

Project Idea Note Submitted to the Plan Vivo Standard

Interchanging CO2 (ICCO2)




Asociación de Reconstrucción y Desarrollo Municipal Cinquera - Cabañas

A R D M

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Table of Contents

Tables

Figures

Summary Information

Project Title	Interchanging CO2 (iCCO2)
Project Location – Country/Region/District	The project site is located inland towards the northern extent of the Suchitoto Department (13° 55' 57.94" N, 89° 01' 30.36" W), distributed across 7 municipalities in El Salvador.
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Summary of Proposed Activities	The Plan Vivo project intends to provide training for the establishment of new, productive and sustainable agroforestry systems, while educating smallholder farmers on climate change and crop resilience. The agroforestry systems involve plantations of fruit, fuelwood, and high-value timber. Through improved crop yields, farmers will gain greater market access and incremental performance-based payments.
Summary of Proposed Target Groups	Target groups are smallholder farmer with land tenure residing within the project area. Women and youth are a minority in the agricultural sector and will thus be presented with considerable opportunities for consultation and active participation.

PART A: Project Aims & Objectives

A1 Rural farmer households in El Salvador are becoming increasingly susceptible to the impacts of climate change due to the expanding agricultural frontier and intensive livestock practices. This project intends to improve the well-being of rural farmers in El Salvador by tackling the social/environmental vulnerability to climate change with the implementation and development of agroforestry systems. The agroforestry management system involves select multipurpose plantations of intercropped fuelwood and high-value timber species, in addition to fruit orchards, for sustained harvest and maximum soil benefits. This Plan Vivo project is supporting forest restoration methods, promoting ecosystem sustainability, and generating income through the sales of timber and non-timber forest products, as well as payments for ecosystem services (PES). These operations will create considerable market opportunities for farmers, connecting them with reliable suppliers, and incentivising innovation.

Specific objectives of this project include:

a) Increasing carbon sequestration rates through soil carbon and above-ground biomass;

b) Increasing farm tree cover with native and naturalized tree species to achieve higher levels of biodiversity, and reduced levels of drought;

c) Introducing more financial stability for rural farmers through the sales of carbon credits, improved land use management, and the sales of timber and non-timber forest products.

PART B: Proposed Project Area

B1 The habitat in El Salvador is unique for its mangrove forests along the coastline, cloud forests among the mountains, and volcanic ranges (Kernan and Serrano 2010). This small country contains a tropical climate, home to forests, wetlands, lakes, and lagoons which contain vital habitat for endemic species. These lush, and biodiverse tropical dry forests and marine attract ecotourism globally. Unfortunately, this environment has been subjected to degradation threatening biodiversity, wildlife habitat, water sources, food security, agriculture resilience, and tourism.

The proposed project will take place within 7 municipalities located south of the Chalatenango Department in El Salvador: lago Suchitlán, Cinquera, Tejutepeque, Tenecingo, Suchitoto, Jutiapa, and El Paisnal, all captured in Figure 1. The project site will occupy 796.75 km² throughout participating smallholders' land. This region is classified as Aw - Tropical Savanna Climate according to Koppen's Climate Classification. Dry periods in Suchitoto extend from December to March with annual rainfall ranging from 1800mm to 2200mm. Annual temperature for the project area is approximately 24.1˚C. April, the warmest month, reaches an average maximum temperature of 32ºC.

Protected Areas

The Plan Vivo project is located near one of El Salvador's internationally protected areas, the Embalse Cerrón Grande wetland. This protected area is immensely important to several species of birds and fish and provides a vital source of fishing, energy generation, tourism, and wildlife conservation for thousands of locals (CentroAmerica 2020). The Cerrón Grande wetland covers 606.98 km², encompassing Suchitlán Lake, a man-made reservoir built across the Lempa River and managed by the local site Ramsar Committee. In the southern fringe of the Cerrón Grande site lies 4 additional protected areas. One of these is privately owned, and the rest are state property:

1. Silly Stones – Municipality of El Paisnal (Department of San Salvador)
2. San Francisco de Cerros - Municipality of El Paisnal (Department of San Salvador)
3. Colima – Suchitoto Municipality (Cuscatlan Department)
4. Bosque de Cinquera (privately owned) – Cinquera Municipality (Cabañas Department)

El Salvador's valuable climate captures both national and international attention. This small country contains 191 nationally designated protected areas, occupying 1778 km² and 666 km² of land and marine areas, respectively (ProtectedPlanet 2020). Although the project area does not directly contain the protected areas, these ecosystems could be impacted by nearby agricultural practices. For instance, fertilizer runoff can leach into groundwaters, and expanding agricultural plots restrict migration pathways and habitat.

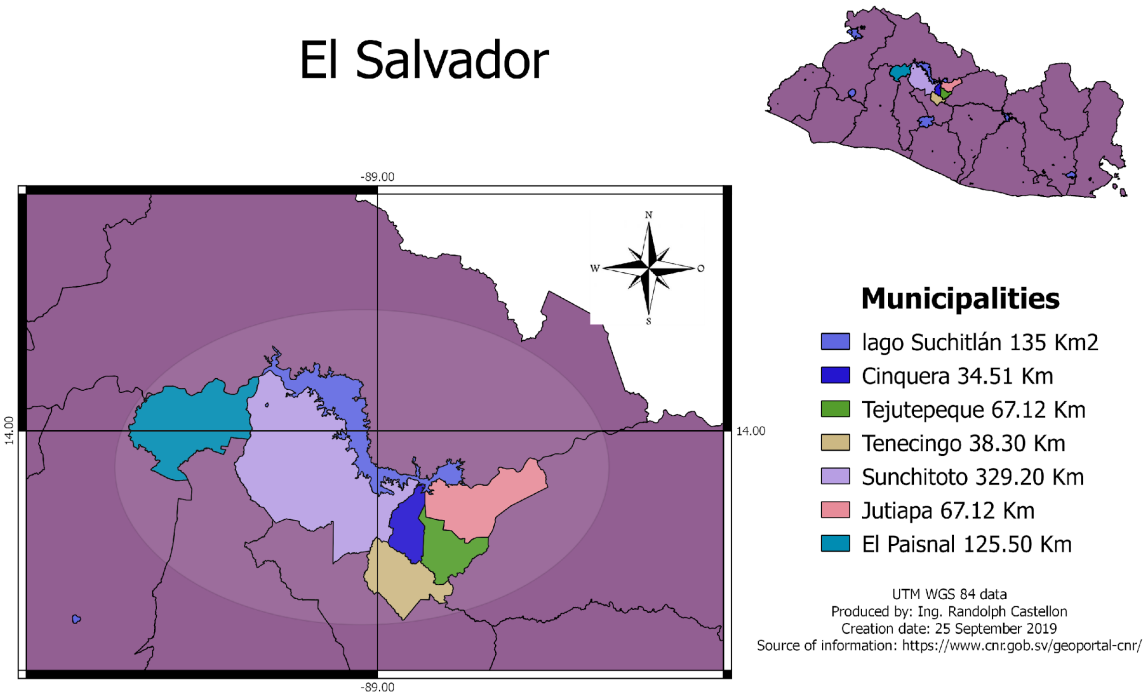

Figure 1 Description of the project area

Degradation Processes

The project land area has been severely degraded due to industrial agricultural processes which have resulted in deforestation, soil erosion, chemical contamination, and soil nutrient depletion. The impacts of climate change worsen these issues and often leave this region vulnerable to drought, soil infertility, and increasingly severe weather conditions (Gies 2018). Impenetrable soils have left ground waters un-replenished while simultaneously increasing flooding incidents. These events have imposed poverty and migration upon small farmers who cannot sustain themselves during the severe dry spells (Gies 2018). In addition, government mismanagement leads to poor soil conservation practices, indiscriminate forest burning, illegal timber harvesting, and unregulated hunting practices. All of these degrading processes are further stressed with overexploitation from an increasing population size.

There is not much variation in the environmental baselines between municipalities. The selected municipalities are clustered in the same region with similar topographies; therefore they do not experience much climate variation. Land-use and agricultural practices have also remained consistent, generating comparable degradation within the region.

Socio-Economic Context

B2. The rural communities living within the project area are classified as poor households relative to the national average. The main source of income and economic activity in these municipalities is subsistence agriculture (corn, beans, rice, sugarcane) and livestock. Although for agriculture industry workers in El Salvador, income remains low with a minimum wage of USD$113.70 per month (Minimum-Wage 2020).

Within the project area, household incomes vary by municipality as illustrated in Table 1 below. Most communities in the area have access to potable water, electricity, and housing, although there are sites in the region with extreme poverty and a high rate of malnutrition and sanitation issues.

Table 1. Farmer Income Levels within Project Area (Serrano and Gomez 2008)

Municipality	Monthly household income ($)	Monthly income per capita ($)
Iago Suchitlán	No Data	No Data
Cinquera	115.9	25
Tejutepeque	257	55.1
Tenecingo	No Data	No Data
Sunchitoto	237.8	49.7
Jutiapa	144.6	25.2
El Paisnal	No Data	No Data

Between the municipalities, there is some variation between population size, life expectancy and administrative arrangements. These population demographics by municipality are outlined below in Table 2. Municipality administrative arrangements contain smaller divisions of government dedicated to rural communities referred to as cantons. These cantons tend to vary in size and governance as there is no specific standard. Smaller divisions within a canton are labelled as hamlets or communities.

Table 2. Population Demographics (Serrano and Gomez 2008)

Municipality	Population size	Life expectancy (years)	Administrative arrangements
Iago Suchitlán	No Data	No Data	No Data

Cinquera	Total: 758	65.9	Divided into 8 cantons: El Cacao, El Tulo, Huilihuiste, La Escopeta, San Antonio, San Benito, San Nicolás, and Valle Nuevo
Tejutepeque	Total: 7,968	65.9	Divided into 6 cantons: Concepción, El Zapote, San Antonio Buenavista, San Francisco Echeverría, Santa Olaya, and Santa Rita
Tenecingo	No Data	No Data	No Data
Sunchitoto	Urban: 7,000 Rural: 20,000	65.9	Consists of 28 cantons and 77 communities
Jutiapa	Total: 3,156	64.1	Divided into 7 cantons: Caleras, Carolina, Llano Largo, Palacios, Platanar, and San Sebastián.
El Paisnal	No Data	No Data	No Data

Part C: Identification of Target Groups & Communities

C1. Smallholder farmer communities within the project area are expected to benefit from this project, particularly those farmers who possess some recognized form of land tenure. The female and youth populations are affected stakeholders who require more opportunities in the agriculture sector for the sake of sustained labour and income. Although they will not be the primary target of this project, they will be consulted to maintain youth interest and provide involvement opportunities for women. Females are dominant with 51.3% of the population, while the male population represents 48.7% of the population. Despite the abundance of female residents, their role in society has been limited. Other marginalized groups within this region include the Nahuapipil, Lenca, and Cacaopera Indigenous Peoples, however

none of these groups reside within the project area. It is estimated that 90% of the El Salvador population identify as Mestizo Peoples, including many of these farmers.

Age distribution in El Salvador is concentrated between the ages of 25 and 55 years old. This can be beneficial for the country's economic activity. The elderly population is quite small with only 7.28% over the age of 65. This could indicate a short life expectancy, which is associated with developing countries.

El Salvador age distribution:

- 0-14 years: 26.58%
- 15-24 years: 20.51%
- 25-54 years: 38.66%
- 55-64 years: 6.96%
- 65 years and over: 7.28%

Role of Women

Patriarchy has dominated El Salvador, especially in rural areas, for most of its colonial history. Women's roles were limited to the domestic home and child-rearing duties, often dependent on their husband's incomes. In the last few decades, there have been positive developments for feminism and human rights movements to empower and support women involvement in leadership roles. Today, there are women participating in municipal and communal positions. However, more progress is still needed to incentivize women, create more platforms for participation, and opportunities to contribute more in the agricultural sector.

Local Organizational Capacity

El Salvador rural communities and small farmers have demonstrated their organizational capacity during consultation groups and feasibility assessments. Some of the most promising aspects is their interest in implementing more sustainable practices. Many community members have a general understanding of the cause and effects of climate change and have expressed desire to implement new mitigating systems. Many residents have witnessed first-hand the impact of climate change and are therefore more motivated to continue the Plan Vivo-certified project.

There are also several examples of community building activities led by residents. Within the project area, there are workshops for vocational training, cultural artistic training, carpentry training, and musical training. Additionally, this region contains a *house of culture* where artistic groups may perform.

Religion is also a prevalent aspect of community in these municipalities. The two dominant religions in the area are Catholicism and Protestantism.

Common religions in El Salvador:

- Catholicism: 41.3%
- Protestantism: 37.2%
- None/Atheist/Agnostic: 18.7%
- Others: 2.8%

Part D: Land Tenure & Carbon Rights

Carbon Rights

D1. Carbon rights in El Salvador are currently underdeveloped; however, there have been recent encouraging developments. For example, El Salvador is a supporter of the voluntary carbon market and has demonstrated their approval of the projects' registration through a signed letter of notification. This clearly validates their government's understanding of the project and will prevent double counting.

Government approval promotes carbon market innovation and provides opportunities for companies and individuals to offset their emissions. Access to these markets, in addition to voluntary compliance, improves climate, health, and economic conditions for El Salvador. In 2017, El Salvador acted to increasing climate investments by consulting with national stakeholders, policymakers, and key institutions with financial support from the Green Climate Fund Readiness Programme (GCF 2017). El Salvador's Nationally Determined Contributions (NDCs) from the Paris Accord were assessed to determine optimal pathways, some of which emphasize better land use management.

Historically, El Salvador has failed to meet international climate treaty targets, even though it is a signatory of UNFCCC and the Paris Agreement, and has instead demonstrated increasing CO2 emissions per capita. Although these emissions are low relative to other countries, El Salvador has been subjected to harsh climate change-related natural disasters, acting as incentive for investment in national resilience.

Land Tenure

This project only works with farmers that own the land they cultivate, due to the requirement for farmers to take care of their trees over many decades. Farmers that rent blocks of land – usually for the planting of short-term crops – are not eligible for the project.

Most farmers in El Salvador possess documentation for their lands which are legally valid for all transactions, including buying or selling land. The government has begun registering all tenure in the National Registry Centre (Centro Nacional de Registros, CNR), but it is expected to be a lengthy process. Lack of registration to date does not affect the legality or validity of farmers' existing documents.

Part E: Project Interventions & Activities

E1. The project's main intervention is the establishment of agroforestry systems with multipurpose plantations of fuelwood, high-value timber, and fruit. Rows of timber and fuelwood species are intercropped with fruit trees established in separate furrows. These species are selected based on community values, stakeholder interests, native species, and species benefits (growth rate, yields, carbon sequestration, etc.). Although the producers are obligated to select from both the fruit and timber/fuelwood species, they do have input on their preferred ratio of species.

The project also involves improved market access through the assisted sales of carbon credits on the voluntary market. This requires technical training, tools/materials, project management, community collaboration, and financial support. These interventions contribute to the improvement of ecosystems and land use management.

Ecosystem Restoration

This project will restore the affected ecosystems and mitigate climate change impacts with new agroforestry systems, improving crop lands. This involves selecting specific trees to intercrop and increase farm tree density and allow for natural soil regeneration processes. Agroforestry relies on farmers' education on the sustainability and improved climate resiliency of agroforestry crop models. Agroforestry models will provide additional tree cover which will reduce erosion, administer shade for understory species, restore soil nutrients, and improve groundwater retention. Furthermore, increased crown cover restores lost habitat and reinforces biodiversity. By encouraging agroforestry practices, farmers will have the opportunity to diversify their income (through the sales of non-timber forest products and rotation crops) and improve crop lands.

Ecosystem Rehabilitation

The Plan Vivo project was designed to support ecosystem rehabilitation through the integration of eight indigenous species with high value for the environment and community. Species were specifically selected for agroforestry plantations based on their adaptability to the region's climate in addition to the evaluation of farmers, technical experts, and participating local markets. The forest trees (*Colubrina ferruginosa, Cedro odorata, Cordia alliodora*, *Swietenia humilis*, and *Gliricidia sepium*) will be arranged in alternating rows of short-lived fuelwood species and longer-lived timber species. The nitrogen fixing fuelwood species will contribute to soil enrichment and provide an earlier return on investment.

The timber species have a varied growth rate and therefore require intermittent thinning before the stands reach maturity. The fruit trees (*Citrus reticulata, Anacardium occidentale,* and *Citrus latifolia*) will be established in separate plantations and harvested for mid-rotation benefits. Incentivising farmers with continued benefits in the short, medium, and long term while discourage ecosystem degradation practices.

Improved Land Use Management

The project will improve land use management through farmer training and education, new technologies and systems, better genetic materials, and improved market access. This will prevent agricultural expansion and migration. Expansion of agricultural crops into surrounding forest land often occurs when soils become too degraded to maintain the harsh, nutrient depleting monocrops. Improving land use management through increased training, and limited burning and agrochemical use, will improve soil quality, encourage sustainable practices, and decrease the risk of expansion. Agroforestry also promotes carbon sequestration and improves air and water quality. This will generate income stability and food security in farmer households, reducing the risk of migration to (and deforestation of) a new area.

Pilot hectares

In late 2020, 40 hectares of the proposed agroforestry system were established with participating farmers and an additional 160 hectares are being planted in 2021 through a parallel process to project certification.

Part F: Identification of Any Non-Eligible Activities

F1. Non-eligible activities include all additional undertakings related to the project objectives, to be supported by the Plan Vivo project. These activities include supporting and implementing communal tree nurseries in addition to access and training for FARM-TRACE, a software platform for developing and commercializing forest carbon projects, further described in the section below.

Tree Nurseries

Tree nurseries can be incredibly useful for mass planting in terms of communal accessibility, standardized reliable seed sources, and sustainable method of seed establishment. Without the assistance of a controlled nursery, it can be difficult for farmers to grow viable seedlings under varying conditions and management. Therefore, the seedlings are consistently supervised by community technicians to ensure the highest quality yields. Some nurseries are anticipated to be relocated onto participants' land to facilitate seedling transportation. In this case, the producer would be responsible for the nursery’s management with assistance from technicians. Once the seedlings reach maturity, they are distributed to farmers in bags filled with a soil mixture and placed in trenches approximately 10 centimetres deep. The seeds are sown between February and April, depending on the species.

The below pictures show examples of the different stages of nursery work.

Once systems of distribution and seed sources are established, the nurseries will help contribute to the long-term sustainability of the project.

Figure 2: Nursery preparation

Figure 3 Seedlings prepped in individual bags for distribution

Figure 4 Transportation of nursery trees.

FARM-TRACE

FARM-TRACE is a software platform created by Taking Root for developing and commercializing forest carbon projects. This type of technology is critical for consistently monitoring trees, forest cover, and carbon over time in a way that is rigorous yet accessible to smallholders. Previous assessments have determined that targeted smallholder farmers have not had previous exposure to this form of technology, however they do express the capacity to manage this system. Taking Root representatives are training the participating farmers on how to accurately measure and document species using the FARM-TRACE mobile app. This application combines satellite imagery with ground information to get an overview of parcel location, their carbon content, and productivity. With additional training and the FARM-TRACE application, farmers will be able to submit annual reports in an efficient manner.

Part G: Long-Term Sustainability Drivers

Implementation of this agroforestry system will contribute to the recovery of degraded forest lands and ecosystem sustainability in the long-term.

G1. The project design includes incentives for tending to multipurpose rotation crops which contribute to project independence and long-term sustainability once short-term benefits such as PES/carbon revenues cease. By assisting project implementation, improving native ecosystems, and obtaining a continuous source of income, farmer households will be motivated to maintain agroforestry crops.

Identifying long-term risk management and including community input will also help ensure program permanence and improve community forest management.

Ecotourism

Due to the beauty and uniqueness of the natural attractions surrounding the project area, there is a great opportunity for the Plan Vivo project to develop ecotourism. Many tourists would be interested in visiting the internationally protected Cerrón Grande wetland. This wetland contains some of the most diverse habitats in the region, where tourists can observe thousands of migrating bird species. The mountainous landscapes topped with beautiful cloud forests also provide hiking opportunities with magnificent scenery. Ecotourism is this area is a strong potential alternative source of income for communities and encourages environmental protection and sustainability. The Association of Reconstruction and Municipal Development (ARDM) is also involved in rural ecotourism development by managing protected areas, particularly the Cinquera forest, and promoting environmental awareness, sustainability, and payments for ecosystem services.

Timber and Non-Timber Forest Products (NTFP) Initiatives

The agroforestry management system involves multipurpose plantations of fruit, fuelwood, and high-value timber. As previously mentioned, rows of timber and fuelwood have been intercropped to fertilize the soil and provide an early harvest of marketable firewood. The fruit trees may also be established in separate furrows to improve the economic and nutritional yield of farmer families in the short term. 120,000 trees will be established on 200 hectares of degraded cropland by 2021. Planting density is 600 trees per hectare, comprised of 400 timber or fuelwood species and 200 fruit species.

Part H: Applicant Organization & Proposed Governance Structure

H1

ICCO

The governance structure of ICCO, the applicant organization, is illustrated in Figure 5 below. ICCO is a business-oriented, non-governmental organization founded in the Netherlands in 1964. ICCO is providing financial support to, and working closely with, ARDM to establish a sustainable model of agriculture while increasing rural famer income stability. Their work focuses on reducing poverty, inequality, and malnutrition in countries exposed to climate change impacts by targeting economic independence, food security, and emergency aid. This includes supporting smallholder farmers to gain access to production and marketing resources. Taking Root has been hired by ICCO to facilitate this process by using their experience in Plan Vivo projects and accessing the FARM-TRACE platform. This will help ARDM and farmers to track plantation growth for annual reports as well as generate reliable data for potential buyer.

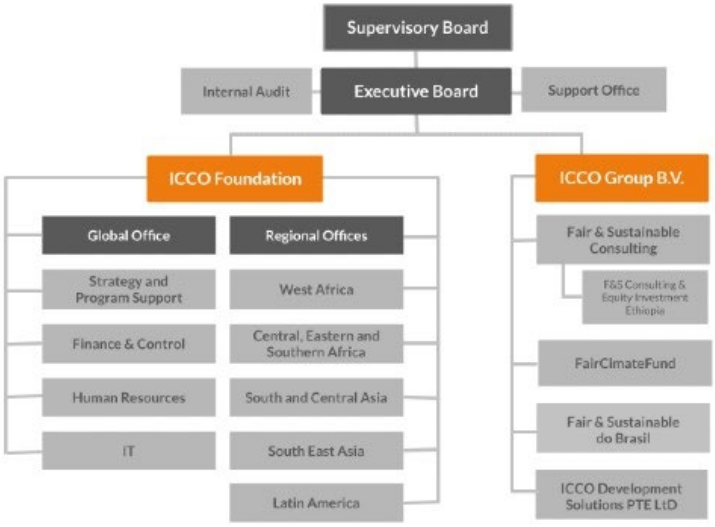

Figure 5 ICCO legal structure. Retrieved from ICCO annual report: https://www.icco-cooperation.org/nl/over-ons/#structuur

ARDM

The Association of Reconstruction and Municipal Development (ARDM) will implement the project and provide field services. It was founded in 1997 to organize and promote socio-economic and environmental development in the Cinquera municipality. They are the leaders in participatory development processes in Cinquera and are advocates for gender equality. The association currently consists of 140 members (76 women and 64 men) from different communities. The Board of Directors has the highest decision-making power and is elected by the general members. It is responsible for implementing the vision and objectives of the partner organization and the general assembly. The Board of Directors is supported by the Administrative party, who manages financial and bureaucratic duties. They also support smaller community projects, implemented by 4 targeted Committees: The Organizing Committee (ADESCOS), Education Committee, Environmental Committee, and the Gender and Youth Committee. The association ADESCOS (Associations for Community Development), is responsible for representing community values, encouraging community collaboration, and guiding practices that will benefit inhabitants. This association has a legal status, recognized by the government over a period of two years. They are responsible for various activities such as clearing sediment from local water sources, Cinquera forest maintenance, and raising awareness about water sources, waste management, and ecosystem services.

Taking Root

Taking Root will be acting as project consultant. Taking Root is a non-profit organization founded in 2007,

working towards reducing global emissions and decreasing poverty through data driven reforestation models and innovative technology targeting small-holder farmers in the tropics. Taking Root is primarily known for its highly successful Plan Vivo project in Nicaragua. Taking Root will be offering project support in the form of farmer training and a license to use their FARM-TRACE application, which will help facilitate the composition of the annual report. Additionally, Taking Root will provide services that include agroforestry development methods and Plan Vivo project design document writing.

H2. Further information on applicant organisations

Table 3. Applicant Organization Information

Applicant organization	Legal status	Long-term objectives of the organization	Brief history and achievements
ICCO/Cordaid	Non-governmental organization	Long-term objectives include promoting the well-being and equality of all peoples while eradicating poverty and injustice. They intend to strengthen agricultural systems to increase food and nutrition security, generate economic independence, and create resilient communities. Cordaid has similar objectives, with more emphasis on equality and social justice.	ICCO was founded in 1964 to battle poverty in developing countries. ICCO has implemented 108 new projects, positively impacting the living conditions of 600,000 people. Recently, ICCO has joined forces with Cordaid to increase their impact. Cordaid has 361 funding and implementing partners and together they have provided 5 million people with improved security and justice.
ARDM	Non-governmental organization	ARDM works to support local environmental and socio-economic development. They also believe in sustainable agriculture, gender equality, and food security.	ARDM has several achievements. For example, they provided training on sustainable agriculture, battled the privatization of water, hosted local heritage gatherings, engaged youth in environmental education, and supported community rural tourism through knowledge and labour.

Part I: Community-Led Design Plan

I1. The project action plan will be generated with the principles from both Community Driven Design (CLD) and Free, Prior, and Informed, Consent (FPIC), where the consultation and input of various stakeholders and regional experts will be documented. As is the standard for all Plan Vivo projects, the 'Living Plan' development is influenced by a Community Driven Design (CLD) process. CLD gives participants a vital role in shaping the program according to their individual needs, resources, and capabilities. Participants' perceptions on the current state of forests/cropland, and their proposed solutions, are important to keep the project functioning independently and sustainably once the project has been established. This will generate powerful benefits for farmers and their successors in addition to El Salvador's climate. The participating groups will be given responsibilities to perform the action plan and will be payed according to the successful implementation of the program. These steps are continually evaluated and improved to ensure efficient and equitable outcomes for participants and participating communities.

This program has also applied the principles of FPIC (Free Prior and Informed Consent) to ensure the ongoing consultation of the communities involved. Community conferences took place prior to project implementation to learn about common values, inform participants of the projects' objectives, and identify other affected stakeholders. This helps to determine spatial patterns and the use of resources in the area. The projects' community-led programs consider women's involvement to ensure participation is not hindered by external responsibilities. Other minority groups have also been identified and adequately consulted and informed of the projects' intended outcomes.

Figure 6 Community consultation in the Tenancingo Municipality

Part J: Additionality Analysis

J1. This project is not the product of a legislative decree or a commercial and economically viable land-use initiative. As the project does not lie within a protected area and there is no state-allocated budget to revitalize crop land, this project would not be feasible without external support and the participation of the affected farmer communities.

Additionality Analysis

Considering investment, alternative projects, risks/barriers, and common practice analysis, this project greatly differs from the baseline. In El Salvador, there are currently no developed models for carbon certifying and monitoring in agroforestry systems and selling them in the voluntary markets. Prior to project interventions, smallholder farmers in this region were planting at a density of 600 trees per hectare. Farmers participating in the project are planting at a higher density (2.5 meters between trees) and with a higher growth success rate. This is achieved through selective species management and quality genetic materials.

The Plan Vivo project will also provide technology to facilitate growth monitoring, accelerate crop productivity, guide farmer technical training, as well as improve communication and efficiency of community meetings. This also discourages the current agrochemical and deforestation-linked practices. As most agricultural workers are living below the poverty line, they do not possess the means to implement a sustainable reforestation model of this scale without external training and financial assistance. With low incomes and constant threats to crop resilience, farmers in this region lack incentive to stray from common practice and invest in systems with significant risks. The Plan Vivo project through ICCO will provide start-up funding for the acquisition of capital and material inputs, in addition to incremental performance-based incomes after project establishment. This will ensure maximum farmer involvement and eliminate most of the risk aversion, generating the biggest impacts for the communities. As previously mentioned, land has become privatized and most farmers are in the business of managing their own crops without any collaboration. This can prevent innovation and reduce the region's climate resilience.

This large-scale reforestation project is the path to assisted innovation and a more resilient environment. A feasibility assessment has determined that this action plan would generate the most positive outcomes and projected benefits for both farmers and financial partners involved.

Risk Mitigation

The Plan Vivo project exhibits its risk aversion strategies through specific management solutions discussed in Table 4.

Table 4. Risks to Project Development

Barrier	Description	Proposed Solutions
Finances	-Poverty in rural areas creates low budgets for establishment costs (seed capital, tools/materials) -Low annual payments to farmers -Sustainable economic benefits to communities	-Implementing a PES/carbon credits system to help overcome financial burden. -Financial support from ICCO to offset establishment costs. -Rotation harvests and diversified crops allows for a more continuous yield.
Technical Experience	-Absence of training and experience -Technology gaps	-Utilize community meetings as an opportunity to provide practical training on sustainable land management as well as provide technology and tools required.
Water scarcity	-Access to freshwater sources -Few irrigation systems in place -Draining limited resources during dry seasons (reduced groundwater)	-Agroforestry fuelwood crops are nitrogen fixing, which enables soil nutrient uptake and increased water retention. -Carbon sequestration works toward reducing extreme drought while mitigating flooding events.
Land tenure	-Property titles within the project area are scarce -Low levels of producer's land tenure	- The Program has been working with the local and national government during the last year to strengthen the rights of the project communities over their forest lands.
Long-term participation	-Incentivising voluntary participation of farmers and their successors over the course of several years	-Provide a series of community consultations to inform participants of long-term benefits (climate change mitigation, improved cropland) -Selecting local tree species specific to farmer and community needs

		-Implementing a Risk Buffer system into each Plan Vivo

Part K: Notification of Relevant Bodies & Regulations

K1. This program is fully supported by the Ministry of Environment and Natural Resources as per the attached letter of support and takes part in the government's long-term sustainable development initiatives. Although government approval is not required for planting, all practices involving the sustainable management of natural resources must be approved by the national forestry institute (MARN). Therefore, after project establishment, all reforestation and management plans will be reported to the local representative of (MARN). The local representative will also be involved in various other program development strategies.

This project has also been working with the local and national government during the last year to strengthen the rights of the project communities over their forest lands. Through a well-planned and executed forest management strategy, such as the one proposed under the standards of Plan Vivo, it is likely that the forest can be effectively conserved.

Part L: Identification of Start-Up Funding

L1. The Plan Vivo Project will be funded by ICCO during the establishment period. Costs including the purchase of seed sources, farmer training, seedling maintenance, and certification costs will be distributed until the first carbon payment. Access to resources, participation opportunities, and appropriate allocation of funds will increase project sustainability and encourage small-holder involvement.

References:

Association of Reconstruction and Municipal Development. 2011. Retrieved from: http://www.ardmcinquera.org/?page_id=144

Browning, David. 1983. Agrarian Reform in El Salvador. Journal of Latin Studies 15(2): 399 – 426.

Central America Data. 2014. Household income up 10% in El Salvador. Retrieved from: https://www.centralamericadata.com/en/article/home/Household_Income_Up_10_in_El_Salvador

CentroAmerica. Lake Suchitlán. Accessed: August 17, 2020. Retrieved from: https://www.visitcentroamerica.com/en/visitar/lake-suchitlan/

GCF Readiness Programme. 2017. El Salvador: Keeping its Paris Agreement commitments by improving climate financing. Retrieved from: https://www.gcfreadinessprogramme.org/news-content/el-salvador-keeping-its-paris-agreement-commitments-improving-climate-financing

Gies,H. 2018. Once lush, El Salvador is dangerously close to running dry. National Geographic. Retrieved from: https://www.nationalgeographic.com/environment/2018/11/el-salvador-water-crisis-drought-climate-change/#close

Kernan,B.S., and Serrano,F. 2010. Report on Biodiversity and Tropical Forests in El Salvador. United States Agency for International Development. Retrieved from: https://usaidgems.org/Documents/FAA&Regs/FAA118119LAC/El%20Salvador_FAA%20118%20119%20FB%20Assessment%20March_2010.pdf

Minimum Wage. 2020. El Salvador minimum wage, labor law, and employment data sheet. Retrieved from: https://www.minimum-wage.org/international/el-salvador

Protected Planet. El Salvador, Latin America & Caribbean. Retrieved from: https://www.protectedplanet.net/country/SV

Serrano, L.A. and Gomez, L. 2008. Pago por servicios ambientales a la Asociación de Reconstrucción y Desarrollo Municipal (ARDM), Cinquera, departamento de Cabañas, República de El Salvador. FAO. Retrieved from: http://www.fao.org/forestry/19361041701d7f9d0380a4ce2e5a62cd142672.pdf