested in 2000 as proved by satellite imagery (cf. GIS MAPS GLC2000 et FAOSTAT) as well as by field visit interviews (cf. *Annex Document 2.4.1 – Plantation Registry 2012-2015*).

The cocoa plantations started in the project area in 2009 with the impulse of Chocolat Halba and FHH. The most common land uses of the targeted areas are: pasture, degraded lands, annual crops and recently planted cocoa farms.

## (k) Socio-economic history and current situation

According to local information, the region was forested 30 to 60 years before migration, and since then they continue to be deforested. Traditionally, immigrants are cattle breeders that have only started in the last years to plant cocoa with the help of FHH, Chocolats Halba and Coop.

Farmers are very poor, earning in average 700 euro/year/family mainly from livestock (milk and meat) and remittances. With initial cocoa plantations they can earn in average up to 1'200 Euros/year. With agroforestry systems increasing yields and resilience, and with timber sales, the project will help the farmers to increase, diversify, and secure their revenues over the long-term, reaching up to 3'000 Euros/year.

## (l) Forest management applied (past and future)

As previously mentioned, the Eligible Planting Area was no longer forest in 2000 as per satellite imagery and field visits data collection (cf. GIS MAPS GLC2000 et FAOSTAT and *Annex Document 2.4.1 – Plantation Registry 2012-2015*)

## (I) Forest management applied (past and future)

The project intends to increase ecosystems resilience by implementing agroforestry, as well as facilitating the incorporation of trees in productive systems. Add to that, the project's activities will include sustainable forest management in order to reach FSC certification in the near future. The objective is to get as close as possible to the remanant forest (species, density, etc...) and offer a reforestation model that match the producers' needs and at the same time to conserve the local biodiversity. The project proposes the reintroduction of a majority of native species on productive parcels (see table below). Non-native fast growing species are included in plantations as an incentive for producers. All the species are adapted to semi-humid to humid local climate and identified as non-invasive.

Caoba	Cedro	Laurel Negro	Granadillo	Carreto	Teca	Cortez Amarillo	Macuelizo	Aceituno	Barba de Jolote	Guyaba	Zapotillo
<i>Swietenia Macrophylla</i>	<i>Cedrela odorata</i>	<i>Cordia alliodora</i>	<i>Dalbergia glomerata</i>	<i>Samanea saman</i>	<i>Tectona Grandis</i>	<i>Tabebuia chrysantha</i>	<i>Tabebuia rosea</i>	<i>Simarouba glauca</i>	<i>Cojoba arborea</i>	<i>Psidium guajava</i>	<i>Manilkara zapota</i>

Tree nurseries were set up in selected communities in 2012, 2013 and 2014 (in order to reduce transport costs and emissions, as well as to create local employment). The technical team are able to coordinate all tree nurseries, adapting production in terms of volume and species for each area.

The field teams visit all parcels before plantations to assess their eligibility, applicable plantation model and species. The planting models are summarised below:

<b>MODEL 1</b> Plantations alongside the cocoa / banana fields' boundaries	<b>Linear plantations</b> on parcels' perimeters Theoretical model: trees with a 3 meters spacing. Data from field (2.82 m spacing). Average density (from field): 689 trees/ha.
<b>MODEL 2</b> Plantations intercropped with cocoa / banana trees	<b>Intercropping plantations</b> in rows inside the parcel and perimeter of the parcels Average density (from field): 236 trees/ ha (theoretical model: 14 m x 14m and 3m spacing for linear plantations)
<b>MODEL 3</b> Plantations on damaged and abandoned lands	<b>Pure forest stand plantations</b> Average density (from field): 1'137 trees/ ha (theoretical model: 3m x 3m, theoretical density 1'111 trees/ha)
<b>MODEL 4</b> Plantations in pasture lands (sylvopastoral)	<b>Plantations in intermediate density to allow pasture in parcels</b> Average density (from field): 446 trees/ha. Theoretical model: 400 trees/ ha (5m x 5m)

The soil is prepared to enhance the chances of seedlings establishment. Planting holes of 30 cm are made for each seedling after removing natural herbaceous. The emissions of CO<sub>2</sub> related to soil preparation are shown to be insignificant (as it impacts less than 10% of planting area). Farmers have to attend a training session (plantations and first stage cultivation) before receiving the number of seedlings agreed with technicians.

The plantation is completed by each farmer during the rainy season. There is no fertilisation program included in project activities so far. During the first year after plantations, regular weeding of the parcel must be done as these are identified as the main cause mortality. Again, such practices of weeding control are part of the training sessions.

In general, trees shall be pruned several years after plantation (between 4 to 8 years depending on tree species), for that, farmers are invited to another training session on pruning and thinning. Pruning is completed during the dry season (end of humid period) by farmers on their parcels using pruners or telescopic pruners. Five years old plantations should go through the thinning for opening the canopy and increasing trees' diameter (mainly in Pur Stand Models).

The carbon stocks in the planting area will be assessed applying biomass inventory protocols determined conjointly by the Aprosacao Cooperative and Pur Projet (including the purchase and distribution of the necessary material). Such inventories are to be implemented by technical team members and farmers are

## (l) Forest management applied (past and future)

invited to take part of the measurement processes (diameter at breast height, tree total height and commercial height).

The harvest of trees will start after 12 years (for fast growing species, see table in CO2 Fixation). It will be conducted following the Aprosacao Harvesting Plan (built conjointly by the cooperative and Pur Projet). The Aprosacao Harvesting Plan will be based on observations of trees' growth (biomass inventories data and studies conducted by the UNA started in 2014), Pur Projet experiences (Peru, Columbia and Guatemala) and in line with FSC-Honduras requisites (FSC certification expected to be run in 2015). The selective harvest will be completed by an independent team designated by the Aprosacao cooperative, with the cooperative's machinery.

The harvesting cycles will begin in 2024. Rotations will be over 40 years to cover full Planting Area (320.67 ha). Each year, in the designated zone, 2.5 % (8.4 ha) of the total planting area will be cut and replanted. The chronogram and mapping of the harvesting activity will be developed with the Aprosacao cooperative and the coordination team. According to the Gold Standard's definition, the forest management model is selective harvesting, since plants will be replaced once cut and there won't be clear cut, keeping a growing carbon sequestration rate until maturity.

The farmers' rights over the timber and exploitation permits will be issued by the ICF (National bureau in Tegucigalpa, Municipal office of Catacamas). The commercialisation of timber harvested will be done through the Aprosacao Cooperative following the process voted in General Assembly (in June 2014). The Aprosacao cooperative and Pur Projet will look for market opportunities, and the first shall internalize and perpetuate the sustainable timber activity internally.

## (m) Forest characteristics (including main tree species planted)

The anthropic transformed land of the project area present two main land cover: the largest is the "Agropecuário" (agricultural and pastoral activities), and the "humid to semi-humid deciduous tropical forest" that is only represented by remnant patches. The Aprosacao reforestation project aims at reintroducing trees in the Agropecuario areas and reducing such a contrast.

The species were identified during meetings with producers and Aprosacao advisory board. The objective was to gather as much as possible the endemic common species in the area. The selection was completed by crossing information in between producers and seeds suppliers accredited by the Honduran Government. The final selection is below:

Caoba	Cedro	Laurel Negro	Granadillo	Carreto	Teca	Cortez Amarillo	Macuelizo	Aceituno	Barba de Jolote	Guyaba	Zapotillo
<i>Swietenia Macrophylla</i>	<i>Cedrela odorata</i>	<i>Cordia alliodora</i>	<i>Dalbergia glomerata</i>	<i>Samanea saman</i>	<i>Tectona Grandis</i>	<i>Tabebuia chrysantha</i>	<i>Tabebuia rosea</i>	<i>Simarouba glauca</i>	<i>Cojoba arborea</i>	<i>Psidium guajava</i>	<i>Manilkara zapota</i>

## (n) Main social impacts (risks and benefits)

The project participants will benefit from additional revenues from timber sales in the medium and long term. Their revenues will increase thanks to the resultant higher crop yields from improved ecosystems services provided by agroforestry (as soil, regulation of water cycles, additional water storage, fixing of nutrients, avoidance of erosion, increase of organic matter, facilitation of pollination). Other potential revenues will be made by the development of commercial sales of seedlings from community tree nurseries. The project will help farmers to diversify their sources of income, reducing their dependency on a single source of revenue and improving their economic and environmental resilience environment (being less sensitive to risks of plagues / diseases / natural disasters).

## (n) Main social impacts (risks and benefits)

The main risk identified in the category is related to the risk of farmers switching back to the pre-existing activities. In order to prevent that, the technical team take this risk into account when determining the best reforestation model (first field visit) with producers and the benefits of such are an insurance itself.

Another risk could be farmers withdraw. To address such risk each producer signs a contract precising that he/she has to inform the cooperative if he/she wants to leave the project or to sell the reforested parcel. This will allow the cooperative to contact the new owner in order to include him/her in the project, so that the new owner signs a new contract with cooperative to be part of the reforestation project.

## (o) Main environmental impacts (risks and benefits)

The Aprosacao Reforestation Project will help regenerating original ecosystems and habitat for endemic fauna and flora. The trees will regulate the local hydrological cycles (rainfalls, runoffs rates, etc...) and biodiversity corridors. The first is particularly important in this region where farmers have experienced local climatic disorders (duration and intensity of dry and rainy seasons important variations).

The trees will also:

- Help avoid erosion of land (slopes region);
- Reduce the soil compaction (cattle ranching);
- Stimulate the fixation of nutrients through the increase of organic matter inputs;
- Regenerates the soil micro and macro-fauna

Furthermore, the project takes place in the buffer zone of the National Park Patuca, home of a great but threatened biodiversity by migration and extension of agricultural land (~5% rate of deforestation per year). The project will help decrease the pressure on forests, as it will propose sustainable productive ways of living.

The main environmental risk identified is the presence of insects that attack trees in early stage of vegetative development (first 3 years). The larvae of *Hipsiphila grandella* (Lepidoptera family) deteriorate the apex of *Switenia macrophylla* and *Odorata Cedrella*. The technical team control the risk by lowering the concentration of those two species on the same parcels. The plantation models will be used to isolate sensitive plants from one another.

## (p) Financial structure

The initial project feasibility assessment was financed by Coop Sustainability Fund.

The plantation phase from 2012 and 2018 and the transition phase between 2018 and 2022 is also covered by the forward sale of carbon credits to Coop Sustainability Fund and Chocolat Halba. The buyers confirmed their intentions in a contract signed with Pur Projet. Pur Projet also looks for additional grants for the project that would allow to decrease the projects GS VER price per unit. However, the project has signed a forward purchase agreement with WWF, as it is the organization that manages the COOP's carbon offsetting activities.

After the transition phase, the sales of timber (FSC certified) through the Aprosacao will make the project financially viable. A percentage of the timber benefits of each project participant will be kept by the cooperative in exchange for the coordination work of the project, maintenance of tree nursery and certification.



## 2. Shapefiles

Please provide *shapefiles* in the *supporting documents* and provide a reference to these *supporting documents* in this template.

(a) Project area

Annex Document 2.2.2 - Shape Project Area; reference: INSTITUTO NACIONAL AGRARIO

(b) Planting areas

Annex document 2.4.2 - Shape Planting Area 2012 – 2015; reference: PUR Projet and APROSACAO staff

(c) Eligible planting area

Annex Document 2.3 - Eligible Project Area; reference: PUR Projet and APROSACAO staff

(d) Modelling Units

Annex Document 2.6 - Modelling Unit; reference: PUR Projet and APROSACAO staff

(e) Infrastructure (roads, houses, etc.)

Annex Document 2.5.2 - Shape Townships Area; reference: PUR Projet and APROSACAO staff

(f) Water bodies

Annex Document 2.5.1 - Shape Water Streams Area; reference: INSTITUTO NACIONAL AGRARIO

(g) Sites with special significance for indigenous people and local communities - resulting from the Local Stakeholder Consultation (LSC)

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(h) Where indigenous people and local communities are situated

Annex Document 2.7.1 - Shape Ethni Pech ; reference : Local Stakeholder Consultation  
[http://worldmap.harvard.edu/data/geonode:GREG\\_OvV](http://worldmap.harvard.edu/data/geonode:GREG_OvV)

(i) Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance

Annex Document 2.7.2 - Shape Protected Areas; reference: INSTITUTO NACIONAL AGRARIO

## 3. Boundaries

Please provide evidence that boundaries of the project area and the planting are clearly distinguishable in the field.

The shapefiles show clear evidence that the boundaries of the project area and the planting are clearly distinguishable in the field.