CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-PDD)
Modified template based on Version 03

CONTENTS

Annexes

- Version 06 – 23 September 2008 – Till Neeff

SECTION A. General description of project activity

A.1 Title of the project activity:

>>

Avoided Deforestation in the Coffee Forest in El Salvador

Version 1.0, 23-09-2008

A.2. Description of the project activity:

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The project *Avoided Deforestation in the Coffee Forest in El Salvador* (or the *Coffee and Environment Initiative*) is a mechanism that looks to stop the deforestation of coffee forest, which every year loses area due to the economic problems suffered by the coffee growers.

The economic problems are generated by high indebtedness, caused mainly due to a decrease in coffee prices in the international market, natural disasters such as Hurricane Mitch (1998), earthquakes in 2001, Stan Strom, and the Ilamatepeq volcano eruption (2005) (PROCAFE, 2004). In response to the economic problems, the BMI (see below) has set up two trust funds, FICAFE and FINSAGRO (see below) that aim to help the coffee producers. These trust funds collect and organize the commercial loans that private banks of the country had issued to coffee growers until 2001.

For the carbon project, BMI has set up a further trust fund, the FIDECAM[1], which will give an economic incentive to the coffee growers by reducing their yearly costs of debts of FICAFE[2] and FINSAGRO[3] (The *FICAFE debts*, hereafter) by up to 30%. In turn the growers will assume the commitment of not cutting the forest and maintain the coffee activity, stopping the actual rate of deforestation and change in the use of the coffee forest, avoiding the emission of the GHG of the areas that will not deforested and keeping the carbon stock inside them. In late 2007 project started when the participating coffee growers received a relief of 30% of their debt serving payments for the year 2006-2007.

The coffee forest can be defined like an ecosystem of coffee cultivation, where the main components are trees and bushes that contribute to the financial, social and environmental sustainability. This can be "simple or mono-specific" when only one specific tree or bush is used in the system, and "mixed" when there are several bushes or trees of the same type. It can produce and show the following benefits:

- Capture and reduction of the GHG

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[1] **FIDECAM** is the Coffee and Environment Trust. It was constituted in 2007. This initiative is managed as a private trust, with right to capture, manage and execute funds. Within this trust, the Foundation for Agricultural Technological Innovation FIAGRO will act as trustee, and the Multisectorial Investment Bank BMI will act as a trust.

[2] **FICAFE** is the environmental trust for the conservation of the coffee forest. It was constituted in 2001 and the Multisectorial Investments Bank (BMI) was nominated trustee. The main objective of the trust is the issuance and placing of Trust Certificates of Amortizable Participation ("CFPA") at the Salvadoran Stock Exchange.

The reaction of FICAFE is part of a joint support strategy of the Salvadoran financial system and the Salvadoran Government to the coffee sector in the country, in order to mitigate the impact of liquidity problems experimented by operators in this industry, as a result of the crisis suffered by the coffee industry, and naily, coffee producers at the world wide level, because it consolidates the sector's debt and finances the the sector at 20 yers term at a low interest rate related to the market rate at national level.

To date, FICAFE assets are mainly constituted in a credit portfolio to enterprises and natural persons who operate in the coffee sector of El Salvador, and who hired loans to finance their activities in this sector with the commercial banks in the Salvadoran financial system. After the constitution of FICAFE, seven Salvadoran commercial banks (trustees), transfer to FICAFE all credits related to the coffee sector in property, for a value above $258 million dollars.

[3] **FINSAGRO** is the Agricultural Sector Rehabilitation Program that supports, through the re-financing lines, coffee producers, compensating the interest rate.

- Water reservoir protection and runoff water
- Protection of the biodiversity
- Protection and reduction of the natural disasters and erosions

The baseline situation shows that the indebtedness level forces many producers to abandon coffee forest in the search of funds for the payment of their debts (FICAFE and FINSAGRO), cutting the trees to establish other more profitable crops or urbanize it. In other cases, the producer is forced to abandon the culture with the consequent immediate deterioration and imminent depredation of the forest in the search of fire wood.

The project is an initiative of the national coffee sector with the support of the Multisectorial Investment Bank[4] (BMI), and is based on the commitment to the no-deforestation nor change in the use of the soil for land that presently is covered by the coffee forest, which includes around 160 thousand hectares, belongs to close to 19,000 coffee producers who have credits with FICAFE and FINSAGRO, and to date are accounted in the pre-registry around 3,600 producer with a production area of over 70 thousand hectares located at different heights, which could increase as more producers become adhered. This land is distributed throughout the country, but is concentrated in all areas of coffee production.

The Initiative contemplates the consolidation (through a single registry managed by the Salvadoran Coffee Council) of a whole coffee forest area in El Salvador, belonging to the debtors of FICAFE and FINSAGRO to commercialize the avoided deforestation rate through a coffee grower commitment to keep their crop in exchange for an economic compensation addressed to the debt payment.

The emission reductions from avoided deforestation will be sold as "VER" (Verified Emission Reduction) in the voluntary carbon market, generated by countries and enterprises looking to support the reduction of greenhouse effect gas emissions outside the Kyoto Protocol.

Funds captured will be deposited to the debts of users of FICAFE and FINSAGRO, and will reduce their financial obligations, improving their sustainability.

Project partners include:

- The BMI: The support of BMI has consisted in the analysis of the financial economic situation of the producers, owners of areas of coffee forest who are in debt with FICAFE and FINSAGRO, in order to find a viable economic alternative for the producer that will bring an incentive to avoid deforestation at their coffee plantation through economic contributions from the carbon market. In this effort, BMI is in charge of:
  - The hiring of experts in the subject such as EcoSecurities to quantify carbon that may be commercialized
  - The consultation process with project beneficiaries (coffee growers) and social groups related
  - Support to FIAGRO in the creation of the Coffee and Environment Trust "FIDECAM"

[4] The **BMI** is the Multisectorial Investments Bank is a Public Credit Institution with autonomous character created by the Law in the Legislative Decree No 856. BMI is a second tier bank oriented to become the main tool of the Government to promote economic development of the country's productive sectors, with special emphasis on the micro and small enterprise. BMI offers funds at the midium and long term granted through local financial institutions supervised by the Financial System Superintendence (SSF). Visit www.bmi.gob.sv

- The Foundation for Agricultural Technological Innovation (FIAGRO) is a serious entity with prestige and leader in technology and development mechanisms in the agricultural and forest sector in the country. In 2005 and 2006 it supported the bank in the preparation of monitoring and evaluation protocols for this initiative.
- The Salvadoran Coffee Council is the ruling entity in the national coffee activity, presently has an official coffee grower's registry and is the entity reference on what refers to sector statistics. Has the seriousness and capacity to manage the unique user's registry.

What the project contemplates is to avoid the continuous loss of the coffee forest with the consequent loss of:

- The already fixed carbon stock;
- The capacity of CO2 capture in the lost coffee areas;
- The ecosystem that favors and protects the life of 209 native trees species and 21 exotic, 188 bird species, 101 resident and 37 migratory (42 threatened and 19 endangered at the local level); also 31 species of small mammals, 8 endangered; some 26 reptile species and 8 species of amphibious with several species endangered;
- The water absorption and retention capacity and the protection of the water table;
- Working opportunities for the most vulnerable sectors in the country.

The benefits to be generated will be:

- Keeping the coffee forest:
- The main benefit of the "Coffee and Environment" Initiative is the conservation of the coffee forest in El Salvador with its environmental and socio-economic benefits, favoring immediately the rural community, Salvadoran society, and humanity.
- Partial payment of coffee growers registered debts:
- Those coffee producers who comply with requirements, processes and commitments to be users, may be benefited with a contribution for the partial payment of up to 30% of the yearly payments of their FICAFE and FINSAGRO debts coming from coffee culture.

A.3. Project participants:

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Table 1: Project participants in the Coffee Forest Conservation Program in El Salvador

Name of Party involved	Private and/or public entity(ies) project participants	Indicate if the Party involved wishes to be considered as a project participant (Yes/No)
El Salvador	• **FIDECAM (private trust)**	No

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

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A.4.1.1. Host Party(ies):

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Host Country: Republic of El Salvador, Central America

A.4.1.2. Region/State/Province etc.:

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There are three regions where the areas contemplated in the Initiative are located (Figure 1):

- **Western Region (W)** including an area of 83,883 hectares distributed among the departments of Ahuachapán, Santa Ana and Sonsonate, of which 41,452 are already pre-registered in the project.
- **Central Region (C)** with an area of 46,292 hectares mainly distributed among the departments of La Libertad, San Salvador, La Paz, Cuscatlán and San Vicente, of which 19,710 are already pre-registered in the project.
- **Eastern Region (E)** with an area of 30,770 hectares distributed among the departments of Usulután, San Miguel and Morazán, of which 9,653 are already pre-registered in the project.

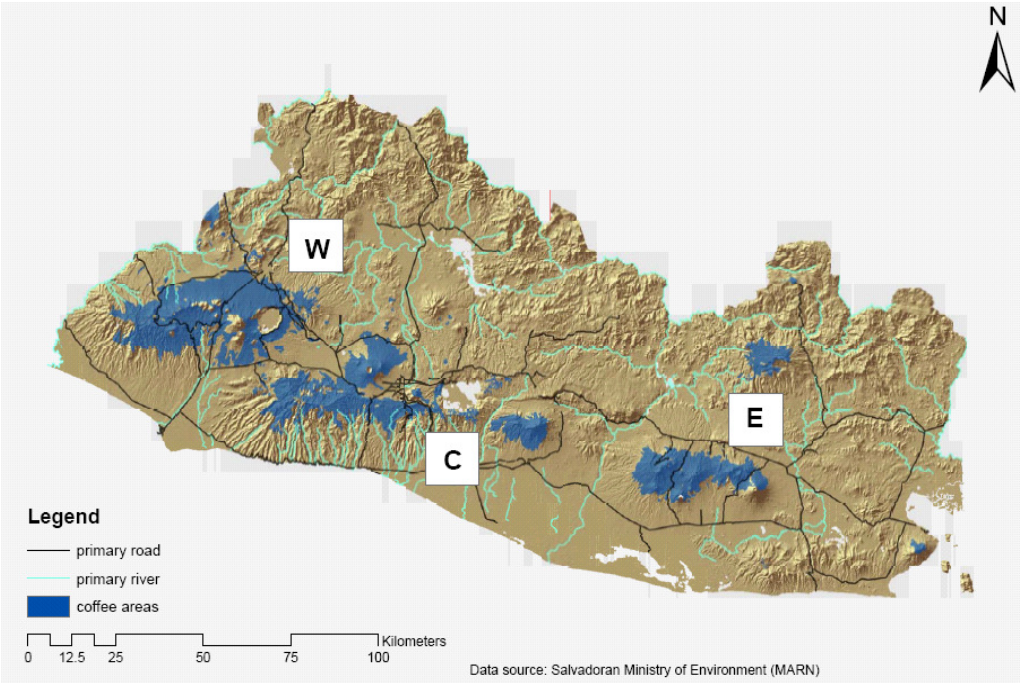

Figure 1: Coffee areas in El Salvador.

A.4.1.3. City/Town/Community etc:

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There are at least 111 municipalities located in the areas of coffee forest belonging to the Program users (Table 2).

Table 2: List of municipalities with Coffee Forest Areas in the Program.

	Regions							
	Western		Central				Eastern	
Municipalities	1	Jujutla	29	Jayaque	62	San Miguel Tepezontes	79	Alegría
	2	Santa Catarina Masahuat	30	Sacacoyo	63	San Vicente	80	Santiago de María
	3	Ataco	31	Apopa	64	Santo Domingo	81	California
	4	Tacuba	32	Mejicanos	65	San Juan Nonualco	82	Santa Elena

	5	Ahuachapán	**33**	San Martín	**66**	Zacatecoluca	**83**	San Antonio del Mosco
	6	San Pedro Puxtla	**34**	Tepecoyo	**67**	Zaragoza	**84**	San Francisco Chinameca
	7	El refugio	**35**	Teotepeque	**68**	Santa María Ostuma	**85**	Guadalupe
	8	Santa Isabel Ishuatan	**36**	Tejutepeque	**69**	Tecoluca	**86**	Jucuapa
	9	Guaymango	**37**	Tonacatepeque	**70**	San Pedro Perulapán	**87**	Chinameca
	10	San Antonio del monte	**38**	San Juan Opico	**71**	San Juan Tepezontes	**88**	La Union
	11	Apaneca	**39**	Ciudad Arce	**72**	Cojutepeque	**89**	Moncagua
	12	Nahuizalco	**40**	La Libertad	**73**	Tepetitan	**90**	San Miguel
	13	Sonsonate	**41**	Tamanique	**74**	San Pedro Nonualco	**91**	Tecapan
	14	Izalco	**42**	Nueva San Salvador	**75**	La Palma	**92**	San Antonio Masahuat
	15	Salcoatitán	**43**	San Salvador	**76**	Citalá	**93**	San Emigdio
	16	Juayua	**44**	San Marcos	**77**	San Ignacio	**94**	San Agustín
	17	El Congo	**45**	Soyapango	**78**	Nejapa	**95**	San Francisco Javier
	18	Coatepeque	**46**	Chiltiupan			**96**	Mercedes Umaña
	19	Santa Ana	**47**	Huizucar			**97**	Berlin
	20	Chalchuapa	**48**	Talnique			**98**	Guatajiagua
	21	Atiquizaya	**49**	Comasagua			**99**	Usulutan
	22	Turin	**50**	Colon			**100**	El triunfo
	23	San Sebastian Salitrillo	**51**	Quezaltepeque			**101**	El Carmen
	24	San Julian	**52**	Ilopango			**102**	San Simon
	25	Armenia	**53**	Nuevo Cuscatlán			**103**	Ciudad Barrios
	26	Metapan	**54**	Cuscatancingo			**104**	San Jorge
	27	Santiago de la Frontera	**55**	San Fernando			**105**	Gualococti
	28	Candelaria de la Frontera	**56**	Suchitoto			**106**	Delicias de Concepción
			57	El Carmen			**107**	Osicala
			58	Santo Tomas			**108**	Yoloaiquín
			59	Olocuilta			**109**	Perquín
			60	Panchimalco			**110**	Yamabal
			61	Santiago Texacuangos			**111**	Sensembra

A.4.1.4. Detail of physical location, including information allowing the unique identification of this project activity (maximum one page):

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The project comprises the coffee farms of many coffee farmers and its physical locations are therefore composed of many individual locations. The farms are listed in the FIDECAM database that is described as follows. Moreover, those farmers that participate in the carbon credit project underwent a registration procedure that is also described as follows.

Detailed description of the FIDECAM database

The FIDECAM database contains records of the loans that FICAFE and FINSAGRO have issued to coffee farms in the country. The database is the registry of loans that the trusts use as a tool for tracking the debt and the debt serving. The database was established in 2007, it was validated in the process of making it useful as a registry of loans to coffee farmers.

The database contains the following fields that are used for the carbon credit project:

- Debt number. The debt number corresponds to the same debt numbers in the records of the FICAFE and FINSAGRO debts. It is used as an identifier for the individual farms.
- Area. The area reflects the coffee area of a respective farm in 2007, when the FIDECAM database was established and when the project started. It does not reflect the overall area

of the farm. The coffee area in the FIDECAM database deviates from the coffee areas listed in the public registries (which were mostly established decades ago), and it also deviates from the areas listed in the FICAFE and FINSAGRO database (which reflect the situation in 2001). Conversely, it corresponds to the coffee area on farms at the end of 2007; and this information is based on the status of underlying commercial loans with private banks. In any event, it may be expected that if deviations from the listed coffee area exist that the true area must be larger since coffee growers had an incentive to understate coffee area at the time of registration with FIDECAM in order to except non-deforestation commitments only for less than their total area of coffee forest.

- Amount of annual payment. Each of the loans comes with an annual payment obligation to FICAFE or FINSAGRO. The payment obligation is constant between years and it does not change. All annual payment amounts were fixed in 2001 for a time frame of 20 years. Since the schemes were suspended in the years 2003 and 2004, the expected end of debt serving is 2023.
- Amount of annual payment that farmers defaulted on in 2002
- Amount of annual payment that farmers defaulted on in 2005.
- Amount of annual payment that farmers defaulted on in 2006.
- Amount of annual payment that farmers defaulted on in 2007.
- Name of the farmer that holds the loan. Contact details of the farmer.
- Location of the farm.

Through the FIDECAM database the coffee farms can be uniquely identified.

Description of legal title to the land, current land tenure and rights to VERs issued for the proposed project activity

Land tenure in the area of project is made by the coffee farms belonging to small producers, corporations and private cooperatives which are legally registered in the Public Registry of the Property through a property writ. Participants in the project will be able to have the following type of tenure, for which they need to show the proper documentation:

- Participate with their own land
- Participate with leased land
- Participate with usufruct contract
- Participate with “comodato” contract

The project established a registry of participating farms. All participating farmers sign an agreement that transfers the environmental benefits to the program. All relevant documentation is available at www.cafeyambiente.org. More precisely, the farms surrender the following documentation for registration and participation in the scheme:

- Copy of DUI (Official Document of identification) and NIT (Official Document of taxes identification) of the natural person or legal representative of the legal person: To identify the identification of the registered user.
- Copy of proofing document for land tenancy: These will be copies that allow insuring the existence of registered properties and their tenancy situation to assure they are free of conflict.
- Environmental benefits transfer document: will give a right to the Coffee and Environment trust to carry out commercial operations with the VERs generated.

- Affidavit of the no-deforestation nor change in property use of their coffee forest commitment: this will establish the commitment to no-deforestation
- Payment plan: Will be used for the updated registry of their debt for the later transfer of payments given for the compliance of the verified commitment.

Through the registration process, the program has obtained the legal right to the emission reductions and to propose a carbon credit project.

A.4.1.5. Further technical description of the project activity:

A.4.1.5.1. Description of the present environmental conditions of the area planned for the proposed CDM project activity, including a concise description of climate, hydrology, soils, ecosystems (including land use):

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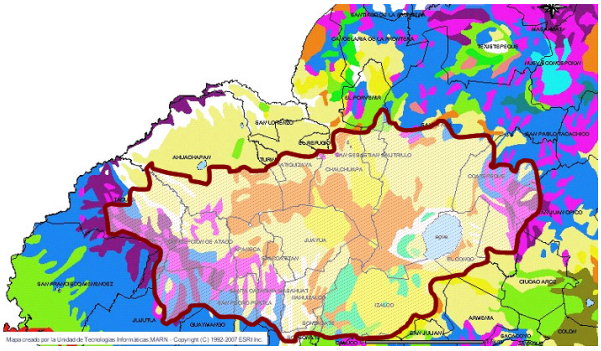
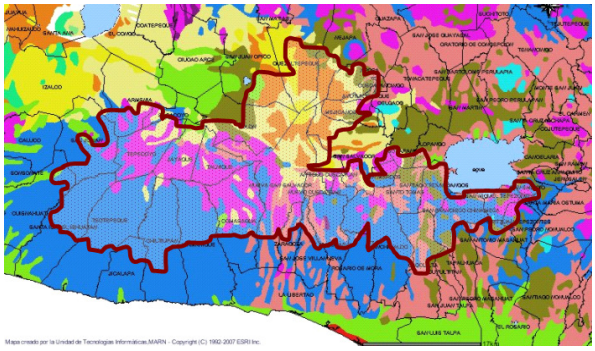
Geology

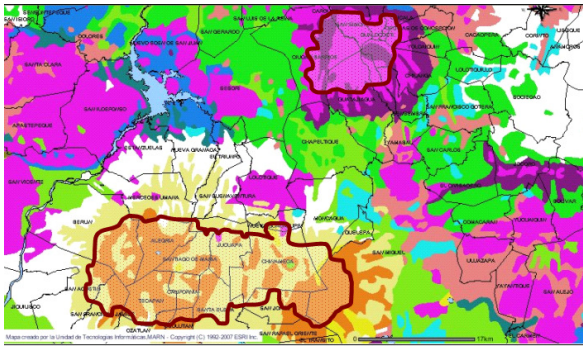
The geology of coffee forests is displayed in Figure 2.



Western



Central



Eastern

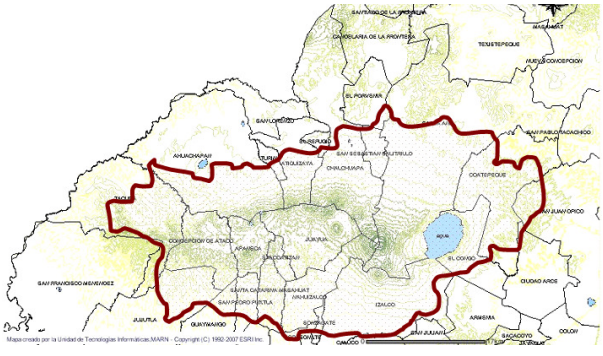
Figure 2: Geology of coffee forest areas.

Coffee forest areas in the Initiative located in the three defined regions have predominantly these types of soils:

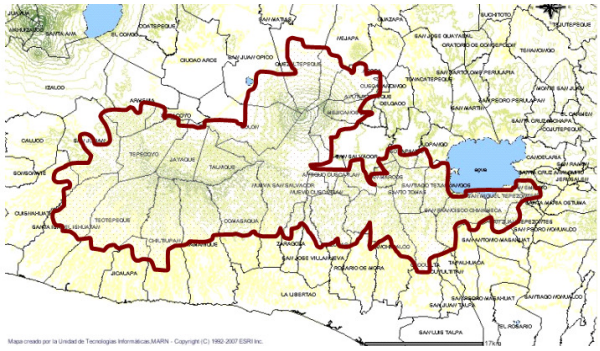
- Western Region
  - Acid Pyroclastic, volcanic mudrock (brown tuffs)
  - Effusive andesites and balsatic: Pyroclastics
- Central Region
  - Acid Pyroclastics, volcanic mudrock (brown tuffs)
  - Effusive andesites and balsatic: Pyriclastics
  - Volcanic mudrock, pyroclastics, interchanged lava currents
  - Effusive balsatic andesites
- Eastern Region
  - Acid Pyroclastics, volcanic mudrock (brown tuffs)
  - Effusive andesites and balsatic: Pyroclastics
  - Effusive balsatic andesites

Relief

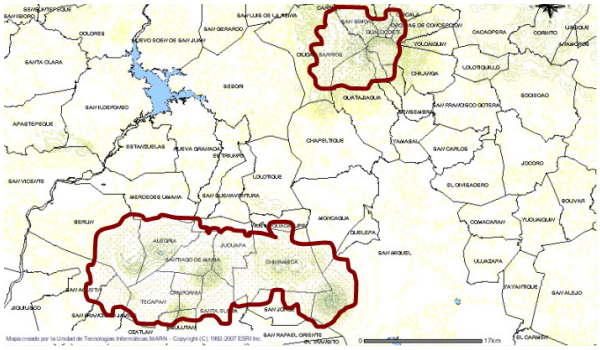
Figure 3 shows maps with the coffee forests' relief.



Western



Central



Eastern

Figure 3: Relief of the coffee forests.

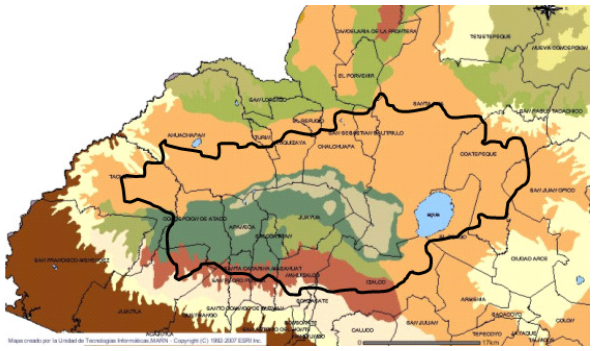
The Initiative's coffee forest is located at different altitudes due to the fact that coffee is grown in a wide range of reliefs:

- Western Region
  - 15,834 hectares above 1200 msl
  - 22,265 hectares between 800 and 1200 msl
  - 45,784 hectares under 800 msl
- Central Region
  - 6,685 hectares above 1200 msl
  - 20,429 hectares between 800 and 1200 msl
  - 19,179 hectares under 800 msl
- Eastern Region
  - 2,391 hectares above 1200 msl
  - 8,504 hectares between 800 and 1200 msl
  - 19,874 hectares under 800 msl

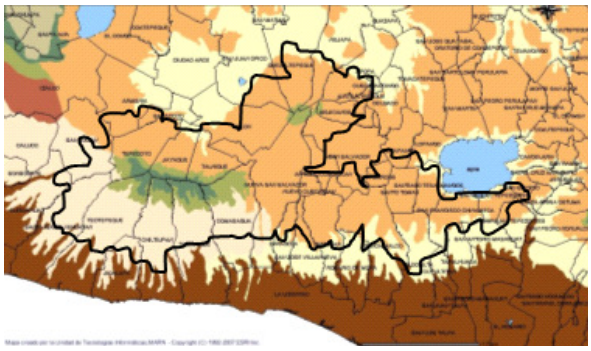
Generally topography in the coffee areas above 800 msl is broken and hilly with slopes above 30%.

Climate and Life Zones

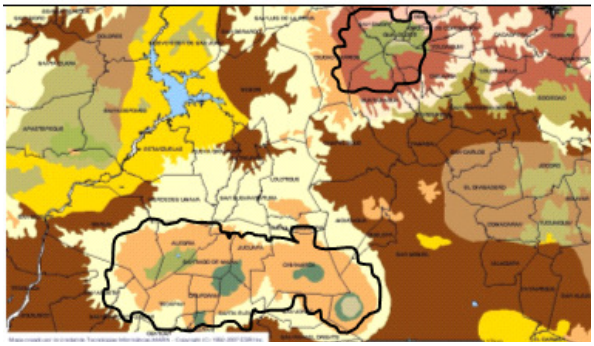
There are maps showing the life zones in coffee forests in Figure 4**.**



Western



Central



Eastern

Figure 4: The coffee forests' life zones.

The coffee forest areas of the project are located and distributed as presented in Table 3.

Table 3: Geographic location of coffee areas per region and altitude.

Typo	Production Area per Region (Has.)							
	Western		Central		Eastern		Total	
	Has.	%	Has.	%	Has.	%	Has.	%
Strictly High Grown (Higher than 1200 msl)	15,834	9.8%	6,685	4.2%	2,391	1.5%	**24,910**	**15%**
High Grown (From 800 to 1200 msl)	22,265	13.8%	20,429	12.7%	8,504	5.3%	**51,198**	**32%**
Central Standard (Under 800 msl)	45,784	28.4%	19,179	11.9%	19,874	12.3%	**84,837**	**53%**

Total	**83,883**	**52.1%**	**46,292**	**28.8%**	**30,770**	**19.1%**	**160,945**	**100%**
Coordinates	**Lat.**	**Long.**	**Lat.**	**Long.**	**Lat.**	**Long.**		
	13°50'	**89°40'**	**13°40'**	**89°20'**	**13°30'**	**88°20'**		

The areas of the initiative's coffee forest located in the three defined regions, predominantly have these life zones:

- Western Region
  - bh-S Subtropical wet forest
  - bmh-S Subtropical very wet forest
  - bmh-MBS Very wet forest Low Subtropical Montano
  - bh-S Humid Subtropical Forest with sub-humid transition
  - bh-T Humid Tropical Forest with Subtropical transition
- Central Region
  - bh-S Humid Subtropical Forest
  - bmh-S Very humid Subtropical Forest
  - bh-S Humid Subtropical Forest with transition to sub humid
  - bh-T Humid Tropical Forest
- Eastern Region
  - bh-S Humid Subtropical Forest
  - bmh-S Very humid Subtropical Forest
  - bh-S Humid Subtropical Forest with transition to sub humid
  - bh-T Tropical humid Forest

Climate

According to SNET[5], depending on the altitude of meters above sea level, there are three thermal zones in El Salvador, according to the average environmental temperature throughout the year, which coincide with the stratification in the areas of the coffee forest of the Initiative.

- 0-800 m: Average temperature decreasing with altitude from 27 to 22 °C in the coastal plains, and 28 to 22 °C in internal plains. In these strata there are approximately 84,837 hectares.
- 800-1200 m: Average temperature decreasing with altitude from 22 to 20 °C in the high plains, and 21 to 19 °C in the mountain slopes. In these strata there are approximately 51,198 hectares.
- 1200-2700 m: From 20 to 16 °C in high plains and valleys, from 21 to 19 °C in mountains slopes. In these strata there are approximately 24,910 hectares.

Hydrology

As it is shown in Figure 3, the Initiative's coffee forest is located in the main areas of water re-charge in El Salvador. Programs and projects such as FORGAES[6] from the European Union, and Coffee and Biodiversity from PROCAFE-World Bank[7] emphasize the importance of conserving these forests in order to preserve the national hydro resource.

Biodiversity

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5 National Territorial Studies Service of El Salvador. www.snet.gob.sv

6 FORGAES: Strengthening Program for the Environmental Management in El Salvador

7 "Coffee and Diverisity" Project, executed by PROCAFE with GEF funds from the World Bank from 1998 to 2000.

The Coffee and Biodiversity (2000) project executed by PROCAFE with funds from the World Bank, registered within the coffee forest, the presence of (Annex 7):

- 230 tree species, which are grouped within 60 families (209 native species, 21 exotic).
- 8 species of amphibians belonging to 5 families, one endangered.
- 22 reptile species, from 7 families (5 saurian families (lizards), with 11 species, and 2 families of serpents, with 12 species). Three of the species are considered threatened or endangered.
- 138 species of birds from 34 families and may be divided in the following manner: 101 resident species, 37 migrants, of which 33 are endangered or threatened.
- 23 species of mammals from 13 families, of which 7 species are threatened or endangered.

A. 4.1.5.2. Description of the presence, if any, of rare or endangered species and their habitats:

>>

According to the lists of species found in the coffee forests (Annex 7) and according to the list of threatened or endangered species (Annex 8), coffee forests in the country are the habitat for the following species under classification:

- Amphibious:
  - *Oedipina taylori*

- Reptiles:
  - *Coryptophanes percarinatus*
  - *Atropoides nummifer*
  - *Cerrophidion godmani*

- Birds
  - *Accipiter striatus*
  - *Buteogallus urubitinga*
  - *Buteo platypterus*
  - *Buteo brachyurus*
  - *Buteo jamaicensis*
  - *Spizaetus tyrannus*
  - *Micrastur ruficollis*
  - *Herpetotheres cachinnans*
  - *Falco sparverius*
  - *Crax rubra*
  - *Dendrortyx leucophrys*
  - *Dactylortyx thoracicus*
  - *Aramides axillaris*
  - *Aratinga canicularis*
  - *Heliomaster sp.*
  - *Aulacorhynchus prasinus*
  - *Pteroglossus torquatus*
  - *Dryocopus lineatus*
  - *Automolus rubiginosus*
  - *Xiphocolaptes promeropirhynchus*
  - *Lepidocolaptes souleyetii*
  - *Mionectes oleagineus*
  - *Zimmerius vilissimus*
  - *Oncostoma cinereigulare*

- *Empidonax hammondii*
- *Chiroxiphia linearis*
- *Myadestes occidentalis*
- *Seiurus motacilla*
- *Basileuterus culicivorus*
- *Piranga leucoptera*
- *Melozone biarcuatum*
- *Cyanocompsa parellina*
- *Icterus maculialatus*

•Mammals
- *Tamandua mexicana*
- *Conepatus mesoleucus*
- *Canis latrans*
- *Herpailurus yaguarondi*
- *Leopardus pardalis*
- *Leopardus wieddi*
- *Agouti paca*

According to data from the Mesoamerican red list of IUCN – The World Conservation Union, national coffee forests are no refuge for threatened or endangered fauna (Annex 9).

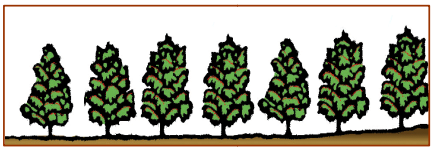
A. 4.1.5.3. Forest ecosystems occurring in the project activity:

>>

The programme differentiates between four different coffee systems with different carbon contents. For this purpose the existing shade-grown coffee plantations that the Programme intends to prevent from conversion, were divided into the following strata, based on a typology of shade-grown coffee systems proposed by UNAM in México (See Table 4).

Table 4: Characterization of Coffee Ecosystems (Source: "Coffee and Biodiversity" Project, PROCAFE/World Bank, 2001).

	**Rustic Traditional System**: farming is carried out under the shadow of natural forest, where the lower strata have been substituted by coffee, and the tree stratum remains almost intact.
	**Multi-crop Traditional System**: structurally similar to the rustic traditional system, with the difference that trees are planted with an economic purpose, such as forest species (for wood production) and fruit-yielding trees.
	**Modern Multi-crop System**: artificial forest mainly using wood-yielding species with managed shadow.

	**Commercial system:** with shadow where a single species predominates (single-crop), generally of the Inga spp. genus.
	**Single crop without shadow**: the coffee plantation is fully exposed to the sun.

A.4.1.5.4. Description of the present socio-economic conditions of the area planned for the proposed project activity, in particular with a view to communities:

>>

The project will be developed in at least 111 municipalities with coffee forest distributed at the national level (28 municipalities in the western area, 50 in the central area, and 33 in the eastern area) representing a total population of 1.75 million inhabitants living in the rural area. According to data from the last Report on Human Development published by the United Nations Development Program in January 2006, the index of average human development in the 111 municipalities is 0.7; average illiteracy rate reaches 24.1%, life expectancy is 69.6 years, and monthly per capita income is 69.64 dollars. Also, an average of 54% of homes live in poverty and 23.5% in extreme poverty; 12 of the 111 municipalities considered in the project present extreme poverty levels of over 40%, placing them at a priority level, considering that the highest rate of extreme poverty in the country is 60.4% (Table 5).

Table 5: Main Socio-Economic Indicators per municipality with coffee forest (Human Development Report, 2006).

		Población			Personas con condicion de pobreza (%)	Hogares con pobreza (%)	Hogares con pobreza extrema (%)	Esperanza de vida	PIB Percapita	Indice de Desarrollo Humano	Ingreso Percápita mesual (en dólares)	Tasa de analfabetismo	Indice de Pobreza Humano
	Western	Total	Urbana	Rural									
1	Jujutla	28059	2359	25700	68.0	59.9	35.7	67.9	2090	0.599	40	40.5	29.2
2	Santa Catarina Masahuat	8635	3085	5550	78.2	74.5	34.6	70.5	2093	0.615	40.1	38	27.6
3	Ataco	13890	6975	6915	53.1	48.7	18.9	70.9	3740	0.691	71.6	23.9	21
4	Tacuba	22425	5503	16922	74.3	68.1	42.2	69.1	1973	0.623	37.8	32.1	30
5	Ahuachapán	90593	28841	61752	55.0	47.7	20.5	69.6	3567	0.692	68.3	19.5	17.4
6	San Pedro Puxtla	8411	3541	4870	75.3	70.6	39.4	70.3	2737	0.646	52.4	31.6	26.2
7	El refugio	5561	1765	3796	28.3	26.4	10.0	69.6	5073	0.733	97.2	14.1	13.1
8	Santa Isabel Ishuatan	9790	667	9123	66.1	60.6	40.8	68.4	2035	0.632	39	30.2	22.3
9	Guaymango	19832	1156	18672	77.9	72.7	47.2	67.8	1833	0.598	37.1	39.6	28.7
10	San Antonio del monte	22938	11227	11711	38.2	33.1	12.3	71.4	4195	0.716	80.3	17.3	14.6
11	Apaneca	7745	2962	4783	57.9	52.0	15.7	70.1	3579	0.699	68.5	19	19.6
12	Nahuizalco	42390	9002	33388	59.3	53.0	22.7	69.4	2706	0.637	51.8	32.2	23.8
13	Sonsonate	91830	45438	46398	41.1	33.4	13.1	71.4	4907	0.724	94	18.1	14
14	Izalco	74668	20421	54247	53.3	46.9	19.9	69.9	3150	0.673	60.3	23.4	18
15	Salcoatitán	7052	3720	3332	60.7	56.4	18.9	71.7	3158	0.685	60.5	24.8	18.4
16	Juayua	26475	11033	15442	46.8	42.0	10.6	70.9	4456	0.712	86.4	21.2	17.1
17	El Congo	27619	16170	11449	57.7	50.6	20.4	72.6	3183	0.705	61	18.7	15.7
18	Coatepeque	45535	7149	38386	56.3	50.7	23.8	69.5	2727	0.653	52.2	27.5	21.4
19	Santa Ana	261568	217067	44501	42.1	35.2	11.8	74.3	5396	0.758	103.3	14.1	11.8
20	Chalchuapa	66546	36846	29700	56.3	38.0	16.4	72.3	4776	0.74	91.5	14.9	13.4
21	Atiquizaya	32061	11294	20767	44.0	41.2	13.9	69.8	3871	0.706	74.1	18.5	15.6
22	Turin	5828	3170	2659	37.3	32.0	16.0	71.2	4681	0.726	89.7	17	16.2
23	San Sebastian Salitrillo	12689	1583	11107	39.4	31.7	7.3	69.3	3702	0.683	70.9	19.2	16.5
24	San Julian	18266	1526	16739	63.1	53.9	24.0	68.5	2340	0.635	44.8	29.8	22.1
25	Armenia	25444	10883	14561	48.2	41.9	14.6	71.0	3736	0.685	71.5	24.2	17.7
26	Metapan	57067	19818	37249	45.3	38.1	16.5	70.9	4429	0.681	84.8	29.2	21.1
27	Santiago de la Frontera	6589	1677	4912	73.5	68.2	44.6	70.2	1808	0.595	34.6	36.9	26.1
28	Candelaria de la Frontera	24042	6307	17735	55.5	50.8	21.6	70.3	3227	0.676	61.8	24.3	18.6
	Central												
29	Jayaque	12376	2869	9507	41.2	37.7	13.4	69.3	3406	0.672	65.2	22.4	16.8
30	Sacacuyu	13774	3047	10727	39.4	35.5	11.4	69.3	4249	0.689	81.4	20.1	15.2
31	Apopa	154349	136982	17367	34.3	30.2	8.4	72.0	5075	0.746	97.2	11.9	9.9
32	Mejicanos	200917	194589	6328	22.5	18.7	5.3	72.6	9187	0.802	175.9	6.3	7.4
33	San Martín	90097	51532	38565	34.5	29.9	9.3	69.8	4646	0.729	89	13.3	11.5
34	Tepecoyo	11638	5121	6517	60.4	54.5	21.3	70.8	2939	0.67	56.3	25.2	18.9
35	Teotepeque	14108	1556	12552	67.2	58.5	34.3	68.5	2229	0.631	42.7	32.2	23.1
36	Tejutepeque	5863	1442	4421	69.4	60.5	36.0	65.9	2880	0.655	55.1	23.7	17.3
37	Tonacatepeque	62147	16557	45590	31.3	25.7	8.8	67.7	4607	0.719	88.2	11.5	11.8
38	San Juan Opico	66678	7874	58804	38.8	33.9	14.4	68.5	3.758	0.693	321.3	18.9	14.9
39	Ciudad Arce	52643	8277	44366	30.4	25.8	6.2	68.8	4222	0.701	80.9	17.1	13.5
40	La Libertad	39173	14741	24432	46.6	41.7	13.2	70.4	3577	0.383	68.5	22.4	16.3
41	Tamanique	12493	1694	10799	60.3	57.1	28.0	68.7	2438	0.623	46.7	33.4	23.9
42	Nueva San Salvador	175286	155929	19357	23.4	18.2	5.9	74.0	10203	0.8626	68.5	7.6	7.2
43	San Salvador	435175	435175		24.8	21.8	6.0	72.8	9230	0.809	176.8	6.3	6.7
44	San Marcos	68683	57791	8892	36.3	31.1	10.0	71.9	5263	0.753	100.8	11	9.7
45	Soyapango	375536	375536		22.2	20.5	5.2	72.8	6968	0.796	133.4	5.4	6.6
46	Chiltiupan	10988	1587	9401	63.4	55.2	36.3	68.7	2222	0.631	42.6	35.2	25.1
47	Huizucar	10560	634	9926	56.3	50.1	24.5	68.1	2332	0.637	44.7	27.8	20.4
48	Talnique	6700	872	5828	45.2	45.4	18.6	68.6	2940	0.649	56.3	25.9	19.3
49	Comasagua	11155	1971	9184	64.4	60.3	35.8	69.0	2060	0.626	39.4	29	20.8
50	Colon	65800	36170	29629	31.1	26.7	8.3	71.6	5005	0.738	95.9	14.7	11.6
51	Quezaltepeque	67376	27977	39399	34.7	30.3	8.9	70.6	4480	0.712	85.8	19	14.1
52	Ilopango	126176	114222	11954	27.3	24.2	5.2	72.2	6521	0.778	124.9	7.5	7.9
53	Nuevo Cuscatlán	7981	7981		45.7	40.4	9.9	74.8	6082	0.77	116.5	14.9	11
54	Cuscatancingo	88834		88834	31.4	27.5	6.6	72.8	5833	0.774	111.7	7.2	7.6
55	San Fernando	2819	653	2166	86.5	81.9	59.7	66.1	1472	0.596	28.2	33.5	26.1
56	Suchitoto	17869	2714	15155	61.7	56.8	28.7	68.5	2594	0.666	49.7	25.3	18.6
57	El Carmen	12409	887	11521	54.7	52.8	23.9	68.0	2790	0.653	53.4	25.7	19.7
58	Santo Tomas	28104	12669	15435	25.7	23.3	7.8	69.0	5601	0.746	107.3	10.6	13
59	Olocuilta	33160	17736	15424	31.1	23.4	7.8	70.3	5369	0.732	102.8	14.1	11.5
60	Panchimalco	42373	5710	36663	47.3	41.6	18.3	66.7	3544	0.671	67.9	23.1	21.3
61	Santiago Texacuangos	19308	2556	16752	28.4	27.6	9.0	66.7	4345	0.698	83.2	15.3	13.3
62	San Miguel Tepezontes	4629	3418	1211	73.8	70.0	38.0	71.7	2457	0.679	83.2	17.2	14
63	San Vicente	53523	31291	22232	53.3	46.5	22.4	68.9	4310	0.699	82.5	21.5	16.4
64	Santo Domingo	6549	2739	3810	49.0	43.6	21.7	67.8	3611	0.7	69.2	15.8	13.8
65	San Juan Nonualco	14208	3396	10812	58.6	54.2	24.0	68.2	3122	0.68	59.8	22.1	16.3
66	Zacatecoluca	62627	36504	26123	47.9	41.6	17.9	70.6	4230	0.71	81	20.3	14.9
67	Zaragoza	25,139	9,930	15,208	44.8	38.9	14.5	70.5	3615	0.697	69.2	19.5	14.7
68	Santa María Ostuma	5,660	1,585	4,075	69.3	63.1	34.0	68.5	2370	0.655	45.4	22.9	16.9
69	Tecoluca	22,967	2,128	20,839	63.6	56.6	29.7	65.5	2292	0.612	43.9	31.8	23.3
70	San Pedro Perulapán	30,476	1,260	29,126	37.6	33.8	11.7	67.7	3305	0.68	63.3	20	16
71	San Juan Tepezontes	3,171	1,698	1,473	72.1	64.4	36.0	70.3	2465	0.684	47.1	18.5	14.5
72	Cojutepeque	48,390	35,522	12,868	36.9	33.0	10.1	72.6	4779	0.748	91.5	12.3	10
73	Tepetitan	3,813	1,388	2,425	52.0	47.2	17.0	67.4	3400	0.674	65.1	20.2	16.9
74	San Pedro Nonualco	9,421	3,951	5,470	64.3	59.7	32.6	69.5	2692	0.673	51.6	18.9	15.2
75	La Palma	11,647	4,102	7,545	58.4	52.4	28.2	67.0	3278	0.658	62.8	28.8	21.5
76	Citalá	4,822	1,922	2,900	62.8	55.7	26.9	67.3	3205	0.66	61.4	30.9	22
77	San Ignacio	6,560	2,254	4,306	59.0	55.5	29.0	66.9	3705	0.679	71	24.7	19.5
78	Nejapa	24,775	3,770	21,005	43.9	37.3	12.2	66.8	3392	0.665	65	21.7	16.6
	Eastern												
79	Alegría	13,752	5,809	7,943	76.0	73.7	36.8	70.6	2068	0.647	39.6	29.5	20.9
80	Santiago de María	17,291	10,507	6,784	55.9	49.8	19.3	71.9	4012	0.711	76.8	21.7	15.6
81	California	2,591	1,847	744	56.9	56.0	28.4	72.7	3474	0.691	66.5	29.5	20.9
82	Santa Elena	15,464	5,464	10,000	61.2	56.2	31.7	70.1	2959	0.663	56.7	29.2	20.7
83	San Antonio del Mosco	6,373	846	5,527	82.2	78.1	59.5	68.4	1441	0.573	27.6	49	35
84	San Francisco Chinameca	6,186	1,802	4,384	61.9	52.3	23.0	68.6	2846	0.662	54.5	22.2	16.5
85	Guadalupe	5,911	2,758	3,154	58.1	54.8	25.3	68.1	2985	0.678	57.2	17.6	15.7
86	Jucuapa	16,226	8,601	7,625	57.5	52.2	24.0	71.4	3900	0.702	74.7	22.8	16.3
87	Chinameca	21,275	6,537	14,738	50.2	44.6	18.5	69.7	3826	0.691	73.3	23	16.9
88	La Union	40,182	24,026	16,157	37.5	31.4	11.0	71.8	5053	0.713	96.8	26	18.6
89	Moncagua	27,378	1,704	25,674	54.2	46.6	20.5	67.9	2602	0.631	49.8	29.4	21
90	San Miguel	242,246	134,782	107,464	36.0	30.6	9.6	71.4	5449	0.729	104.4	19.6	14.4
91	Tecapan	11,462	1,645	9,817	64.5	35.0	29.5	68.6	2168	0.601	41.5	19.6	14.1
92	San Antonio Masahuat	4,047	2,359	1,688	65.8	60.4	33.6	70.6	3119	0.696	59.7	20.9	15.4
93	San Emigdio	2,689	1,287	1,402	65.8	62.1	38.8	69.9	2413	0.671	46.2	23.3	17.3
94	San Agustín	4,448	1,420	3,028	71.8	66.3	46.6	69.9	2020	0.627	38.7	35.4	24.9
95	San Francisco Javier	6,050	1,253	4,798	76.7	72.1	40.6	69.1	1719	0.602	32.9	36.4	25.5
96	Mercedes Umaña	13,866	3,280	10,586	64.5	60.4	34.8	69.3	2308	0.628	44.2	33.6	23.7
97	Berlin	17,952	7,566	10,386	72.2	64.9	35.2	70.6	2795	0.651	53.5	31.9	22.5
98	Guatajiagua	10,907	4,507	6,400	84.4	78.2	53.1	67.9	1645	0.571	31.5	49.6	34.7
99	Usulutan	70,347	45,337	20,010	42.7	36.9	11.2	72.2	4816	0.725	92.2	19.6	14.1
100	El triunfo	6,339	3,803	2,536	61.9	55.1	26.3	71.9	3422	0.69	65.5	25.6	18.2
101	El Carmen	15,512	1,624	13,888	51.2	44.8	20.1	68.4	3984	0.673	76.3	29.6	21.6
102	San Simon	8,062	1,582	6,480	75.2	70.1	44.2	66.4	1885	0.608	36.1	32.9	23.7
103	Ciudad Barrios	29,665	8,346	21,318	65.3	59.6	32.9	69.5	2810	0.63	53.8	40	28.4

The coffee prices crisis and natural disasters occurred in the last years have caused that most producers are highly indebted and do not have the working capital to continue producing coffee, what has been translated into the abandonment of the coffee culture, affecting employment generation, income decrease and accentuate poverty levels.

A.4.2. Category(ies) of project activity:

>>
Avoided Deforestation, i.e., Reducing Emissions from Deforestation (RED).

A.4.3. Technology to be employed by the project activity:

>>
The Coffee and Environment Initiative for the Conservation of the Coffee Forest of El Salvador will not introduce any type of different technology but preserve the present land use in the coffee forests. The project is therefore an avoided deforestation project that works through debt relief for participating coffee farmers. The financial mechanism is described in detail in section A.2.

A.4.4 Estimated amount of emission reductions over the chosen crediting period:

>>

Table 6 shows the ex-ante estimates of emission reductions. These estimates do not yet include the buffer discounts.

Table 6: Ex-ante estimate of emission reductions.

Year	Estimation of baseline net GHG removals by sinks (tonnes of CO_2 e)	Estimation of actual net GHG removals by sinks (tonnes of CO_2 e)	Estimation of leakage (tonnes of CO_2 e)	Estimation of net anthropogenic GHG removals by sinks (tonnes of CO_2 e)
2008	794,110	0	395,443	398,667
2009	741,838	0	345,455	396,383
2010	693,069	0	300,168	392,900
2011	647,566	0	259,116	388,449
2012	605,109	0	221,881	383,228
2013	565,492	0	188,089	377,402
2014	528,523	0	157,409	371,114
2015	494,024	0	129,542	364,482
2016	461,827	0	104,221	357,607
2017	431,779	0	81,206	350,573
2018	403,733	0	60,282	343,451
2019	377,555	0	41,255	336,299
2020	353,119	0	23,951	329,168
2021	330,308	0	8,212	322,095
2022	309,012	0	0	309,012
2023	289,130	0	0	289,130
2024	270,567	0	0	270,567
2025	253,233	0	0	253,233
2026	237,047	0	0	237,047
2027	221,931	0	0	221,931
Total (tonnes of CO_2 e)	9,008,969	0	2,316,231	6,692,738

A.4.5. Public funding of the project activity:

>>

This Program does not have on-going governmental economic support. Since at the end of 2007 the program was not yet registered as a carbon credit project, the government of El Salvador has sponsored a 30% debt relief payment to coffee growers participating in the program for the year 2006-2007.

The BMI has contributed with funds for the design and creation of the Initiative, the hiring of technical consultancies, and payment of the registration and validation process.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

>>

The project uses its own methodology, *Emission reductions calculation for the FICAFE project*, Version 04 – 15/09/2008 (Till Neeff). The methodology is contained in Annex 6.

B.2 Justification of the choice of the methodology and why it is applicable to the project activity:

>>

Definitions

The land-use categories considered by the project are the following:

- Coffee forests with a biomass density of CFor. Coffee forests come in different types (Table 4).
- Abandoned coffee forests with a biomass density of CLU i=abandonment. Abandonment takes place because coffee farmers do not have the means any longer to operate their plantations. Upon abandonment coffee forests are converted into an idle landscape with very low biomass content. This does not happen because of an intervention of the coffee farmers, but this happens because unrelated actors extract the trees.

Other types of land-use conversion than the conversion of coffee forests to abandoned coffee forests are not considered. These other types of conversion are observed to occur, but no emission reductions will be claimed for modifying the rates of conversion.

Justification

There is no detailed justification necessary, since the methodological approach was developed specifically for this project.

Important assumptions of the methodology include the following:

a. Although the conversion of coffee forest to other land uses is observed to happen, that conversion is not part of the project. The project will only claim emission reduction for the avoided abandonment – and not for the avoided conversion to other land uses.
b. In the baseline scenario the conversion is not driven through the need for fuelwood since typically, the fuelwood collectors are unrelated people that have no control over the coffee forests. The coffee farmers have no incentive to cease coffee growing and instead offer area for fuelwood collection since they don't gain from the fuelwood collection.
c. During the baseline inventory of coffee farms, a number of farmers were interviewed (see Annex 3). There was not a single case of increasing coffee forest area. For that reason the baseline of deforestation is accepted as a given in the methodology. The specific baseline definition is thus the determination of the rate of deforestation.

B.3. Description of the sources and gases included in the project boundary

>>

Physical boundary

The sources of greenhouse gases correspond to the coffee forest areas that are part of the project boundary. The coffee forest areas are the physical locations where the coffee forests grow. The project boundary is therefore identical to the physical locations of the coffee forests.

The total coffee forest area is composed of coffee forests in the many individual farms that participate in the FIDECAM scheme. All these sub-areas are listed in the FIDECAM database that is contained in Annex 3. In the calculations, the sub-areas receive the sub-script "c" and calculations relating to the overall coffee forest area carry the subscript "A". At project start t=0, the total coffee forest area corresponds to AFor A t=0.

Greenhouse gases

The project boundary considers carbon dioxide as the only greenhouse gas for both the baseline and project emissions calculations. This is conservative because during burning of wood from plantations emissions of other greenhouse gases will also occur that the project conservatively neglects.

Carbon pools

The project accounts for all carbon pools: including tree and non-tree above-ground biomass, below-ground biomass, litter, deadwood and soil-organic carbon.

B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

>>

The baseline of deforestation is accepted as a given in the methodology specific to this project. (This assumption can be confirmed by reviewing the historical data used to define parameter *f*(predX t) at validation stage.) The specific baseline identification is thus the determination of the rate of deforestation in the baseline according to the equations set out in the methodology section *Calculation of the deforestation rate for the baseline scenario*, as described in section B.6 of the PDD.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):

>>

This project reduces emissions from deforestation and its additionality consists in that it creates a new incentive not to deforest. Through the project, farmers will receive a new source of income that will generally improve their financial standing. The improved financial standing will be reflected in a reduced rate of deforestation.

The FICAFE and FINSAGRO schemes supports coffee growers financially even without the project (i.e., in the baseline scenario) – and that is reflected in the baseline-scenario deforestation rate. Carbon finance will provide a further financial support to coffee growers through an enhanced FIDECAM scheme – and that is reflected in the project-scenario deforestation rate.

The additionality argument therefore rests on two facts:

- The project will claim emission reductions only for the reduction in the rate of deforestation against a rate of deforestation that would have occurred in its absence. Only the reduction in deforestation below the baseline level will be credited. The baseline deforestation rate will depend on market developments, most crucially on the coffee price.
- The reduction in deforestation rate will be calculated only for those farmers that are expected to be in need of further financing. This is achieved because the baseline deforestation rate relates to only those coffee growers that will be observed to be in financial trouble and that are therefore not able to serve their FICAFE and FINSAGRO debts.

Thus, to be additional, the incentive provided by this project to reduce deforestation must be one that would not be provided in the absence of the project. Following the reasoning of project-based additionality testing, alternative scenarios are considered to prove additionality. The alternative scenarios to consider are the following:

- Alternative 1: The BMI chooses to provide further financial support to farmers at the same level as what they would receive from carbon credits (the project activity without carbon credits).
- Alternative 2: The financial situation of the coffee farmers improves particularly through rising coffee prices.
- Alternative 3: Deforestation occurs at the baseline rate (the baseline).

Regarding Alternative 1: The BMI is not able to provide further financial support to coffee farmers without carbon credits. The reason is that further financial support would effectively equal a debt relief. A debt relief is not currently within the scope of business of the BMI. This is so because the BMI is a bank that usually collects on debts granted to its debtors. Hence, there is no funding available from BMI to fund a debt relief in the absence of carbon credits. It is concluded that Alternative 1 is not likely to happen.

Regarding Alternative 2: A rise in coffee prices could happen and it is captured in the way the baseline is set. The baseline deforestation rate is calculated as a function of the coffee prices. Should the coffee prices rise, the baseline deforestation rate will decrease. Therefore Alternative 2 is part of Alternative 3.

With Alternative 1 discarded and Alternative 2 as a part of Alternative 3, Alternative 3 emerges as the baseline scenario. The project is therefore additional.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

>>

This section is part of the PDD template under the CDM. We decided not to use this section and to integrate the information in section B.6.3 because we believe it improves the clarity of the presentation.

B.6.2. Data and parameters that are available at validation:

Data / Parameter:	*f* (predX t)
Data unit:	dimensionless
Description:	functional form to predict p ct (X="financial trouble")
Source of data used:	Statistical software package R 2.2.0
Value applied:	p (X="financial trouble") = *f*(predX t)

	= EXP { (beta0 + beta1 * [annual payment] + beta2 * [coffee forest area] + beta3 * [coffee price] + beta4 * [fertilizer price] + beta5 * [diesel price]) / (1+ (beta0 + beta1 * [annual payment] + beta2 * [coffee forest area] + beta3 * [coffee price] + beta4 * [fertilizer price] + beta5 * [diesel price]))}
Justification of the choice of data or description of measurement methods and procedures actually applied :	The model was selected through stepwise regression. The relevant R- code is in Annex 3. For adjusting the model, the FIDECAM database was used. Annex 3 contains the database.
Any comment:	

beta0	-8.456415E+00
beta1	5.242118E-06
beta2	-2.065164E-03
beta3	-1.041039E-01
beta4	7.243352E+01
beta5	3.482448E-01

Data / Parameter:	p (Def i=abandonment | X=”financial trouble”)
Data unit:	dimensionless
Description:	probability of deforestation towards post-conversion LU type i=abandonment, given that condition X=”financial trouble” is fulfilled
Source of data used:	baseline inventory of coffee farms
Value applied:	0.0772
Justification of the choice of data or description of measurement methods and procedures actually applied :	The probability is derived by calculating the area of all abandoned coffee forests in farms that were in “financial trouble” and by calculating the overall area of those farms in “financial trouble”. The probability is the quotient of the two. The dataset is contained in Annex 3. The calculations are summarized in Table 8.
Any comment:	

Data / Parameter:	AFor c (t=0)
Data unit:	ha
Description:	area of coffee forest in year t=0 in sub-area c at project start
Source of data used:	FIDECAM database
Value applied:	See Annex 3
Justification of the choice of data or description of measurement methods and procedures actually applied :	The FIDECAM database lists the area of coffee forests in all sub-areas c at project start at t=0.
Any comment:	

Data / Parameter:	CFor

Data unit:	t C ha^{-1}
Description:	average carbon density in forests
Source of data used:	- Procafe 2001. Proyecto Café y Biodiversidad. Informe final del componente de investigación agronómica. Caracterización de los agroecosistemas cafetaleros y medición de capacidad de captura de carbono del area de influencia del proyecto café y biodiversidad en la región occidental de El Salvador. Cuadro 1, page 6 - Procafe 2001. Proyecto Café y Biodiversidad. Informe final del componente de investigación agronómica. Caracterización de los agroecosistemas cafetaleros y medición de capacidad de captura de carbono del area de influencia del proyecto café y biodiversidad en la región occidental de El Salvador. page 30
Value applied:	106.4 t C ha^{-1}
Justification of the choice of data or description of measurement methods and procedures actually applied :	The estimate is based on literature sources and corresponds to an area-percentage weighted-mean estimate of carbon density, based on distinction between different types of coffee forests in El Salvador. The calculations are detailed in Table 9.
Any comment:	

Data / Parameter:	CLU i=abandonment
Data unit:	t C ha^{-1}
Description:	average carbon density in abandoned coffee forests
Source of data used:	- CFor - Expert judgment by Jan Fehse and Till Neeff from EcoSecurities in May 2008.
Value applied:	36.6 t C ha^{-1}
Justification of the choice of data or description of measurement methods and procedures actually applied :	CLU i=abandonment is calculated using the assumption that soil-organic carbon would not increase upon conversion between coffee forest and abandoned coffee forest. It is also calculated using expert judgments for the amount of biomass in vegetation, other than in soil-organic carbon. The calculations are detailed in Table 10.
Any comment:	

Data / Parameter:	EFSubs
Data unit:	t CO2e (t CO2e in FW)$^{-1}$
Description:	factor for emissions per unit of fuelwood that other fuels substitute for
Source of data used:	- 2006 IPCC Guidelines for National GHG Inventories. Volume 2. Table 1.2, page 1.18-1.19. - 2006 IPCC Guidelines for National GHG Inventories. Volume 2. Table 2.5, page 2.22-2.23. - Smith, K. et al (2000) Greenhouse Implications of Household Stoves: An Analysis for India. Annual Review of Energy and the Environment 25: 741–63.
Value applied:	0.432
Justification of the choice of data or	EFSubs is calculated using default values about stove efficiencies, net calorific values and emissions per energy-unit. EFSubs then relates to the replacement of

description of measurement methods and procedures actually applied :	fuelwood through liquefied-petroleum gas. The calculations are detailed in Table 15.
Any comment:	

Data / Parameter:	EFShift
Data unit:	t CO2e (t CO2e in FW)$^{-1}$
Description:	factor for emissions per unit of fuelwood
Source of data used:	- Procafe 2001. Proyecto Café y Biodiversidad. Informe final del componente de investigación agronómica. Caracterización de los agroecosistemas cafetaleros y medición de capacidad de captura de carbono del area de influencia del proyecto café y biodiversidad en la región occidental de El Salvador. page 29.
Value applied:	1.100
Justification of the choice of data or description of measurement methods and procedures actually applied :	The emissions per unit of fuelwood are calculated in order to also cover the emissions from decomposition of roots after tree harvest. In doing so, EFShift accounts for that emissions are larger than the amount of fuelwood collected since not the entire tree can be used as fuelwood when the roots remain in the ground. In accounting for roots, it was decided to base EFShift on a root-to-shoot ratio of RSR=0.1. Therefore, EFShift = 1 + 0.1 = 1.1.
Any comment:	

Data / Parameter:	sustFWProd
Data unit:	t C in FW
Description:	annual sustainable production of fuelwood in plantations
Source of data used:	- Mansur, E. 1990. Plan de reforestación de El Salvador. Cited in: CONAF/FAO 2004.Estudio de tendencias y perspectivas del sector forestal en América Latina. Informa nacional El Salvador. P.16.
Value applied:	6.5
Justification of the choice of data or description of measurement methods and procedures actually applied :	During the pruning events of shade trees coffee plantations generate fuelwood. The calculations are detailed inTable 13.
Any comment:	

Data / Parameter:	MWCO2-C
Data unit:	t CO_2e (t C)$^{-1}$
Description:	ratio of molecular weights of CO_2 and C
Source of data used:	Global default
Value applied:	44/12
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

B.6.3 Ex-ante and ex-post calculation of emission reductions:

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Emission reductions (ex-ante and ex-post)

Both for the ex-ante calculation and for the ex-post calculation, emission reductions are calculated using the following equation. The ex-ante calculation is summarized in Table 17.

CRED = C s=BL - C s=PJ - LK

Where:
CRED – annual emission reductions; t CO_2e yr^{-1}
s – baseline (BL) and project (PJ) scenarios; dimensionless
C s=PJ – annual emissions under the project scenario; t CO_2e yr^{-1}
C s=BL – annual emissions under the baseline scenario; t CO_2e yr^{-1}
LK – annual leakage; t CO_2e yr^{-1}

The ex-ante estimation for the project's emissions, leakage and emission reductions is summarized in section B.6.5, in Table 17.

Calculation of annual emissions under both the project scenario and the baseline scenario (ex-ante and ex-post)

In the following, the subscript s=BL and s=PJ are omitted in order to simplify the equations. They apply to both the project scenario and to the baseline scenario. The same equation is used ex-ante and ex-post.

Annual emissions correspond to the following:

C t = Σi CDef i=abandonment * ADef A i=abandonment t

Where:
C t – annual emissions in year t; t CO_2e
i – post-conversion land-use types from 1 through I; dimensionless
t – years across project lifetime from 0 through T, 0 is the year of the baseline study and T is the project lifetime; dimensionless
CDef i – average emissions per area-unit of deforestation towards post-conversion land-use type i; t CO_2e ha^{-1}
ADef A it – total annual area of deforestation towards post-conversion land-use type i in year t; ha

In this calculation, the only land-use type considered is i=abandonment. Conversion of coffee forests to other land-use types is not factored into the calculations.

The emissions under the baseline and under the project scenarios are summarized in Table 17. The areas undergoing abandonment under baseline and project scenario are summarized in Table 7.

Calculation of the annual areas undergoing deforestation (activity data) (ex-ante and ex-post)

The calculation of areas undergoing deforestation yields the results displayed in Table 7.

For the ex-ante estimation, we estimate the baseline-scenario deforestation rate using hypothetical assumptions about the future development of coffee prices. We estimate the project-scenario deforestation rate using a hypothetical assumption of an achievable reduction in deforestation rate of 100% below the baseline level. The calculations are displayed as follows in this section.

Table 7: Baseline scenario and project scenario.

t	year	Baseline scenario deforestation area	Project scenario deforestation area
		ADef A i=abandonment s=BL	ADef A i=abandonment s=PJ
		ha	ha
1	2008	3,621	0
2	2009	3,383	0
3	2010	3,160	0
4	2011	2,953	0
5	2012	2,759	0
6	2013	2,579	0
7	2014	2,410	0
8	2015	2,253	0
9	2016	2,106	0
10	2017	1,969	0
11	2018	1,841	0
12	2019	1,722	0
13	2020	1,610	0
14	2021	1,506	0
15	2022	1,409	0
16	2023	1,318	0
17	2024	1,234	0
18	2025	1,155	0
19	2026	1,081	0
20	2027	1,012	0

Calculation of the deforestation rate for the baseline scenario (ex-ante and ex-post)

The baseline scenario consists of annual areas of deforestation for conversion of coffee forests to other land-use types. Although it is observed that coffee forests are converted also to other land-use types (namely cropland and residential areas – see Table 8), we only consider the abandonment of coffee forests. The post-conversion land-use types are therefore limited to abandoned land.

The following equation is used:

$$p\ ct\ (Def\ i) = p\ (Def\ i \mid X) * p\ ct\ (X)$$

Where:
p ct (Def i) – probability of deforestation towards post-conversion land-use type i in year t in sub-area c; dimensionless
c – sub-area from 1 through C; dimensionless
p (Def i | X) – probability of deforestation towards post-conversion land-use type i, given that condition X is fulfilled; dimensionless
p ct (X) – probability that condition X is fulfilled in year t in sub-area c; dimensionless

Step a. The probabilities of land-use conversion are calculated using a proxy variable. The proxy variable (p ct (X)) corresponds to the probability that a given coffee farm enters into financial trouble, i.e., that the condition X="financial trouble" is satisfied. For the purpose of this project, we used whether a given farm defaults on its debt payments to the FICAFE and FINSAGRO as an indicator of whether it is in financial trouble.

Regarding criterion a): Defaulting on debt payments is related to deforestation because the reason for deforestation is that coffee farms are abandoned and that the farmers discontinue farming. Once the farms are abandoned, deforestation occurs over the course of various years. Farmers that default on debt payments are usually in financial trouble and thus not able to serve the debt.

Regarding criterion b): The debt registries contain records on defaulting debt payments during the years 2002, and 2005-2007 and it was used for adjusting the model. All incomplete payments of debt in that database are deemed to correspond to a situation of financial trouble of the respective farm. With 753 entries in the database for every year, there are a total of 5 x 753 observations available.

The proxy variable is the same ex-ante and ex-post.

Step b. A range of candidate predictor variables (predX t) were considered:

- annual payment (contained in Annex 3)
- coffee forest area (contained in Annex 3)
- coffee prices (contained in Annex 3)
- fertilizer prices (contained in Annex 3)
- diesel prices (contained in Annex 3)
- alternative fertilizer prices (not contained since later dropped from the model)
- prices of labour (not contained since later dropped from the model)

The stepwise regression procedure selected a model that relies on the predictor variables as displayed in the below model form:

Log [p (X="financial trouble") / (1- p (X="financial trouble"))]
= beta0 + beta1 * [annual payment] + beta2 * [coffee forest area] + beta3 * [coffee price] + beta4 * [fertilizer price] + beta5 * [diesel price]

Therefore,

p (X="financial trouble") = *f*(predX t)
= EXP { (beta0 + beta1 * [annual payment] + beta2 * [coffee forest area] + beta3 * [coffee price] + beta4 * [fertilizer price] + beta5 * [diesel price])
/ (1+ (beta0 + beta1 * [annual payment] + beta2 * [coffee forest area] + beta3 * [coffee price] + beta4 * [fertilizer price] + beta5 * [diesel price]))}

The fitted coefficients are:

beta0	-8.456415E+00
beta1	5.242118E-06
beta2	-2.065164E-03
beta3	-1.041039E-01
beta4	7.243352E+01
beta5	3.482448E-01

The model form *f*(predX t) remains the same ex-ante and ex-post. However, the predictor variables predX t will be the result of monitoring and therefore different ex-post.

Step c. The probabilities of land-use conversion towards the respective land-use types are derived from the proxy variable using pre-determined ratios (p (Def i | X="financial trouble")). The ratios describes the probabilities of conversion, given that the condition (X= „financial trouble") is satisfied. This ratio was calculated using a dataset about actual land-use conversion among farms that were in financial trouble between late 2006 and late 2007. The dataset ("baseline inventory of coffee farms") is contained in Annex 3 and it is summarized in Table 8. Using those data, the overall probability of abandonment of farms in financial trouble amounted to p(„coffee forests are abandoned" | „the farm is in financial trouble") = 0.0772.

Table 8: Land-use change in 2006-2007 and probabilities of conversion. All areas and probabilities only relate to farms that were in financial trouble during the time.

Areas and probabilities	Area	Probability
	ha	
(Def i=residential | "financial trouble")	0.00	0.0000
(Def i=cropland | "financial trouble")	5.59	0.0014
(Def i=abandonment | "financial trouble")	301.49	0.0772
(Def i=remains | "financial trouble")	3,597.34	0.9213
(Def i≠remains | "financial trouble")	307.08	0.0787
Total area with "financial trouble"	3,904.42	

Although different types of post-conversion land-use types actually occur (see Table 8), we only consider those lands that are abandoned. Therefore, the probabilities of conversion towards cropland and residential areas are not used any further.

The model for p (Def i | X) is the same ex-ante and ex-post. The ratios shall be fixed during the validation.

Step d. The probabilities that coffee forests are abandoned within each sub-area are calculated for the baseline scenario, using p (Def i=abandonment | "financial trouble") from step b, p ct ("financial trouble") from step a. This calculation is carried out at the sub-area level in *the project spreadsheet*.

For the ex-post calculations, monitoring results will be plugged in the equations and the values in *the project spreadsheet* will change accordingly.

Calculation of forest area for the baseline scenario (ex-ante and ex-post)

Step a. The overall coffee forest area at project start is contained in the FIDECAM database (Annex 3). According to the FIDECAM database, at t=0 the overall coffee forest area amounted to AFor A t=0 = 58,495.67 ha. The coffee forest area at project start does not need to be updated during monitoring. It applies for the ex-ante and the ex-post calculations.

Step b. Using the probabilities of conversion, the corresponding coffee forest areas (AFor ct) are calculated for all sub-areas and for all years. This calculation is carried out at the sub-area level in *the project spreadsheet*.

AFor c (t+1) = AFor ct * p ct (Def i=remains)

Where:

AFor ct – area of forests in year t in sub-area c; ha
p ct (Def i=remains) – probability of not deforestation in year t in sub-area c; dimensionless

Ex-post these calculations need to be updated since the probabilities will be calculated using monitoring results.

Step c. Using the probabilities of conversion and the remaining coffee forest areas in each year, the areas of abandonment are calculated for all years. This calculation is carried out at the sub-area level in *the project spreadsheet*.

ADef c i=abandonment t = AFor ct * p ct (Def i=abandonment)

Where:
ADef c i=abandonment t – annual area of deforestation towards post-conversion land-use type i=abandonment in year t, in sub-area c; ha
AFor ct – area of forests in year t in sub-area c; ha
p ct (Def i=abandonment) – probability of deforestation towards post-conversion land-use type i=abandonment in year t in sub-area c; dimensionless

Ex-post these calculations need to be updated since the probabilities will be calculated using monitoring results.

Step d. The total areas annually undergoing abandonment (ADef A t i=abandonment) are calculated as the sum of the areas within the farms (the sub-areas) (ADef ct i=abandonment). The overall result is displayed in Figure 5. This calculation is carried out at the sub-area level in *the project spreadsheet*.

ADef A i=abandonment t = Σc ADef c i=abandonment t

Where:
ADef A i=abandonment t – total annual area of deforestation towards post-conversion land-use type i=abandonment in year t; ha
ADef c i=abandonment t – annual area of deforestation towards post-conversion land-use type i=abandonment in year t, in sub-area c; ha

Ex-post these calculations need to be updated since the probabilities will be calculated using monitoring results.

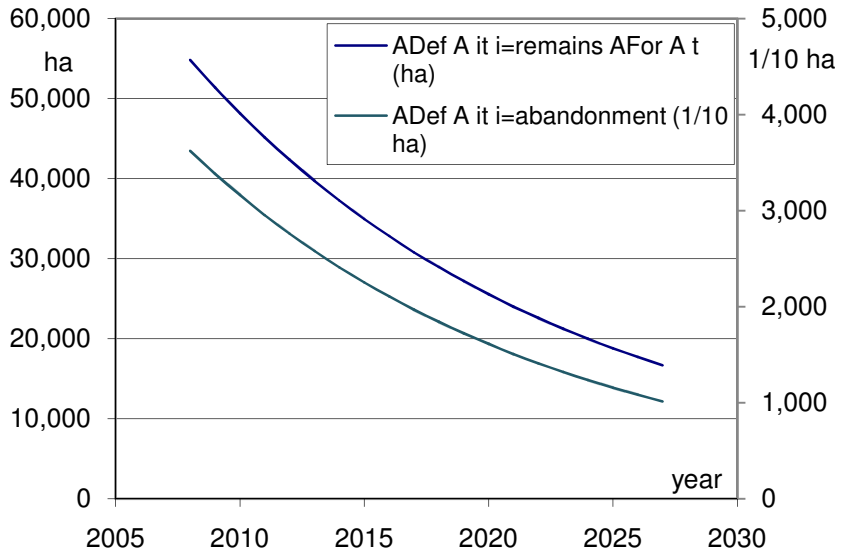

Figure 5: Baseline scenario of the project based on hypothetical assumptions about coffee prices.

Calculation of the deforestation rate for the project scenario (ex-ante and ex-post)

Does not apply

Calculation of forest area for the project scenario

Ex-ante, it is assumed that the project will lead to a relative reduction in deforestation of 100%. Therefore, ex-ante it is assumed that there is no deforestation under the project scenario.

Ex-post, the deforestation area under the project scenario will be monitored.

Calculation of the average emission per area-unit of deforestation (emission factors) for the baseline scenario and the project-scenario (ex-ante and ex-post)

The average emissions per area-unit of deforestation are the same under project-scenario and baseline scenario. They are also the same whether for the ex-post or the ex-ante calculations.

The following equation shall be used for the emission factors:

CDef i = (CFor – CLU i) * MWCO2-C

Where:
CDef i – average emissions per area-unit of deforestation towards post-conversion land-use type i; t CO_2e ha^{-1}
CFor – average carbon density in forests; t C ha^{-1}
CLU i – average carbon density in land-use type i; t C ha^{-1}
MWCO2-C – ratio of molecular weights of CO_2 and C (44/12); t CO_2e (t C)$^{-1}$

The project's emission factors shall be fixed during the validation.

The choice is made to use "literature estimates" for the carbon densities of coffee forest. The average carbon density in coffee forests (CFor) is calculated as an area-percentage weighted-average using the information in Table 9. Using the information, the following value is derived: CFor = 106.4 tC / ha.

Table 9: Data for calculating the average carbon density in coffee forests[8].

Type of coffee forest	# farms	% farms	Total biomass
	#	%	tC / ha
rustic traditional system	23	0.12	174.3
multi-crop traditional system	76	0.38	117.7
modern multi-crop system	25	0.13	100.6
commercial system	76	0.38	76.5

The choice is made to use "expert judgement" for the carbon densities of the other land-use types, because there are no appropriate literature sources for the carbon density in the replacement vegetation available. Some of assumptions are listed in Table 10. It is also assumed that the amount of soil-organic carbon in coffee forest would be greater or equal the amount of soil-organic carbon in abandoned coffee forest. Using those assumptions, total carbon in abandoned coffee forests would be reduced to CLU i=abandonment = 46.6 tC/ha.

Table 10: Calculation of CLU i=abandonment[9].

CFor (see above)	tC / ha	106.4
Percentage of total biomass in soil-organic carbon for coffee forest (expert judgment)	dimensionless	25.0%
Biomass in soil-organic carbon for coffee forest (calculated)	tC / ha	26.6
Biomass (other than in soil-organic carbon) for abandoned coffee forest (expert judgment)	tC / ha	20.0
CLU i=abandonment (calculated)	tC / ha	46.6

Therefore, the emission factor for abandonment amounts to:

CDef i=abandonment = (CFor – CLU i=abandonment) * 44/12 = 219.3 t CO2e/ha.

Where:
CDef i=abandonment – average emissions per area-unit of deforestation towards post-conversion land-use type i=abandonment; t CO_2e ha^{-1}
CFor – average carbon density in forests; t C ha^{-1}
CLU i=abandonment – average carbon density in land-use type i=abandonment; t C ha^{-1}
MWCO2-C – ratio of molecular weights of CO_2 and C (44/12); t CO_2e $(t\ C)^{-1}$

Leakage

Leakage is calculated as follows:

LK = LKFW

[8] Procafe 2001. Proyecto café y biodiversidad. Informe final del componente de investigación agronómica. Caracterización de los Agroecosistemas Cafetaleros y Medición de Capacidad de Captura de Carbono del Areade Influencia del Proyecto Café y Biodiversidad en la Región Occidental de El Salvador. P. 35.

[9] Expert judgments by: Jan Fehse and Till Neeff from EcoSecurities, May 2008.

Where:
LK – annual leakage; t CO_2e yr^{-1}
LKFW – annual leakage from lack of fuelwood; t CO_2e yr^{-1}

More, precisely, leakage is calculated using the following equation:

LKFW = LKFWSubs + LKFWShift

Where:
LKFW – annual leakage from fuelwood collection; t CO_2e
LKFWSubs – annual leakage from fuelwood that other fuels substitute for; t CO_2e
LKFWShift – annual leakage from shifting fuelwood collection elsewhere; t CO_2e

Using the above equations and the results of the below steps a-c, leakage amounts to the values displayed in Table 11.

Table 11: Summary of ex-ante estimation of leakage.

t	year	LKFW	LKFWSubs	LKFWShift	FWlack t
		tCO2e	tCO2e	tCO2e	tC in FW
1	2008	395,443	236,272	159,172	188,649
2	2009	345,455	214,728	130,727	167,994
3	2010	300,168	193,728	106,441	148,713
4	2011	259,116	173,333	85,784	130,713
5	2012	221,881	153,588	68,293	113,910
6	2013	188,089	134,525	53,565	98,221
7	2014	157,409	116,162	41,247	83,573
8	2015	129,542	98,510	31,031	69,894
9	2016	104,221	81,572	22,648	57,121
10	2017	81,206	65,345	15,861	45,192
11	2018	60,282	49,819	10,463	34,050
12	2019	41,255	34,982	6,274	23,643
13	2020	23,951	20,818	3,133	13,922
14	2021	8,212	7,311	901	4,840
15	2022	0	0	0	0
16	2023	0	0	0	0
17	2024	0	0	0	0
18	2025	0	0	0	0
19	2026	0	0	0	0
20	2027	0	0	0	0

For the ex-post estimation, FWlack t will change, and the leakage calculation will then change accordingly. Also, the emission factors per unit of fuelwood will change.

Step a. For the ex-ante estimation, we calculated the annual amount of fuelwood that needs to be substituted for.

FWlack t = (ADef ts=BL – ADef ts=PJ) * CFor * percFWinTB
– (∑(i=1->t) ADef is=BL – ∑(i=1->t)t ADef is=PJ) * sustFWProd

Where:
FWlack t – amount of fuelwood that needs to be substituted for in year t; t C in FW
ADef ts – annual area of deforestation in year t under scenario s; ha

CFor – average carbon density in forests; t C ha^{-1}
percFWinTB – fraction of total biomass that on average becomes fuelwood upon deforestation; dimensionless
ADef is – annual area of deforestation in year i under scenario s; ha
(∑(i=1->t) ADef i is therefore the sum of deforestation over years i up to year t under scenario s)
sustFWProd – annual sustainable production of fuelwood in plantations; t C in FW ha^{-1}

Ex-post, the areas undergoing deforestation will change, and therefore the amount of lacking fuelwood will need to be updated in function of monitoring results.

The factor percFWinTB is estimated as the difference between the biomass density in coffee forest and abandoned areas, corrected by the biomass in roots (Table 12). It corresponds to: 51.1%. It is calculated using the following equation:

percFWinTB = (CFor – average{CLU i=abandonment}) / EFShift / CFor

Where:
percFWinTB – fraction of total biomass that on average becomes fuelwood upon deforestation; dimensionless
CFor – average carbon density in forests; t C ha^{-1}
CLU i=abandonment – average carbon density in land-use type i; t C ha^{-1}
EFShift – factor for emissions per unit of fuelwood; t CO2e (t CO2e in FW)$^{-1}$

Table 12: Calculation of percFWinTB.

Forest biomass	CFor	tC / ha	106.415
Replacement vegetation biomass	CLU i=abandonment	tC / ha	46.604
Biomass difference	CFor - CLU i=abandonment	tC / ha	59.812
Factor for emissions per unit of fuelwood	EFShift	tCO2e / tCO2e in FW	110.0%
fuelwood content in biomass difference	(CFor - CLU i=abandonment) / EFShift	tC / ha	54.374
percFWinTB	(CFor - CLU i=abandonment) / EFShift / CFor	dimensionless	51.1%

The factor sustFWProd is estimated based on a country average for El Salvador and default factors (Table 13).

Table 13: Estimation of sustFWProd.

Supply of fuelwood from pruning[10]	m3 / ha	6.5
Average wood density	t d.m. / m3	0.7
Carbon fraction	tC / t d.m.	0.5
sustFWProd	tC / ha	2.275

Using the estimate of percFWinTB derived in Table 12 and using the estimate of sustFWProd derived in Table 13, FWlack t can be calculated and it amounts to the values displayed in Table 11. Both

[10] Mansur, E. 1990. Plan de reforestación de El Salvador. Cited in: CONAF/FAO 2004.Estudio de tendencias y perspectivas del sector forestal en América Latina. Informa nacional El Salvador. P.16

percFWinTB and sustFWProd are not subject to monitoring results but they are fixed during the validation.

Step b. The factor percSubs t is estimated based on annual census data[11]. For the ex-ante estimation, we extrapolated a linear trend of increasing use of gas and decreasing use of fuelwood into the future (Table 14). This factor will be monitored for the ex-post estimation.

Table 14: Estimation of percSubs t, the fraction of fuelwood lack that is substituted for by gas. For the years 2002-2006, the values are observed values from the EHPM. For the time period after that they are linearly extrapolated.

t	Year	Using gas	Using fuelwood	Using gas	Using fuelwood
				percSubs t	
		Number of households	Number of households	%	%
1	2008	1,337	354	79.08%	20.92%
2	2009	1,399	334	80.71%	19.29%
3	2010	1,461	315	82.25%	17.75%
4	2011	1,523	296	83.73%	16.27%
5	2012	1,585	277	85.14%	14.86%
6	2013	1,647	258	86.48%	13.52%
7	2014	1,709	238	87.76%	12.24%
8	2015	1,772	219	88.99%	11.01%
9	2016	1,834	200	90.17%	9.83%
10	2017	1,896	181	91.30%	8.70%
11	2018	1,958	161	92.38%	7.62%
12	2019	2,020	142	93.42%	6.58%
13	2020	2,082	123	94.42%	5.58%
14	2021	2,144	104	95.38%	4.62%
15	2022	2,206	85	96.31%	3.69%
16	2023	2,268	65	97.20%	2.80%
17	2024	2,330	46	98.06%	1.94%
18	2025	2,392	27	98.89%	1.11%
19	2026	2,454	8	99.69%	0.31%
20	2027	2,516	-12	100.00%	0.00%

percSubs is estimated for the ex-ante calculation using a linear extrapolation of observations during past years. Ex-post, percSubs will be monitored.

Step c. Calculate the emission factors.

The emissions factor for substituting the use of fuelwood by other fuels (EFSubs) is calculated as shown in Table 15.

Table 15: Calculation of EFSubs.

Variable	Source	Unit	Value
Net calorific value of fuelwood	2006 IPCC Guidelines for Natl GHG inventories. Volume 2. Table 1.2, page 1.18-1.19.	TJ / t d.m.	0.016
Stove efficiency of fuelwood	Smith, K. et al (2000) Greenhouse Implications of Household Stoves: An Analysis for India. Annual	TJ delivered / TJ applied	23.5%

[11] DIGESTYC (2008). Encuesta de Hogares de Propósitos Múltiples (EHPM). www.digestyc.gob.sv.

	Review of Energy and the Environment 25: 741–63.		
Stove efficiency of gas	Smith, K. et al (2000) Greenhouse Implications of Household Stoves: An Analysis for India. Annual Review of Energy and the Environment 25: 741–63.	TJ delivered / TJ applied	53.6%
Energy delivered in cooking per unit of fuelwood	[net calorific value of fuelwood] * [stove efficiency of fuelwood]	TJ delivered / t d.m.	0.004
Energy to be applied through gas in cooking per unit of fuelwood	[Energy delivery in cooking per unit of fuelwood] / [Stove efficiency of gas]	TJ applied / t d.m.	0.007
Emission factor for LPG	2006 IPCC Guidelines for National GHG inventories. Volume 2. Table 2.5, page 2.22-2.23.	t CO2e / TJ applied	63.152
EFSubs	[Energy to be applied through gas in cooking per unit of fuelwood] * [Emission factor for LPG]	tCO2e / tCO2e in FW	0.432

The emissions per unit of fuelwood are calculated to cover the decomposition of roots when a tree is harvested. EFShift therefore amounts to EFShift = 1+RSR, where the RSR ("root-to-shoot ratio") describes the fraction of tree biomass that is stored in roots, corresponding to 10%[12].

The emission factors are fixed and they will be the same ex-post.

Step d. Leakage from substituting and shifting fuelwood is calculated as follows.

LKFWSubs = FWlack t * MWCO2-C * percSubs t * EFSubs

Where:
LKFWSubs – annual leakage from fuelwood that other fuels substitute for; t CO_2e
FWlack t – amount of fuelwood that needs to be substituted for in year t; t C in FW
MWCO2-C – ratio of molecular weights of CO_2 and C (44/12); t CO_2e (t C)$^{-1}$
percSubs t – fraction of fuelwood that other fuels substitute for in year t; dimensionless
EFSubs – factor for emissions per unit of fuelwood that other fuels substitute for; t CO2e (t CO2e in FW)$^{-1}$

LKFWShift = FWlack t * MWCO2-C * (1-percSubs t) * EFShift

Where:
LKFWShift – annual leakage from shifting fuelwood collection elsewhere; t CO_2e
FWlack t – amount of fuelwood that needs to be substituted for in year t; t C in FW
MWCO2-C – ratio of molecular weights of CO_2 and C (44/12); t CO_2e (t C)$^{-1}$
percSubs – fraction of fuelwood that other fuels substitute for in year t; dimensionless
EFShift – factor for emissions per unit of fuelwood; t CO2e (t CO2e in FW)$^{-1}$

The ex-ante estimates for LKFWSubs and LKFWShift are summarized in Table 11, above. The calculations will change ex-post.

B.6.4 Buffer:

>>

[12] Procafe 2001. Proyecto Café y Biodiversidad. Informe final del componente de investigación agronómica. Caracterización de los agroecosistemas cafetaleros y medición de capacidad de captura de carbono del area de influencia del proyecto café y biodiversidad en la región occidental de El Salvador. page 29

According to the methodology, the risk of non-permanence of the achieved emission reductions is mitigated through a buffer approach. The buffer approach is the approach proposed in the AFOLU guidance of the VCS-2007 document[13].

Table 16: Risk factors and risk ratings for the project.

Risk factor	Risk rating
Land ownership type	
Private or public forest conservation organization with a credible track record in similar activity / legally protected land with good enforcement	Low
Privately owned land / legally protected land	Low-Medium
Uncertain land tenure / legally unprotected land or protected with weak enforcement	Medium-High
Technical capability of project developer/implementer	
Proven capacity to design and successfully implement strategies (e.g., creating sustainable livelihood alternatives and/or effectively managed protected areas) for ensuring longevity of carbon benefits?	Low
No previous experience in the design and implementation of strategies for ensuring longevity of carbon benefits	Medium-High
Net revenues from the protected forest (including carbon)	
Lower than pre-project / lower than alternative land-uses	High
Similar to pre-project / similar than alternative land-uses	Medium
Higher than pre-project / higher than alternative land-uses	Low
Infrastructure and natural resources	
High likelihood of new road(s)/rails being built near or inside the protected forest	Medium-High
Low likelihood of new road(s)/rails being built near or inside the protected forest	Low
High-value natural resources (oil, minerals, etc.) known to exist in the protected forest	High
High hydroelectric potential within protected forest	Medium-High
Population surrounding the project area	
Decreasing, or increasing but with low population density	Low
Stable and high population density	Medium
Increasing and high population density	High
Net financial returns for deforestation agents	
> 10% compared to pre-project situation	Low
About similar	Medium
< 10% compared to pre-project situation	High
Incidence of crop failure on surrounding lands from severe droughts, flooding and/or pests/diseases	
Infrequent (<1 in 10 years)	Low
Frequent (>1 in 10 years)	Low-High

Following the guidance on risk factors and risk ratings from VCS, it is estimated that the project should receive an overall risk rating as “”Low Risk” (Table 16) because all but one categories yielded that score. According to the guidance of the VCS, avoided deforestation projects with a low risk rating should deduct buffers of 5-10% of their emission reductions. In adopting a conservative approach, a buffer size of 10% is applied.

[13] http://www.v-c-s.org/.

The VCS foresees that the buffer size of projects reduces with continuing good performance, as assessed during monitoring in 5-year intervals. It is thus expected that at future monitoring events less than 10% of the emission reductions will have to be set apart.

B.6.5 Summary of the ex-ante estimation of emission reductions and carbon credits:

>>

Table 17: Ex-ante calculation of emission reductions and carbon credits.

		Baseline emission	Project emission	Leakage	Gross emission reductions	Buffer size	Expected carbon credits
t	year	C s=BL	C s=PJ	LK	gross ER	buffer	CRED
		tCO2e / yr	tCO2e / yr	tCO2e / yr	tCO2e / yr	%	carbon credits
1	2008	794,110	0	395,443	398,667	10.00%	358,800
2	2009	741,838	0	345,455	396,383	10.00%	356,745
3	2010	693,069	0	300,168	392,900	10.00%	353,610
4	2011	647,566	0	259,116	388,449	10.00%	349,605
5	2012	605,109	0	221,881	383,228	10.00%	344,905
6	2013	565,492	0	188,089	377,402	10.00%	339,662
7	2014	528,523	0	157,409	371,114	10.00%	334,003
8	2015	494,024	0	129,542	364,482	10.00%	328,034
9	2016	461,827	0	104,221	357,607	10.00%	321,846
10	2017	431,779	0	81,206	350,573	10.00%	315,516
11	2018	403,733	0	60,282	343,451	10.00%	309,106
12	2019	377,555	0	41,255	336,299	10.00%	302,669
13	2020	353,119	0	23,951	329,168	10.00%	296,251
14	2021	330,308	0	8,212	322,095	10.00%	289,886
15	2022	309,012	0	0	309,012	10.00%	278,111
16	2023	289,130	0	0	289,130	10.00%	260,217
17	2024	270,567	0	0	270,567	10.00%	243,510
18	2025	253,233	0	0	253,233	10.00%	227,910
19	2026	237,047	0	0	237,047	10.00%	213,342
20	2027	221,931	0	0	221,931	10.00%	199,738

B.7 Application of the monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	Coffee price
Data unit:	USD / QQ
Description:	Spot price for contract C
Source of data to be used:	Consejo Salvadoreño del Café
Value of data applied for the purpose of calculating expected emission reductions in section B.5	134.79 USD / QQ
Description of measurement methods	Data shall be used as published and provided by the Consejo Salvadoreño del Café. http://www.consejocafe.org.sv/docs/precioc.pdf.

and procedures to be applied:	The coffee prices shall be aggregated to yearly averages. The data shall be collected once per year during the yearly monitoring campaign.
QA/QC procedures to be applied:	From third-party source.
Any comment:	This is one of various variables that are described more generally as predX t in the methodology.

Data / Parameter:	Fertilizer price
Data unit:	USD / kg
Description:	End-user price for ammonium
Source of data to be used:	Ministerio de Agricultura. Dirección General de Economía Agropecuaria – Departamento de Información de Mercados
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.32 USD / kg
Description of measurement methods and procedures to be applied:	Data shall be used as published and provided by the Ministerio de Agricultura. Dirección General de Economía Agropecuaria – Departamento de Información de Mercados. A subset of those data are publically available at http://www.mag.gob.sv/dgea The fertilizer prices shall be aggregated to yearly averages. The data shall be collected once per year during the yearly monitoring campaign.
QA/QC procedures to be applied:	From third-party source.
Any comment:	This is one of various variables that are described more generally as predX t in the methodology.

Data / Parameter:	Diesel price
Data unit:	USD / gl
Description:	End-user price for diesel
Source of data to be used:	Ministerio de Agricultura. Dirección General de Economía Agropecuaria – Departamento de Información de Mercados
Value of data applied for the purpose of calculating expected emission reductions in section B.5	3.31 USD / gl
Description of measurement methods and procedures to be applied:	Data shall be used as published and provided by the Ministerio de Agricultura. Dirección General de Economía Agropecuaria – Departamento de Información de Mercados. A subset of those data are publically available at http://www.mag.gob.sv/dgea The diesel prices shall be aggregated to yearly averages. The data shall be collected once per year during the yearly monitoring campaign.

QA/QC procedures to be applied:	From third-party source.
Any comment:	This is one of various variables that are described more generally as predX t in the methodology.

Data / Parameter:	Area of farms
Data unit:	ha
Description:	Same as AFor c (t=0)
Source of data to be used:	FIDECAM database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	The respective values that the database contains. The FIDECAM database is contained in Annex 3.
Description of measurement methods and procedures to be applied:	Not subject to change, the database shall be revisited every year during the yearly monitoring campaign.
QA/QC procedures to be applied:	The coffee area in farms is given with the FICAFE database. The database is not subject to change. Since there are no changes or updates to be expected, there are no extensive procedures for checking quality of the data.
Any comment:	This is one of various variables that are described more generally as predX t in the methodology.

Data / Parameter:	Annual debt payments to FICAFE and FINSAGRO of individual farmers
Data unit:	USD / yr
Description:	
Source of data to be used:	FIDECAM database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	The respective values that the debt registries contain. The FIDECAM database is contained in Annex 3.
Description of measurement methods and procedures to be applied:	Not subject to change, the database shall be revisited every year during the yearly monitoring campaign.
QA/QC procedures to be applied:	No procedures necessary because not subject to change.
Any comment:	This is one of various variables that are described more generally as predX t in the methodology.

Data / Parameter:	percSubs t
Data unit:	dimensionless
Description:	fraction of fuelwood that other fuels substitute for in year t
Source of data to be used:	EHPM data from DIGESTYC
Value of data applied	We extrapolated a linear trend of increasing use of gas and decreasing use of

for the purpose of calculating expected emission reductions in section B.5	fuelwood (Table 14). The past data were provided by DIGESTYC 12/11/2007. According to that calculation, the fraction of fuelwood to be replaced by usage of gas will increase annually from 79.08% (in 2008) to 100.00% (in 2027). www.digestyc.gob.sv.
Description of measurement methods and procedures to be applied:	The data shall be collected once per year during the yearly monitoring campaign. The latest published results shall be used although not necessary from the same year of the monitoring campaign.
QA/QC procedures to be applied:	Comes from third-party source.
Any comment:	

Data / Parameter:	ADef A t i=abandonment s=PJ
Data unit:	ha
Description:	total annual area of deforestation towards post-conversion LU type i=abandonment in year t for s is the project scenario
Source of data to be used:	Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	It was assumed for the purpose of the ex-ante calculations that the project can reduce deforestation by 100%.
Description of measurement methods and procedures to be applied:	There are more detailed instructions in Annex 5. The data shall be collected once per year during the yearly monitoring campaign.
QA/QC procedures to be applied:	Re-measurement of 20% of the data.
Any comment:	

B.7.2 Description of the monitoring plan:

>>

General instructions

One monitoring campaign shall be conducted every year.

At the BMI, there will be the position of a carbon-credit coordinator.

The carbon-credit coordinator will be responsible for:
- Collecting all the data items,
- Training staff for data collection and reporting on results,
- Quality control of collected data,
- Archiving all collected data

All collected data will be archived at the premises of the BMI in
- Hardcopy format, and

- Softcopy format.

Specific instructions on [Coffee price]

The coffee prices will be obtained from literature sources, namely from official data published by the Consejo Salvadoreño del Café. Should the Consejo Salvadoreño del Café cease publishing usable data, then an equivalent data source may be found.

The data will be collected once per year during the monitoring campaign and relating to the monitoring period.

Specific instructions on [Fertilizer price] and [Diesel price]

The fertilizer and diesel prices will be obtained from literature sources, namely from official data published by the Ministerio de Agricultura – Dirección General de Economía Agropecuaria – Departamento de Información de Mercados. Should the Ministerio de Agricultura cease publishing usable data, then an equivalent data source may be found.

The data will be collected once per year during the monitoring campaign and relating to the monitoring period.

Specific instructions on [Annual debt payments to FICAFE of individual farmers] and [Area of farms]

The annual debt payments and the areas of farms are fields in the FICAFE database. Since they are not subject to change there is no actualization necessary. However, the database and these fields shall be revisited every year during the monitoring campaign. Revisiting will be necessary in order to account for unforeseeable events, e.g., that some of the farms cease participation in the FICAFE scheme.

Specific instructions on percSubs t

The percSubs will be obtained from census data, as provided in the EHPM of DIGESTYC. Should DIGESTYC cease publishing usable data, then an equivalent data source may be found.

The data shall be collected once per year during the yearly monitoring campaign. The latest published results shall be used although not necessary from the same year of the monitoring campaign.

Specific instructions on ADef A t i=abandonment s=PJ

The procedures prescribe conducting a survey to determine the area undergoing abandonment every year. The survey shall follow the same approach that is also applied in collecting data for determining p (Def i=abandonment | “financial trouble”) during the baseline inventory.

The survey shall be conducted within a random sample of sub-areas. The sub-areas correspond to the coffee farms. The sub-areas will be selected by random sampling from the FICAFE database. At least 100 data points shall be collected.

The respective farms shall be contacted in phone interviews. At least 20% of the interviews shall be double-checked in the field.

The results from the sample survey shall be upscaled to the entire project area by simple extrapolation.

Responsible for conducting the survey is the carbon-credit coordinator, but it may be carried out by a third party, e.g., a consultant. The carbon-credit coordinator will then train and supervise the consultant.

The survey shall be conducted every year during the monitoring campaign.

The details of the survey, including the questionnaire are defined through its Terms of Reference that are contained in Annex 5 (being very similar to the Terms of Reference of part of the baseline inventory).

B.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

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The baseline study and the monitoring methodology were finished in June 2008. For the baseline study the following persons were responsible:

- Carlos H. Alvarenga Ticas and Alfredo Alfaro (BMI)
  Carlos.Alvarenga@bmi.gob.sv
  +503 22670035
- Till Neeff and Robert Tippmann (EcoSecurities as Consultant for the BMI)
  Till@ecosecurities.com
  +44 1865 202635

SECTION C. Duration of the project activity / crediting period

C.1 Duration of the project activity:

C.1.1. Starting date of the project activity:

>>

Although the FICAFE and FINSAGRO started several years earlier in 2001/2002, the carbon-credit project only commences with its crediting period. The carbon-credit project activity started in 01/10/2007 at the end of the coffee growers' year 2007 when the coffee growers received a debt relief for the first time. The project is scheduled for first verification after completion of the coffee growers' year 2008 in late 2008.

C.1.2. Expected operational lifetime of the project activity:

>>

20 years.

C.2 Choice of the crediting period and related information:

C.2.1. Renewable crediting period

C.2.1.1. Starting date of the first crediting period:

>>

C.2.1.2. Length of the first crediting period:

>>

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>>
The crediting period starts in 01/10/2007.

C.2.2.2. Length:

>>
20 years.

SECTION Da. Environmental impacts

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Da.1. Original conditions regarding environmental indicators, in particular biodiversity

See section A.4.1.5.

Da.2. Biodiversity without the project

In absence of the project, deforestation of the coffee forests is expected to continue at high rates. The deforestation will have the following externalities on biodiversity:

Loss of habitats
If coffee forests continue being destroyed, the habitats for species that they offer will be destroyed as well. Coffee forests are an important habitat for many biodiversity species, especially for local and migrating bird species. The coffee farms under shade are vital for over 188 bird species, 31 mammal species, 26 reptile species and 326 plant species (Rainforest Alliance, 2000).

Through the project, the loss of habitats may be halted in the coffee forests. We quantify the loss in habitats that the project attempts to avoid as follows:

- The function of the coffee forests to provide habitats is quantified using some species as a proxy to its overall importance as habitat. The proxy to be used is either the abundance of plant species or the abundance of bird species.
- A reference study will be carried out that quantifies the average importance of the coffee forests as a habitat. The reference study will examine the same types of coffee plantations displayed in Table 4, and additionally a typical case of abandoned and degraded coffee plantations. The reference study will establish a relationship between area size of coffee plantations and the amount of species in the coffee plantation.
- On an annual basis the reference study will be used to quantify the expected negative impact of the baseline deforestation on the ability of coffee plantations to provide habitat.

Further fragmentation of ecosystems and destruction of ecological corridors
Destroying coffee forests will eliminate an important biological corridor in the country. There is only 9% of the original forest in El Salvador, and the non-sustainable practices of soil use are degrading and eroding most of the rural areas in this country. Since approximately 8% of the country is covered by coffee farms under shade, the protected areas cannot on their own conserve biodiversity, especially for the large areas needed to sustain the migrant patterns.

The positive impact on halting the further fragmentation of ecosystems and the destruction of ecological corridors occurs off-site the coffee plantations. Moreover and while utterly important, its contribution to protecting biodiversity is hard to quantify. It is therefore not part of the monitoring scheme.

Depletion of soil and water resources
Deforestation of the coffee forests will lead to drainage and erosion volumes in the coffee plantations that may be influenced by the storm characteristics, land slope, physical changes in the soil surface and humidity background. Moreover, the function of coffee forests to capture water with its important role for the water table will be compromised. The beneficial effects of coffee forests on the fertility of soils will be inhibited.

The contribution of the project to the protection of soil and water resources is not quantified in its monitoring scheme. However, it is expected that the contribution is substantial.

Da.3. Documentation on the analysis of the environmental impacts, in particular biodiversity, including transboundary impacts:

>>

Da.3.1. Net positive biodiversity impacts

List of impacts

The project will have a multitude of positive impacts on biodiversity that correspond to avoiding the negative externalities of the without-project scenario, as listed and quantified in section Da.2. More specifically, the positive impacts are the following:

Conservation of habitats
Conserving coffee forests also entails protecting the habitats they offer to species. All of the project's impacts on biodiversity take place in function of an avoided abandonment of coffee forests. The loss in coffee forest area under the baseline scenario and under the project scenario is monitored in great detail as described in the corresponding sections of the PDD.

Starting with the yearly area on which destruction of coffee forest is avoided, the degree can be quantified to which habitats will not be lost because of the project's intervention. This quantification can be carried out using the approach described shown in section Da.2.

Conservation of soil and water resources
Avoiding deforestation of the coffee forests will avoid drainage and erosion volumes in the coffee plantations that may be influenced by the storm characteristics, land slope, physical changes in the soil surface (due to management work) and humidity background. Moreover, the coffee forests allow water capture and preservation of the areas of water re-charge, assuring a longer useful life of the water table in the country. What's more, the coffee plantations contribute to an increase in soil fertility due to the use of nitrogen fixing plants, specially leguminous (Sherry 2000). Moreover, there is weed control due to the consumption of seeds by some migrant birds (Strong 2000) – an action that is probably also developed by some small mammals; and complementary products (fruits, fire wood, etc.) that may be taken advantage of or sold by the farmer (Greenberg et al. 1996, Gobbi 2000). Most of these effects reduce the need to apply artificial fertilizers and pesticides, reducing the cost for the farmer and producing crops with a minimum or no contamination.

Although substantial in its significance, the positive impacts on soil and water resource are not quantified.

Negative impacts on biodiversity
No negative impact on biodiversity is foreseen.

Calculations

The exact procedures for calculation and quantification will be defined once the reference studies are commissioned and once data for verification are collected.

Da.3.2. Offsite biodiversity impacts

Conservation of ecosystems and ecological corridors
Conserving the coffee fores has a positive impact on the protection of biodiversity on the scale of the country and beyond the coffee plantations itself. Coffee farms under shade work as biological corridors in connecting various protected areas to each other. Moreover, coffee forests are the ideal buffer zones for the areas surrounded by parks and national reserves. These buffer areas extend the size of the protected areas, offering more habitat and protection for wild life (Rainforest Alliance, 2000; Mesoamerican Biological Corridor, 2002).

Da.3.3. Biodiversity impact monitoring

The project's biodiversity impacts will be quanitifed in the areas of preventing a further loss of habitats. For the quantification of the net positive impact, the approach drawn up in section Da.2. and the procedure in section ab.3.1. are used. The general instructions on monitoring from section B.7.2 shall be followed.

The following paramteres will be monitored

It has not yet been decided which exact parameters will be monitored or available ex-ante. It is however, expected that the quantification of the impact of the project on the conservation of biodiversity will be quantifiable based on a reference study and based on the results of monitoring area loss of coffee forests. The area loss under the baseline and project scenarios are part of the monitoring of the project's carbon impact.

The following parameters will be available ex-ante, and thus do not need be monitored:

It has not yet been decided which exact paramters will be monitored or available ex-ante. It is however expected that a reference study will be available ex-ante that quantifies the impact of the loss of coffee forest area on its ability to provide habitat. More specifically, it is expected to use an empirically calculated relationship between area size of coffee forests and the amount of plant species (or possibly bird species) that are expected to be encountered.

Da.4. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

>>

Participants in the Coffee and Environment Initiative for the Conservation of the Coffee Forest and Salvadoran authorities as a host country are aware of the environmental benefit of avoiding deforestation in the coffee areas, considering that this effort does not generate any relevant negative impact to the environment.

SECTION Db. Socio-economic impacts

Da.1. Original conditions regarding socio-economic indicators, in particular communities

See section A.4.1.5.

Db.2. Communities without the project

In absence of the project, deforestation of the coffee forests is expected to continue at high rates. The deforestation will have the following externalities on the communities:

Loss of economic activity
In absence of the project, the loss of economic activity in the coffee sector will continue. Every year this entails the destruction of large areas of coffee plantations. As a proxy to loss in economic activity, we estimate the loss in revenues from selling coffee per area unit of coffee under production as follows:

[loss in revenues from selling coffee under the baseline scenario (USD)] =
[lost coffee forest area under the baseline scenario (ha)]
* [average productivity of coffee forests (qq / ha)]
* [average prices paid to coffee producers (USD / qq)]

The parameters in the above equation are available as follows:

- Lost coffee forest area (ha) under the baseline scenario is given through the monitoring of the project's carbon impacts, more specifically with parameter ADef A it s=BL.
- The average productivity of coffee forests (qq / ha) is estimated using national averages[14].
- The average prices paid to coffee producers (USD / qq) are estimated using national averages[15].

Using the same expected area losses of coffee forests as in the estimation of the project's carbon benefits, it can be concluded that without the project the communities could lose a large amount of revenues, and thus an important part of their economic activity (Table 19).

Loss of employment
Loss in employment is linked to the losses in production, culture land and damage to infrastructure. The loss of employment in the coffee forests implies that inhabitants in the coffee areas have less income to take care of health and education, what gives place to a decrease in life expectancy, education level, and poverty increase.

[14] Consejo Salvadoreño del café – Average productivity of coffee plantations. Unpublished. Data for ex-ante estimates provided 16/09/2008 by Tomas Bonilla; tbonilla@consejocafe.org.sv;+503 2267-6600.

[15] Consejo Salvadoreño del café - Precios internos históricos. http://www.consejocafe.org.sv/estadisticas.html.

In absence of the project, it is expected that the loss of employment in the coffee sector will continue. The amount of employment to be lost in this productive agriculture activity can be determined as follows:

[amount of employment lost in the coffee sector under the baseline scenario (jobs)] =
[lost coffee forest area under the baseline scenario (ha)]
* [average productivity of coffee forests (qq / ha)]
* [labour intensiveness of coffee growing (job / qq)]

The parameters in the above equation are available as follows:

- Coffee forest area (ha) under the baseline scenario is given through the monitoring of the project's carbon impacts, more specifically with parameter ADef A it s=BL.
- The average productivity of coffee forests (qq / ha) is estimated using national averages[16].
- The labour intensiveness of coffee growing is estimated using national average data[17].

Using the same expected area losses of coffee forests as in the estimation of the project's carbon benefits, it can be concluded that without the project the communities would a large amount of employment (see Table 19).

Continuing migration from rural areas to urban, and international migration
Availability of employment in the rural areas is directly related to migration from field inhabitants to cities, at the level of the national territory, as well as to other countries. Within the national territory, the main migration flow is oriented towards the departments of San Salvador and La Libertad, especially to the urban areas, that is, the Metropolitan Area of San Salvador; and at the international level, the main flow is towards the United States (about 8% Salvadoran coffee growers who abandon production try to emigrate to the United States, according to data published by the World's Coffee Organization).

Regarding migration, the impacts of the loss of coffee forest area are somewhat more indirect than regarding the loss of economic activity and the loss of employment, as quantified above. Therefore, the project will not attempt to quantify or monitor migration. Nevertheless, migration is considered an important externality of the economic problems in the coffee sector, and thus mentioned here to be more complete.

Db.3. Documentation on the analysis of the socio-economic impacts, in particular on communities, including transboundary impacts:

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Db.3.1. Net positive community impacts

[16] Consejo Salvadoreño del café – Average productivity of coffee plantations. Unpublished. Data for ex-ante estimates provided 16/09/2008 by Tomas Bonilla; tbonilla@consejocafe.org.sv;+503 2267-6600.

[17] Consejo Salvadoreño del café - Estimación de generación de empleo del café. http://www.consejocafe.org.sv/estadisticas.html

List of impacts

Corresponding to the items listed in section Db.2., it is expected that the project will have positive impacts in the socio-economic aspects, as follows:

Maintain economic activity
The project will contribute to maintain the economic activities in coffee farms. Starting with the yearly area on which destruction of coffee forest is avoided, the amount of revenue can be quantified that is not lost because of the project's intervention. This calculation can be carried out using the equation shown in section Db.2, and yields the results displayed in Table 19.

Maintain the present employment levels
One of the main socio-economic benefits of the project consists in securing employment opportunities. Starting with the yearly area on which destruction of coffee forest is avoided, the amount of jobs can be quantified that is not lost because of the project's intervention. This calculation can be carried out using the equation shown in section Db.2, and yields the results displayed in Table 19.

Negative community impacts
It is not expected that there will be negative socio-economic impact due to keeping coffee production.

Calculations

The calculations for the ex-ante estimations based on the situation in the year 2007/2008 are summarized in Table 18. For the ex-post estimation at verifications, the ex-ante estimations will be replaced through monitoring results.

Table 18: Calculation of the project's community impacts regarding the loss of economic activity and employment.

for ex-ante estimation, but monitored later			
average prices paid to coffee producers	USD / qq	82.03	Consejo Salvadoreño del café - Precios internos históricos. http://www.consejocafe.org.sv/estadisticas.html
average productivity of coffee forests	qq / ha	12.71	Consejo Salvadoreño del café – Average productivity of coffee plantations. Unpublished. Data for ex-ante estimates provided 16/09/2008 by Tomas Bonilla; tbonilla@consejocafe.org.sv;+503 2267-6600.
fixed ex-ante, no need to monitor			
amount of work per coffee unit	day / qq	12.5	Consejo Salvadoreño del café - Estimación de generación de empleo del café. http://www.consejocafe.org.sv/estadisticas.html
days per job	day / job	250	Consejo Salvadoreño del café - Estimación de generación de empleo del café. http://www.consejocafe.org.sv/estadisticas.html
jobs per day	job / day	0.004	Calculated from above
labour intensiveness of coffee growing	job / qq	0.05	Calculated from above

Table 19: Quantification of the project's community impacts regarding the loss of economic activity and employment.

t	year	ADef A it s=BL	ADef A it s=PJ	Prod.	Coffee price	Revenue lost (BL)	Revenue lost (PJ)	Net benefit revenue	Jobs lost (BL)	Jobs lost (PJ)	Net benefit empl.
		(ha)	(ha)	(qq / ha)	(USD / qq)	(USD)	(USD)	(USD)	(jobs)	(jobs)	(jobs)
1	2008	3,621	0	12.71	82.03	3,775,012	0	3,775,012	2,301	0	2,301
2	2009	3,383	0	12.71	82.03	3,526,521	0	3,526,521	2,150	0	2,150
3	2010	3,160	0	12.71	82.03	3,294,684	0	3,294,684	2,008	0	2,008
4	2011	2,953	0	12.71	82.03	3,078,375	0	3,078,375	1,876	0	1,876
5	2012	2,759	0	12.71	82.03	2,876,544	0	2,876,544	1,753	0	1,753
6	2013	2,579	0	12.71	82.03	2,688,214	0	2,688,214	1,639	0	1,639
7	2014	2,410	0	12.71	82.03	2,512,473	0	2,512,473	1,532	0	1,532
8	2015	2,253	0	12.71	82.03	2,348,472	0	2,348,472	1,432	0	1,432
9	2016	2,106	0	12.71	82.03	2,195,418	0	2,195,418	1,338	0	1,338
10	2017	1,969	0	12.71	82.03	2,052,573	0	2,052,573	1,251	0	1,251
11	2018	1,841	0	12.71	82.03	1,919,249	0	1,919,249	1,170	0	1,170
12	2019	1,722	0	12.71	82.03	1,794,805	0	1,794,805	1,094	0	1,094
13	2020	1,610	0	12.71	82.03	1,678,643	0	1,678,643	1,023	0	1,023
14	2021	1,506	0	12.71	82.03	1,570,204	0	1,570,204	957	0	957
15	2022	1,409	0	12.71	82.03	1,468,970	0	1,468,970	895	0	895
16	2023	1,318	0	12.71	82.03	1,374,456	0	1,374,456	838	0	838
17	2024	1,234	0	12.71	82.03	1,286,209	0	1,286,209	784	0	784
18	2025	1,155	0	12.71	82.03	1,203,810	0	1,203,810	734	0	734
19	2026	1,081	0	12.71	82.03	1,126,864	0	1,126,864	687	0	687
20	2027	1,012	0	12.71	82.03	1,055,007	0	1,055,007	643	0	643

Db.3.2. Offsite community impacts

Decrease migration from rural areas to urban area and internationally
Since employment generation is directly proportional to the migration flow, the project will contribute also to decrease migration of many workers to the cities in the country or developed countries. Some of the advantages of decreasing the migration flow are the decrease in social problems such as the high index of criminality and family disintegration caused by the separation of the family members.

Db.3.3. Community impact monitoring

The project's community impacts will be quanitifed in the areas of preventing a loss of economic activity and a loss of employment. For the quantification of the net positive impact, the equations shown in section Db.2. and the procedure in section Db.3.1. are used. The general instructions on monitoring from section B.7.2 shall be followed.

The following parameters shall be monitored:

Data / Parameter:	[average prices paid to coffee producers]
Data unit:	USD / qq
Description:	

Source of data to be used:	Consejo Salvadoreño del café - Precios internos históricos. http://www.consejocafe.org.sv/estadisticas.html
Value of data applied for the purpose of the ex-ante estimation	82.03
Description of measurement methods and procedures to be applied:	The data shall be collected once per year during the yearly monitoring campaign.
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	[average productivity of coffee forests]
Data unit:	qq / ha
Description:	
Source of data to be used:	Consejo Salvadoreño del café – Average productivity of coffee plantations. Unpublished. Data for ex-ante estimates provided 16/09/2008 by Tomas Bonilla; tbonilla@consejocafe.org.sv;+503 2267-6600.
Value of data applied for the purpose of the ex-ante estimation	12.71
Description of measurement methods and procedures to be applied:	The data shall be collected once per year during the yearly monitoring campaign.
QA/QC procedures to be applied:	
Any comment:	

The following parameters will be available at validation, and thus do not need be monitored:

Data / Parameter:	[labour intensiveness of coffee growing]
Data unit:	job / qq
Description:	Jobs in the cultivation, as well as in the harvesting phase of coffee
Source of data used:	Calculations with data from the Consejo Salvadoreño del café - Precios internos históricos. http://www.consejocafe.org.sv/estadisticas.html
Value applied:	0.05
Justification of the choice of data or description of measurement methods and procedures actually applied :	

amount of work per coffee unit	day / qq	12.5	Consejo Salvadoreño del café
days per job	day / job	250	Consejo Salvadoreño del café
jobs per day	job / day	0.004	Calculated from above
labour intensiveness of coffee growing	job / qq	0.05	Calculated from above

Any comment:	

SECTION E. Stakeholders' comments

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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Stakeholders Selection Process

The Coffee and Environment Initiative considers as stakeholders all coffee producers who have coffee forest area and indebted with FICAFE and FINSAGRO.

Other parties interested in the initiative are the other members of the agricultural-productive chain of coffee, such as agro-industrialists and exporters. Banks, entities defending the environment (NGOs), producers associations, government representatives and the support to the coffee sector were also invited through advertising in one of the newspapers with largest circulation.

As a cornerstone of the stakeholder consultation, there were consultation meetings. The selection process for participants in the consultation days was the following:

- During the first consultation (June 20, 2007 at BMI), it was considered important to know and publish the initiative to the members representing the Coffee Forum, a movement created in order to look for alternatives to the financial coffee crisis through the sale of environmental services. This selection happened because this entity encompasses the most important groups in the coffee sector, including cooperatives, individual producers, and agro-industrials.
- During the second consultation (04 July, 2007 at CAMARASAL), it was considered important to call only coffee producing debtors from FICAFE and FINSAGRO using as a publicizing channel for invitation banks and agro-industrialists and cooperatives who work as financial intermediaries.
- During the third consultation (18 July 2007, at UCRAPROBEX), it was decided to summon the support and coordination of the Union of Cooperatives from the Agrarian Reform, Producers, Processors and Exporters of Coffee UCRAPROBEX, to the representatives of cooperatives of the agrarian reform related to coffee activity.
- In the fourth meeting (25 July 2007, ASI), there was no process of selection, but an invitation was issued to all those interested in the Initiative, through an announcement published in a newspaper.

Process to Invite Stakeholders

- **During the first meeting** the coffee forum was directly invited through a telephone call. 8 cooperatives representatives participated, with NGOs and associations.
- **During the second meeting** there was an invitation and banks and financial intermediaries were invited (for them to call their debtors openly. Invitations were sent where 25 to 30 participants were requested per entity. 86 people participated.
- **During the third meeting,** UCRAPROBEX called to a meeting of partners reaching a participation of 24 cooperatives representatives.
- **During the fourth meeting,** BMI published a notice in one of the two largest newspapers, confirming later participation in their area of customer service.

Process of consultation preparation

The consultation process had three stages:

- **Initiative Presentation:** A presentation was made using a computer and multimedia projector consisting in the presentation of the contents displayed in Table 20.
- **Questions and Comments Meeting:** During this stage it was allowed that all audience make questions, comments, requests, observations and criticisms to the Initiative to document them and answer them at that time, taking note of the same and have them included in the process of project preparation. This stage was done without time limit.
- **Directed discussion with the public (Made only on the second meeting):** Here the audience was invited to answer a series of five questions prepared to generate discussion on the model. The questions were:
    - Do you believe there really is a deforestation rate of the coffee forest?
    - Do you believe this project will help avoid deforestation when changing the use in activities?
    - Do you believe that the incentive from investors to pay the debt will give sustainability to the coffee farms?
    - How can we ease the participation of users?
    - How to generate an image of the coffee sector friendly with the environment?
    - Do you agree with the Initiative and want to participate in it?

As support material for the producers, they received a copy of the presentation, a copy of the event agenda and at the same time, the web page www.cafeyambiente.org was created where the initiative may be known in depth, and questions and comment may be made 24 hours per day.

Table 20: Content of Presentation in Consultation Meetings.

SLIDE 1	**Coffee Situation** **Economic contribution** **Contribution to society** **Problems faced** **Coffee economy** **Deforestation**
SLIDE 2	**Concept birth** **Environmental benefits lost due to deforestation** **Measure of deforestation rate** **Possibility to look for a mechanism that supports the producer with an incentive not to deforest**
SLIDE 3	**Carbon market** **CDM Market** **Definition** **Restrictions**
SLIDE 4	**Voluntary market** **Definition** **Why choose this alternative**
SLIDE 5	**Program Principles** **Concept** **Desire from external investors to support the coffee sector**
SLIDE 6	**Program benefits** **Stop deforestation** **Maintenance of coffee park** **Transfer of payments to their debt payments due to no-deforesting**
SLIDE 7	**Steps towards implementation** **Registry** **Area consolidation** **Presentation of project document including this consultation** **Verification and validation by an external entity** **Sales process** **Funds transfer** **Yearly audit**

SLIDE 8	Users	
		Requirements
		Who can participate
		Have a duly documented debt
		Have coffee under established requirements (l legal and agronomic)
		Registration
		Acquired commitments

Development of consultation

In the following there are details from the consultation meetings. There are also photos in Annex 10.

1st Consultation Meeting: Performed at BMI on June 20, 2007, with the participation of 8 persons, offered by Engineer Alfredo Alfaro, Development Banking Manager at BMI, with the support of Carlos Alvarenga, Agricultural Specialist, 11:00 am to 12:30 pm.

The Initiative was presented and reviewed, observations were received, and questions from special cases were answered.

2nd Consultation Meeting: Performed in a rented auditorium at the Chamber of Commerce and Industry of El Salvador, located downtown in the capital city, on 04 July, 2007, with the participation of 86 persons, offered by Engineer Alfredo Alfaro, Development Banking Manager of BMI with the support of Carlos Alvarenga, Agricultural Specialist and moderator Lic. Rafael Reyes and Lic. Besy de Durán, from the CECAME S.A. de C.V. consulting firm, 9 a.m. to 11:30 a.m.

This meeting was filmed and documented completely as a sample of consultation dynamic.

3rd Consultation Meeting: Performed at UCRAPROBEX, located at La Libertad department, on 18 July, 2007, with the participation of 24 persons, offered by Engineer Alfredo Alfaro, Development Banking Manager of BMI with the support of Carlos Alvarenga, Agricultural Specialist, from 10:00 a.m. to 12:00 p.m.

Questions from participants were answered, and notes were taken from comments and recommendations made.

4th Consultation Meeting: Performed at the Industrials Association Auditorium of El Salvador, on 25 July, 2007, with the participation of 87 persons, offered by Engineer Alfredo Alfaro, Development Banking Manager of BMI with the support of Carlos Alvarenga and Diana Rivera, Agriculture Specialists, from 14:00 to 16:30 pm.

Questions from the audience were answered, and notes were taken from their comments and recommendations.

E.2. Summary of the comments received:

>>

First Consultation Meeting: Questions and comments were the following:

Q/ Why reduction will only be up to 30%

A/ Because that is what has been calculated according to projected flows that may be obtained from the sale of VERs. According to what has been analyzed, a support of 30% in the payment of your premium incentivates national producers not to deforest.

Q/ What other type of support will there be for producers who want to keep their coffee forest? Will there be financial lines for those who want to improve their farms?

A/ BMI on its side is promoting a credit line for coffee renovation to strengthen the sector. It is offered with low interest and wide grace period.

Q/ What other support will the government offer?

A/ This question escapes the environment of the Initiative.

Second Consultation Meeting:

Q/ Mr. Ernesto Sol asked: Who are the investors? Why did we not negotiate with another percentage, say, and 50%?

A/ The answer given is that Investors are enterprises participating in the voluntary carbon market and must justify in this mechanism, that actions are being performed to benefit the environment.

On the finance percentage again, it was proposed that 30% is a technical criteria and comes from a calculation of the loss estimated of the coffee forest loss of 4.36%. Many participants were taking notes constantly.

Q/ Maria Antonieta de Arévalo, member of the La Majada cooperative expressed: "Banking is contaminated, the FICAFE payment, what is the mechanic if the banking system is proposing re-financing?

A/ The answer was quite technical and the public showed interest when programs for re-structuring of debt programs were mentioned. Nevertheless, when it was mentioned that there is guarantee that the bank will accept the new conditions, come showed concern.

Q/ Fausto Hernández, partner of Los Naranjos cooperative talked about the importance of the coffee forest. And asked if the banking system already has knowledge on the program.

A/ The answer is yes, the banking system already knows about the program.

Q/ Mrs. Chacón, representative of a private entity asked what happened with an expired debt.

A/ The answer was that compensation corresponds to balances of 2006 and cases of expired debts must be overcome with the debtor outside the program's environment.

Q/ Tito Hernández Pérez, representative of UCRAPROBEX and Los Naranjos took the floor again on rescuing the coffee forest. Asked why the government did not give more support?

A/ As a response, he was told that government participation is outside the sphere of knowledge of the speaker, but his questions would be transmitted as far as possible.

Q/ Arístides Arévalo from the San José La Majada Cooperative asked if a debt from the commercial banking system may be transferred, and he was told that the coffee sector does not receive incentives, because it is one of the ones that contributes the most to water conservation, and suggested that programs destined to water conservation should be destined.

A/ The answer was that a Water Fund is being created that will be managed by ANEP, with ideas such as a Water Trust. The debt transfer is a feasible figure that is called loan innovation.

Q/ The next question was whether if by Sept. /07 70% of the debt is not paid, and the group falls in arrears, what happens? The question was because in the area of Los Naranjos, as a result of the Ilamatepec volcano eruption, there were many losses.

It was also requested to receive more support from the government for nature recovery. The public supported the presentation.

A/ It was clarified that is proposed is safety in land tenancy and sustainability, and thus it is necessary that the producer continues paying his debts in order not to fall in embargos that endanger the tenancy. Honesty was also emphasized.

Q/ Remberto González from Cooperative El Progreso asked whether it must be up to 30%, whether it can be less? Is everything going to be paid, and then reimbursement or only 70% will be paid?

A/ The answer mentioned that up to 30% and then a flow analysis to prepare the project, and can go down if in the sale of VERs, the price obtained is low.

Third Consultation Meeting:

Q/ There will be additional compensation for other environmental services generated by the coffee forest?

A/ So far this is the only alternative. What may happen is that the initiative generates a market in the country, and opens the doors to other opportunities.

Q/ What is the real producer's commitment?

A/ Continue with coffee production and keeping the coffee forest, avoiding deforestation. Shall also stay updated with debt payments contributions.

Q/ How long will the commitment and support from this initiative will take?

A/ These are 5 years extendable periods.

Comment/ Coffee forests have lost over 8% per year.

Comment/ The government should have made an analysis on coffee producers, as the poorest, because most are small producers, and more alternatives should be looked for.

Fourth Consultation:

Q/ Cooperative La Majada: What are the rules for the project? What should coffee growers do?

A/ There will be a FIDECAM regulation that will be public. What will be sold is fixed and captured carbon, and must comply with their payments and commitment of not deforesting and keeping their coffee activities.

Q/ The bank normally charges an advance payment if there is more exports after having paid the yearly FICAFE payment; Does this advance payment apply or not to the program?

A/ If there are advance payments, the producer will always be recognized with a certain percentage to his quota for non-deforestation commitment.

Q/ UCAFES: What do investors purchase, now that we produce coffee and oxygen? We need to have clear rules of the game. What are we subscribing ourselves? What are we going to sign? For how long?

A/ They purchase fixed carbon captured in the areas where deforestation is avoided. They also verify compliance with CCB standards.

They sign a transfer of environmental benefits and an affidavit of commitment to no-deforestation that will be published in the web www.cafeyambiente.org. The commitment lasts 5 years, extendable.

Q/ Mario Alvarado, Coop. De Caficultores los Nonualcos: It is a good project, but, what happens with those of us who have a debt at FIDEAGRO? What can be done?

A/So far no other debts may be included. Only FICAFE and FINSAGRO, because they are documented. We shall find out about this.

Q/ Jeff Hoffman, Café El Volcán: This is a political and economic component project, when we talk about own debt, are we referring also to the purchase of large properties? Does this component pay own debt?

A/ longer period should exist, to have clear what we are going to undersign.
How does a farm owner contributes to fulfill the debt of others? Some owe more, others less. Some debts are coming from coffee production, others from industry?

Q/ I wish to hear, how many dollars per oxygen hectare are being calculated?

A/ This initiative helps pay the premium partially from FICAFE and FINSAGRO, from all who have coffee properties that generate environmental benefits. These are the requirements.

The term is up to August 31 and the process is not complicated. Nevertheless, your comment will be taken into consideration, because the objective is to keep the national coffee forest, giving all an opportunity.

The model of initiative is for the country, and the deforestation rate in the country. With this support, what we are looking for is to generate a financial out for the debtor and at the same time commit him towards caring for his coffee forest.

Q/ Finca Teocal Lamatepec, Denis Canizales. It is a fast presentation, but I am concern how much we are being bound to continue with the same processor. How long are you committed with ABANSA, to increase the term?

It had been understood that the processor cannot change. It would be a good idea to have mobility due to the processor's service. Can the debt be easily moved?

Q/ August 30 is the last day, time is automatic, that means, there is no extension?

A/ Activities ruled by their own regulations or provisions, do not change. The initiative cannot have influence in the FICAFE and FINSAGRO regulation or national banking. Only offers support on these regulated debts, following their procedures.

So far, it has been evaluated that the whole sector may be registered to August 31. The subject of the extension will be analyzed.

Q/ Elisa Jurado, Sociedad Cooperativa de Ciudad Barrios. What did you base yourselves on to take 30%?

Flow projections in most probable scenarios of VER sales.

Q/ Maria Elena Romero. If a producer has 2 FICAFE debts in two banks, is 30% applied to both? Is it applicable to farmers in arrears?

A/ It applies to both. The payment requirement is the 2006/2007 quota and forward. If there are arrears, it shall be negotiated with the debtor and it escapes the initiative.

Q/ Maria Elena de Boto, Finca Los Ángeles. When is the commission for administration of the trust fund?

A/ This data will include the payment of a verifier, valuer and broker agent. BMI will only charge a commission that will cover costs without looking for profit, and is already included in the flow. The producer must not pay anything.

Q/ Jeff Holman. El Volcán. I have the impression that you are buying at a low price. Oxygen sale standards must not have lower conditions than those of Kyoto. Those are investors we do not know.

A/ Investors are unknown because they are still not defined. The sale mechanism of the VER will be public and transparent before the Salvadoran and international society.

Q/ Up to 30% means that this percentage will change every year?

A/It will depend on the results of the verifier. Yes, it may change.

Q/ What happens with those customers who already paid their FICAFE quota this year?

A/ If there are still FICAFE and/or FINSAGRO balances, those will be benefited and will obtain support anyway.

E.3. Report on how due account was taken of any comments received:

>>
Comments received are taken into consideration to prepare the proposal and Initiative generation.

Activities to be performed to answer concerns and comments are:

- The creation of a Line for the renovation of the Coffee Forest: that supports coffee growers who receive incentives to strengthen their coffee forest areas to generate sustainability.
- Follow-up on what can happen for the Water Trust created by the privates.
- Creation of a web www.cafeyambiente.org to publicize information, reception of doubts, and comments on the subject.
- Establishment of public account rendering on the Trust
- Generation of advertising activities on the Initiative, to transmit the experience and help the generation of other VER and CER related sales.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Banco Multisectorial de Inversiones **BMI (Trust of FIDECAM)**
Street/P.O.Box:	Calle El Mirador
Building:	Edificio World Trade Center Torre 2 Nivel 4
City:	San Salvador
State/Region:	San Salvador
Postfix/ZIP:	
Country:	El Salvador
Telephone:	(503) 2267-0010
FAX:	(503) 2267-0011
E-Mail:	
URL:	www.bmi.gob.sv
Represented by:	Alfredo Alfaro
Title:	Gerente de Banca de Desarrollo
Salutation:	Ingeniero
Last Name:	
Middle Name:	
First Name:	
Department:	Gerencia de Banca de Desarrollo
Mobile:	
Direct FAX:	(503) 2267-0011
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Personal E-Mail:	alfredo.alfaro@bmi.gob.sv

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

At the end of the coffee growers' year 2007 the coffee growers were due to receive debt relief for the first time. Since the carbon credit project was not yet registered the government intervened and provided a 30% debt relief to all coffee growers participating in the project.

Annex 3

BASELINE INFORMATION

The FIDECAM database

#	Coffee forests area in 2007	Annual debt payment	Payment default in 2002	Payment default in 2005	Payment default in 2006	Payment default in 2007
c	AFor c (t=0)		"financial trouble"	"financial trouble"	"financial trouble"	"financial trouble"
	ha	USD / yr	{1;0}	{1;0}	{1;0}	{1;0}
1	27.86	11,193.11	0	0	0	0
2	70.28	23,734.27	1	1	0	1
3	56.00	14,738.40	0	1	1	1
4	29.63	3,515.73	0	0	1	1
5	115.05	40,898.21	1	0	0	0
6	62.28	5,151.92	0	0	0	0
7	7.01	3,448.90	1	0	1	1
8	58.04	8,751.75	0	1	0	0
9	65.72	12,969.70	0	0	0	0
10	0.79	4,026.85	1	1	1	1
11	72.13	38,816.88	1	1	1	0
12	140.00	17,080.93	0	0	0	0
13	54.50	9,779.63	0	0	0	0
14	278.27	81,399.89	1	1	1	1
15	31.59	7,595.89	0	0	0	0
16	46.49	10,570.35	0	0	0	0
17	8.41	2,827.75	1	1	1	1
18	17.07	3,064.93	1	1	1	1
19	10.50	1,105.60	1	0	1	1
20	19.27	1,644.76	0	0	0	0
21	34.96	7,935.04	0	0	0	0
22	27.97	12,770.05	1	1	0	0
23	31.47	13,081.13	0	0	1	1
24	165.03	37,022.27	1	1	1	1
25	55.91	14,115.39	0	0	0	0
26	21.00	12,905.46	1	1	1	1
27	18.87	6,847.46	1	1	0	1
28	53.55	29,502.83	1	0	1	1
29	62.00	12,206.60	0	0	0	1
30	88.80	7,272.85	0	0	0	0
31	53.85	40,479.20	1	0	1	1
32	4.20	1,774.64	0	1	0	0
33	10.49	6,334.38	1	1	1	1
34	8.39	2,571.03	1	1	1	1
35	67.29	38,712.03	0	0	0	1

36	11.89	3,763.42	0	0	0	1
37	91.94	955.61	0	0	0	0
38	35.67	6,062.37	0	0	0	0
39	28.42	5,214.14	1	0	0	0
40	62.93	34,078.02	0	0	0	0
41	63.25	24,448.12	0	1	0	1
42	5.53	8,498.33	1	1	1	1
43	30.17	8,270.81	1	1	1	1
44	24.00	6,153.22	0	0	0	0
45	17.48	11,600.01	1	1	1	1
46	20.28	2,759.30	1	0	0	1
47	32.87	11,183.53	0	1	1	0
48	13.99	6,658.70	0	0	0	1
49	42.00	4,980.09	0	0	0	0
50	44.08	5,490.66	0	0	1	1
51	5.69	14,124.15	1	1	1	1
52	20.97	7,433.98	0	0	0	0
53	127.27	21,898.13	0	0	0	0
54	51.05	3,584.54	0	1	0	0
55	90.00	4,843.33	0	0	0	0
56	19.56	17,276.65	1	0	1	1
57	45.55	69,500.80	1	0	0	1
58	18.19	1,587.17	0	1	1	1
59	53.21	18,691.32	1	0	1	1
60	75.00	57,266.31	0	1	1	1
61	119.99	125,642.70	0	1	1	1
62	278.03	550,885.70	0	1	1	1
63	11.19	563.80	0	0	0	0
64	196.56	71,719.04	0	1	0	1
65	8.39	1,388.80	1	0	0	0
66	21.60	12,549.35	0	1	1	1
67	11.96	4,936.87	1	1	1	1
68	12.01	5,513.78	1	1	1	1
69	1.94	1,503.56	0	0	0	1
70	173.32	72,706.43	1	1	1	1
71	28.65	7,444.81	1	1	1	1
72	57.75	15,223.61	0	0	0	0
73	28.39	10,404.54	1	1	1	1
74	179.50	1,852.76	0	0	0	0
75	53.87	43,189.48	1	0	1	1
76	23.07	3,458.93	0	0	0	0
77	26.57	3,264.23	0	0	0	0
78	172.37	33,935.18	1	0	0	0
79	55.27	6,185.88	0	0	0	0
80	51.30	5,640.22	0	0	0	0
81	67.00	6,104.05	0	0	0	0

82	30.70	3,920.22	1	0	0	1
83	77.48	13,786.87	1	0	0	1
84	47.12	15,025.10	1	0	1	1
85	38.22	17,559.45	1	0	1	1
86	79.11	8,697.91	1	0	1	1
87	4.88	928.56	1	0	0	1
88	50.34	10,784.13	0	0	0	1
89	11.18	4,912.20	1	0	1	1
90	30.06	2,745.53	0	0	0	0
91	129.37	12,140.27	0	0	0	1
92	6.29	1,398.24	0	0	0	0
93	6.29	977.00	0	0	0	0
94	97.20	52,957.90	1	0	1	1
95	32.74	23,297.12	0	1	1	1
96	11.33	6,130.82	0	0	1	1
97	225.75	70,614.26	0	1	0	1
98	34.97	3,257.69	0	0	0	0
99	216.16	67,363.66	0	0	0	0
100	105.59	57,265.90	1	0	0	1
101	31.47	23,237.38	1	0	0	1
102	43.38	22,061.86	1	1	1	1
103	48.66	37,517.37	1	0	0	1
104	7.00	5,707.79	0	0	0	1
105	14.00	3,548.25	1	1	1	1
106	4.13	6,727.22	0	0	0	0
107	23.03	10,189.17	1	0	0	1
108	33.66	5,109.87	1	0	1	1
109	1,034.47	766,421.13	1	1	1	1
110	76.65	14,972.96	0	0	0	1
111	22.48	16,017.74	1	0	1	1
112	521.33	96,499.89	0	0	0	0
113	18.00	1,620.51	0	0	0	0
114	69.38	65,722.78	0	0	0	1
115	72.27	22,077.79	0	0	0	0
116	126.80	16,124.76	0	0	0	0
117	89.60	18,541.09	1	0	0	0
118	38.04	4,796.50	0	0	0	0
119	24.05	4,271.12	0	0	0	0
120	82.47	15,172.43	1	1	0	1
121	34.89	4,766.69	0	0	0	0
122	6.98	460.66	0	0	0	0
123	74.82	10,844.11	0	0	0	0
124	78.40	1,602.36	0	0	0	0
125	221.67	99,339.32	1	0	1	1
126	410.68	265,419.01	0	0	0	1
127	9.09	1,015.98	0	0	0	0

128	22.60	10,627.61	0	0	1	1
129	24.47	3,139.39	0	0	0	0
130	32.90	10,610.73	0	0	1	1
131	10.44	653.92	0	0	0	0
132	2,054.47	261,308.11	0	0	0	0
133	28.67	2,195.84	0	0	0	0
134	638.45	272,930.66	0	0	1	1
135	18.29	8,618.50	1	1	1	1
136	1.06	361.39	1	0	0	0
137	10.89	4,342.64	1	0	0	1
138	5.25	148.05	0	0	0	0
139	2.10	324.04	0	0	0	0
140	2.80	390.35	0	0	0	0
141	119.00	7,064.43	1	1	0	1
142	60.39	9,844.24	1	0	0	0
143	416.39	11,378.31	1	1	1	1
144	209.97	68,561.29	1	1	1	1
145	73.43	6,037.98	1	1	1	1
146	135.31	17,705.49	1	1	1	1
147	30.76	8,278.67	1	1	1	1
148	636.46	123,497.17	1	0	0	0
149	378.32	60,513.66	0	0	0	1
150	160.49	227,465.92	1	0	1	1
151	26.22	961.31	0	0	0	0
152	6.13	483.03	0	0	0	0
153	7.00	617.95	0	0	0	0
154	2.00	346.52	1	1	1	1
155	1.40	353.64	1	0	0	1
156	21.00	737.45	1	1	0	1
157	2.72	459.52	1	1	0	1
158	0.99	358.84	0	1	1	1
159	1.40	134.95	1	0	0	1
160	3.86	402.22	1	1	0	0
161	10.77	1,566.46	0	0	0	0
162	67.14	3,393.47	1	1	0	1
163	10.84	3,878.38	1	0	1	1
164	23.83	2,720.80	0	1	1	1
165	7.00	971.66	1	1	1	1
166	8.39	673.62	1	1	1	1
167	42.66	1,761.72	0	1	1	1
168	9.79	224.36	0	1	0	0
169	27.97	4,521.80	1	1	1	1
170	5.59	804.09	1	0	0	0
171	2.50	936.80	1	0	0	1
172	7.70	2,036.02	1	0	1	1
173	3.50	361.66	0	1	1	1

174	2.10	1,025.72	1	1	1	1
175	3.50	441.33	0	0	1	1
176	9.00	916.39	0	1	1	1
177	4.89	127.17	1	1	1	1
178	35.00	5,551.96	0	0	1	1
179	14.79	1,596.22	1	1	0	1
180	317.53	149,058.79	0	0	0	1
181	624.44	231,868.00	0	0	0	1
182	46.15	15,872.69	0	0	0	0
183	117.00	6,978.86	0	0	0	0
184	24.42	6,945.53	0	0	0	1
185	164.65	48,783.57	0	0	0	0
186	110.18	37,139.28	0	1	0	1
187	76.22	76,165.18	0	0	0	1
188	17.08	6,955.02	0	0	0	0
189	192.00	27,598.35	0	0	0	1
190	28.80	13,335.67	0	0	0	0
191	52.41	22,360.39	0	0	0	0
192	202.80	6,713.15	0	0	1	1
193	160.00	107,174.09	1	1	1	1
194	18.00	3,656.73	0	0	0	0
195	71.19	20,844.54	0	0	0	0
196	59.67	14,433.21	0	0	0	0
197	97.90	26,874.04	0	0	0	0
198	132.46	12,145.13	0	0	0	0
199	154.00	43,477.70	0	0	0	1
200	106.99	71,888.23	0	0	0	0
201	37.25	9,820.91	0	0	0	0
202	35.13	2,125.57	0	0	0	0
203	2.35	4,161.85	0	0	0	0
204	44.27	12,705.88	0	0	0	0
205	61.85	13,002.73	0	0	0	0
206	79.23	15,556.16	0	0	0	0
207	13.30	8,621.27	0	0	0	1
208	128.85	19,700.43	0	0	0	0
209	107.00	28,226.43	0	1	1	1
210	45.45	3,642.92	0	0	0	0
211	129.36	25,788.40	0	0	0	1
212	96.20	16,252.95	0	0	0	0
213	7.71	11,536.18	0	0	0	0
214	71.09	20,944.45	0	0	0	0
215	64.69	15,946.63	0	0	0	0
216	53.85	34,622.12	0	0	0	0
217	65.82	42,957.79	1	1	1	1
218	137.00	1,159.68	0	0	0	0
219	62.94	1,674.17	0	0	0	0

220	50.00	11,651.14	0	0	0	0
221	30.61	9,723.84	0	0	0	0
222	100.00	4,370.91	0	0	1	1
223	58.30	46,026.88	1	1	1	1
224	27.90	4,217.46	0	0	0	0
225	26.57	3,530.28	0	0	0	1
226	1,695.79	474,774.55	0	0	0	0
227	7.00	678.14	0	0	0	0
228	12.00	3,423.40	0	0	0	0
229	187.30	112,745.76	0	0	0	0
230	61.00	20,610.36	1	0	1	1
231	5.20	1,178.97	0	0	0	0
232	60.17	22,645.83	1	1	0	1
233	34.96	29,460.22	0	0	0	0
234	241.25	131,378.23	0	0	0	0
235	122.00	30,476.82	0	0	0	1
236	538.48	76,085.00	0	0	0	1
237	6.32	1,919.64	1	1	1	0
238	3.46	1,683.72	0	0	0	1
239	8.40	5,115.32	1	1	1	1
240	36.03	2,503.67	0	0	0	0
241	15.30	2,901.48	1	0	0	0
242	27.93	12,167.36	1	0	1	1
243	13.23	6,385.24	0	0	0	0
244	171.01	43,148.36	0	0	0	0
245	113.33	111,600.44	0	0	0	0
246	11.44	6,920.99	1	1	1	1
247	34.98	10,827.12	0	1	1	1
248	22.50	5,773.10	0	0	1	1
249	24.05	2,889.46	0	0	0	0
250	29.16	4,708.73	0	0	1	1
251	3.65	1,462.58	0	0	0	0
252	14.00	1,409.38	0	0	0	0
253	177.58	13,528.09	0	0	0	0
254	1,767.82	559,627.84	0	0	0	0
255	453.43	151,451.39	0	0	1	1
256	92.00	11,723.83	1	0	0	1
257	55.46	223,912.01	0	0	0	0
258	41.62	6,386.88	0	0	0	1
259	599.13	189,886.55	1	0	0	0
260	14.09	8,819.07	0	0	0	0
261	15.40	9,378.94	0	0	0	0
262	90.34	21,532.96	1	0	1	1
263	108.45	7,809.13	1	0	1	1
264	38.00	9,273.88	0	0	0	1
265	36.42	18,938.04	0	0	0	1

266	56.00	7,084.29	0	0	0	1
267	86.46	15,303.53	0	0	0	0
268	87.90	20,632.67	1	1	0	1
269	83.35	19,076.72	0	1	1	1
270	81.74	17,030.72	0	0	0	0
271	81.85	19,234.52	1	1	1	1
272	33.00	4,302.10	0	0	0	1
273	90.20	13,844.76	1	0	0	0
274	83.15	16,427.27	1	0	0	0
275	51.22	570.03	0	0	0	0
276	107.41	5,236.00	0	0	0	0
277	56.00	7,275.48	0	0	0	0
278	73.07	28,934.39	1	0	0	0
279	48.05	16,674.25	1	0	0	0
280	13.99	9,966.40	1	0	0	1
281	41.79	7,239.46	0	0	0	0
282	70.00	5,270.09	0	0	0	1
283	61.18	9,117.29	1	0	0	1
284	1,613.53	602,993.97	0	0	0	0
285	76.50	6,250.59	0	0	0	0
286	15.73	15,768.10	0	1	0	1
287	68.06	38,451.00	0	1	0	1
288	36.76	42,434.02	0	1	0	1
289	92.17	35,758.71	0	1	0	1
290	80.63	14,733.00	1	1	0	1
291	61.22	31,597.14	0	0	0	1
292	40.00	9,271.00	0	0	0	1
293	68.53	21,151.04	0	0	0	0
294	38.19	7,694.29	0	0	0	0
295	32.86	17,204.36	1	0	1	1
296	40.55	5,432.44	0	0	0	0
297	40.55	2,194.70	0	0	0	0
298	41.10	4,590.07	0	0	0	0
299	104.38	20,942.39	0	0	0	0
300	23.08	41,428.37	1	0	1	1
301	41.95	2,650.16	1	0	0	0
302	24.16	12,968.99	1	0	0	0
303	17.00	3,065.69	0	0	1	1
304	31.39	5,836.43	0	0	1	1
305	0.00	718,800.86	0	0	0	0
306	179.69	24,419.06	1	0	0	0
307	6.50	1,110.84	0	0	0	0
308	85.46	67,758.14	1	1	1	1
309	32.45	6,380.91	1	0	0	0
310	44.00	10,186.32	1	1	1	1
311	137.80	90,976.49	0	0	0	0

312	53.00	42,679.52	0	0	0	0
313	61.00	49,895.18	0	0	0	0
314	347.06	35,156.94	0	0	0	0
315	83.92	3,804.82	0	0	0	0
316	8.39	2,258.44	0	1	0	1
317	41.78	19,243.98	1	1	1	1
318	4.20	3,341.63	0	0	0	1
319	70.00	25,580.55	1	0	0	0
320	52.84	7,696.79	0	0	0	0
321	10.41	3,652.59	1	1	1	1
322	2.34	1,662.08	0	0	1	1
323	38.85	21,701.67	0	0	0	0
324	31.36	12,913.74	0	0	0	0
325	43.13	57,651.76	0	0	0	0
326	71.33	55,414.05	0	0	0	1
327	69.93	1,737.43	0	0	1	1
328	169.91	23,464.61	0	0	0	0
329	28.00	8,865.30	0	0	0	0
330	33.00	6,830.71	0	0	0	0
331	26.00	3,154.50	0	0	0	0
332	12.74	8,321.78	1	0	0	1
333	101.00	4,621.08	0	0	0	0
334	101.00	3,637.48	0	0	0	0
335	101.00	3,615.52	0	0	0	0
336	57.06	1,667.98	0	0	0	0
337	168.07	47,118.78	1	0	1	1
338	138.35	14,189.45	1	0	0	0
339	912.18	500,381.56	0	0	0	0
340	23.42	9,649.83	1	1	0	0
341	44.80	7,904.24	0	0	0	0
342	64.28	13,400.05	0	0	0	0
343	30.05	4,604.03	0	0	0	0
344	339.73	41,037.72	0	0	0	0
345	49.83	10,526.99	0	0	0	0
346	62.94	2,987.66	0	0	0	0
347	931.84	161,167.68	0	0	0	0
348	65.74	3,662.34	0	0	0	0
349	75.62	30,686.07	0	0	0	0
350	29.42	20,961.30	1	1	0	1
351	71.00	27,481.49	0	1	1	1
352	78.26	25,762.87	0	1	0	1
353	24.30	6,116.04	1	0	0	0
354	42.03	16,150.60	0	0	0	0
355	109.93	29,635.74	0	0	0	0
356	67.57	26,116.98	0	0	0	0
357	141.78	83,297.34	0	0	0	0

358	55.00	7,533.15	0	0	0	0
359	101.23	23,233.78	0	0	0	0
360	9.50	1,704.62	0	1	1	1
361	28.38	5,707.51	1	1	1	1
362	3.00	522.84	0	0	0	0
363	78.26	26,572.72	1	1	1	1
364	19.58	4,018.75	0	0	0	1
365	78.61	25,983.46	1	0	0	0
366	45.08	2,930.38	1	1	0	0
367	28.00	10,205.76	1	0	0	0
368	67.13	16,503.63	0	1	1	1
369	20.88	16,582.15	1	1	1	1
370	8.40	6,397.61	0	0	0	0
371	18.90	16,486.47	0	0	0	0
372	141.26	57,311.53	1	1	1	1
373	108.62	26,870.15	0	0	0	0
374	81.71	10,120.06	0	0	0	0
375	139.86	16,111.39	1	1	1	1
376	8.55	4,790.96	0	0	0	0
377	111.03	56,459.45	1	0	0	0
378	80.15	27,716.85	0	0	1	1
379	30.69	4,609.60	1	1	0	1
380	122.75	69,440.15	0	1	0	1
381	142.95	5,426.73	0	0	0	0
382	1,043.06	582,907.76	1	0	1	1
383	372.80	43,095.79	0	0	0	0
384	629.00	120,872.75	1	0	1	1
385	45.47	3,850.62	1	0	1	1
386	154.20	159,121.10	0	0	0	1
387	160.86	27,291.22	0	0	0	1
388	11.45	2,329.24	0	0	0	1
389	0.00	26,255.92	0	0	0	0
390	28.39	38,954.45	0	0	0	1
391	27.48	6,151.06	1	0	1	1
392	47.62	8,806.73	0	0	0	1
393	2.43	93,023.25	1	0	0	0
394	2.11	306.77	0	0	0	0
395	2.97	305.66	1	1	1	1
396	35.27	9,093.58	0	0	0	1
397	11.51	3,158.07	1	0	1	1
398	59.50	3,887.89	1	1	1	1
399	8.30	4,138.06	1	1	1	1
400	9.79	1,628.86	1	0	0	0
401	2.10	534.32	1	0	0	0
402	4.90	374.18	0	0	0	0
403	350.00	40,975.93	1	1	0	1

404	3.50	343.29	1	0	0	1
405	8.39	1,230.52	0	0	0	0
406	1.20	512.76	1	1	0	0
407	8.39	739.19	0	1	0	1
408	3.50	549.55	1	0	0	0
409	27.96	3,513.21	1	1	1	1
410	24.48	19,087.07	0	1	0	1
411	31.46	5,605.41	0	0	1	1
412	12.42	7,088.75	0	0	0	0
413	78.65	3,493.53	0	0	0	0
414	78.65	1,269.35	0	0	0	0
415	30.11	22,618.09	0	0	1	1
416	102.51	2,563.86	0	0	0	0
417	43.40	3,350.64	0	0	0	0
418	97.96	2,934.49	0	0	0	0
419	7.00	1,890.72	0	0	0	0
420	83.00	7,013.30	0	0	0	0
421	10.42	868.68	0	0	0	0
422	87.52	2,276.83	0	0	0	0
423	143.52	45,178.57	0	0	0	1
424	107.85	30,090.30	0	0	0	1
425	40.60	4,326.44	0	0	0	0
426	90.90	12,930.88	0	0	0	0
427	23.00	2,719.61	0	0	0	0
428	123.36	18,431.65	1	1	1	1
429	69.93	3,087.98	0	0	0	0
430	9.80	1,146.08	0	0	0	0
431	65.03	9,599.07	0	0	0	0
432	66.43	1,313.55	0	0	0	0
433	14.00	2,907.80	0	0	0	0
434	11.89	1,951.15	0	0	0	0
435	46.85	3,640.81	0	0	0	0
436	137.06	22,818.22	0	0	0	0
437	62.76	5,579.57	0	0	0	0
438	50.00	6,160.27	0	0	0	0
439	163.42	53,007.61	0	0	0	0
440	32.20	3,351.33	0	1	0	1
441	50.84	28,401.84	0	0	0	0
442	55.64	22,915.46	0	0	0	0
443	253.00	25,894.95	0	0	0	0
444	90.91	4,317.87	0	0	0	0
445	19.59	6,904.27	0	0	0	0
446	52.45	7,927.86	0	0	0	0
447	29.00	7,661.61	0	0	0	0
448	20.79	5,036.97	1	0	0	0
449	13.99	1,919.19	0	1	1	1

450	206.76	82,958.97	0	0	0	0
451	233.50	140,167.49	1	1	1	1
452	174.83	34,147.89	0	1	0	1
453	503.50	184,400.93	0	0	0	0
454	20.57	1,586.70	1	1	1	1
455	92.00	2,929.16	0	1	0	1
456	54.41	14,957.31	1	0	0	0
457	6.99	3,395.77	0	1	1	1
458	131.48	218,050.91	0	1	1	1
459	119.05	46,888.13	1	0	0	1
460	95.35	28,501.40	0	0	0	1
461	42.00	23,482.10	1	1	1	1
462	36.00	2,788.70	0	0	0	0
463	489.51	56,090.79	1	0	0	0
464	48.00	2,785.08	0	0	0	0
465	7.22	1,066.44	0	0	0	0
466	46.00	2,788.36	0	0	0	0
467	68.00	1,851.87	1	1	1	1
468	153.98	16,644.24	1	1	1	1
469	42.96	24,366.79	1	1	1	1
470	13.01	13,618.20	1	1	1	1
471	43.00	15,118.19	1	1	1	1
472	10.87	61,805.14	1	1	1	1
473	101.41	17,542.41	1	0	0	1
474	26.92	15,800.72	0	0	0	1
475	20.49	2,477.45	1	0	1	1
476	226.31	51,101.74	0	0	1	1
477	1,608.92	100,958.58	0	0	0	0
478	11.88	847.42	0	0	0	1
479	457.73	125,637.34	0	0	0	1
480	20.97	7,425.61	1	0	0	1
481	32.47	4,928.98	1	0	1	1
482	34.96	5,332.89	0	0	0	0
483	16.59	390.98	1	0	0	0
484	43.18	174,333.64	1	0	1	1
485	13.33	7,642.32	1	0	1	1
486	17.48	2,351.32	0	0	0	1
487	15.18	2,121.94	0	0	1	1
488	16.32	22,390.92	0	0	0	0
489	8.93	1,468.80	1	1	1	1
490	4.20	954.03	1	1	1	1
491	1.89	548.20	0	0	0	0
492	3.50	174.06	1	0	0	0
493	4.20	492.96	0	0	1	0
494	303.63	60,262.93	1	0	1	1
495	85.00	116,624.30	1	1	1	1

496	2.80	291.11	0	0	0	0
497	1.50	416.29	1	1	1	1
498	0.92	176.60	1	0	0	0
499	0.95	1,951.86	1	1	0	1
500	5.60	1,437.05	1	1	1	1
501	47.56	12,280.37	1	1	1	1
502	14.35	2,438.24	1	0	0	0
503	16.78	4,604.24	0	0	0	1
504	232.91	18,973.62	0	0	0	0
505	34.27	8,101.37	0	0	0	0
506	123.87	57,881.07	0	0	0	0
507	34.97	4,078.71	0	0	0	0
508	15.38	4,856.69	0	1	0	0
509	15.73	2,150.61	0	0	0	0
510	13.98	6,884.91	1	0	0	1
511	23.00	5,603.86	0	0	0	0
512	26.98	1,688.18	0	0	0	0
513	10.97	1,663.23	0	0	0	0
514	53.27	6,636.66	0	0	0	1
515	15.00	9,230.29	1	1	1	0
516	14.90	16,328.62	1	1	1	1
517	78.86	17,467.54	1	0	1	1
518	123.00	6,332.32	0	0	0	0
519	61.54	14,494.38	0	1	0	0
520	94.41	6,757.36	0	0	0	1
521	51.00	11,922.89	1	0	0	0
522	108.89	38,250.36	1	0	0	0
523	23.00	334.02	0	0	0	0
524	28.14	4,163.97	1	0	0	1
525	298.85	33,454.34	0	0	0	0
526	13.72	1,776.36	0	0	0	0
527	12.61	2,063.73	0	0	0	0
528	86.24	9,828.66	0	0	0	0
529	13.15	2,426.27	0	0	0	0
530	24.02	3,825.71	0	0	0	0
531	7.43	12,292.18	1	0	0	0
532	10.44	2,829.83	0	0	0	0
533	11.58	2,066.08	0	0	0	0
534	11.26	7,354.16	1	0	0	0
535	24.00	4,534.30	0	0	0	0
536	9.07	7,358.73	1	0	0	0
537	4.02	4,679.55	1	0	0	0
538	13.91	7,893.33	1	0	0	0
539	3.08	3,716.22	1	0	0	0
540	10.41	2,458.76	0	0	0	0
541	25.74	8,513.10	0	1	1	1

542	20.13	10,054.39	0	0	1	0
543	41.95	1,930.14	0	0	0	0
544	29.71	2,479.61	0	0	0	0
545	87.41	14,062.06	0	0	0	0
546	36.04	6,499.52	1	0	1	1
547	62.93	2,485.86	1	0	1	1
548	19.00	9,231.62	1	0	0	1
549	35.75	25,036.07	1	0	1	1
550	4.37	876.40	0	0	0	0
551	109.53	112,097.85	1	0	1	1
552	29.61	23,737.60	1	0	1	1
553	36.89	32,934.77	1	0	0	1
554	7.72	1,284.46	1	0	1	1
555	10.29	5,838.75	1	0	1	1
556	55.94	14,968.62	1	0	1	1
557	40.85	4,360.37	1	0	1	1
558	33.29	2,271.02	0	0	1	1
559	15.81	15,827.89	1	0	1	1
560	18.18	11,574.91	0	0	1	1
561	24.47	884.77	0	0	0	0
562	1.23	962.63	1	0	0	1
563	57.00	4,364.11	1	0	1	1
564	51.76	2,271.02	0	0	1	1
565	41.95	1,292.88	0	0	0	0
566	32.00	2,271.02	0	0	0	1
567	38.00	2,270.42	0	0	1	1
568	33.29	2,271.02	0	0	1	1
569	26.57	1,969.61	0	0	1	1
570	58.00	5,431.20	0	0	0	0
571	19.05	1,499.93	0	0	0	0
572	37.41	2,028.47	0	0	0	0
573	2.10	5,123.19	0	0	0	0
574	106.97	21,205.66	0	1	0	1
575	32.00	8,368.00	0	1	1	1
576	59.34	3,753.95	0	0	0	0
577	40.41	2,807.60	0	0	0	0
578	33.60	2,334.44	0	0	0	0
579	13.58	7,362.93	0	1	0	0
580	82.88	1,557.51	0	0	0	1
581	24.59	1,555.57	0	0	0	0
582	15.04	6,344.24	0	0	0	0
583	29.00	17,848.95	1	1	0	0
584	73.43	1,389.53	0	0	0	0
585	104.89	21,256.02	1	0	0	1
586	64.33	34,927.18	1	0	0	0
587	29.19	23,399.74	0	0	1	1

588	46.15	2,612.95	0	0	1	1
589	22.38	5,735.51	1	1	1	1
590	73.56	21,479.62	1	1	1	1
591	65.73	30,241.88	0	0	0	0
592	65.72	12,095.00	1	0	0	0
593	68.73	22,211.65	1	0	0	1
594	67.78	8,715.75	1	0	0	1
595	18.73	3,645.17	1	0	0	0
596	12.48	3,941.72	1	0	0	1
597	10.14	3,430.10	0	0	0	0
598	109.04	66,992.85	0	1	1	1
599	8.59	2,906.66	0	0	0	0
600	59.44	63,940.10	1	0	0	1
601	37.46	9,977.93	1	0	0	0
602	1.43	5,783.19	1	0	1	0
603	39.40	9,181.01	1	0	0	0
604	25.33	3,845.40	0	0	1	1
605	55.20	12,752.58	0	0	0	0
606	29.02	2,263.20	0	0	1	1
607	27.00	2,263.20	0	0	0	1
608	14.04	3,995.36	0	0	0	1
609	5.59	586.60	1	0	1	1
610	4.32	26,649.43	1	0	1	1
611	3.83	422.78	1	0	0	0
612	4.20	472.11	0	0	1	0
613	7.00	1,209.17	0	0	0	0
614	0.98	158.55	0	0	0	0
615	4.20	601.90	1	1	0	0
616	1.12	133.36	0	0	0	0
617	1.40	126.12	0	0	0	0
618	0.70	150.09	1	1	0	1
619	17.05	9,669.67	1	0	0	0
620	275.14	245,621.36	0	1	1	1
621	307.87	180,880.00	NA	0	0	0
622	645.45	267,538.71	NA	0	0	1
623	25.23	35,764.01	NA	1	1	1
624	53.90	76,394.87	NA	1	1	1
625	1.85	2,628.08	NA	0	0	0
626	73.50	23,732.79	NA	0	0	0
627	1,586.06	110,000.00	NA	0	0	0
628	71.44	29,965.71	NA	0	1	1
629	28.13	25,898.68	NA	0	1	0
630	1.65	1,300.00	NA	0	0	1
631	33.35	13,359.45	NA	0	1	1
632	4.86	4,342.29	NA	0	0	1
633	4.83	4,309.29	NA	0	0	1

634	1.10	182.60	NA	0	0	1
635	7.41	2,869.00	NA	0	0	0
636	5.08	3,619.35	NA	0	0	0
637	94.40	34,510.00	NA	0	0	0
638	4.25	1,354.15	NA	0	0	1
639	6.57	4,408.44	NA	0	1	1
640	4.45	1,011.38	NA	0	0	0
641	29.27	13,551.57	NA	0	1	1
642	41.96	5,458.44	NA	0	0	0
643	1.45	600.00	NA	0	1	1
644	27.55	5,417.14	NA	0	0	0
645	37.76	6,482.64	NA	0	0	1
646	6.74	1,098.23	NA	1	1	1
647	9.71	3,300.00	NA	0	0	0
648	28.02	48,364.00	NA	0	1	1
649	1.69	1,714.28	NA	0	0	0
650	3.47	14,100.00	NA	0	1	1
651	89.96	31,600.00	NA	0	0	0
652	16.84	25,892.67	NA	0	0	1
653	69.00	26,494.24	NA	0	1	0
654	5.76	2,088.38	NA	1	1	1
655	122.09	4,380.00	NA	0	1	1
656	25.96	8,700.12	NA	0	0	0
657	21.67	10,900.00	NA	0	0	0
658	147.00	37,500.00	NA	0	0	0
659	1.55	618.42	NA	1	1	1
660	35.30	5,416.91	NA	0	1	1
661	25.17	7,970.00	NA	0	0	0
662	69.93	24,200.00	NA	0	0	0
663	3.56	417.58	NA	0	0	1
664	18.90	7,980.00	NA	1	1	1
665	1.76	29,115.00	NA	0	0	0
666	3.24	53,719.00	NA	0	0	0
667	1.56	25,857.00	NA	0	0	0
668	22.40	17,900.00	NA	0	0	0
669	16.98	12,163.32	NA	0	0	0
670	29.76	21,443.00	NA	0	0	0
671	10.33	50,293.15	NA	1	1	1
672	3.88	1,892.00	NA	0	1	1
673	12.60	7,680.00	NA	0	0	1
674	13.69	3,512.35	NA	0	1	0
675	2.80	6,300.00	NA	0	0	1
676	40.38	4,400.00	NA	0	0	1
677	12.98	7,436.53	NA	0	0	0
678	1.37	784.17	NA	0	0	0
679	0.60	344.45	NA	0	1	1

680	87.41	7,900.00	NA	0	0	1
681	27.15	109,634.73	NA	0	0	0
682	88.31	142,835.00	NA	0	0	0
683	15.97	64,500.00	NA	1	1	1
684	0.70	6,480.00	NA	0	0	1
685	9.29	5,266.67	NA	0	0	0
686	3.96	2,244.14	NA	0	0	0
687	16.10	5,843.00	NA	0	1	1
688	1.00	3,780.00	NA	0	1	1
689	4.90	3,356.34	NA	0	1	1
690	4.79	4,812.87	NA	0	1	0
691	1.47	1,473.25	NA	0	1	1
692	5.59	13,816.00	NA	0	0	0
693	2.97	2,100.00	NA	0	1	1
694	14.10	5,640.00	NA	0	0	0
695	3.15	689.00	NA	0	0	0
696	3.19	3,192.00	NA	0	0	0
697	1.07	222.86	NA	0	0	0
698	5.51	4,373.06	NA	0	0	0
699	97.20	7,900.00	NA	0	0	1
700	59.74	91,140.00	NA	0	0	1
701	120.00	11,812.73	NA	0	0	0
702	2.44	491.67	NA	0	0	0
703	7.65	2,685.71	NA	0	0	0
704	4.23	3,240.00	NA	0	1	1
705	171.28	13,648.85	NA	0	0	1
706	20.00	7,552.31	NA	0	0	0
707	27.27	22,974.00	NA	0	0	0
708	79.30	21,098.61	NA	0	1	0
709	2.59	1,219.47	NA	1	1	1
710	12.63	3,832.72	NA	0	0	0
711	9.78	17,561.75	NA	0	0	1
712	3.29	5,903.40	NA	0	0	0
713	41.96	27,200.00	NA	0	0	0
714	31.56	2,620.52	NA	0	0	0
715	3.34	1,412.83	NA	0	0	0
716	57.09	14,720.00	NA	0	0	0
717	17.15	5,206.39	NA	0	0	0
718	155.47	287,664.48	NA	0	0	1
719	10.00	2,794.74	NA	0	1	1
720	7.00	2,305.00	NA	0	1	1
721	17.00	16,980.57	NA	0	1	1
722	14.95	5,000.00	NA	0	0	0
723	11.00	2,086.00	NA	0	0	0
724	52.27	32,716.00	NA	0	1	1
725	7.67	3,900.57	NA	0	0	1

726	10.01	18,742.86	NA	0	1	1
727	1.99	4,948.57	NA	0	1	1
728	1.50	745.30	NA	1	1	1
729	21.00	19,700.00	NA	0	1	1
730	3.50	2,110.00	NA	0	1	1
731	33.64	26,969.00	NA	0	0	0
732	13.11	312.07	NA	0	1	1
733	9.83	6,040.00	NA	0	0	0
734	9.59	4,748.16	NA	0	0	0
735	19.43	3,593.10	NA	0	0	0
736	4.37	1,320.41	NA	0	0	0
737	0.00	101,785.29	NA	0	0	0
738	31.43	2,662.08	NA	0	1	0
739	10.08	1,218.76	NA	0	1	0
740	38.00	2,588.12	NA	0	0	0
741	28.00	11,506.53	NA	0	1	0
742	27.50	6,559.06	NA	0	0	0
743	10.39	468.05	NA	1	1	1
744	22.52	21,887.95	NA	0	0	0
745	15.40	14,969.96	NA	0	0	0
746	3.42	360.00	NA	0	0	1
747	19.37	10,857.14	NA	0	0	0
748	12.29	16,861.86	NA	0	0	0
749	1.20	5,200.00	NA	0	0	0
750	1.16	5,040.00	NA	0	0	0
751	6.29	1,577.16	NA	0	0	0
752	1.01	24,804.94	NA	0	1	0
753	69.73	70,881.80	NA	0	0	0

Baseline inventory of coffee farms

#	Coffee forest area according to the FIDECAM database	Area lost in 2006/2007	Reason for conversion	Defaulted on debt payment
c	A c (t=0)	A (Def=i c t=0)	i	X="financial trouble"
	Ha	ha		{1;0}
1	76.2	2.1	Abandonment	1
2	46.1	0.0	Remains	0
3	67.1	21.0	Abandonment	1
4	141.8	22.0	Abandonment	0
5	307.9	47.9	Abandonment	0
6	141.3	87.4	Abandonment	1
7	489.5	14.0	Abandonment	0
8	173.3	9.9	Abandonment	1
9	71.4	4.1	Abandonment	1
10	123.0	0.0	Remains	0
11	347.1	0.0	Remains	0
12	61.2	0.0	Remains	1

13	58.3	0.0	Remains	1
14	1.6	0.0	Remains	1
15	24.5	3.5	Abandonment	1
16	61.0	0.0	Remains	0
17	12.7	0.0	Remains	1
18	11.3	0.0	Remains	0
19	11.4	7.0	Abandonment	1
20	42.0	2.1	Abandonment	0
21	14.0	7.0	Abandonment	1
22	15.4	4.9	Abandonment	0
23	37.8	14.0	Abandonment	1
24	85.5	9.1	Abandonment	1
25	46.2	4.9	Abandonment	1
26	39.4	0.0	Remains	0
27	1.4	1.0	Abandonment	0
28	3.5	2.5	Abandonment	1
29	253.0	0.0	Remains	0
30	14.0	0.0	Remains	1
31	7.0	0.0	Remains	1
32	32.7	2.0	Abandonment	1
33	2.3	0.1	Abandonment	1
34	14.0	0.0	Remains	1
35	11.3	0.0	Remains	1
36	46.1	0.0	Remains	0
37	48.0	0.0	Remains	0
38	36.7	0.0	Remains	0
39	45.1	4.5	Abandonment	0
40	117.4	0.0	Remains	0
41	108.6	0.0	Remains	0
42	61.5	0.0	Remains	0
43	80.6	0.0	Remains	1
44	33.0	0.0	Remains	1
45	11.5	0.0	Remains	1
46	20.3	0.0	Remains	1
47	12.0	1.4	Abandonment	1
48	36.0	0.0	Remains	0
49	4.2	0.0	Remains	0
50	18.9	0.0	Remains	1
51	126.8	0.0	Remains	0
52	18.9	3.1	Abandonment	0
53	60.2	0.0	Remains	1
54	40.0	0.0	Remains	1
55	15.3	3.5	Abandonment	0
56	119.1	7.0	Abandonment	1
57	202.8	4.9	Abandonment	1
58	120.0	0.0	Remains	1
59	13.0	0.0	Remains	1
60	13.2	0.0	Remains	0
61	8.4	0.0	Remains	1
62	12.6	0.0	Remains	1
63	90.0	0.0	Remains	0
64	18.9	0.0	Remains	1
65	16.1	0.0	Remains	1

66	0.8	0.0	Remains	1
67	70.0	0.0	Remains	1
68	68.7	0.0	Remains	1
69	8.4	1.9	Abandonment	0
70	19.6	0.0	Remains	0
71	31.5	0.0	Remains	1
72	169.9	0.0	Remains	0
73	1.0	0.8	Abandonment	1
74	62.9	0.0	Remains	1
75	107.0	0.0	Remains	1
76	7.0	0.0	Remains	1
77	27.9	0.0	Remains	0
78	54.4	3.5	Abandonment	0
79	61.9	0.0	Remains	0
80	154.0	0.0	Remains	1
81	45.6	15.1	Abandonment	1
82	59.7	19.8	Abandonment	1
83	82.5	0.0	Remains	1
84	79.2	0.0	Remains	0
85	28.4	0.2	Abandonment	1
86	110.2	0.0	Remains	1
87	225.8	2.8	Abandonment	1
88	56.0	0.0	Remains	1
89	43.0	5.6	Cropland	1
90	42.0	0.0	Remains	0
91	53.0	0.0	Remains	0
92	75.0	17.5	Abandonment	1
93	34.3	0.0	Remains	0
94	18.2	5.6	Abandonment	1
95	20.0	5.0	Abandonment	0
96	76.7	0.0	Remains	1
97	43.4	13.1	Abandonment	1
98	7.7	2.3	Abandonment	1
99	44.3	0.0	Remains	0
100	42.0	1.4	Abandonment	1
101	32.2	0.0	Remains	1
102	97.2	0.0	Remains	1
103	10.5	10.5	Abandonment	1
104	3.5	3.5	Abandonment	1
105	174.8	0.0	Remains	1
106	132.5	0.0	Remains	0
107	47.6	0.0	Remains	1
108	19.4	0.0	Remains	0
109	137.8	0.0	Remains	0
110	21.0	0.0	Remains	1
111	17.5	0.0	Remains	1
112	8.4	0.0	Remains	1
113	12.0	0.0	Remains	1
114	1.9	0.0	Remains	1
115	58.0	23.5	Abandonment	0
116	86.2	12.6	Abandonment	0
117	37.4	16.1	Abandonment	0
118	94.4	21.0	Abandonment	1

119	8.5	1.7	Abandonment	0
120	19.4	3.9	Abandonment	0
121	15.0	14.0	Abandonment	0
122	24.0	0.0	Remains	0
123	15.7	0.0	Remains	0
124	13.6	0.0	Remains	0
125	1.2	0.0	Remains	0
126	1.2	0.0	Remains	0
127	192.0	0.3	Abandonment	1
128	19.6	0.0	Remains	1

R-code for logistic regression

See separate document.

Prices

Time period	Coffee price (USD / QQ)	Fertilizer price (USD / kg)	Diesel price (USD / gl)
2002	48.44	0.19	1.36
2003	61.98	0.20	1.60
2004	69.45	0.23	1.73
2005	104.02	0.24	2.27
2006	104.01	0.24	2.76
2007	114.05	0.27	2.70

Note: Prices from 2003-2004 are not used for the model because the FICAFE/FINSAGRO schemes did not operate during those years.

Annex 4

MONITORING INFORMATION

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Annex 5

Terms of Reference for determining deforestation areas

See separate document.

Annex 6

Methodology: Emission reductions calculations for the FICAFE project

See separate document.

Annex 7

Lists of species found in the coffee forests of El Salvador

The following tables are based on an inventory by the World Bank (Proyecto Café y Biodiversidad 2000). The following lists are available:

- Tree species (Table 21)
- Amphibious species (Table 22)
- Reptile species (Table 23)
- Bird species (Table 24)
- Mammals (Table 25)

Table 21: Tree species found in the coffee forests of El Salvador.

FAMILY	Scientific name	Common Name	EXOTIC	NATIVE
ACTINIDIACEAE	*Saurauia kegeliana*	Alais, Alai		N
AGAVACEAE	*Yucca elephantipes*	Izote		N
ANACARDIACEAE	*Spondias radkoferi J.D.Smith*	Jocote		N
	Spondias mombim L.	Jocote		N
	Spondias sp.	Jocotillo		N
	Mangifera indica L.	Mango	E	
	Astronium graveolens Jacq.	Ron-rón		N
ANNONACEAE	*Annona reticulata L.*	Anona colorada		N
APOCYNACEAE	*Rollinia rensoniana Standley*	Chulumuyo		N
	Alstonia longifolia (A.DC.)Pichon	Chilindrón		N
	Stemmadenia donell-smithii (Rose) woodson	Cojón de puerco		N
	Stemmadenia obovata (Hook. & Arn.) Schumann	Cojón de tierra fría		N
AQUIFOLIACEAE	*Ilex discolor Hemsley var. Discolor*	Rodeo		N
ARALIACEAE	*Dendropanax arboreus (L.)Decne. & Planchon*	Mano de león		N
	Oreopanax xalapensis (Kunth) Decne. & Planchon	Mano de león de tierra fría		N
BIGNONIACEAE	*Tabebuia cf. Chrysantha (Jacq.) Nicols*	Cortez Blanco		N
	Tecoma stands (L.) Juss.ex Kunth	San Andrés		N
	Tabebuia impetiginosa (Mart. Ex DC.) Stadl.	Cortez Negro		N
	Spatodea campanulata Beauv.	Llama del bosque	E	
	Tabebuia rosea (Bertol.) DC.	Maquilishuat		N
BIXACEAE	*Bixa orellana*	Achiote		N
BOMBACACEAE	*Pseudobombax ellipticum (Kunth)Dugand*	Chilo		N
BORAGINACEAE	*Cordia alliodora (Ruiz Lopez & Pavon) Oken*	Laurel		N
	Cordia gerascanthus L.	Laurel Negro		N
	Bourreria huanita (Llave & Lex.) Hemsley	Palo Rosa, Rosa Blanco o Negro		N
	Codia dentata Poiret	Tigüilote		N
BURCERACEAE	*Bursera simaruba (L.) Sarg.*	Jiote, Palo chulon, Jiote rojo		N
CASUARINACEAE	*Casuarina equisetifolia*	Casuarina	E	
CECROPIACEAE	*Cecropia obtusifolia Bertol*	Guarumo		N

	Cecropia peltata L.	Guarumo		N
CELASTRACEAE	*Zinoweiwia cuneifolia Lundell*	Barreto		N
	Maytenus chiapensis Lundell	Escobo Blanco		N
CHRYSOBALANACEAE	*Hirtella racemosa Lam.*	Ikakio		N
	Licania retifolia Blake	Mulo		N
CLETHRACEAE	*Clethra cf. Lanata Martius & Galeotti*	Zapotillo de montaña		N
COMBRETACEAE	*Terminalia oblonga (Riuz & Pavon)Steudel*	Volador		N
COMPOSITAE	*Perymenium cf. Grande*	Botoncillo		N
	Montanoa sp.	Flor Amarilla		N
	Vernonia deppeana Llave.	Sukinai		N
	Perimenium grande Hemsley	Tatascamite, Tatascamite Blanco o Colorado		N
	Pluchea odorata (L.) Dass	Vara hueca o negra		N
CRHYSOBALANACEAE	*Licania platypus (Hemsley)Fritsch*	Zunsa		N
CUPRESACEAE	*Crupressus lusitanica Miller*	Ciprés		N
DICHAPETALACEAE	*Dichapetalum donell-smithii Engler*	Huevo de Tacuazín		N
EBENACEAE	*Quercus skinneri Benth.*	Belloto		N
	Diospyros sp.	Cacho de venado		N
	Diospyros salicifolius Humbl. Et Bonpl. ex Will	Matazanillo		N
	Diospyros verae-crusis (Standley)Standley	Pepe Nance, Trecio		N
ERYTHROXYLACEAE	*Erythroxylum areolatum L.*	Pergamino		N
EUPHORBIACEAE	*Acalypha villosa Jacq.*	Chichicaste dulce		N
	Cnidoscolus jurgensenii	Chichicaste Mano de león, Chayo, Mala Mujer		N
	Sapium glandulosum (L.) Morong	Chilamate		N
	Sapium macrocarpum Muell.- Arg.	Chilamate		N
	Croton reflexifolius Kunth	Copalchí		N
	Risinus comunis L.	Higerillo, Higuero	E	
	Drypetes laterifolia	"indeterminado"		N
	Omphalea oleifera Hemsley	Palo de Queso, Tambor		N
	Euphorbia pulcherrima Willd. Ex klotzsch	Pascua	E	
	Euphorbia heterophy L.	Pascuita		N
	Phyllanthus caroliniensis Walter	Sulfatio		N
	Alchornea latifolia Sw.	Tambor Rojo		N
	Gymnanthes guatemalensis Standley & steyerm	Triqui-traca		N
FAGACEA	*Quercus sapotaefolia liebm.*	Quiebra Muela		N
	Quercus lancilimba Trel.	Roble		N
FLACOURTIACEAE	*Xilosma cf. clorantthum J.D.Smith*	Aguja de Arra o Arrea		N
	Casearia commersoniana Cambess.	Camarón, Camarón cola de pava		N
	Casearia corymbosa Kunth	Limoncillo		N
	Casearia sylvestris Sw. Var. Sylvestris	Sombra de Mula		N
	Lunania mexicana Brandegee	Tizón		N
GUTTIFERAE	*Calophyllum brasiliense Cambess*	Bario		N
	Rheedia edulis (Seemann) Triana & Planchon	Chaparrón		N
	Mammea americana	Mamey	E	
	Clussia guatemalensis Hemsley	Mangle de Tierra Fría		N
JUNGLANDACEAE	*Juglan olanchana Standley & L.O. Willians*	Nogal		N
LAURACEAE	*Persea americana*	Aguacate		N

	Ocotea sinuata (Mez.) Rohwer	Cachulaguacate		N
	Ocotea veraguensis (Meissner)Mez	Pimiento Negro, Pimientillo		N
	Ocotea sp.	Pimiento Rojo, Pimiento		N
	cf. Phoebe sp.	Zapatillo		N
LEGUMINOSAE	*Andira inermis (Sw.) Kunth ex DC.*	Almendro de río		N
	Delonix regia (Bojer)Raf.	Arbol de Fuego	E	
	Myroxylon balsamun var. Pereirae (Royle) Harms	Bálsamo		N
	Myrospermum frutescens Jacq.	Bálsamo de montaña		N
	Senna nicaraguensis (Benth.) Irwin & Barneby	Barajo		N
	Cassia grandis L.f.	Calao, Carao		N
	Albizia guachapele (Kunth) Dugand	Canilla de mula		N
	Machaerium biovulatum Micheli	Cedazo, Sedazo		N
	Lonchocarpus peninsularis (J.D.Smith) Pittier	Chaperno		N
	Lonchocarpus minimiflorus J.D.Smith	Chaperno negro		N
	Lonchocarpus rugosus Benth.	Chapulutapa		N
	Lysiloma auritum (Schldl.)Benth.	Cicahuite, Guaje		N
	Lonchocarpus salvadorensis	Cincho		N
	Enterolobium cyclocarpum (Jacq.) Griseb.	Conacaste		N
	Inga oerstediana Benth. Ex Seemann	Cuje, Nacaspilo,		N
	Lonchocarpus atropurpureus Benth.	Funera		N
	Lonchocarpus sp.	Funera		N
	Diphysa robinioides Benth.	Guachipilín		N
	Acacia hindsii Benth.	Izcanal		N
	Leucaena leucocephala (Lam) de Wit	Leucena		N
	Gliricidia sepium (Jacq.) Walp.	Madrecacao		N
	Poeppigia procera C.Presl.	Memble		N
	Schizolobium parahyba (Vell.) Blake	Mentol, Vaporub	E	
	Swartzia simplex var. Ochnacea (DC.) Cowan	Naranjillo		N
	Bauhinia ungulata L.	Pata de Cabro		N
	Inga paterno Harms	Paterno		N
	Inga jiniguil	Pepeto Cuadrado, Guama		N
	Inga oerstediana Benth. Ex Seemann	Pepeto de Río		N
	Inga vera Willd.	Pepeto de Río		N
	Inga latifolia	Pepeto Negro		N
	Inga vera ssp. Spuria (Willd.) Leon	Pepeto Peludo		N
	Inga laurina (Sw.)Willd.	Pepeto Silvestre		N
	Inga calderonii Standley	Pepeto Zapato de Mico		N
	Erythrina berteroana Urban	Pito		N
	Albizia adinosephala (J.D.Smith) Britton & Rose	Polvo de queso		N
	Lysiloma divaricatum (Jacq.)Macbride	Quebracho		N
	Lonchocarpus cf. Peninsularis	Tapalutapa		N
	Eysenhardtia adenostylis Baillon	Taray		N
LYTHRACEAE	*Laphoensia punicifolia*	Trompío		N
MALVACEAE	*Hampea stipitata S.Watson*	Masagua		N
MELASTOMATACEAE	*Conostegia xalapensis (Bonpl.) D.Don*	Cirín		N
MELIACEAE	*Guarea glabra Vahl.*	Barrehorno		N
	Cedrela odorata L.	Cedro Colorado		N
	Trichilia americana (Sesse & Mociño) Penn.	Cedro de Jocote, Jocotillo		N
	Cedrela salvadorensis Standley	Cedro Real, Cedro Salvadoreño		N
	Trichilia martiana C.DC.	Cola de pava		N

MORACEAE	*Ficus glabrata*	Amate		N
	Ficus ovalis (Liebm.) Miq.	Amate		N
	Ficus sp.	Amate de montaña		N
	Ficus sp.	Mata Palo		N
	Ficus elastica	Amate Morado		N
	Ficus cf. Maxima	Amate Verde		N
	Ficus pertusa L.f.	Amate, Capulamate		N
	Castilla elastica Cervantes	Árbol de hule		N
	Artocarpus altilis (Parkinson)Fosb.	Árbol de pan	E	
	Maclura tinctoria (L.)Steudel ssp. Tintoria	Mora, Palo Mora		N
	Brosimum alicastrum Sw.ssp.alicastrum	Uhushte, Hujusthe de invierno, Ohuste		N
MUSACEAE	*Musa paradisiaca L.*	Guineo	E	
MYRSINACEAE	*Ardisia pascalis*	Cerezo		N
	Ardisia compresa Kunth	Cotomate		N
	Ardisia pascalis	Fresa silvestre		N
MYRTACEAE	*Eugenia lindeliana Berg.*	Cipresillo		
	Eugenia sp.	Escobo Negro		N
	Eugenia aeruginea DC.	Guacoco, Guacote		N
	Myrciaria floribunda (Willd.) O. Berg	Guayacán		N
	Psidium guajava L.	Guayaba		N
	Eugenia sp.	Icaco de Tierra Fría		N
	Sizygium jambos (L.) Alston	Manzana Rosa, Manzana Pedorra	E	
	Pimenta dioica (L.) Merill	Pimiento		N
	Outarea lucens (Kunth) Engler	Ojo de cangrejo		N
OCCNACEAE	*Hauya elegans subsp. Lucida*	Cacho de chivo		N
ONAGRACEAE	*Agonandra racemosa (DC.) Stadley*	Pinavec		N
OPILIACEAE	*Chamaedorea graminifolia H.A. Wendl.*	Cuiliote		N
PALMAE	*Chamaedorea tepejilote*	Pacaya		N
PINACEAE	*Pinus oocarpa Schiede ex. Schlech.*	Pino		N
PIPERACEAE	*Piper yzabalanum C.DC.ex. J.D.Smith*	Anicillo Negro		N
	Piper arboreum Aulblet	Cordoncío		N
	Piper auritum Kunth	Santa María		N
	Triplaris melaenodendron (Bertol.)	Mulato		N
POLYGONACEAE	*Coccoloba barbadensis Jacq.*	Papaturro		N
	Coccoloba acapulcensis	Papaturro de montaña, Mecacoao		N
	Coccoloba montana Standley	Papaturro de tierra fría		N
	Grevillea robusta	Gravileo	E	
RHAMNACEAE	*Colubrina arborescens (Mill.) Sarg.*	Pimiento Blanco		N
ROSACEAE	*Prunus sp.*	Aluminio, Uluminio		N
	Prunus brachybotrya Zucc.	Sapuyulo		N
	Chioccoca alba (L.) Hitchc.	Arito Blanco		N
RUBIACEAE	*Faramea occidentalis (L.) Rich*	Cafesio		N
	Pogonopus speciosus (Jacq.)Shumann	Chorcha de pava		N
	Rondeletia cordata Benth	Fosforito		N
	Randia armata (SW.) DC.	Morrito		N
	Psychotria quinqueradiata Polak.	Pajarito		N
	Exostema mexicanum A.Gray	Quina		N

RUTACEAE	*Citrus aurantifolia (L.)Swingle*	Limón	E	
	Citrus nobilis Lour.	Mandarina	E	
	Casimiroa edulis Llave & Lex.	Matazano		N
	Citrus limetta Risso	Naranja lima	E	
	Citrus sinensis (L.)Osbeck	Naranjo	E	
	Zanthoxylum microcarpum Griseb.	Pochote Rojo		N
	Allophyllus racemosus Sw.	Huesito		N
SAPINDACEAE	*Melicoccus bijugata*	Mamón		N
	Sapindus saponaria L.	Pacún		N
	Matayba glaberrima Radlk.	Palo de Yegua		N
	Thounidium decandrum (Bonpl.)Radlk.	Zorrillo		N
SAPOTACEAE	*Chrysophyllum cainito L.*	Caimito		N
	Chrysophyllum mexicanum Brandegee ex Standley	Caimito Blanco		N
	Chrysophyllum oliviforme L.	Caimito de Montaña		N
	Manilkara zapota (L.) Royen	Nispero	E	
	Manilkara chicle (Pittier) Gilly	Nispero o Zapote de montaña		N
	Manilkara sp.	Nispero Extranjero	E	
	Sideroxylon capiri spp. Tempisque (Pittier)Penn	Tempisque		N
	Indet.	Zapote verde	E	
SIMAROUBACEAE	*Simarouba glauca DC.*	Aceituno		N
	Alvaradoa amorphoides Liebm.	Plumajillo		N
	Witheringia sp.	Comida de paloma		N
SOLANACEAE	*Solanum macranthum Dunal*	Cuerna vaca	E	
	Cestrum nocturnum L.	Huele de noche, Hiede de noche		N
	Solanunsp.	Tapalayote		N
	Theobroma cacao	Cacao		N
STERCULIACEAE	*Guazuma ulmifolia Lam.*	Caulote, Tapaculo, Pepe caulote		N
	Styrax argenteus Presl.	Estoraque		N
STYRACACAE	*Heliocarpus mexicanus (Turcz.) Sprage*	Calague		N
TILIACEAE	*Muntingia calabura L.*	Capulín		N
	Trichospermum mexicanum (DC.) Baillon	Capulín Blanco		N
	Apeiba tiborbou Aublet	Peine de Mico		N
	Luehea candida (DC.) Martius	Pochote		N
	Trema micrantha (L.) Blume	Capulín macho		N
ULMACEAE	*Aphananthe monoica (Hemley) Leroy*	Duraznillo		N
URTICACEAE	*Urera eggersii Hieron*	Chichicaste blanco		N
	Urera corallina (Lliebm.) Wedd.	Pan caliente		N
VERBENACEAE	*Cornutia pyramidata L.*	Manto de Jesus, Cangrejo		N
	Citharexulum donell-smithii Greenman	Rosario, Chorrito, Soguio		N
Indet.	*Indet.*	Arcabo		N ?
Indet.	*Indet.*	Cedratano		N ?
Indet.	*Indet.*	Contamal		N ?
Indet.	*Indet.*	Cuetio		N ?
Indet.	*Indet.*	Fc5-M5-D		
Indet.	*Indet.*	Fcoe2		
Indet.	*Indet.*	Fcoe6		
Indet.	*Indet.*	Juda		N ?

Indet.	*Indet.*	Limpia dientes		N ?
Indet.	*Indet.*	Lucito		N ?
Indet.	*Indet.*	Macaguita		
Indet.	*Indet.*	Macahuite		
Indet.	*Indet.*	Muestra 3460		N ?
Indet.	*Indet.*	Nacahuite		N ?
Indet.	*Indet.*	P101M5		
Indet.	*Indet.*	Palo Colorado		
Indet.	*Indet.*	Sombreron		N ?
Indet.	*Indet.*	Fcoe7		
Indet.	*Indet.*	Camarón rojo		

Table 22: List of amphibious species in the coffee forests of El Salvador.

FAMILY	Scientific name
HYLIDAE	*Agalychnis moreletii*
BUFONIDAE	*Bufo leutkeni*
	Bufo marinus
LEPTODACTYLIDAE	*Eleutherodactylus rhodopis*
	Leptodactylus melanonotus
	Physalaemus pustulosus
RANIDAE	*Rana maculata*
PLETHODONTIDAE	*Oedipina taylori*

Table 23: Reptile species found in the coffee forests in El Salvador.

FAMILIA	Nombre Científico
CORYTOPHANIDAE	*Basiliscus vittatus*
	Coryptophanes percarinatus
POLYCHROTIDAE	*Norops crasulus*
	Norops macrophallus
	Norops serranoi
	Norops sericeus
PHRYNOSOMATIDAE	*Sceloporus malachiticus*
	Sceloporus squamosus
SCINCIDAE	Scincido no identificado
VIPERIDAE	*Atropoides nummifer*
	Cerrophidion godmani
COLUBRIDAE	*Drymarchon corais*
	Conophis lineatus
	Stenorhina freminvilleii
	Drymobius margaritiferus
	Enulius flavitorques

	Leptodeira septentrionalis
	Ninia sebae
	Scolecophis atrocinctus
	Senticolis triaspis
	Tantilla brevicauda

Table 24: Bird species found in the coffee forests of El Salvador.

FAMILIA	Nombre Científico
TINAMIDAE	*Crypturellus cinnamomeus*
CATHARTIDAE	*Coragyps atratus*
	Cathartes aura
ACCIPITRIDAE	*Accipiter striatus*
	Asturina nitida
	Buteogallus urubitinga
	Buteo platypterus
	Buteo brachyurus
	Buteo jamaicensis
	Spizaetus tyrannus
FALCONIDAE	*Micrastur ruficollis*
	Herpetotheres cachinnans
	Falco sparverius
CRACIDAE	*Crax rubra*
	Ortalis leucogastra
ODONTOPHORIDAE	*Dendrortyx leucophrys*
	Dactylortyx thoracicus
RALLIDAE	*Aramides axillaris*
COLUMBIDAE	*Columba flavirostris*
	Zenaida asiatica
	Leptotila verreauxi
PSITTACIDAE	*Aratinga canicularis*
	Brotogeris jugularis
CUCULIDAE	*Piaya cayana*
	Morococcyx erythropygus
	Crotophaga sulcirostris
STRIGIDAE	*Glaucidium brasilianum*
APODIDAE	*Streptoprocne rutila*
	Streptoprocne zonaris
	Chaetura vauxi
	Panyptila cayennensis
TROCHILIDAE	*Chlorostilbon canivetii*
	Hylocharis eliciae
	Amazilia beryllina
	Amazilia rutila
	Heliomaster sp.

	Archilochus colubris
TROGONIDAE	*Trogon violaceus*
	Trogon elegans
MOMOTIDAE	*Momotus momota*
	Eumomota superciliosa
RAMPHASTIDAE	*Aulacorhynchus prasinus*
	Pteroglossus torquatus
PICIDAE	*Melanerpes aurifrons*
	Piculus rubiginosus
	Dryocopus lineatus
FURNARIIDAE	*Automolus rubiginosus*
DENDROCOLAPTIDAE	*Sittasomus griseicapillus*
	Xiphocolaptes promeropirhynchus
	Xiphorhynchus flavigaster
	Lepidocolaptes souleyetii
TYRANNIDAE	*Myiopagis viridicata*
	Mionectes oleagineus
	Zimmerius vilissimus
	Oncostoma cinereigulare
	Rhynchocyclus brevirostris
	Tolmomyias sulphurescens
	Contopus cinereus
	Empidonax flaviventris
	Empidonax minimus
	Empidonax hammondii
	Attila spadiceus
	Myiarchus tuberculifer
	Pitangus sulphuratus
	Megarynchus pitangua
	Myiozetetes similis
	Myiodynastes luteiventris
	Tyrannus verticalis
INCERTAE SEDIS	*Pachyramphus aglaiae*
	Tityra semifasciata
PIPRIDAE	*Chiroxiphia linearis*
VIREONIDAE	*Vireo flavifrons*
	Vireo solitarius montanus
	Vireo solitarius solitarius
	Vireo gilvus
	Vireo leucophrys
	Vireo flavoviridis
	Hylophilus decurtatus
	Cyclarhis gujanensis
CORVIDAE	*Calocitta formosa*
	Cyanocorax melanocyaneus
HIRUNDINIDAE	*Progne chalybea*
	Tachycineta thalassina
TROGLODYTIDAE	*Campylorhynchus rufinucha*

	Thryothorus maculipectus
	Thryothorus rufalbus
	Thryothorus modestus
	Troglodytes aedon
SYLVIIDAE	*Polioptila caerulea*
TURDIDAE	*Myadestes occidentalis*
	Catharus aurantiirostris
	Catharus ustulatus
	Turdus grayi
	Vermivora chrysoptera
	Vermivora peregrina
PARULIDAE	*Dendroica petechia*
	Dendroica magnolia
	Dendroica virens
	Dendroica townsendi
	Mniotilta varia
	Setophaga ruticilla
	Seiurus aurocapillus
	Seiurus motacilla
	Oporornis tolmiei
	Wilsonia citrina
	Wilsonia pusilla
	Euthlypis lachrymosa
	Basileuterus culicivorus
	Basileuterus rufifrons
	Icteria virens
THRAUPIDAE	*Habia rubica*
	Piranga rubra
	Piranga ludoviciana
	Piranga leucoptera
	Thraupis abbas
	Euphonia affinis
	Euphonia hirundinacea
	Euphonia elegantissima
	Cyanerpes cyaneus
EMBERIZIDAE	*Tiaris olivacea*
	Melozone biarcuatum
	Melozone leucotis
CARDINALIDAE	*Saltator coerulescens*
	Saltator atriceps
	Pheucticus ludovicianus
	Cyanocompsa parellina
	Passerina cyanea
	Passerina ciris
ICTERIDAE	*Dives dives*
	Quiscalus mexicanus
	Molothrus aeneus
	Icterus maculialatus

	Icterus spurius
	Icterus pustulatus
	Icterus pectoralis
	Icterus gularis
FRINGILLIDAE	*Icterus galbula*
	Carduelis psaltria

Table 25: Mammal species found in the coffee forests of El Salvador.

FAMILIA	Nombre Científico	Nombre Común
	Philander opossum	Tacuasín de cuatro ojos
MIRMECOPHAGIDAE	*Tamandua mexicana*	Oso hormiguero
DASYPODIDAE	*Dasypus novemcinctus*	Cusuco
MUSTELIDAE	*Conepatus mesoleucus*	Zorrillo de lomo blanco
	Mephitis macroura	Zorrillo rayado
	Spilogale putorius	Zorrillo manchado
	Mustela frenata	Comadreja
PROCYONIDAE	*Bassariscus sumichrasti*	Muyo
	Nasua narica	Pezote
	Potos flavus	Micoleón
	Procyon lotor	Mapache
CANIDAE	*Canis latrans*	Coyote
	Urocyon cinereoargenteus	Zorra
FELIDAE	*Herpailurus yaguarondi*	Gato zonto
	Leopardus pardalis	Ocelote
	Leopardus wieddi	Tigrillo
CERVIDAE	*Odocoileus virginianus*	Venado cola blanca
TAYASSUIDAE	*Pecari tajacu*	Cuche de monte
ERETHIZONTIDAE	*Coendou mexicanus*	Puercoespín
GEOMYIDAE	*Orthogeomys grandis*	Taltuza
AGOUTIDAE	*Agouti paca*	Tepezcuintle
DASYPROCTIDAE	*Dasyprocta punctata*	Cotuza

Annex 8

Official list of forest fauna species threatened or in danger of extinction in El Salvador.

See separate document.

Annex 9

IUCN Red List for Mesoamerica

See separate document

Annex 10

Photos from the stakeholder consultation

See separate document

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