Acorn

This document represents the basic layout and describes the required input for an ADD (**Acorn Design Document**).

Of each project within Acorn an ADD should be provided. The ADD should be stored and made available on the Acorn platform for the stakeholders concerned. This report is drawn up in close collaboration between the local partner and Acorn staff members. The local partner is responsible for providing all required information and performing the assessments. Acorn is responsible for the quality and continuously updating of the ADD. The ADD can be requested by validation and verification bodies and certifiers for third party oversight or quality checks at any given time.

The following index box is provided before each section in the ADD to demonstrate the goal of the section, when each section needs to be performed, the frequency in which these sections need to be updated, who should complete the assessments within, and who should verify the information provided.

 **Timing**  **Frequency**  **Editor**  **Reviewer**

 **Purpose of the section**

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Solidaridad Acorn Design Document

Nicaragua | Jinotega and Matagalpa and RACCN

Date of Assessment: June 2022

Part A: Project Summary

Question	General Information	Answer
1	**Project title**	Agroforestry pilot project Solidaridad / Fundación Aldea
2	**Project location - country, region & district** (attach map if possible)	Nicaragua, Jinotega, Matagalpa and RACCN (See Annex 1 for map).
3	**Ecoregion**	Central American Pine-oak Forests and Central American Atlantic moist forests Central America dry forest Central America Montane forest
4	**Local partner representative** (name & position)	Local Partner = Solidaridad Nicaragua NGO = Fundación Aldea
5	**Local partner mission statement**	Solidaridad: We work across supply chains to make sustainability the norm and enable farmers and workers to earn a decent income, produce in balance with nature, and shape their own future.
6	**Subcontractor mission statement**	Aldea: Improve the quality of life through families with health and education; competitive and resilient farms; in empowered rural communities — in harmony with God
7	**Contact details** (phone, email, & address)	*Provided. Concealed for data protection purposes*
8	**Main cash crop(s)**	Coffee and cacao
9	**Project target group**	Small coffee and cacao producers with agroforestry systems affiliated to Fundación Aldea and other cooperatives.
10	**Number of existing participants**	4140 between cacao and coffee farmers
11	**Number of potential additional participants**	25,000 , of which 20000 produce coffee and 5000 cacao

12	**Estimated total size of project area (ha)**	5400 (ha) of which 4000 pertain to coffee farmers and 1400 hectares to cacao.
13	**Describe the project's aims and objectives** (e.g. the problems this project will address)	The project aims to transition small coffee and cacao farmers to agroforestry systems and connect them to high-value carbon markets as a mechanism to reward farmers for their contribution to reduce carbon emissions by planting and looking after trees within their farms. In addition to climate change mitigation, the agroforestry systems promoted by Solidaridad and Aldea Foundation also serve as a climate change adaptation strategy in low- to mid-level coffee landscapes.
14	**Describe how smallholder farmers/communities were involved during the design of the agroforestry project.** (Provide evidence of participation, e.g. workshops, meetings)	Fundación Aldea promotes shade-grown coffee as a climate change adaptation strategy and to increase coffee quality and yields. Farmers participate in the design of the agroforestry system, contributing their experiences and knowledge about the most suitable species according to the conditions of their farms and local preferences (See Annex 7). Financing was provided through the parent organisation, Aldea Global, for the establishment of the agroforestry system, while producers covered planting and maintenance costs. Producers also received training, technical support and accompaniment for the farm development and maintenance. Memories of events/workshops and lists of participants of the producers will be attached (see Annex 7), to whom the project was presented, under the modalities of meetings, training and technical assistance. In these events, 3,949 producers participated (people who participated in different project processes) from the municipalities of Jinotega, San Sebastian de Yali, San Rafael del Norte, Santa María de Pantasma, El Cúa from the department of Jinotega and from the municipality of Tuma la Dalia, from the department of Matagalpa (see Annex 7 for evidence of participation).
15	**Provide a general description of current socioeconomic conditions in the project area** (income, poverty level etc.)	The project is located in rural communities in the Departments of Jinotega and Matagalpa, characterised by moderate poverty levels. Coffee production in this region has been impacted by changing climate which in turn has increased pests and disease. From 2012 to 2015, the coffee sector was seriously affected by leaf rust disease. Producers were ill-prepared to cope with the outbreak and many

		farms, particularly those with intolerant coffee varieties were destroyed. Farmers have been slowly recovering from this outbreak, through the planting of more resistant varieties. However, in recent years, production costs rose significantly, barely enabling farmers to break even. However, prices are currently at a 10-year high, enabling farmers to return profits again. However, these profits are moderated by significantly increased production costs due to high agri-input costs as a result of shortages in the (post) COVID era, high labour costs, especially during harvest season, as well as the removal of previous tax exemptions on agri-inputs.
16	**Describe how the agroforestry intervention proposed is expected to impact the following;**	a. **Food security/nutritional intake**: A positive impact is expected due to the fruit trees planted by farmers for self-consumption. The impact on nutrition also depends on how farmers use their additional income generated from project interventions. If farmers choose to spend it on a more abundant and varied diet this will be a positive impact but if they choose to spend it on other expenses such as education this will have little impact.
		b. **Farmer financial state**: Increase in family income expected due to long term increase in yield quality, quantity and consistency and income diversification due to fruits that may be sold and income from CRUs. A reduction in fertiliser/pesticides
		c. Gender equality: Will increase , as Aldea Foundation has a policy to prioritize opportunities that benefit women coffee producers. Within this policy, the aim is to improve women's access to services (like non-reimbursable projects, financing and training) and/or means of production (inputs or formal land rights). The beneficiaries of agroforestry systems should be at least 30% women. Aldea works together with the certification; "Con manos de mujer", to increase women involvement.
		d. **Farmer access to resources**: Access to technical resources will increase due to Producers receiving training, technical support and accompaniment for farm development and maintenance. In terms of inputs farmers will require less fertiliser

		due to the land becoming naturally more fertile, reducing the amount of resources farmers need to access.
		e. **Biodiversity on farms**: Biodiversity in terms of flora and pollinators will increase due to the additional trees being planted on the farms. Biodiversity in terms of soil microorganisms and insects etc. will increase due to the caring of the land that is involved in agroforestry practises (i.e. protecting organic soils) and the barrier that trees offer soil against extreme weather events (i.e. heavy rain/winds). Biodiversity of fauna should remain stable and stop deceasing due to protection of land from deforestation and land use change (2 key drivers of habitat loss for native species).
17	**Describe any known local land degradation/deforestation processes or trends, and drives of these** (e.g. population increase, fire, conversion for agriculture)	Slash and burn practices persist. Environmental contamination, particularly pollution of water sources caused by improper wastewater management practices in individual and centralised coffee washing stations, and run-off of chemicals into rivers, as well as inadequate disposal of left-over coffee pulp.
18	**Describe whether there is a low, medium or high risk of deforestation in the region surrounding the project** (not project area)	Low risk. Accompaniment is given by Aldea Foundation with environmental campaigns to avoid deforestation, in addition, coffee certification criteria are met, which promotes the care of natural resources.
19	**Please select the following type of land use that best describes the project area**	Existing agroforestry.
	Land Tenure	
20	**Estimated average plot size per farmer (ha)**	1.44 ha for both cacao and coffee farmers
21	**How is land tenure organised among participants** (formal titling, informal titling or land mapping)	There are different land ownership structures amongst the target group of farmers, both informal: ● Deeds ● Possessory rights
	The Agroforestry System	
22	**Is this project new or existing agroforestry or a combination**	Fundación Aldea has been implementing agroforestry systems since 2016 with the aim of improving coffee quality and yields of member farmers and contributing to environmental conservation. This project adds

		on a component of carbon market access for coffee and cacao farmers, improving the financial performance of production units.
23	**Type of trees that have/will be planted under agroforestry scheme** (shade, fruit-bearing, medicinal)	Native/naturalised forestry species, trees ideal for shade, timber and fruit bearing trees (macadamias, mango and citrus).
24	**Describe how the agroforestry system is expected to impact the land** (e.g. more shade, less pests, less inputs – fertilisers, presence of pollinators)	● Improves soil fertility ● Reduces water erosion ● Improves soil structure ● Lowers the temperature on the farm ● Creates a microclimate favourable for coffee and cacao production. ● Improves productivity and quality
	Project Additionality	
25	**How is the initial implementation of this project being financed?**	The project is financed through a blended model that includes various grant funding and debt finance from several sources. Solidaridad is the party that receives the funding and distributes it to Aldea for the service they provide farmers.
26	**Did/will the project receive grant funding or investment for project start-up? If yes, who provided this?**	Grant funds for support and technical advice provided by: IDB, SNV, MEDA, plus grant funding provided through Rabobank to cover polygon data collection and farmer onboarding costs. Debt finance has been provided through Aldea Global to member producers to establish the agroforestry systems.
27	**In what year and season will/were the first trees planted?**	The additional trees were planted by farmers in 2018, 2019, 2020 and 2021.
28	**Was the project established with the intent of receiving carbon finance for trees planted?**	It was initially intended to connect farmers to carbon markets, but a combination of a lack of knowhow, high project development costs and low carbon prices meant that this did not happen.
29	**Is this project mandatory under any national or local laws?** (List relevant forestry regulations, national climate change commitments etc.)	Solidaridad is not aware of any regulations/laws in which project interventions are mandated. This is evidenced in Nicaragua's NDC Report (2020), the National Policy for Sustainable Development of the Forest Sector (Executive Decree No. 69-2008), The Non-legally Binding Instrument on All Types of Forests (NLBI) under the UNEP National Forest Programme of PRORURAL.
30	**Is the project incorporated by any other accounting program** (e.g. compliance, voluntary or national GHG program)**? If yes, describe how**	The project will coordinate with the national Climate Change Secretary in Nicaragua to ensure that project areas certified under the ACORN protocol are not incorporated into other initiatives. Further, Solidaridad will

	project ensures no double counting will take place.	collaborate with Aldea Global to flag up any potential reporting by traders or roasters of Scope 3 emission reductions based on coffee purchased from the farms included in this project. This is an ongoing concern to avoid any potential double counting, which Solidaridad will address as a priority in the coming years.
31	**Without the project's involvement, would farmers have the necessary resources, skills, knowledge, finances, or network to successfully transition to a long-lived agroforestry system?**	No. Farmers lack the know-how on agroforestry systems, carbon markets and monitoring and evaluation. It would be a slow process and with lower technical quality in the implementation
32	**What is the main driver encouraging farmers to transition to agroforestry?**	Initially, the main driver was adaptation to the negative effects of climate change. However, in time, given the opportunity to access payments for carbon sequestration, this has become an additional incentive to farmers to transition to agroforestry systems.
33	**Was the promise of carbon credits the enabling factor for farmers to transition to agroforestry?**	Initial driving factor was climate change but carbon finance was the additional incentive for farmers to transition.
34	**What are the biggest challenges faced by farmers** (climate change, volatility in commodity prices, low productivity, access to resources, financial security, crop damage from wildlife, human conflict etc.)	Negative effects of climate change and high production cost, leading to low productivity, and low profits.

Part B: Eligibility Checklists

Local partner eligibility checklist			
Topic	Sub-topic	Requested information	Result
Organizational capacity	Organizational structure	Provide a description of your organizational structure and roles of each organization involved for the project (attach diagram/table in annex).	Fundación Solidaridad Latinoamericana (FSLA) is part of Solidaridad Network, a global network supported by an international secretariat in the Netherlands, with over 50 years' experience in sustainable development (see Annex 5 for organisational hierarchy). Aldea foundation is an NGO that partners with Solidaridad and is in direct contact with participants regarding technical support and farmer engagement etc (see Annex 5 for organisational hierarchy). Aldea global is the parent organisation of Aldea Foundation who offer finance to farmers.
	Organizational capacity	Provide a description of your "on the ground" capacity to undertake long-term community-led project(s) and implement agroforestry.	Solidaridad has been working in Nicaragua since 2015 to support farmers in local level climate change adaptation and mitigation activities, within sustainable supply chains (coffee, cocoa, livestock and palm oil). Solidaridad has built up expertise in training and accompanying small farmers and producer organisations to implement good agricultural practices, and, in particular, climate-smart coffee and cocoa. Through a team of experts in Nicaragua and the wider Central American region, as well as partner organisations, Solidaridad provides technical assistance, digital solutions and training to extension service providers, producers, workers and their families. Aldea foundation has been promoting agroforestry practices since 2016 in Nicaragua and have local offices and a structure that allows engagement with farmers (see Annex 5).
	Sustainability	The local partner agrees with the Rabobank's sustainability policy.	Yes. During the due diligence process, Solidaridad Nicaragua agrees with sustainability policy of Rabobank amongst other policies which are non-negotiables for the bank. These

		documents are all signed during the process.
GDPR	The local partner's current data handling policies are compliant with GDPR regulations.	The local partner is currently aligned with the latest version of the GDPR (general data protection regulation) 2016/679
Participant organization	Describe how the project is organized, or in the process of being organized, into cooperatives, associations, community-based organizations or other organizational forms able to contribute to the social and economic development of the participants and their communities, and which is democratically controlled by the participants.	Solidaridad is connected to external experts (i.e. agronomists) and works more as the middle man in this project (although they have technical offers in the field who collect polygons and ground truthing data and undertaker site visits for example). Solidaridad partner with Aldea Foundation who is more in contact with the farmers as this organization was already working with farmers in this area since 2016 and has included the local communities and participants in the design of this project (See annex 7). A project council will be created with both Solidaridad, Aldea and participants to ensure democracy and active engagement with farmers by both parties during ongoing operations.
Project effects	The project strives to not contribute, or does its utmost to avoid, environmental or (agricultural) biodiversity harm.	Yes. As stated in the framework, Acorn requires a biodiversity study to make sure there is no harm done in the project area. In addition, Acorn carefully designs the agroforestry systems to make sure there is no harm in the environmental space. As an example, these agroforestry systems are designed in such a way to avoid fertilizers. Heavy machinery is also not allowed for additionality but also environmental purposes. Acorn's whole concept is to add positive value both to farmers' livelihoods and to the environment while taking care of the biodiversity in the region.
Entity	The local partner is an established legal entity that takes responsibility for the project and for meeting the requirements of the Acorn Framework for the duration of the project.	Yes.

Local presence	The local partner has a strong in-country presence and the respect and experience required to work effectively with local participants and their communities.	Yes. Local partner counts with a on the ground team which has a strong relationship with the project's participants and local communities in addition to a long term experience with agriculture and agroforestry systems. Without this presence, Acorn would not be able exist given its strong dependance on the local teams which can engage with farmers while reporting and keeping in touch with Acorn.
Local policies	The local partner has a solid understanding of local policies and can confirm that the country's policy allows individual CRUs to be sold.	Yes. After meetings with Local Partner, Acorn understands that it can sell CRUs in the country. This is one of Acorn's non-negotiable points given the stake that different stakeholders have on the entire business case. Without the right policies, Acorn could not exist in the country and farmers would not be able to generate CRUs to sell in the international voluntary carbon market.
Influence	The local partner is capable of negotiating and dealing with government, local organizations and institutions.	Solidaridad Nicaragua is a renowned, not for profit organization with vast experience in the agricultural sector working closely with farmers, cooperatives, governmental institutions amongst others. As an example, for this project, they are working with the Asombrate program which brings together coffee and cacao farmers to implement agroforestry systems while caring for the environment, biodiversity and local communities.
Resources	The local partner is focused and has the organizational capability and ability to mobilize the necessary resources to develop the project (e.g. including access to seedlings, inputs, agronomic knowledge, monitoring and technical support).	Yes. Another aspect which Acorn makes sure when performing the eligibility checklist (described in Acorn's framework) is the local partner's organizational capacity and ability to mobilize resources which allow to develop and keep the project standing throughout its lifespan. Without proper seedling distribution, inputs, knowledge and support, farmers would not be able to implement the agroforestry systems which would allow to produce CRUs. Acorn wants to make sure to sign a partnership

		agreement which includes the organizational capacity of the local partner to make the business case work for all stakeholders.
Data collection	The local partner can provide reliable data (i.e. GPS polygons, phone numbers, other KYC data).	Yes. Another aspect within Acorn's framework under the local partner scanning, is to understand whether the local partner can provide Acorn with good quality and reliable data. Without proper data, the whole business case would be based on weak foundations.
Training	The local partner has the ability to mobilize and train participants, and implement and monitor project activities.	Yes. Local partner counts with the operational capacity to train participants and on the ground field supportes such as enumerators to be able and implement project activities.
Condition (i)	The local partner recognizes that the participant's involvement in the project is entirely voluntary.	Yes. As stated in the participant agreement, the farmer's participation is completely voluntary. Another non-negotiable for Acorn's projects.
Condition (ii)	The local partner recognizes that participants own the carbon benefits of the project intervention.	Yes. Both the participant agreement and the acorn framework state the benefit distribution mechanism where the farmers get the biggest part from the carbon credit's revenue.
Participant payments (i)	The project coordinator ensures that payments are made in a transparent and traceable manner.	Yes. Acorn has a system in place which works purely on payment verifications which local partners distribute to each farmer depending on the carbon credits generated from biomass delta. These payments need to be counted with evidence which can be verified as legit.
Participant payments (ii)	The project coordinator ensures that mobile payments to participants are either already possible or there are no foreseeable obstacles for this in the near future.	Yes. Acorn makes sure to collect mobile phone numbers in the cases that faremrs have one, to be able to ensure the possibility of mobile payments in the future. It is easier for Acorn to be able and trace the payments when they are done electronically or via mobile phones.
Contributions	The local partner does not draw more than 10% of sales income for ongoing coordination, administration and monitoring costs. Exceeding this percentage is	Yes. As stated in the framework and the partnership agreement.

		only possible in exceptional circumstances where justification is provided and Acorn formally approves a waiver.	
	Participant identity	The local partner is able to collect and provide proof of participant's identity.	Yes. As part of the local partners eligibiilty checklist, Acorn makes sure that they can collect the necessary data for the Acorn project to collect, measure and make the business model work.
Tenure & rights	Land-tenure and carbon rights (i)	Provide a description of how land tenure is organized amongst the target project participants	Land is privately owned and participants possess deeds.
	Land-tenure and carbon rights (ii)	The project applies to land over which the participant/community has (formal/informal) ownership or long-term user rights.	Yes. As tated in the framework and the participant's agreement, Acorn needs to count with formal or informal land tenure to make sure the project involves participants which are owners of the lad where the agroforestry systems will be implemented and create CRUs in the future.
Sustainable land use activity	Land use	Provide a description of the current land use activities, before the start of the project intervention, within the project.	Farmers practice coffee and cacao farming in an agroforestry system, some a small percentage of farmers also grow banana and beans for self-consumption. Hens are also kept by some farmers to provide eggs for self-consumptions.
	Project design	The project is/will be designed to promote sustainable land-use and has/will have a feasible business case underwritten by agronomist(s) and community representatives.	Yes. When designing agroforestry system, Acorn consistently makes sure to consider sustainable land-use while taking care of the environment and the biodiversity in the area as mentioned in Acorn's framework.
	Deforestation	The local partner confirms that no deforestation has taken place five years before the start of the project intervention (project baseline). If this cannot be confirmed, a description of the cause of the deforestation is provided, including the measures that have been taken to prevent	Yes. As one of the most important non-negotiable clauses in the framework, Acorn makes sure that no deforestation has taken place five years before the start of the project intervention (project baseline). This is done via satellite imagery and remote sensing technology to fully understand the on the ground process. In addition, the local partner signs a partnership agreement where this clause is also

	deforestation from happening again.	referred to. In some cases, when Acorn identifies plots which have lost trees during the last five years, the project coordinator asks the local partner for explanation for these cases.
Additionality	The local partner ensures project additionality and ensures a durability period of 20 years.	Yes. Another crucial point in the framework and partnership agreement is additionality. As one of the main pillars in the voluntary carbon markets, Acorn investigates this concept in detail. The local partner is requesting evidence (both financial and non-financial) to make sure that the project is, in fact, additional.
Existing agroforestry (i)	Agroforestry at the farm level has been implemented less than 5 years before the start of the project intervention.	Yes. Acorn does a proper due diligence assessment to make sure agroforestry systems have existed on the plots for no more than 5 years. This makes sure Acorn can consider them as existing agroforestry systems.
Existing agroforestry (ii)	Participants and local partners confirm that previously sequestered CO_2 on the land has not yet been monetized.	Yes. Both local partner and participants need to understand that previous sequestered CO2 has not been monetized as they understand that this is what Acorn does. Given that Acorn was not existent at the time, the sequestered CO2, has not been considered for monetization purposes.
Existing agroforestry (iii)	Existing agroforestry has been funded largely by donors/grants.	Yes
New agroforestry	There is sufficient supply of seedlings, inputs, water and other required resources.	Yes. As part of the project scanning (eligibility assessment, framework), Acorn makes sure that the land, the stakeholders and the context is suitable to implement the agroforestry systems for carbon sequestering purposes. It is crucial to analyze the context to make the business case work for all stakeholders.
Naturalized species	The local partner promotes the use of native species. The use of naturalized species is acceptable under the conditions outlined in the Framework.	Yes. During the agroforestry design process, native species are considered a high priority when deciding which species to include in these designs. Once the agroforestry designs are accepted from both sides, the local partner needs to communicate these to participants and gather feedback as

			well. During this entire process, the use of native species is not debatable while the naturalized species are acceptable under Acorn's framework.
	Current habitat	Provide a description of the current ecosystem and flora and fauna species of the project area.	The ecogeographic zone is humid tropical with productive systems in jungle rainfall, broadleaf trees predominate, the predominant species are Cedar, Mahogany, Oak, Oak, etc.

Participant eligibility checklist			
Topic	Sub-topic	Requested information	Result
Organizational Capacity	Smallholder labour force	Participants are not structurally dependent on permanent hired labor, and manage their land mainly by themselves with the help of their families.	Yes. Another clause in the framework states that participants with hired labor are not eligible for Acorn projects. Only participants which manage the land by themselves or with the help of family, are accepted into the program.
	Smallholder farm size	The cultivated land of participants does not exceed 10 ha.	Yes. As mentioned in the framework, the farm size is another checkbox that needs to comply with Acorn's eligibility checklist Acorn only accepts farms which are no greater than 10 ha.
	Resources	Participants, with the support of the local partner, have the ability to mobilize the necessary resources to implement the project.	Yes. Within the Acorn framework, one of the points in the participants eligibility checklist states that they need to have the ability to mobilize resources to make sure that they can implement the agroforestry design which was previouslt agrred upon. Hence, create and sell CRUs in the future.
	Data collection	Participants can allow reliable data to be collected for the project (i.e. GPS polygons, phone numbers, other KYC data).	Yes. Besides the participant agreement, Acorn needs a consent form to be signed by participants to make sure that data can be collected from their plots/farms. This enables Acorn to be able and use information to calculate CRUs while taking into consideration which plots

			and owners produced the CRUs for posterior CRU payments.
	Condition (i)	Participants are aware that their decision to participate in the project is entirely voluntary.	Yes. As stated both in the framework as in the participant agreement.
	Participant identity	Participants are able to provide proof of their identity.	Yes. One of the points of the participant eligibility checklist, states that the participants need to be able to proof their identity in order to make sure Acorn has the ability to check the right farmers/participants are getting paid.
Tenure & rights	Land-tenure and carbon rights (i)	Provide a description of how land tenure is organized.	Land is privately owned and participants possess deeds.
	Land-tenure and carbon rights (ii)	The project applies to land over which the participant/community has (formal/informal) ownership or long-term user rights.	Yes. As stated in the framework and the participant agreement, communities and/or participants need to have ownership in the long-term to ensure that the project can be implemented and maintained in the long-term while generating CRUs from carbon sequestration.
Sustainable land use activity	Land use	Provide a description of the current land use activities within the project.	Farmers practice coffee farming in an agroforestry system, some a small percentage of farmers also grow banana and beans for self-consumption. Hens are also kept by some farmers to provide eggs for self-consumptions.
	Deforestation	Participants confirm that no deforestation has taken place five years before the start of the project intervention (project baseline). If this cannot be confirmed, a description of the cause of the deforestation is provided, including the measures that have been taken to prevent deforestation from happening again.	Yes. Both in the eligibility checklist from the Acorn framework and the participant agreement state that participants need to confirm that no deforestation has taken place in the last five years.
	Additionality	Participants ensures project additionality and is aware that the project has a durability period of 20 years.	Yes. As stated both in the participant eligibility checklist from Acorn's framework and the participant agreement.

Existing agroforestry (i)	Participants confirm agroforestry at the farm level has been implemented less than 5 years ago.	Yes. As part of the eligibility checklist for participants and the participant agreement.
Existing agroforestry (ii)	Participants confirm that previously sequestered CO_2 on the land has not yet been monetized.	Yes. As part of the participant agreement. It is a mutual understanding that the monetization starts when the Acorn program is implemented with an agreed agroforestry design.
Current habitat	Provide a description of the current ecosystem and flora and fauna species of the project area.	The ecogeographic zone is humid tropical with productive systems in jungle rainfall, broadleaf trees predominate, the predominant species are Cedar, Mahogany, Oak, Oak, etc.

Part C: Additionality Assessment

Positive list	Demonstrate that the project meets requirements (a) and (b) and at least one of the requirements (c) and (d).	
	(a) The project area is located in a country or region with a recent UNDP Human Development Indicator[1] below or equal to 0.8.	Yes, the HDI is below 0.8 (0.660).
	(b) The project shall not be mandatory by any law or regulation, or if mandatory, the local partner shall demonstrate that these laws and regulations are systematically not enforced.	Solidaridad is not aware of any regulations/laws in which project interventions are mandated. This is evidenced in Nicaragua's NDC Report (2020), the National Policy for Sustainable Development of the Forest Sector (Executive Decree No. 69-2008), The Non-legally Binding Instrument on All Types of Forests (NLBI) under the UNEP National Forest Programme of PRORURAL.
	(c) The project is located in a region with a mean annual precipitation of less than 600 mm[2].	No, the mean annual precipitation is above 600mm2 (1214mm2).
	(d) The project area is (predominantly) located in a country or region with a recent UNDP Human Development Indicator below 0.6.	No, the HDI is above 0.6 (0.660). However, this represents the national value *(including main urban areas)* while the project area is likely to have a lower HDI value.
Barrier analysis	Demonstrate that the project intervention would not have taken place due to a least one of the following barriers.	
Type of barrier	Situation without project	Situation with project
Financial barrier	Farmers have experienced significantly increased production costs due to high agri-input costs as a result of shortages in the (post) COVID era, high labour costs (especially during harvest season), as well as the removal of previous tax exemptions on agri-inputs. Before project intervention farmers had insufficient financial resources to develop a project due to the high production costs. Finally, there was no payment system for ecosystem services in place in the projects area and farmers did not have access to or knowledge	Through the support of Acorn and the promise of carbon finance, economic resources were obtained to collect ground truth and polygon data and train farmers and the technical team for project implementation. The CRU sales provide PES for the first time to farmers for the carbon they are sequestering. With the establishment of agroforestry systems and access to high-value carbon markets, the producer obtains more economic benefits (additional and diversified income) that supports them to overcome the high production costs they

	about the carbon market in order to gain this payment for sequestration.	face and incentivises them to maintain their trees in times of financial hardship. Additionally, this financial reward of CRUs for their farming behaviour change is likely to encourage other farmers who are facing the same financial barriers in the region to transition.
Technical barrier	Due to the above financial barriers , the farmers also face technical barriers. With such high production costs farmers could have never been able to afford to purchase the planting materials necessary for a success	Solidaridad coordinate with multiple community nurseries supported by The Aldea Foundation to ensure availability of a large number of diverse and good quality saplings. The Aldea Foundation and Solidaridad cover the costs of 60% of agri-inputs for farmers (i.e. seedlings, fertiliser, and farm tools such as pruning shears and saws).The other 40% is financed through the foundation of Aldea Global. Solidaridad functions as the project manager in this case. Currently, funds are being raised to leverage both models. If Solidaridad cannot finance all the planting materials in the future, they will still provide support by connecting the producers with financing or cooperation solutions. The support offered by Acorn during data collection, reduces resourcing costs and allows more time, effort, and money to be invested into technical assistance for farmers.
Ecological barrier	Before project intervention, farmers faced unfavourable meteorological conditions (e.g. early/late frost, drought) and climatic phenomena (e.g. very strong winds can tumble or damage the trees, losing leaves/branches and affecting shade. Heavy rains can generate washing and prevent coffee trees from flowering. Coffee rust (a fungus spore) travels in the wind and damages coffee plants. Insects are increasing which also generally weakens coffee beans and reduces density.). These climate conditions also affect the amount of time farmers can spend in the field, the development of trees, and their crop yields, leaving them more susceptible to the negative socio-economic impacts of climate change such as reduced productivity and livelihood. Without project intervention, it is likely that	The carbon finance offered to farmers as a reward for planting and maintaining trees within their farm acts as an indirect solution to help build farmers resilience to harsh ecological conditions that are a result of climate change. For example the trees planted will act as a defence mechanism to reduce the impacts of damage to crops and farms from flooding and extreme winds, while mitigating microclimates. Additionally, the shade offered by the trees planted will protect not only the health of crops and soil, but also the farmers themselves, from exposure to harsh UV during extreme temperatures.

	many producers will not be able to continue harvesting coffee, since coffee production is lowered by climate change and rising temperatures.	
Cultural barrier	Before project intervention, farmers were practising monocropping of coffee in full sun. They believed this was the most profitable approach and lacked understanding of coffee in a shade system. The result of these unsustainable farming practices left farmers vulnerable to the impacts of the leaf rust disease that was present in 2012-2015 and still affects farmers. Farmers did not have any training in agroforestry, had poor systems management (small producers not following ideal practices; not fertilizing or inappropriate fertiliser use and not preventing or managing pests and diseases), they lacked knowledge on how to best take care of trees in their first years of establishment, and did not have the skills to monitor and evaluate the success of an agroforestry system.	Solidaridad believes knowledge is key and provides training through their partnership with Aldea on arrangement, use and management. This training includes awareness of the importance of integrating trees with crops, ideal pruning practices to dose the amount of shade, techniques to establishing and manage long-term agroforestry systems (especially in year 1 when trees are selected, planted and maintained on the farms), and help with monitoring and evaluating the success of system (i.e. growth, shading pests).A written plan is provided to the producer but in this plan they have the freedom to choose what tree species they like based on traditional knowledge and values. Therefore, Solidaridad sets the arrangement and the producer chooses how to do it. Aldea Foundation also provides field visits directly to the farm, (Currently, 40 model farms have been identified located in 40 different communities in the main coffee production area of Nicaragua where Fundación Aldea has a presence). Aldea Foundation also identifies community leaders and trains them to become lead farmers with demonstration plots to increase scaling. By transitioning to agroforestry, farmers will be more resilient to the financial hardship that results from such disease outbreaks and climatic phenomena due to their additional source of income from CRUs.

Overall conclusion:

This assessment aims to prove that the agroforestry project, coordinated by Solidaridad in Nicaragua, and the trees planted during this project are additional. This assessment explores the concept of additionality at the tree level, the farmer level and the project level, emphasizing the importance of the latter.

Tree Level

The agroforestry transition project led by Solidaridad was established in 2017 and the first trees were planted in 2018 on 160 hectares. This has now grown to a total of approx. 2448 hectares over the past years with farmers planting trees also in 2019, 2020 and 2021. The collaboration between

Acorn and Solidaridad Nicaragua officially began in 2021, however, discussions between Solidaridad and Acorn had already begun in 2020. The involvement of Acorn and the resulting carbon finance will incentivise the first 1700 farmers to maintain and enhance their agroforestry systems. Solidaridad's agroforestry pilot was established with the intention to connect farmers to the carbon market, however, a combination of a lack of knowhow, high project development costs and low carbon prices meant that this did not happen until a few years later. As part of Solidaridad's agroforestry design, it is the goal that each farmer plants approximately 100 trees per hectare. Farmers would generally like to plant all trees in one year, provided the area is manageable (density of existing biomass, area available etc.), the planting resources (saplings etc.) are available within the tight timeframe for planting, and the farmer has adequately planned for expected labour costs, and time required. However, as this agroforestry project with Acorn is beginning with a large group of 1700 farmers, for logistical reasons, Solidaridad is promoting the sowing of trees in batches and over multiple years. Solidaridad also believes that a phased approach to planting is more sustainable as it allows for learning among farmers and more opportunity for knowledge sharing. The carbon credits farmers receive for the trees planted in the project are ex-post based and will only be derived from one year before CRU issuance. To ensure additionality in this case where an existing agroforestry system is present, the adjustment factor for pre-project trees will be applied as per the Acorn methodology (See Part M, question 3).

Farmer level

Nicaraguan smallholder farmer located in Jinotega and Matagalpa, experience moderate poverty levels. Coffee production in this region has been impacted by the changing climate, resulting in an increase of pests and disease. From 2012 to 2015, the coffee sector was seriously affected by leaf rust disease. Producers were ill-prepared to cope with the outbreak and many farms, particularly those with intolerant coffee varieties were destroyed. Farmers have been slowly recovering from this outbreak, through the planting of more resistant varieties but were still taking a mono-culture approach before project intervention. In recent years, production costs rose significantly. Although prices are currently at a 10-year high, these profits that farmers receive are moderated by significantly increased production costs due to high agri-input costs as a result of shortages in the (post) COVID era, high labour costs (especially during harvest season), as well as the removal of previous tax exemptions on agri-inputs. This results in farmers barely being able to break even. These environmental impacts and the threat of climate change were the initial driving factors that sparked farmers' interest in transitioning to agroforestry, however, it was the additional incentive of carbon finance that enabled farmers to feel comfortable with the commitment to practicing agroforestry long-term in a time where they experience high production costs, leading to low productivity, and low profits.

Before project intervention, the farmers faced multiple barriers due to their poor systems management (small producers not following ideal practices; not fertilizing or inappropriate fertiliser use and not preventing or managing pests and diseases), the high production costs, climatic phenomena that affect the development of trees, their lack of knowledge on how to care for trees in their first year of establishment, and how to monitor and evaluate the success of an agroforestry system. To overcome these barriers, Solidaridad offers farmers technical support (i.e. planting materials, monitoring, and training for farmers on the techniques of establishing and managing long-term agroforestry systems) especially in year 1 when trees are selected, planted and maintained on the farms. The mortality rate of trees before project intervention was at least 35 to 40% in the first three years (year 1 = 15%, year 2 = 10% and year 3 = 10%). Solidaridad believes the training they offer farmers through their partnership with Aldea will reduce mortality rates by at least 5%. The CRU payment also provides an additional benefit to the producer to improve tree care and avoid tree mortality. Solidaridad also coordinate with multiple community nurseries supported by The Aldea Foundation to ensure availability of a large number of diverse

and good quality saplings. In terms of financial support, Solidaridad and Aldea equally cover the costs of agri-inputs (i.e. seedlings, fertiliser, and farm tools such as pruning shears and saws). If they cannot finance the planting materials for all farmers at scale, they connect producers with financing or cooperation solutions (i.e. Mercom). Lastly Solidaridad helps farmers to register agroforestry systems with the national authorities (INAFOR). Without the support of Solidaridad and Acorn, farmers would not have the necessary resources (i.e. saplings), skills (i.e. training), knowledge (i.e. awareness of tree benefits and disadvantages of slash and burn techniques), or network (i.e. access to carbon market) to successfully transition to a long-lived agroforestry system. With the support of Solidaridad and Aldea's technical assistance and the income diversification that Acorn provides through carbon finance, it is expected that project interventions are expected to deliver an increase of 300 kg/ha for farmer cash crop (coffee) output.

Solidaridad rely on grant funding from IDB, SNV, and MEDA for the implementation of the project. This funding was shared with Aldea Foundation and used for support and technical advice and for onboarding farmers. Grant funding was also provided by Rabobank to cover polygon data collection and farmer onboarding costs. The support that Acorn provides during data collection significantly reduces the resourcing costs the local partner would face without the collaboration. This grant funding, in addition to the debt finance provided by Aldea to producers to establish their agroforestry systems, has allowed farmers to transition and maintain their agroforestry systems in the first years before the trees are productive and offer benefits such as shading of crops. However, farmers are still in need of additional income from a source other than coffee due to the high production costs and unstable yields. Without a diversified and additional income that CRUs provide, farmers would rarely have the financial stability needed to overcome the socio-economic challenges associated with production costs and climate change.

The carbon finance provided by Acorn to farmers will help support them to break even and ensure they have an extra source of income in case of extreme events such as disease outbreak and are incentivised to keep their trees in the ground during financial hardship. Many of the trees planted by these smallholder farmers do not provide immediate tangible benefits, such as shade trees compared to fruit trees, and if they lack cultural significance, may be the first cut down in severe financial hardship (even with a low risk of deforestation in the project area) if no financial incentive or reward was in place for farmers to preserve them. Before project intervention slash and burn farming practices were highly prevalent in the project area but the promise of carbon finance now works as a barrier to ensure these practices do not continue and that the carbon sequestered by trees in the project area remains for at least 20 years. The long-term sustainability of recently implemented agroforestry systems and the first additional trees planted are jeopardized if farmers don't receive compensation for the carbon they sequestered.

Project level

Solidaridad does not work with a fixed number of smallholder farmers but a constantly growing and expanding network. Solidaridad's goal is to help smallholder coffee farmers transition to agroforestry systems and connect them to high-value carbon markets as a mechanism to reward farmers for their contribution to reduce carbon emissions by planting and looking after trees within their farms. In addition to climate change mitigation, the agroforestry systems promoted by Acorn and the local partner also serve as an climate change adaptation strategy in low- to mid-level coffee landscapes. The first trees planted under the initial phase of this project are few compared with what will be planted over the following years with the continued provision of grant funding from IDB, SNV, MEDA, Rabobank , and debt finance from Aldea. If focus is placed purely on the first 1700 farmers to plant their trees and not those expected to transition with the scaling of the project, the additionality of the full project is not being considered.

The success of the farmers, who are compensated for the carbon they have sequestered, is likely to work as an extra stimulus to increase the participation of the wide range of farmers that Solidaridad has access to, roughly 25,000 (more if they are able to partner with other NGOs like Aldea in the future). Acorn's systems approach involves looking at the financial barriers these 25,000 potential farmers face and ensuring the first farmers receive carbon payment, critical to start the development of a carbon financing structure required for scaling, and as proof of payback for farmers that demonstrates a high quality project to investors who want to fund the full 25,000. If the first farmers who transitioned with Solidaridad are not rewarded with income from the carbon credits that Acorn offers, both Solidaridad and the farmers may be discouraged from scaling up their agroforestry interventions after all their hard work during the implementation phase and lack of stable financial benefits in the years to come. This lack of reward will reflect poorly on agroforestry schemes for other farmers in the community and region that have the potential to transition, resulting in a barrier to scaling up. This would also result in the project as a whole will not receive further investment unless financers have proof of and faith in the carbon credit system as a payment for investment. Providing carbon finance to compensate Nicaraguan farmers is the only practical way to achieve scale and proof of concept.

Part D: Carbon Baseline Assessment

Carbon Baseline		
Requested information	Format	Answer
Describe how land tenure has been demonstrated	Text	Most farmers have informal rights in the form of *derecho posesorio* (possessory right) and deeds. What often happens is that farmers buy a property and obtain the bill of the sale but they don't take it to the registration office. In this way you don't have an official property title because you haven't done the official procedure at the Public Registry of Property. A lot of farmers buy and sell land in this way without registering it, the properties do belong to them because of the selling deed and they have the right but they don't register it (see Annex 2 for a sample of farmer tenure documentation).
Describe potential land tenure issues and measures taken to mitigate these	Text	Change of land ownership due to sale or mortality. To address this, an eemployee designated to monitor land ownership can discuss continuation of the project with the new owner and change the contract (onboard the new farmer)
Description of current land use	Text	Aside from cultivation of coffee, 95% of the smallholder farmers use the land in the project area also for cultivation of bananas, basic grains, beans, cocoa and bananas (farmer never have more than 2 crops at a time and most have only one, coffee). The rest is fruit cultivation or livestock (mainly hens, ducks and geese for egg consumption). Majority of the farmers use manual prevention and control (i.e. weeding, harvesting, biological traps) to reduce risk of pests. However, more than half of the farmers in the project area use chemical control, especially for diseases such as leaf rust and rooster's eye. To control these diseases farmers use herbicides (approx. 12-40L/year) and fungicides (0-20L/year). Majority of the farmers use inorganic fertilisers (mainly Ferticafe) with differing strengths ranging from 0-100 sacks/year. Without project intervention there would be abandonment of the crop due to land degradation/global warming, this is already happening in some areas in Nicaragua. The increasing input costs such as for fertiliser would result in farmers not being able to keep the soil in a suitable condition for their coffee and disease outbreaks further adding to the risk of coffee abandonment and land being turned into pastures for cattle.
Description of current habitat species	Text	The ecogeographic zone is humid tropical with productive systems in jungle rainfall, broadleaf trees predominate, the predominant species are Inga species (brevipedicellata, punctata, alba) Juglans

		regia, Cedrela odorata, Cordia alliodora, Persea americana, Albizia saman. Wild fauna sometimes found in the project area include squirrels, lemurs, rabbits, foxes, sloths, reptiles (i.e. lizards), deer, armadillos, mountain cats, and exotic birds (including the threatened and loved parakeet – See Part E -3). Without project intervention and CRUs, Solidaridad expect biodiversity to continue to drop significantly (abundance and variety or flora and fauna species) as has been the case historically due to the decrease in forest cover. Additionally, farmers likelihood to convert their agroforestry to cattle raising without additional income, incentive and due to climate change will increase. This would have detrimental impacts to biodiversity as land use change is regarded in the top 3 threats to biodiversity, especially in this region.
Description of deforestation potential	Text	Solidaridad confirms that no deforestation has taken place in the project area five years before the start of the project intervention. Accompaniment is given with environmental campaigns to avoid deforestation, in addition, coffee certification criteria are met, which promotes the care of natural resources. Logging practices are illegal, and you need a permit for it. The farmers who are part of the project are organised producers and don't do logging activities or the selling of wood.
Description of trees species <2m and their distribution	Text	There are no trees under 2m in height identified in the project area because of the species that they promote, all of them usually exceed 2 meters in height at 6 months, maximum 1 year. This has been confirmed through Solidaridad's tree inventory list and with Solidaridad's Forest Engineers.
Number of existing trees ≥2m	Number	14217 (see tree species list below for description)
Number of existing trees older than 5 years	Number	7625
Coverage percentage of existing trees older than 5 years	%	54%

1. Existing tree species list (≥2m).

Species ≥2m *(Latin name)*	**Number**	**Species ≥2m** *(Latin name)*	**Number**
Acer truncatum	25	*Adenanthera pavonina*	1
Acioa edulis	19	*Acrocarpus fraxinifolius*	27
Adina microcephala	57	*Alangium villosum*	190

Albizia guachapele	71	*Albizia saman*	454
Andira inermis	1	*Aniba riparia*	8
Albizia saponaria	6	*Andira inermis*	46
Annona muricata	1	*Annona reticulata*	51
Bauhinia petersiana	1	*Bauhinia purpurea*	2
Beilschmiedia tarairi	3	*Bourreria purpusii*	354
Bombacopsis quinata	2	*Bunchosia argentea*	15
Brosimum alicastrum	81	*Bursera simaruba*	160
Byrsonima crassifolia	2	*Calliandra calothyrsus*	6
Calycophyllum candidissimum	16	*Carpinus betulus*	5
Callistemon viminalis	1	*Calophyllum brasiliense*	3
Casearia tomentosa	26	*Chrysophyllum cainito*	4
Chrysophyllum oliviforme	35	*Coccoloba uvifera*	3
Cecropia insignis	106	*Cedrela fissilis*	185
Cedrela odorata	760	*Cinnamomum coriaceum*	29
Ceiba pentandra	13	*Clethra lanata*	1
Conocarpus erectus	1	*Cordia collococca*	5
Cordia alliodora	1413	*Cordia Myxa*	4
Croton indet	4	*Dalbergia tucurensis*	161
Croton floribundus	102	*Delonix regia*	2
Delonix regia	1	*Erythrina ulei*	339
Ehretia acuminata	1	*Enterolobium cyclocarpum*	12
Erythrina fusca	153	*Faurea speciosa*	3
Ficus anthelmintica	60	*Ficus aurea*	7
Ficus cuspidata	71	*Ficus religiosa*	39
Ficus insipida	3	*Geissois benthami*	52
Gliricidia sepium	291	*Guazuma ulmifolia*	58
Gmelina arborea	3	*Grewia humilis*	33
Hibiscus elatus	16	*Hieronima alchorneoides*	1
Hymenaea courbaril	2	*Inga acrocephala*	40
Inga alba	505	*Inga brevipedicellata*	2997
Inga laurina	296	*Inga punctata*	1592
Juglans regia	1112	*Liquidambar styraciflua*	1
Leucaena leucocephala	2	*Loreya arborescens*	118
Lonchocarpus minimiflorus	101	*Manilkara zapota*	52
Mimosa artemisiana	5	*Myroxylon balsamum*	1
Muntingia calabura	7	*Myrciaria floribunda*	1
Myrospermum frutescens	4	*Nectandra angusta*	4
Neoscortechinia arborea	4	*Omphalocarpum elatum*	1
Olea europaea	2	*Pachira quinata*	54
Oreopanax echinops	104	*Persea americana*	604
Podocarpus latifolius	91	*Pouteria sapota*	1
Phoebe declinata	27	*Pimenta dioica*	1
Pinus oocarpa	13	*Piper tucumanum*	1
Piscidia carthagenensis	1	*Pithecellobium saman*	2
Psidium guajava	73	*Quercus macrocarpa*	238
Pterygota alata	2	*Quercus velutina*	4
Quercus nigra	1	*Rinorea pectino-squamata*	2
Salix alba	22	*Salix babylonica*	4

Schinopsis balansae	1	*Shorea hopeifolia*	2
Sideroxylon capiri	1	*Solanum granuloso-leprosum*	1
Spathodea campanulata	61	*Swietenia humilis*	116
Spondias mombin	25	*Syzygium malaccense*	12
Syzygium divaricatum	27	*Tabebuia rosea*	200
Tecoma stans	6	*Trichilia hirta*	217
Talisia elephantipes	1	*Zanthoxylum riedelianum*	1
Trichilia trifolia	46	*Zuelania guidonia*	11

2. Provide T-5 check data to evidence loss of tree cover over the past five years from project start date.

The following table has been updated for the last time on 10/10/2024

Outcome	Number	Plot ID	Reason for failure
PASS	9921		
FAIL	366	Request from Acorn.	All failed T-5 checks indicate a decrease in biomass higher than 60% comparing the values of the moment of onboarding and the values 5 years later to this date. Given that plots failed, these have not been onboarded to the Acorn platform.

3. Provide a description of the ecoregion(s).

The Central American Pine-oak Forests ecoregion occupies an area of 111,400 square kilometres, extending along the mountainous spine of Central America, extending from the Sierra Madre de Chiapas *and* Chiapas Highlands *in Mexico's* Chiapas *state through the highlands of Guatemala, El Salvador, and Honduras to central Nicaragua. The pine-oak forests lie between 600–1,800 meters (2,000–5,900 ft) elevation and its biome is classified as 'Tropical and subtropical coniferous forests'. Dominated by a rich assemblage of pines and oaks, it marks the southern limit of boreal floristic influence in the New World. These mixed forests are dominated by species of pine, oak, birch, and alder trees. This ecoregion is rich in fauna with more than 150 mammals present. Some of the mammals found in this ecoregion are the jaguar, puma, ocelots, tapir, greater grison, tayra, Central American spider monkey, and mantled howler monkey. This ecoregion conversation status is considered 'critical/endangered'.*

The Central American Atlantic moist forests ecoregion covers the lowland coastal forests of Honduras, southeast Guatemala, and the eastern forests of Nicaragua, with a total area of 89,979 square kilometres. Half of this ecoregion is closed-canopy tropical broadleaf evergreen forest. Tree heights in this forest often reach up to 50 meters. The mean elevation is 293 metres (961 ft), with a maximum of 2,270 metres (7,450 ft). The climate of the ecoregion is Tropical monsoon climate, characterized by even temperatures all year (minimum of 18 °C) and a distinct dry season. The driest month has less than 60 mm of precipitation. The climate in this ecoregion ranges between tropical rainforest and a tropical savanna. Average annual precipitation in the ecoregion is 2,333 mm. Common tree species at low elevations include gumbo-limbo, crabwood, Spanish cedar, kapok, Spanish elm, mahogany, and Terminalia Amazonia. At higher elevations, Brazilian fire tree and various epiphytes (plants growing on other plants) can be found. This ecoregion contains a number of large undisturbed fragments (including 30% as officially protected), which is important for larger species of animals. Biodiversity is rich in this ecoregion with common wide-ranging mammals such as

oncilla, olingos, margay, geoffrey's spider monkey, capuchin, mantled howler monkey, and giant anteater. The forests in this ecoregion are considered an Endemic Bird Area.

Next to these ecoregions, the project also takes place in the Central America dry forest and Central America montane forest where most of cocoa farmers are located. Comparatively, the central America dry forest is located at lower altitudes than the Montane forest, but both are located above 1000 meters over sea level. The central America dry forest, presents a clearly marked dry season and precipitation can reach up to 1500 millilitres during the rainy season. Given the existence of this dry season, plant species tend to be drought resilient. Therefore, common species are shrubs, acacias and some cacti species. Naturally, wildlife has also adapted to this conditions and is common to find iguanas, armadillos among bird species.

The central America montane forest is located even higher than the dry forest, with an altitude that can exceed the 3000 mts above sea level. The precipitation is also greater, reaching up to 4000 millilitres annually, consequence of its altitude. Similarly, this brings along colder temperatures and persistent moisture levels in the air. Given this conditions, flora and fauna varies from the one found in the dry conditions of the dry forest. Some plant species are oaks and pines. The biodiversity is also greater in terms of fauna, with many birds species such as quetzals and hummingbirds.

Part E: Project Baseline Assessment

Toral number of participants surveyed		Number of female participants surveyed	Number of male participants surveyed		
100		**28**	**62**		
Area	**Indicator**	**Metric**	**Source**	**SDG**	**Result**
Environmental improvement	**Agricultural biodiversity**	**Calculation of crops, livestock, natural vegetation, and pollinators. Presence wild animals.**	**Farmer survey and Gini-Simpson Index**	**15**	**43%**
Local livelihood	**Farmer income**	**Annual farmer revenue (income + CRU revenue – expenses)**	**Farmer survey**	**1, 8**	186,694 *Nicaraguan Cordobas*
	Household Nutrition	**Number of food groups consumed in the household in the past 24 hours.**	**Household Dietary Diversity Score (HDDS) index survey[3]**	**2**	5,38
	Agricultural land use productivity	Average yield of main cash crop(s) (kg/ha/year) and total farm yield (kg/ha/year)	Farmer survey	2, 8, 12	1707 kg/ha/year (coffee) and 1151 kg/ha/year (cocoa) , while the average total farm yield is 3755,14 kg/year
	Women empowerment	Number of female employees, Project Council members, and participants. Subjective farmer perception of women	Farmer survey and local partner survey	5	21% of participants are women and 3 out of 5 representatives of the project council are women

[3] *Swindale & Bilinsky, 2006*

		involvement in the project.			
	Youth inclusion	Number of youth employees, Project Council members, and participants. Subjective farmer perception of youth involvement in the project.	Farmer survey and local partner survey	4, 8	*This project has not surveyed participants on this specific indicator.*

1. Famer income from carbon finance

I.) Fill in the table below based on the carbon credits received by farmers

To be completed after first farmer payment.

Please note, a payment plan has been discussed with the participant of the second project council. Refer to annex 7.

Number of farmers who received CRUs	Number of CRUs received	Time period credits were received	Total income from carbon credits
2,185	37,432	2022 - 2023	931382.88 EUR

2. Nutritional Variety

I.) Describe farmer nutritional intake currently and how project intervention is expected to positively/negatively impact this.

Majority of farmers eat enough food each day and do not skip meals. Many consider their diet as healthy but lack variety because they only consume a basic Nicaraguan diet (beans, corn, rice, sugar), including the same food every day. On average farmers consume 5 food groups each day but almost no farmers consume seafood. Fruit trees can be selected by farmer for the agroforestry design but are not the key trees promoted by Aldea and Solidaridad.. In any case, these trees will offer an extra source of fruit for self-consumption. This is valuable as 64 out of 100 farmers reported they consume no fruit at all. The additional income from carbon finance may help the farmers afford to eat a more varied diet including more costly foods such as seafood which contain critical nutrients (i.e. healthy fats) that ward of disease.

II.) HDDS Index Survey Results.

Food group type	Average amount of households consuming each food group (%)
Cereals	100%
Root and tubers	*30%*
Vegetables	*29%*
Fruits	34%
Meat, poultry, offal	32%
Eggs	23%
Fish and seafood	1%

Pulses, legumes, nuts and seeds	31%
Milk and milk products	43%
Oils and fats	61%
Sweets	58%
Spices, condiments and beverages	64%
Average number of food groups consumed per household: 5 (5.38)	

3. Agricultural Biodiversity

I.) Describe the current state of biodiversity and how project intervention is expected to positively/negatively impact this.

Farmer rate their biodiversity often as average to high, however the score under the Gini Simpson index is unsustainable at roughly 43%. This result reflect the poor variety of crops grown in the project area with majority of farmer growing purely coffee and maybe one or two other crops such as beans or bananas in a small percentage. Farmers grow multiple species of coffee (approx. 1-4) as a preventive for disease outbreaks. The variety of plants/animals differs on each farms, with many farmers having livestock for self-consumption of eggs or selling of dairy products. Wild animals are sometimes spotted in the project area such as squirrels and birds. Many more rare species are also spotted in small occasions such as mountain cats, exotic birds, monkeys, sloth etc. Concerning threatened species, Solidaridad in consultation with farmers, believe only the Orange-fronted parakeet has been observed in the project area. Many other threatened species may exist in the region, however, they are either too rare to be seen or the farmland (which is lacking biodiversity at 39%) is not an ideal habitat compared with the more forest areas in the mountains etc. This presence of wild animals would enhance the Gini Simpson score proving that the project area does have a bit more biodiversity than reflected. This is something Solidaridad and Acorn will keep an eye on closely when monitoring the project. Farmers have a range of tree species on their farm (approx. most predominant). Project intervention will further increase the adoption of additional tree species to increase variety in flora. Farmers will be given skills necessary to teach them how to grow other crops among their coffee (i.e. vegetables and fruit teres) so producers don't rely on one main species and have a buffer in time of disease outbreak in coffee as historically seen. By farmers being encouraged to keep their trees in the ground this will provide a safe space for wild fauna looking to live or travel through with many other region of the country being deforested and degraded, resulting in a decrease in the loss of biodiversity.

II.) How many farmers perform beekeeping?

8 farmers out of 100 perform beekeeping

III.) Gini-Simpson Index Results.

Crops	Area	pi	p2	Livestock	number	equivalent	pi	p2
Coffee(+27.75)	163.85	0.552	0.3074	Cows	321	321	.8963	0.80
Basic grains (+18.2)	24.2	.0.081	0.0065	Chickens	1801	25.21	.0.07	0.0049

Cacao	108,73	0.336	0.1128	Pigs	201	5.427	0.015	0.0002
				Hens	303	4.242	0.011	0.000121
				Geese	15	0.3	0	0
				Rabbits	16	0.32	0	0
				Goats/sheep	13	1.3	0.00362	0,000013
				Turkey	4	0.12	0	0
Total	296.78		**0.42 (58 %)**	Ducks	32	0.32	0	0
Average of crop/livestock indices	**39%**			**Total**	2759	358.139		**0.80 (20%)**

Natural vegetation, trees and pollinators	**Description**	
Productive area with natural vegetation	Significant	.75
Pollinator Presence	Significant	.66
Beekeeping	None (0.08%)	0
Total average		0.47
Agricultural Biodiversity Score	**43%**	

IV.) List pollinator species in the project area.

Present in project area	**Pollinator type**
Regularly	Bees, Mosquitos, Butterflies, ants, flies
Moderately	Opossums, hummingbirds, bats
Sometimes	Beetles, moths
Rarely	

V.) List wild animal species in the project area.

Species (*latin name*)	**Prevalence (*Regularly/Sometimes/Rarely*)**
Lemur	Rarely
Exotic birds (i.e. toucan)	Sometimes
Rabbits	Sometimes
Foxes	Sometimes
Sloths	Sometimes
Reptiles (i.e. lizards)	Regularly
squirrels	Regularly

Deer	Sometimes
Monkeys	Rarely
armadilo	Rarely
Puma	Rarely
Weasel	Sometimes
Agouti	Sometimes
Guinea pigs	Sometimes
Mapachi	Sometimes
Ocelot	Rarely
Temurel	Rarely
Pericoterdo	Rarely

VI.) List species with a high local environmental and social conservation value in the project area, and if influenced by project intervention, describe relevant monitoring objectives/plan.

Species *(Latin name)*	**Threat Classification** (Culturally Significant/ Vulnerable/Endangered/ Critically Endangered)	**Project Influence** (Positive /Negative)	**Monitoring Objectives/Plan**
Orange-fronted parakeet (*Eupsittula canicularis)*	Vulnerable	Positive due to more trees planted that can provide habitat and refuge and food for this specie.	Technical field officers will visit ""monitoring plots"", areas where high local environmental and social conservation value has been identified in the project area, and document what they observe and interview farmers in the area. A plan for this is being created as there have only been very few reports of one such threatened species. For now, monitoring of this specie and other possible ones this will occur in line with the Acorn framework (surveying a random sample of farmers at least every 3 years).

4. Farmer income

I.) Describe the current financial state of farmers and socioeconomic conditions and how project intervention is expected to positively/negatively impact these.

Average farmer income is 186.000 Nicaraguan Córdoba. Most farmers have poor financial state because they are unable to get financing or credit due to requirements (i.e. age) and the processes involved that are too difficult for the farmer. Farmers also face high input costs and the price of

coffee is unstable and fluctuates. The project is located in rural communities in the coffee-growing Departments of Jinotega and Matagalpa, characterised by moderate poverty levels. Coffee production in this region has been impacted by changing climate which in turn has increased pests and disease. In recent years, production costs rose significantly, barely enabling farmers to break even. However, prices are currently at a 10-year high, enabling farmers to return profits again. However, these profits are moderated by significantly increased production costs due to high agri-input costs as a result of shortages in the (post) COVID era, high labour costs, especially during harvest season, as well as the removal of previous tax exemptions on agri-inputs. This project intervention will reduce the costs of farmers in terms of inputs (i.e. fertiliser), the CRUs will give farmers additional income to spend on costly inputs or help for the farm so they can expand their agroforestry system further. Aldea will also provide farmers access to credit that they are struggling to receive in order to maintain and enhance their farms.

II.) Please fill in the table below demonstrating the income and expenses of farmers in Nicaraguan Córdoba.

All information here listed is based on the national currency of Nicaragua.

Annual farmer revenue	**Description of revenue sources** (crops for market, livestock products, selling fruit from trees, CRU income)	**Annual farmer operating expenses**	**Description of Expenses** (food, seeds, fertilisers, feed, pesticides, livestock purchases, veterinary costs, labour, fuel, transport, taxes, loan interest, rent)	**Average farmer income** (revenue – expenses)
344,360	The sale of cash crops (coffee and cacao) are the main source of income, as expected. Next to this, other agricultural activities such as selling of chickens , banana or maize can be considered as common alternative sources of income among participants	318,278	Among the different expenses, the purchase of tools and inputs such as fertilizers are the most common expenses, along with the cost of labour. Next to these, food and seeds were mentioned by farmers but to a lower degree.	26,082

5. Agricultural land use productivity

I.) Describe the current productivity levels of farmers and how project intervention is expected to positively/negatively impact these.

Productivity is low due to high input costs, the effort required to control diseases, the lack of technical resources and skills of farmers. This project will teach farmer necessary skills and supply them with resources to overcome their technical challenges. The planting of shade trees will increase soil health and result in less fertilisers being needed. The fertiliser that is needed can also be derived from tree leave etc.

II.) Please fill in the table below demonstrating farmer productivity.

Average yield of cash crop (kg/ha/year)	Average total farm yield (kg/year)	Other crops contributing to productivity and their amount (%) in terms of amount produced per kg/ha
Coffee 1707,32 kg/ha/year	3755,14 kg/year	*While the array of other crops contributing to the total farm productivity is varied, the most frequently raised crops are maize, basic grains and bananas. In terms of relevance, these alternative crops can represent up to 30% of the total productivity of an average farm.*
Cacao 1151,98 *Kg/ha/year*		

6. Women's empowerment

I.) Describe the current status of women empowerment and how project intervention is expected to positively/negatively impact these.

In the project area women have less access to formal land rights and experience less participation in decision-making processes due to social-cultural norms. Aldea Foundation has a policy to prioritize opportunities that benefit women coffee producers. Within this policy, the aim is to improve women's access to services (like non-reimbursable projects, financing and training) and/or means of production (inputs or formal land rights). The beneficiaries of agroforestry systems should be at least 30% women. Aldea works together with the certification; "Con manos de mujer", to increase women involvement. Solidaridad strives to include a female presence in the project council for equality in decision making.

II.) Please fill in the table below demonstrating the women involved in the project.

Number of women farmers/ participants	Number of women participating in project council	Number of women working for the local partner (e.g. project officers, field technicians)	Areas where women are employed in the project (nurseries, agronomists, etc.)
21% of participants (approx. 889 farmers) from the total of 4140 participants	Currently 3 out of 5.	8 employees in Solidaridad Nicaragua and 3000 employees in Aldea Foundation (global)	Monitoring, technical assistance, nurseries, agronomist, Solidaridad, Aldea

7. Indicator Monitoring

I.) Describe the monitoring objectives for any expected impacts on farmer livelihood and the environment from project intervention. If there are any negative impacts expected, describe the relevant mitigation actions.

Livelihood / environmental indicator	Impact description	Mitigation action (if negative impact expected)	Monitoring frequency	Responsible party
Nutritional Variety	Each agroforestry design should include 15% of fruit trees like	Solidaridad had taken into consideration when farmers receive	At least every 3 years	Producer (supplying information)

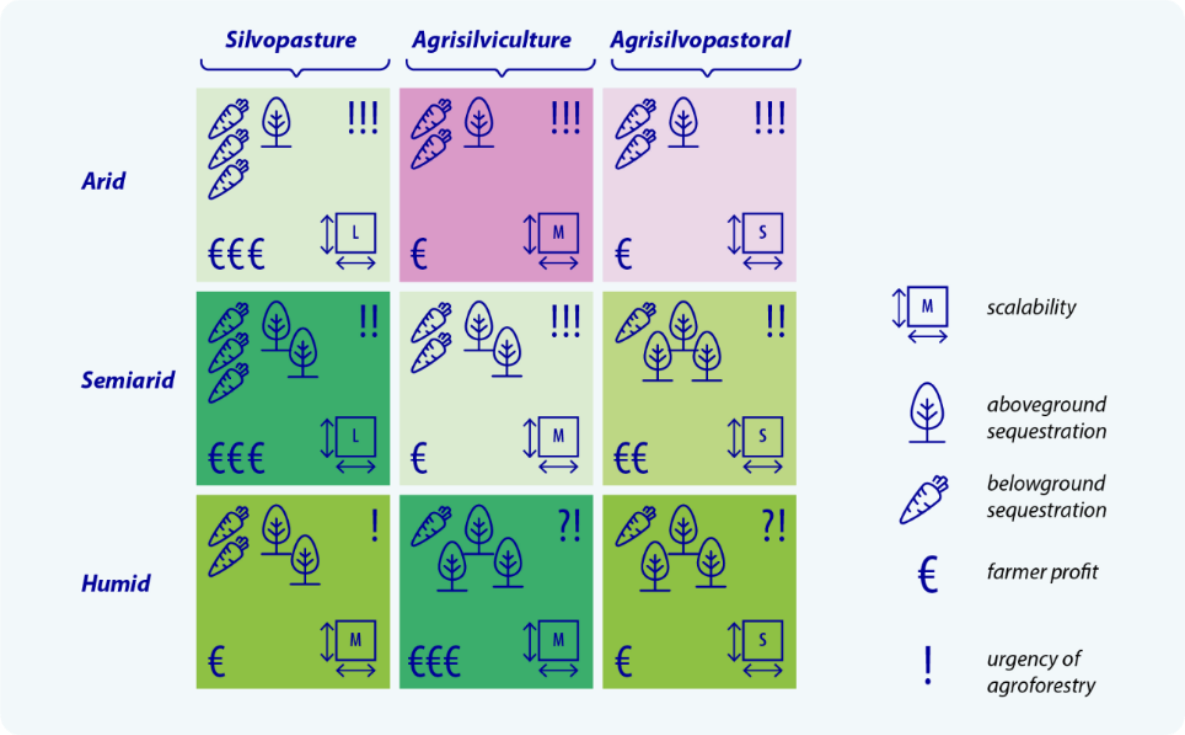
	citrus. This will increase the nutritional variety for family consumption. Additional income from CRUs may help farmers and their family afford more variety in their diet. If farmers are paid at a time when they have just received their profits from coffee they may spend the CRU income on more processed foods such a salsa's and cookies.	the most income and the period they struggle the most and will pay them in the latter.	farmers will be surveyed	/Solidaridad & Aldea (sending and receiving surveys)
Agricultural biodiversity	Flora biodiversity increases because of the wide variety in the shade or fruit trees species planted instead of just coffee plants. Crop biodiversity could increase due to farmers having more knowledge and skills to integrate additional crops on their farm. This change is favourable to pollinators and may increase their abundance. Preserving trees planted will also be favourable to other wild species (i.e. birds, monkeys, squirrels). In an agroforestry design farmers could choose only 1 or 2 species and plant then reducing the increase in biodiversity.	A list has been create through consultation between Aldea, Solidaridad and farmers on the best trees for the farmer and the environment. Aldea teach farmers the importance of choosing a variety of species and explain that 15% of trees farmers plant should be fruit. This is evidenced in Annex 7.	At least every 3 years farmers will be surveyed	Producer (supplying information) /Solidaridad & Aldea (sending and receiving surveys)
Farmer financial state	Agroforestry can provide extra income because of the fruits that can be sold. CRUs generated will provide additional stable income. Aldea also supports farmers in obtaining credit to optimise their farm. In the initial phases of the	Aldea connects farmers to financial institutions and teaches them skills to integrate additional crops in their farm as a buffer if coffee is suffering (disease etc.). Many farmers will start to receive	At least every 3 years farmers will be surveyed	Producer (supplying information) /Solidaridad & Aldea (sending and receiving surveys)

	project the yield of coffee may slightly and temporarily drop impacting income.	carbon income already in 2022.		
Gender equality	Increases since Aldea prioritizes the participation of women in decision making and gives social representation through assistance with land titles (see Part E - 6).	No negative impact	At least every 3 years farmers will be surveyed	Producer (supplying information) /Solidaridad & Aldea (sending and receiving surveys)
Agricultural productivity	Increases because the agroforestry system extends the life of the crop and produces more sellable coffee. Productivity could increase up to 35% over the life of the projects. Less inputs will be needed due to shade trees providing organic fertilisation and increasing the health of the soil. Coffee yield can decrease if the project area has too much shade.	Farmers are trained on shade management techniques (i.e. pruning) by Aldea and are instructed on the approx. 100 trees/ha on their farm and the ideal spacing.	At least every 3 years farmers will be surveyed	Producer (supplying information) /Solidaridad & Aldea (sending and receiving surveys)

Part F: Project Activities

1. Describe the agroforestry system to be implemented as part of the project using the figure below (silvopasture/agrisilviculture/agrisilvipastoral).

The agroforestry system is classified as existing agrisilvicultural agroforestry in a humid environment on which coffee is the main cash crop. The planting of native/naturalised shade, and fruit trees is prioritised in this system.



2. For each agroforestry system fill out Table 2 below (use additional tables if necessary):

Type	Species	Species details		
		Native, naturalised or invasive?	If naturalised, please describe its likely: Livelihood benefits that make it preferable to any alternative native species	If naturalised, please describe its likely: Impact on biodiversity or other provision of key ecosystem services in the project and surrounding areas
Coffee agroforestry system composition				
Tree	Cedrela odorata	Native	Not applicable	Provide proper shade and windbreak for coffee trees and protects watersheds. Insect repellent resulting in reduced pests.
Tree	Juglans olanchanum	Native	Not applicable	Provide shade for coffee trees and protects watersheds.

Tree	Swietenia macrophylla	Native	Not applicable	Provide proper shade for coffee trees and protects watersheds.
Tree	Albizia saman	Native	Not applicable	High carbon sequestration rates for long-term removal of carbon dioxide from the atmosphere. Shade for coffee trees and protects watersheds.
Tree	Cordia alliodora	Native	Not applicable	Provide proper shade for coffee trees and protects watersheds.
Tree	Pouteria sapota	Native	Not applicable	Protects watersheds.
Tree	Platymiscium pinnatum	Native	Not applicable	Provide proper shade and windbreak for coffee trees and protects watersheds. Fixes nitrogen for itself and other nearby plants growing.
Tree	Inga punctata	Native	Not applicable	Used for planting in degraded soils to restore their fertility, produces root nodules containing nitrogen fixing bacteria. Crops benefit from the release of nitrogen and also from the nutrients of decomposing leaf mulch. It also decreases temperature.
Tree	Persea americana	Native	Not applicable	Provision of shade for soil health
Tree	Inga spuria (Inga vera)	Native	Not applicable	The tree fixes atmospheric nitrogen and so enriches the soil in which it grows. It is frequently used as a shade tree in coffee and cacao plantations, being large enough when only 3 years old. It responds well to drastic pruning
Tree	Erythrina fusca	Native	Not applicable	This tree increases litter fall in plantations with this species which adds to the available amount

				of nitrogen and phosphorus to the soil.
Cacao agroforestry system composition				
Tree	Citrus sp	Naturalised	Fruit for family diet and local market sales	Provision of shade for soil health
Tre	Musaceas	Naturalised	Fruit for family diet and local market sales	Provision of shade for soil health
Tree	Mangifera indica	Naturalised	Fruit for family diet and local market sales	Provision of shade for soil health
Tree	Persea americana	Native	Not applicable	Provision of shade for soil health
Tree	Inga punctata	Native	Not applicable	Used for planting in degraded soils to restore their fertility, produces root nodules containing nitrogen-fixing bacteria. Crops benefit from the release of nitrogen and also from the nutrients of decomposing leaf mulch. It also decreases temperature.
Tree	Inga spuria (Inga vera)	Native	Not applicable	The tree fixes atmospheric nitrogen and so enriches the soil. It is frequently used as a shade tree in cocoa plantations.
Tree	Gliricidia Sepium	Native	Not applicable	Improves the soil through the pruned branches and leaves which serve a natural compost, with a high content of nitrogen and other nutrients to restore soil fertility
Tree	Tabebuia Rosea	Native	Not applicable	Shade provision and potential use in

				ecological restoration projects
Tree	Cordia alliodora	Native	Not applicable	Provide shade for cocoa trees and protects watersheds.
Tree	Cedrela odorata	Native	Not applicable	Provides shade and serves as a windbreaker for cocoa trees and protects watersheds.
Tree	Carapa guianensis	Native	Not applicable	Shade provision with self-pruning capacity, enrichment of agroforestry systems
Tree	Swietenia macrophylla	Native	Not applicable	Provides shade for cocoa trees and protects watersheds.
Tree	Dalbergia sp	Native	Not applicable	Provides shade and fixes nitrogen

Growth management for Coffee's agroforestry system	
Preparation and Planting	Preparation: Ideal spacing for holes are determined. Farmer digs a hole and at the bottom organic fertilizer is applied. Afterwards the plant is placed. The tree spacing will be as follows: Coffee 2.3 m x 1.36 m density 3200 per ha and Musaceae 5 m x 6 m density per 295, and Forest: 188 trees per hectare.
Tree/Shrub Management	Management practices will include: Early stage pruning, Sanitary pruning, Elimination of atypical plants, Conventional fertilization and in some cases organic amendments, Weed management, and Shade management. When the trees reside at a height of approximately four to five meters they must be pruned/crown pruning/pruning of the branches once a year so they do not grow too high and the shade is always kept at medium height. For harvesting of fruit trees it differs per species but generally they are harvested at the same time as the pruning of the branches. Therefore, pruning is parallel to harvesting. Harvesting occurs approximately after five years when they start to bear fruit. Harvest occurs manually and usually in summer.
Crop Management	Every four rows of coffee, a tree is planted every 12 meters.

Growth management for Cacao's agroforestry system	
Preparation and Planting	The ideal space for the trees is determined by field technicians and farmers. A 40 cm x 40 cm x 40 cm hole is dug per tree, and lime is applied to the bottom to disinfect the soil, alongside organic fertilizer (a shovelful of compost, Bokashi or dry cow dung to accelerate root development. The plant is then placed in the hole. The distances between trees are as follows: ● Cocoa 4 m x 4 m, density 893/ha

	• Bananas/plantains: 4 m x 6 m, density of 438/ha. • Forest trees: 18 x 18 and 9 x 12, density of 163.ha.
Tree/Shrub Management	Management practices include a yearly application of fertilisers for years 1-3. From then onwards, a formative and maintenance pruning is applied to manage shade in order to not block out too much light for the cocoa trees underneath, thus preventing attacks of monilia, black pod disease and other diseases.
Crop Management	Management practices include: - Formative, maintenance, and sanitary/rehabilitation pruning. - Replacement of incompatible or unproductive plants through grafting processes to reproduce more productive plants - Application of fertilisers and in some cases organic amendments - Weed and shade management. When they reach a height of approximately four to five metres, they are pruned yearly. Cocoa trees are harvested manually between 3-5 years after planting, depending on the type and origin.

3. **Describe the project's agroforestry design/implementation plan.**

A large list of tree species (native or naturalised) that will be planted as part of project intervention have been chosen by agronomist (after testing soil and looking at climatic variable etc.) and traditional knowledge of community/farmers. Farmers are able to decide for themselves which tree species they wish to plant, however, they are encouraged to plant a variety of trees species including fruit, shade and medicinal properties. The tree species planted can differ, however, the most popular species chosen by farmers are listed in the question 2 table above. All seedlings/sapling are resourced from private local nurseries in which Solidaridad have agreements. They are currently seeking partnerships with more nurseries to be able to supply farmers at scale. There is a possibility to create a contract with people in charge of forest nurseries, but it is not a common practise.

When planting trees, farmers are instructed to perform the following: Coffee 2.3 m x 1.36 m density 3200 per ha and Musaceae 5 m x 6 m density per 295, and Forest: 188 trees per hectare.

Key management practices to maintain a thriving agroforestry system will include:

- *Early stage pruning*
- *Sanitary pruning*
- *Elimination of atypical plants*
- *Conventional fertilization and in some cases organic amendments*
- *Weed management*
- *Shade management.*

The planting of these trees will occur in phases over multiple years depending on resource availability (planting materials), age and energy or farmer, size of the land etc. So far trees have been planted in 2018, 2019, 2020 and 2021, with more to come in 2022. It is the goal that these trees will reduce the need for costly inputs such as fertiliser and pesticides, with farmer encourage to use tree leaves as an organic fertiliser and less risk of disease outbreaks for example. Other advantages expected for the agroforestry system include:

- *Improved soil fertility*
- *Reduced water erosion*

- *Improved soil structure*
- *Lowered temperature on the farm*
- *Creation of a microclimate favourable for coffee production.*
- *Improved productivity and quality*

In terms of the cacao's agroforestry design implementation, the tasks and management practices are similarl but tailored to the requirements of the species included in the agroforestry design. In this regard, already the tree species to be planted were selected based on the soil and climatic conditions, as well as current management practices among participants.

When planting trees, the following considerations are suggested to farmers:

Cacao 4 m x 4 m with a density of 625 plants per hectare, Musáceas 4 m x 4 m, with a density of 625 per hectare, shading trees with a planting distance of 7 m x 7 m, , timber species with a planting distance of 8 m x 12 m and finally, fruit bearing trees with a planting density of 8 m x 8 m; with a total density of 100 trees per hectare.

After the agroforestry system is in place, certain management practices are applied to ensure proper levels of shading. Some of these are, pruning during the plants growth phase , for both cacao and forest species, sanitary pruning and conventional fertilizers application as well as organic amendments for the soil. Next to these, weeds and shade management is also encouraged.

4. Provide an estimate of the carbon benefits for each tree species per hectare over a likely median project period.

Tree species	Expected carbon benefit/ha	Project period used (e.g. 10 years)
Coffee's agroforestry system		
Cedrela odorata	34.1 CO2e kg/Ha	10 years
Juglans olanchanum	40.4 CO2e kg/Ha	10 years
Swietenia macrophylla	23.7 CO2e kg/Ha	10 years
Albizia saman	15.6 CO2e kg/Ha	10 years
Cordia alliodora	15.8 CO2e kg/Ha	10 years
Pouteria sapota	41.4 CO2e kg/Ha	10 years
Platymiscium pinnatum	25.1 CO2e kg/Ha	10 years
*Inga punctata**	15.2 CO2e kg/Ha	10 years
Persea americana	30.7 CO2e kg/Ha	10 years
Inga spuria (Inga vera)*	15.2 CO2e kg/Ha	10 years
Cacao's agroforestry system		
Cedrela odorata	34.1 CO2e kg/Ha	10 years
Juglans olanchanum	40.4 CO2e kg/Ha	10 years
Swietenia macrophylla	23.7 CO2e kg/Ha	10 years
Cordia alliodora	15.8 CO2e kg/Ha	10 years
Platymiscium dimorphandrum	25.1 CO2e kg/Ha	10 years
*Inga punctata**	15.2 CO2e kg/Ha	10 years
Inga spuria (Inga vera)*	15.2 CO2e kg/Ha	10 years
Persea americana	30.7 CO2e kg/Ha	10 years

**These figures will not be used to issue CRUs*

5. Describe how this agroforestry system is expected to impact the land (i.e. shade, less pests, increase in pollinators).

Everything has ecological relationships; shade trees will provide many recycled nutrients to the soil and the coffee plants, maintain moisture levels in coffee plant tissues and protect the plant from extreme temperatures. Many trees species included in the agroforestry design are native and attract pollinators and natural predators that help control coffee pests (biological control).

6. How do you ensure that the trees already in the project area before project intervention (if any) do not perish due to competition with the trees planted during this project or are damaged due to project activities?

This is implemented in the agroforestry system. If the system is going to have 120 trees per hectare and there are already 20 on the project area, then only 100 additional trees will be planted. This takes the competition into consideration. So existing trees will be taken into consideration when new trees are planted to include the amount of shade already created and existing trees do not perish .To not make the crops compete with the trees, you need to have certain quantities of shade that do not compete with the production of crops and other native flora. There are two types of shade; the temporary and the permanent. The permanent is from the tall trees that are there for a long period of time. You need to balance this shade to provide the crops with enough sunlight. Farmers are aware of this concept of shade management and the techniques required to find this balance due to the training offered by Solidaridad and Aldea.

As an example, Gmelina arborea, also known as Gemelina or melina, is a species of tree native to Southeast Asia. It has been naturalized in several parts of the world, including tropical America and Africa, due to its great versatility.

Gmelina arborea is a fast-growing multipurpose tree that generates a large biomass, it has a vigorous root system that allows it to act effectively as a nutrient bomb due to the absorption of nutrients leached from the subsoil and its deposit on the soil surface through leaf litter, improving the biological, chemical and physical properties of the soil. It produces a large amount of appreciable foliage even at the peak of the dry season, which is useful to protect the crop and soil from high radiation. In Nicaragua, it is used in agroforestry systems mainly for its versatility and multiple benefits. This species is planted together with other crops such as coffee and cocoa to protect young trees from strong winds, it is predominantly established at the edges of agroforestry systems, being mainly used as a living fence, windbreaks and protective barriers, as well as for its adaptability to different types of soils and climates, which facilitates its growth in various regions.

Part G: Project Council

1. Describe the project council governance structure, showing that participants or community groups collectively nominate project representatives who have the capacity to operate and make decisions on their behalf and determine a decision-making mechanism for the project council.

Solidaridad works with the producer organizations Fundación Aldea, which has a governance structure that allows decision-making in a participatory and consensual manner for the execution of projects that benefit all partners. For this project, it is proposed that the governance structure of the project council be similar to that of Fundación Aldea. Additionality, Solidaridad will implement differentiated project council for both cofffe and cacao, allowing different producer groups to discuss relevant matters more efficiently.

As mentioned, the governance structure of Fundación Aldea will be a reference to structure the governance of this Acorn project. In this regard, Fundación Aldea has its own statutes, board of directors, management, technical and administration team. The foundation has 13,000 associates, of which 3,000 are female associates. From this volume of associates, the governing bodies of this organization are chosen. The existing governing bodies of Fundación Aldea (beginning of project intervention) are two:

a) *General Assembly*
   i. *The general assembly is the highest deliberative and decision-making authority of Fundación Aldea. The sessions of the general assembly are ordinary (annual) and extraordinary when the situation warrants it. In each community a pre-assembly is held for the election of the delegates and they in turn elect their representatives. The general assembly is made up of thirty members, who are elected in accordance with its statutes and regulations. The general assembly elects its five members: President, Vice President, Secretary, treasurer and member for a period of two years. Its members can be re-elected by the farmers for up to two more terms.*

b) *Board of directors*
   i. *The board of directors is a permanent management body that meets monthly, on an ordinary and extraordinary basis, when required. The board of directors delegates the executive administration to a director or director. The board of directors is elected and has a term of three years, they can be re-elected for two periods in extraordinary assemblies, by the members of the ordinary general assembly.*

Normally, in the ordinary assemblies, the projects and programs that the foundation plans to execute are presented to the associated delegates. The delegates present their observations, through written or verbal opinions, consensus is generated and the approval agreements on the feasibility of executing the activity are established in the minutes.

For the Acorn project a restructuring of this existing structure is being carried out that allows the participation of farmer representatives who are both part of Acorn and outside of Acorn at scale to discuss only this project by Solidaridad and Aldea. Initial lead farmers have already been nominated based on interest and capabilities (communication/leadership skills) and accepted on a community level (through meetings) to represent groups of farmers participating in the Acorn and those impacted by the project but who are not participants. These meetings will occur at least twice a year (April and October), with both a representative from Aldea and Solidaridad. Either Aldea or

Solidaridad with facilitate the meeting. For the first council meeting in 2022, Solidaridad will be the facilitator.

2. Describe how project council allows participants to provide feedback on the project design and implementation.

The project will establish a project council with 5 lead farmers. Along with the growth and upscaling of the project, new lead farmers will be nominated by the wider farmer communities to increase the size of the council. Next to this, given the inclusion of cacao as a new cash crop of the Acorn project, a new project council will be formed to represent cacao producers participating in Acorn. Each council member will be allocated a group of farmers that they are responsible for representing. The lead farmers selected will have to demonstrate that they are capable of connecting and meeting with farmers and being available to receive feedback/grievances by their farmer group (communication/leadership qualities). Women council members have been prioritized to increase gender equality and have equal representation in farmer insight and decision making. The project council will by led by the participant farmers, as they choose the topics they would like to raise and issues they would like to solve and have input in. Even though the farmers choose the agenda, the facilitator (Solidaridad or Aldea) will bring up each of the categories in question 7 and a report will be made by an official transcriber that includes all topics discussed and a signature from each council member present that they are in agreement with the report. This report will follow their own design and not the Acorn template.

3. List the lead farmers that have been nominated by participants to represent project participants during project council meetings to voice concerns and needs, and actively engage in decision making.

Farmer participant	Gender	District	Years participating in council
Farmer 1	Male	Com. Las Cruces, Pantasma	0
Farmer 2	Female	Jiguina, Jinotega	0
Farmer 3	Female	San Martín de Loma Azul, San Rafael del Norte	0
Farmer 4	Male	Chaguite Grande, Jinotega	0
Farmer 5	Female	Río Negro, San Rafael del Norte	0
Cacao Project Council			
Farmer 6	Female	Waslala, RACCN	0
Farmer 7	Mal	Waslala, RACCN	0
Farmer 8	Male	Waslala, RACCN	0

Farmer 9	Female	Waslala, RACCN	0
Farmer 10	Male	Waslala, RACCN	0
Cacao Project Council			

**Farmers names were protected due to data privacy reasons*
***Solidaridad will implement the project council for cacao producers and participants during 2024.*

4. Describe the grievance mechanism for this project, including;
    I.) The method for communicating grievances (whatsapp/phone, email, facebook, meeting, letters, anonymous box etc.).

A mailbox for complaints and suggestions is provided in the village offices; in turn, a telephone number has been provided for this same purpose and this is shared to all farmers during onboarding. Similarly, staff has been delegated to provide personalized attention, where associates can express their disagreements anonymously (i.e. unsigned complaint in mailbox allowed). Producers can also always communicate their complaints to the lead farmers, field technicians, program coordinates, delegates of their territory and these in turn inform the foundation's board of directors. Once the information is obtained, it is discussed in management sessions for its resolution. The farmer (if not anonymous) is noticed of the outcome and their feedback on this outcome is requested. Likewise, the associated producers externalize their disagreements with the program coordinators. Farmers have explained that they prefer to raise grievances to the field technicians and lead farmers during visitis to their farmers as they trust this method.

II.) How you ensure that complaints and/or recommendations can be done at any time and can be identified or be anonymous.

Through a reciprocal relationship between the producer and the Foundation, where the channel is the field technician. See question 4 I.) above for explanation of accessibility of mailbox (allowing anonymity) and telephone number. The field technicians feel like friends to their producers and have a high amount of trust that goes both ways. There is no demand for anonymous grievances as it is common for them to be raised with the community if one is ever preferring not to report it directly to Solidaridad of Aldea. However, there is a mailbox in Jinotega where anonymous submissions can be submitted if ever necessary.

III.) The process in place to ensure grievances raised are dealt with in a transparent, fair and timely manner (e.g. chain of escalation).

All producers are attended and listened to by lead farmers /project council members and field technicians (during site visits, phone communication etc.) that escalate their grievance to the project coordinator if unresolvable at this level who then sends this to the board of directors if needing extra attention and decision making that can't be solved during project council sessions or is private. In the case of a particular management, farmers grievances are referred to the corresponding area. For example, in the case of complaints in a technical advisory, it is sent to the technical advisory coordinator, in the same way, the complaints will be evacuated by the person in charge of the technology area (App Aldea Tech) and the community philanthropy area (education and health /

water and sanitation). Acorn will be informed of grievances within 35 days of solidaridad/aldea receiving this.

IV.) Describe how the grievance mechanism is communicated to participants.

The mechanism is described and implemented also in digital platforms, such as Village Tech, where the customer service number is provided. For the farmers that do not have access to the digital platform, they are informed upon onboarding (all famers must be informed regardless at this time). However, all farmers have explained they have access to the digital platform, at least multiple times in the year. For the collection of complaints in the mailboxes, there are personnel who receive them, analyze them and develop communication and process improvement strategies for informing producers. Farmers are visited regularly by Aldea and Solidaridad and each visit they will be asked if they have any challenges, concerns or input on the project.

5. List any grievances that have been raised outside of project council meetings and the actions taken to resolve them.
   The following table showcases grievances reported during the second year of this Acorn project.
   Please note, during its second year only the first of the two meetings have taken place. Solidaridad is planning on carrying out a second meeting before the fulfillment of the project's second year.

Grievance reported	Action taken	Responsible party
There has been issues with gathering of polygons, which resulted in issues at the time of calculating CRUs. (16/08/2023)	Verification of polygons on ground will take place to ensure quality	Solidaridad

6. All project council reports that have been produced after the first year (minimum of 2) are stored by the local partner and can be requested upon validation. These reports must be completed based on the Project Council Report template provided by Acorn (including what decisions were made, how they were made, any feedback given and how it is been acted upon, grievances reported and how they are dealt with, satisfaction with grievance mechanism, proof of meeting (minutes and attendee list).

   Please refer to annex 7 for the reports of the two yearly project councils.

7. The project council reports demonstrate participants contributing to the selection and design of activities, considering :
   - Local livelihood (customs, needs and opportunities)
   - Land availability and tenure
   - Food security
   - Inclusion of marginalized groups
   - Opportunities to enhance (agricultural) biodiversity
   - Monitoring
   - Project implementation
   - Field management
   - Payments

Part H: Organisational Capacity

1. Describe your legal status as a local partner (e.g. NGO, local co-op or trader).

Solidaridad is an international civil society organization (NGO) with over 50 years of experience in developing solutions to make communities more resilient. Aldea Foundation is a sub NGO that was established in 2016 as the "Other Helping Hand" that complements the business work of Aldea Global Jinotega (a global NGO). Aldea Foundation have 23 employees and work across 600 communities with 14,000 members (3,200 of which are women).

2. Describe your in-country presence and relationship with participants and communities in the project area.

Solidaridad has its early roots in supporting repressed communities in Latin America over the last 50 years. Solidaridad is in constant collaboration with the local communities and farmers within the project area to explore the challenges and opportunities they face while implementing agroforestry practices. Solidaridad has been working in Nicaragua since 2015 to support farmers in local level climate change adaptation and mitigation activities, within sustainable supply chains (coffee, cocoa, livestock and palm oil). Since 2017, Solidaridad has been working in Nicaragua with smallholder farmers to build an agroforestry design around coffee and cocoa farming. Aldea foundation has been active in Jinotega (place of establishment) since 1992 but have been promoting agroforestry practices since 2016. They joined forces with Solidaridad in 2018, with farmers actively planting trees in 2018, 2019, 2020 and 2021.Aldea is seen as family in the farming community as they have been helping farmers since 1992. Their directives are elected by the community and farmers members to ensure they are best represented.

3. Briefly describe how you contribute to the social and economic development of the participants and their communities.

The project is located in rural communities in the coffee departments of Jinotega and Matagalpa, characterized by moderate levels of poverty. This also applies for communities producing cocoa. Coffee and cocoa production in this region has been affected by climate change which in turn has increased pests and diseases. In addition to this farmers face rising production costs, especially for inputs resulting from the COVID shortage, and the elimination of previous tax exemptions. This Project aims to transition smallholder coffee and cocoa farmers to agroforestry systems and connect them to high-value carbon markets as a mechanism to reward them for their contribution to reducing carbon emissions by planting and caring for trees within their farms. According to the study of productivity in agroforestry systems carried out by the Village Foundation, the implementation of Agroforestry Systems on the farms of associated families provided a 20% increase in production and a 21% increase in income. In addition to climate change mitigation, the agroforestry systems promoted by Solidaridad and the local partner also serve as a climate change adaptation strategy in low- to mid-level coffee landscapes, benefitting the whole community.

4. What is the experience of the local partner working with farmers and in the project location (organising land tenure, implementing agroforestry, providing training etc.).

This project is the first carbon project for both both Solidaridad and Aldea. Since 2017, Solidaridad has been working in Nicaragua with smallholder farmers to build an agroforestry design around coffee farming. During this time Solidaridad has provided training for farmers in agroforestry practices. Aldea foundation has been active in Jinotega (place of establishment) since 1992 to help

farmers get a better price for their coffee and produce it sustainable. Aldea have been promoting agroforestry practices since 2016, actively planting trees in 2018, 2019, 2020 and 2021. The initiative to establish coffee in agroforestry systems began with the POSAF/MARENA project in 2010. Later, in 2016, with the Inter-American Development Bank, a model of agroforestry systems with timber trees of high economic value was implemented.

5. Describe how the project will securely store project information, including project designs, business case details, proof of payment, record of participants events and monitoring results.

All project information will be securely stored on Solidaridad and Aldea systems - google suite (organizational email and filing system), Salesforce (organizational CRM, project management and finance system), with different levels of access according to internal policies and procedures. For example, confidential business information such as farmer and cooperative financial data will have a high level of restricted access. For the purposes of reporting, including to project donors and investors, data will be anonymized and aggregated. Different tools will be used to collect data from farmers and partner organizations level, such as GPS, SIG, "Farm Diary" app, Cool Farm Tool, Taroworks. Data access to these systems will be restricted to those staff members engaged in the project. Fundación Aldea has a monitoring system where a physical file of each producer is issued, in turn an electronic file is generated, with the data of the farmers. This information will be backed up on a server, which is under development, by Fundación Aldea's technology area. Additionally, there is an accounting area that records the execution of projects under international accounting standards and national laws, including incentives provided to partners. Solidaridad and Aldea confirm that all data for the project is stored based on GDPR regulations, any paper copies of farmer data will be destroyed.

6. List relevant local, national and international policies, laws and regulations and demonstrate how the project is aligning project activities to comply.

In addition to aligning with the NDC for Nicaragua (See Annex 12), the project is aligned with the country's environmental legal and public management framework, thus contributing to the country's sustainable development. Among the main instruments of environmental management and legal framework we have*:*

1. *National Plan to Fight Poverty 2022-2026 in the measures to face the impacts of climatic variability and Climate Change: Manage forests sustainably, fight against desertification, stop and reverse the degradation of land and stop the loss of diversity; Protection of Forest Resources Efficiently and compliance with international agreements and achievement.*

2. *Decree of Approval of the National Climate Change Policy. Presidential Decree 04-2022 Published in Gazette No.35 published on February 22, 2022. In which we identify with its guiding principles:*

    a. *Human Development, Good Living and Common Good*
    b. *Gender Equity*
    c. *Climate Culture focused on promoting a low-emission economy.*
        i. *Comprehensive mitigation measures.*
            - *Promote the reduction of GHG emissions and the increase of carbon sequestration in Agricultural Production Systems within the framework of improving the efficiency of productivity, resilience and*

adaptive capacity in coordination with other conservation and protection policies and adaptation to climate change.

- *Knowledge, research, innovation and transformation of good agroclimatic practices.*
- *Governance of Climate Action.*

3. *Law 462 Law of conservation, promotion and sustainable development of the forestry sector, approved on June 26, 2003 Published in La Gaceta, Official Gazette No. 168 of September 4, 2003. Section 7 art. 29: Oxygen Production and Carbon Fixation*

4. *Law 217 "General Law of the Environment and Natural Resources" with its incorporated reforms. Published in the Gazette No.20 of Friday, January 31, 2014. In its following sections:*
    a. **Section V: "Environmental Information System".*
    b. **Section VII: "Incentives".*
    c. **Section XI: Payment for Environmental Services.*
    d. **Section XIII: Climate Change Management.*

The project aligns with all of the above due to the planting of trees in an agricultural system resulting in sequestration of carbon (climate mitigation), the transition to agroforestry being labelled as an innovation transformation in agriculture, the increase of forest or reduction of forest tree loss in the country, the policies and procedures in place to empower women farmers, and the reward of carbon finance for farmers and increased productivity helping to reduce poverty in the project area.

7. Describe project's mechanisms to identify and address barriers to participation for groups that could be excluded based on the basis of gender, age, income or social status, ethnicity or religion, or any other discriminatory basis.

Fundación Aldea do not have a mechanism to identify and address barriers to group participation based on those likely to be discriminated against, however they do have an inclusive gender policy (see question 9 below). The barriers all farmers (sample of 3949 farmers from all villages in project area) face were discussed and considered during workshops and meeting during project design and were considered at this stage (i.e. lack of resources, technical skills, knowledge). Farmer barriers will continue to be identified and resolved during project council meetings over the course of the project. Solidaridad and Aldea will work together to determine such a mechanism to ensure the barriers of discriminated groups are also identified and considered into project implementation.

8. Describe process for onboarding participants.

Farmers were selected by Aldea to participate in this project during project design to ensure their input could be accurately captured. The producers were selected in the following way:

1. Producers who grow coffee and cocoa who have made investments in renewal of pruning, renewal with tissue management and establishment of new plantations.
2. Producers who have participated in the establishment of agroforestry systems with coffee.
3. To be active associates in the global village and the village foundation.
4. Producers who have a clean credit history and delivery of coffee for marketing.
5. Demonstrate the legality of land tenure.

The information gathering process was carried out through visits to the farms, where a polygon of the perimeter of the established area with coffee and timber trees was elaborated. The objectives of the visit, the carbon capture process and the feasibility of selling carbon bonds in the market were explained to the farmer and agreed upon. Each producer provided their identification document, information on the farm and the signing of consent documentation, for the use of information, photographs of the area of the farm where the agroforestry system was established. This information is backed up physically and electronically in the Aldea Foundation database (see question 5 above).

After selection of participants and creation of project design, the following onboarding steps were followed:

Step 1: Aldea Foundation identification of a local partner (organization of small producers or exporters with small producers within their supply chain).

Step 2: Presentation of the project to the identified local partner (Solidaridad)

Step 3: Solidaridad determines whether the producers meet the eligibility criteria (the criteria detailed in the ACORN framework), plus the following Solidaridad Nicaragua criteria: mass producer review (min. 2,000/5,000 hectares) in the same work area and located in 1 of the 3 main ecoregions in which coffee producers will be worked in Nicaragua), an MoU is signed establishing the responsibilities, roles and responsibilities of each organization.

Step 4: The local partner provides Solidaridad with a list of producers with the following information:

- Area with coffee / cacao cultivation
- Location of farms
- If you have already established the SAF, date of establishment
- Number of trees x ha established
- Established tree species
- Type of support provided by the organization to producers (technical assistance, financing, coffee marketing, others)

Step 4a: In the event that financing is required for the establishment and/or enrichment of the SAF, Solidaridad develops the investment case from the perspective of the producer and groups the producers to achieve the necessary economy of scale to attract the required investment. . Solidaridad is currently working with Rabobank and other financial partners to develop the necessary financial mechanisms to channel to producers the pre-financing required to scale carbon production.

Step 5: Solidaridad identifies the ecoregion to which the producers belong to determine if the biomass calculation has already been carried out in that ecoregion.

Step 6: If there are producers located in an ecoregion where the biomass calculation has not been carried out, this process must be carried out

Step 7: Prepare induction materials that allow understanding the technical, methodological and financial elements of the carbon market process and how agroforestry systems have the elements required to be considered. Develop and implement a process of training and accompaniment of

producers in alliance with the technical teams of the organizations. This process must consider the different managerial, technical and producer organizational levels.

Step 8: Solidaridad and the local organization carry out the process of onboarding the producers to the ACORN platform. The local organization hires technicians to survey the polygons, fill out the socioeconomic file, sign the consent agreement for the use and analysis of biomass data within the Agroforestry System. Solidaridad staff perform data quality control and supervise the entire process in the field, and send the data to Acorn.

Step 9: Solidaridad and the local partner communicate to the producers the number of CRUs generated by each of their farms and the payment they will receive (in cash and in kind) and how and when they will receive it.

Step 10: Solidaridad receives the payment for the CRUs generated from Acorn and transfers it to the local partner to be delivered to the producers. Solidaridad shares with the local partner 10% of the sale of the CRUs to cover the costs for the onboarding of the producers.

9. Describe project employment policies regarding employment of youths, women, and disadvantaged groups.

See Solidaridad code of conduct (Annex 13). Aldea do not have their own policy in this area, but there is a public and open process (bids), shared on communication platforms in the hiring of personnel, for the activities that the foundation demands, in relation to the execution of the projects. Currently, the development of a contracting policy and administrative processes is planned, including transparency, non-discrimination and evaluation of the abilities of the applicants. Both Solidaridad and Aldea do not employee people under the age of 18 according to the Nicaraguan law. Simultaneously, Fundación Aldea has a gender policy, which expresses the commitment to promote gender equality within all its organizational structure. The gender policy is fully in line with the United Nations Sustainable Development Goals (SDGs), where explicit commitments to gender equality are made, both as an independent objective on gender equality and the empowerment of women. (SDG 5) as one of the themes that crosses all the SDGs. See attached documents

10. Describe how women are involved in the project but NOT as farmers (i.e. partnering nurseries, training).

Aldea Foundation works with wives and daughters of associates, in economic initiatives and support for young people, children of associates. Simultaneously, the economic empowerment of women will be promoted, through the legalization of land in their name and support for young people through a strategy of generational change, with the establishment of agroforestry systems. Women are also employed in roles such a monitoring, technical assistance, nurseries, and agronomist in the project, not to mention the female employees within the Solidaridad and Aldea team (see Part E section 6 on women's empowerment).

11. Describe how the project will promote knowledge sharing among participants and the community.

Fundación Aldea from its "Nuestra Finca Sostenible" Program executes actions to improve productivity in coffee farms, and manage the certification of specialty coffee. These actions are complemented by training processes and personalized technical advice so that producers can access the carbon credits market.The program includes a Digital Technical Advisory model, made up of a Technical Advisory Coordinator, 6 specialist agronomists and a network of 50 promoters (daughters and sons of producers) who serve more than 2,000 small associated producers. A curriculum of agronomic management of coffee cultivation was established according to its phenological stages with which producers are trained. The Technical Advisors, each one has assigned between 6 to 8 promoters to whom it follows up for the execution of the training activities. The promoters replicate with the producers the trainings received. Each developer is assigned a total of 40 associates located in the surrounding communities where he/she lives.

The theme of the operation of carbon credits will be taught within the training programs and the incorporation of more small producers into this carbon capture program will be promoted through the establishment of SAF Café. Complementary to the Technical Advice, the use of the AldeaTech mobile application is promoted, which is a digital technical advisory platform specialized in agroclimatic coffee information.

Solidaridad will also have a community representative at project council meetings to ensure knowledge from outside of the project is also being shared within the project.

Part I: Financial Feasibility

1. Provide a detailed business case for the project, including:
    - the expected annual income from agricultural production and carbon sequestration
    - the expected costs associated with the transition to agroforestry and the generation and trading of CRUs (e.g. planting materials, fertilizer costs, temporary labor cost)
    - The expected productivity changes that will result from project interventions

See Annex 5 for local partner and farmer business case.

The Agroforestry design in Nicaragua makes sense for a farmer's perspective. A typical farmer, predominantly growing coffee with some banana production, has a baseline profit of ~EUR 2500 per year (for 1,44ha). Although the farmer has to make some transition costs in terms of purchasing seedlings and providing labour for planting and ongoing maintenance of the additionally planted trees, the additional income due to productivity and price increases of coffee, growing avocado and additional carbon revenue lead to an improved baseline profit for the farmers. Through working with Acorn, coffee farmers of Solidaridad generate an average of ~4 CRUs over a 20-year period leading to EUR 61 in additional carbon revenues per year and a total of EUR 1280 over a 20-year period. Carbon revenues represent 1-4% of additional revenues compared to a farmer's baseline.

The business case for Solidaridad, entitled to withhold 10% of the CRU revenue is solid as well. As the "Investment Costs Farmers" (e.g. tree planting costs and all other expenses that are of direct benefit for the farmers) can be withhold for 80% of the CRU revenue, Solidaridad generates a recurring income stream through the CRU revenue (EUR 3 million in a 20 year period) by which it can fund ongoing operations. CRU revenues exceed Solidaridad's direct local partners costs (those that have to be covered by the 10% of the CRU revenue) in 2023. The work Solidaridad did before engaging with Acorn has been financed through pre-available grant funding. Furthermore, Solidaridad Nicaragua has additional grant funding available to finance its ongoing operations through the Dutch Postcode Lotery DreamFund of which Nicaragua is a focus country.

2. What measures are in place to ensure that you do not draw 10% of sales income for ongoing coordination, administration and monitoring costs? (e.g. earmarked funds or separate account for farmer payments).

The Solidaridad Central America and Mexico program is committed to implementing and scaling the ACORN program in the coming years. We have already secured significant (grant) funding to enable us to onboard 25,000 farmers to ACORN i 2022-7 and will continue to secure additional funding to scale this figure further. This funding, organizational commitment, and existing infrastructure will enable us to cover coordination, administration and M&E costs without drawing on the CRU commission. The 10% will be used as income for project administration and monitoring expenses, where a budget will be drawn up between the Aldea Foundation and Solidaridad, prior to its execution.

Fundación Aldea will monitor the financial programming of the income generated by the sale of carbon. For each payment of CRUs, no more than 5% will be calculated for administrative expenses for Aldea Foundation. An expense budget will be prepared based on the amount generated by 5% of the income from the sale of carbon. A percentage is contemplated for training, follow-up and operating expenses.

Part J: Payments and Benefit Sharing

1. Provide evidence on how CRU payments will be disbursed to participants and equate to at least 80% of proceeds.

Solidaridad receives 90% of the value of the CRUs, retains 10% and distributes 80% to producers. For now, payments to producers will be made through the anchor companies and NGOs (currently Aldea Foundation) that have a direct relationship with producers. This is also to comply with Nicaraguan regulations about what is considered or could be considered a commercial activity, as well as the possible distribution channels of the payment for the sale of the CRUs. These companies will pay the farmers through the payment system they use to make the purchase of coffee, either by bank transfer or by check (for cash), in both cases there is a settlement document, which explains in a clear and transparent way the payment was received by each associate, this information will be provided to the producer, which must be signed at the time of receiving payment. All supporting information will be provided to Acorn to demonstrate the proper functioning of the payment mechanism.

In 2022/3, the feasibility of using financial technology will be analyzed, taking into account the existing financial regulation. In the case of producers affiliated with robust organizations, where the role of Solidaridad is less (for example, we do not provide pre-financing, the SAF are already established, or the polygons already exist), the possibility of sharing the 10 % with this organization may be possible. Possible changes in national laws regarding payments for the sale of CO2 and the possibility that they will be subject to taxes in the near future, or other transactional costs, will also be taken into account. Payments will be made according to the performance of the agroforestry systems, that is, producers will be paid according to the growth of the trees on their farms and the corresponding value of biomass (delta).

During the second reporting year, it was discussed during the project council meeting the approach to pay out farmers. It was decided that all CRU revenues would be shared among participants based on the size of their participating plots. Fundación Aldea will make payments to the farmers through the alliance with Aldea Global, which has offices in the municipalities where the producers of the project are located. A spreadsheet will be made with the description of the liquidation of the CRU's reported in the ACORN system. Please keep in mind the local partner will be paid USD from rabobank and the conversion rate to local currency (Cordobas) will be used to pay farmers. The liquidation is a document, which explains in a clear and transparent way the payment to be received by each associate, this information will be provided to the producer, a copy of which must be signed at the time of receiving their payment. All supporting information will be provided to demonstrate the proper functioning of the payment mechanism. In the near future Aldea will use their new Tech App to track payment to each farmer instead of forms for better transparency and efficiency.

2. Describe what proportion of cash payments will be disbursed to farmers.

The producer will receive in cash (online bank transfer or check) for the full value of the farmer CRUs generated. Only 20% of farmers prefer a bank account transfer over a cheque. Farmers can use their CRU income to then request “in kind payments” from Aldea such as planting materials and tools. However, for traceability all farmers will be paid in cash or online payment. Solidaridad accompanies the decision-making process on the distribution of cash, always respecting the autonomy of the organizations. In the event that a producer generates less than USD 50 in a year, it is proposed to

retain this payment until the next cycle to reduce transaction costs. This point to be confirmed with Rabobank. In 2022, payments will be documented using the systems of local organizations that do business with their suppliers. In some cases, this proof can be electronic, and in other cases it can be a physical document, signed by the producer. In the near future Aldea will use their new Tech App to track payment to each farmer instead of forms for better transparency and efficiency.

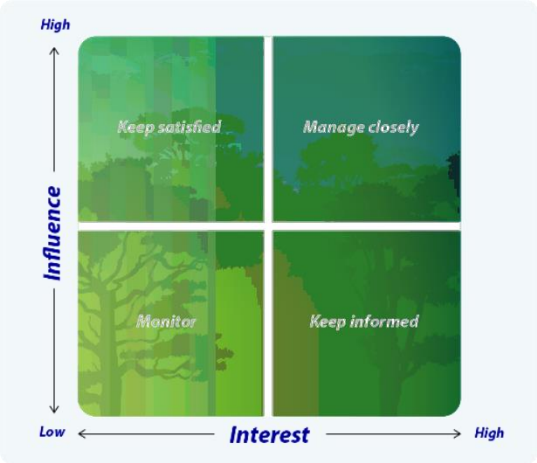
Fundación Aldea through Aldea Global has designed a payment mechanism from its branches called ALDEAS. The payment will be made through a settlement, which is a document that records the information on the income generated by carbon capture and administrative expenses, indicating the net payment for each producer, according to the policy for these payments. Once Fundación Aldea receives the funds for these payments, the producers are informed so that they can go to any of the ALDEAS branches to withdraw their payment if they choose. These payments will be made personally and directly to the producer.

3. Describe what proportion and type of in-kind benefits will be provided to farmers.

The farmer will receive all CRU income in cash (cheque) or online transfer (20% of farmers to bank account). Originally, it was thought farmers could optionally choose whether they wanted their payment in kind or cash on a case by case basis, however, this was not preferred in the end due to poor traceability to ensure the farmers get the exact amount of their payment. However, Aldea offers all farmers the chance to use their CRUs as a sort of in-kind payment to purchase planting materials with the money they receive from them.

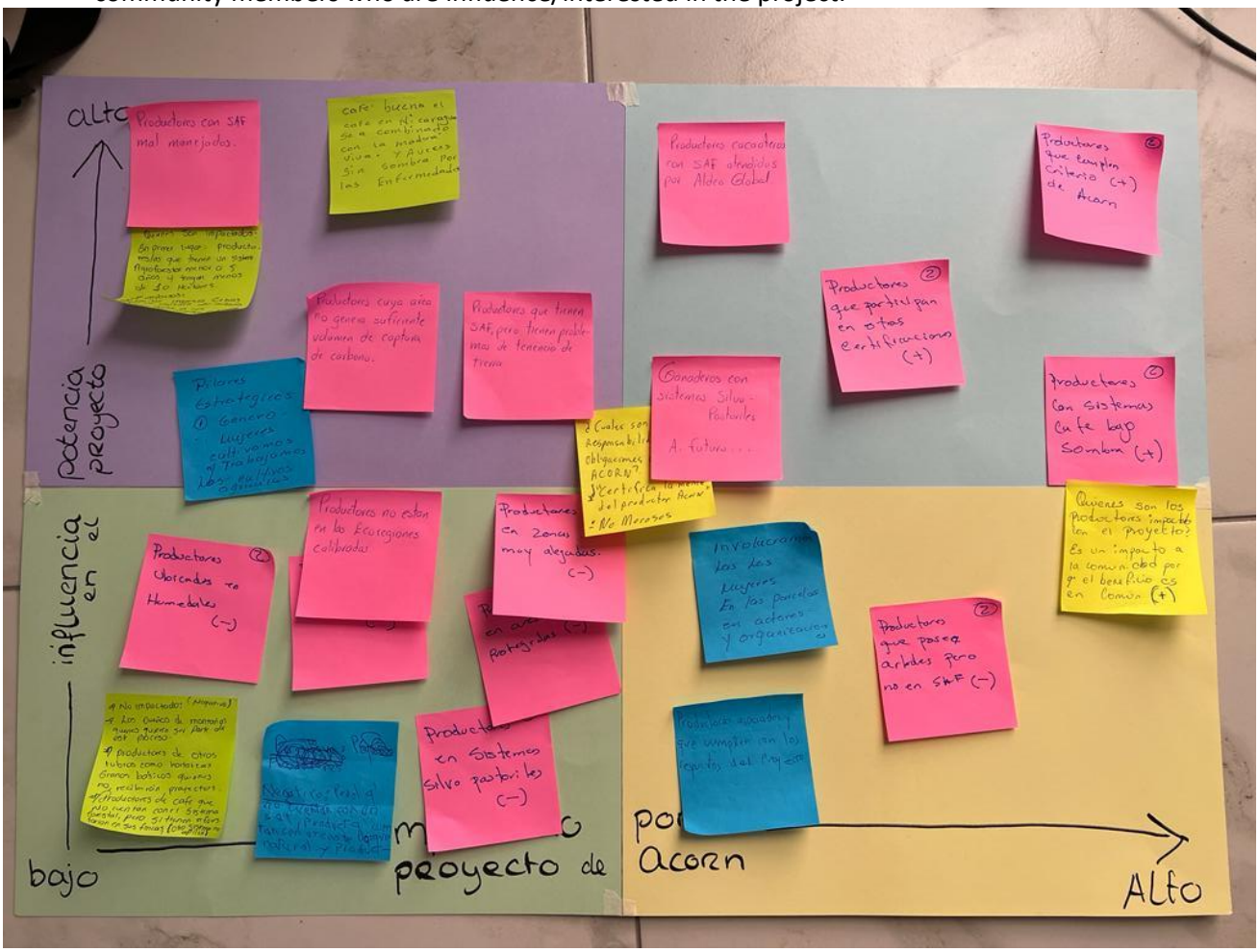
Benefit	Examples	Description
Inputs	• Seedling costs • Sapling costs • Fertilizer	n/a
Education	• Training costs • Agronomist consultation costs	n/a
Operation	• Mobile communication costs • Mobile payment costs • Fencing	n/a
Livelihood	• Land tenure consultation costs	n/a

Part K: Stakeholder Analysis



1. Referring to the stakeholder analysis figure above, describe the interest and influence each stakeholder has in the project and justify the reason for this in the table below. All stakeholders that receive outcomes other than "Monitoring" must be informed of the project (e.g. newsletters) and their views/approval sought where necessary. Please add rows for additional stakeholders as necessary.

   Below, evidence of the deep dive stakeholder analysis to identify vulnerable farmers and community members who are influence/interested in the project.



Below the evidence of the project level stakeholder analysis:

Stakeholder	Interest	Influence	Justification	Outcome	Informed
Farmers	High	High	Active communication will be maintained through technical advisors, digital platform, face-to-face meetings, where progress, accountability and service improvements are reported. A carbon capture report will be provided for each beneficiary, which will be included in the Village Tech platform, where it will be accessible to each associate.	Manage closely	Yes
Local communities	High	High	Information will be provided to communities on the benefits of the program. Local communities must be informed and engaged in a participatory manner. Participation verification documentation and visual resources will be attached (Annex 7) including memories of community meetings, lists of participants and photographs.	Manage closely	Yes
National government	High	High	A presentation of the project will be made (either online or in person) to the local and national authorities as requested, the pertinent communication has been made to carry out the activity.	Manage closely	Yes

Local government	High	High	Local government carry out visits to project site to review agroforestry systems and update municipal/departmental/national registry of agroforestry systems. INAFOR registers forest plantations, and provides follow-up to agroforestry systems MARENA, entity that administers the environmental law, which includes programs related to carbon capture, through the climate change secretary	Manage closely	Yes
Donors	High	Low	Project funded by donor funds who will be informed in regular reports	Keep informed	Yes
NGOs	High	High	Grant financing from Aldea Global for the establishment of this agroforestry project . Solidaridad will partner with other NGOs to reach scale.	Manage Closely	Yes
Procurement (nurseries)	High	Low	Suppliers of planting materials from local nurseries and agricultural inputs. Agreements with agri-input providers have been made including nurseries providing high-quality saplings are vital to reach scale. Just one nursery informed to date.	Keep informed	Yes
Corporate buyers	Low	Low	Rabobank to lead CRU sales; Solidaridad occasionally discusses CRU purchases with corporates in the agrifood sector and will inform of the project as necessary.	Monitor	N
Financial partners/ institutions	High	High	Scaling the project depends on facilitating access to adequate finance for carbon farming - the farmer business case will be disseminated to financial institutions for their support	Manage closely	Y

Part L: Reversal Risk Assessment

Project phase	Drivers behind reversal risk	Risk level	Potential mitigating measures	Justification
Project adoption/start	Limited education or inadequate understanding of agroforestry	Low	• Build on local culture, traditions and markets[4] • Ensure accessible training • Secure agronomist assistance	Solidaridad has built up expertise in training and accompanying small farmers and producer organisations to implement good agricultural practices, and, in particular, climate smart coffee and cocoa. Through a team of experts (an agricultural technician, forestry technician and agronomist) in Nicaragua and the wider Central American region, as well as partner organisations, Solidaridad provides technical assistance, digital solutions and training to extension service providers, producers, workers and their families. The local technicians are from the area of the farmers, familiar with the local culture/traditions of the producers. There is an assigned technician in that specific area who has a training plan for producers fitted to their land. After consultation the technician identifies agroforestry implementation practices and potential negative impacts.
	Marginal community support or low community involvement	Low	• Explore farmer needs • Promote program • Demonstrate positive impact on social and	Aldea Foundation promotes this agroforestry program and the expected benefits to every farmer that asks for a loan to renovate their coffee. Aldea gives them the credit under the precondition of

			economic well-being	transitioning to an agroforestry system. At the end of the day it is the farmers own decision, however Solidaridad involve the community and increase campaigns to strengthen the community about the importance of these agroforestry systems and this program in particular. The barriers all farmers (sample of 3949 farmers from all villages in project area) face were discussed and considered during workshops and meeting during project design and were considered at this stage (i.e. lack of resources, technical skills, knowledge). Farmer barriers will continue to be identified and resolved during project council meetings over the course of the project. In the case of cocoa, Solidaridad will work with other supporting organisations, including financial institutions, farmer groups and off-takers to facilitate access to finance so that cocoa farmers can make the necessary investments in their agroforestry designs.
	Inadequate operational capacity (limited experience, no local presence)	Low	• Use the train-the-trainer principle	Fundación Solidaridad Latinoamericana (FSLA) is part of Solidaridad Network, a global network supported by an international secretariat in the Netherlands, with over 50 years' experience in

				sustainable development. Aldea foundation has been promoting agroforestry practices since 2016, actively planting trees in 2018, 2019, 2020 and 2021. Solidaridad will select community promoters, lead farmers, and technical teams from cocoa organisations, in conjunction with local organisations, and train them in theoretical and practical workshops through a learning agenda that includes both face-to-face learning sessions and the use of digital tools, such as the Carbon Farming Academy.
	Insufficient (local) nurseries	Medium	• Make upfront arrangements • Negotiate purchasing power	Solidaridad have informal partnerships with private nurseries as local community run forest nurseries do not have big enough for significant supply at scale. There is a possibility to create a contract with people in charge of forest nurseries, but it is not a common practise.
	Animal or human interference	Low	• Erect fencing (natural, etc.) • Help mediate disagreements between perceived land boundaries	Low risk of animal and human interference as the coffee farms are fenced around its perimeter. This is not seen day-to-day in project area.
Hi Project progress	Negative project cash flow	Low	• Ensure adequate financial planning • Ensure local financing for	The project is financed through a blended model that includes various grant funding and debt finance from several sources. Grant funds for support and technical advice provided by: IDB, SNV, MEDA, plus

			unforeseen events	grant funding provided through Rabobank to cover polygon data collection and farmer onboarding costs. Debt finance has been provided through Aldea Global to member producers to establish the agroforestry systems. The Solidaridad Central America and Mexico program is committed to implementing and scaling the ACORN program in the coming years. We have already secured significant (grant) funding to enable us to onboard 25,000 farmers to ACORN in 2022-7 and will continue to secure additional funding to scale this figure further.
	Poor agroforestry schemes	Low	• Encourage species and genetic diversity • Secure agronomist assistance	The tree species that will be planted (chosen by agronomist and tradition knowledge of community/farmers) as part of the project interventions include Cedrela odorata, Juglans olanchanum, Swietenia macrophylla, Albizia saman, Cordia alliodora, Pouteria sapota, Platymiscium pinnatum, Platymiscium pleiostachyum, and Orepanax germinates. The tree spacing will be as follows: Coffee 2.3 m x 1.36 m density 3200 per ha and Musaceae 5 m x 6 m density per 295, and Forest: 5 m x 10 m density per 200. Management practices will include: Early stage pruning, Sanitary pruning, Elimination of atypical plants, Conventional fertilization and in some cases organic

				amendments, Weed management, and Shade management.
	Change of land ownership and coverage	Low	• Involve one entity to manage/track rights status	Issue: Change of land ownership due to sale or mortality. Mitigation action: Employee designated to monitor land ownership can discuss continuation of the project with the new owner and change the contract.
	Political instability (e.g. war, economic crisis)	High	• Keep up-to-date on local and national political conditions	The political situation is unstable and the government have been removing NGOs legal rights. The government has a lot of influence on the projects ability to sell CRUs and have not given clear acceptance of project intervention. The team on the ground in Nicaragua keeps track of local news/radio. The REDD+ network also provides information regarding disaster prevention and actual political issues.
	Natural risks: - Fires - Pests & disease - Extreme weathers - Other events	Medium	• Perform historical risk analysis and apply applicable preventive measures • Training in effectively containing natural risks	A technician is assigned to a specific area and several producers. When there is an issue related to natural risks, they provide recommendations to that specific area or producer regarding prevention and containment of these risks in group capacity. No official risk assessment has been done in the area.
Project maturity	Logging risk	Low	• Ensure alternative fuel for wood • Ensure food productivity of trees	Low risk. Accompaniment is given with environmental campaigns to avoid deforestation, in addition, coffee certification criteria are met, which promotes the care of natural

				resources. Before project intervention slash and burn farming practices were highly prevalent in the project area but the promise of carbon finance now works as a barrier to ensure these practices do not continue and that the carbon sequestered by trees in the project area remains for at least 20 years. Logging practices are illegal, and you need a permit for it. The farmers who are part of the project are organised producers and don't do logging activities or the selling of wood.
	Waning or short-lived local partner commitment	Low	• Facilitate continuous dialogue and evaluation • Sign commitment agreements	Solidaridad enables public-private dialogue to reach commitments and implement policies that create conditions and incentives for producers to adopt sustainable practices. They also regularly convene stakeholders and design sustainability policies to enhance long term implementation and commitment to the project. Agreements are also signed as part of this project with Acorn, the local partner and the farmer, demonstrating their commitment to the longevity of this project. The ACORN supply team will keep communication open with the local partner and evaluate their commitment to the project.

1. List any reversal risks in Part M that are high-risk, provide appropriate mitigation actions, and describe how often these risks will be monitored.

Risk	Mitigation action	Monitoring Frequency	Responsible party
Political instability resulting in risk that NGO loses certification and project cannot sell CRUs	Solidaridad to present to the government on the project and receive a formal letter of approval/endorsement from the government.	Solidaridad to align with the government to monitor acceptance yearly	Solidaridad

Part M: Technical Specifications

1. Applicability Conditions

In the table below, explain how this project meets the applicability conditions of the Acorn Methodology:

	Applicability Condition	Met	Reasoning
A	The Project Interventions meet the Agroforestry definition (see Section 3 of Acorn methodology v1.0) and any trees planted are Native or Naturalized species.	Yes	Confirmed by local partner and explained in carbon baseline
B	The Project Area must not have been cleared of native vegetation within 5 years of the start of the Project Intervention.	Yes	Initially, a verbal check was performed with the local partner who confirmed this and t-5 checks from remote sensing measurements confirmed it as well
C	Individual plots within the Project Area are between 0.1 and 10 ha and are not on wetlands.	Yes	Confirmed through polygon checks
D	All land within the Project Area is either cropland or degraded land under the Baseline Scenario	Yes	Initial verbal explanation in carbon baseline by local partner and land cover check performed confirmed
E	The project interventions must not include activities that increase the total number, weight or number of grazing days for any livestock type, relative to the baseline scenario.	Yes	Explained to participants and to be confirmed by sample-based agricultural biodiversity check over the coming years
F	The project intervention must not include the planned harvesting of planted trees during or after the crediting period.	Yes	Covered in local partner contract
G	Heavy machinery must not be used for site preparation or management.	Yes	Not applicable for these smallholder farmers and covered in the local partner contract
H	The project intervention must not increase the use of synthetic (nitrogen-containing) fertilizers relative to the baseline scenario.	Yes	Covered in local partner contract
I	Soil disturbance attributable to the project intervention must not occur on more than10% of a plot that is under any of the following types of land: - Land containing organic soils; - Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in Annex 4 of Acorn Methodology	Yes	The SoilGrid confirmed that project is not on high organic soils, with the following results thickness detail 183cm, SOC content less than 20%, but 2,60%, limited clay 38%.

2. Adjustment Factors

The table below gives an overview of the adjustment factors applied for this specific project (see Annex 8 for equation input data).

AdjF Coffee	Factor (%)	Reasoning
Leakage	0%	See analysis and land cover assessment results below.
Uncertainty	24%	Aggregated uncertainty is calculated to be 24%, hence below 50%.
Pre-project	50%	Equations 1 – 3 of the methodology give us an outcome of 39,91%, hence an adjustment factor of 50% is applied to the CRU calculations. Please refer to the 52Impact analysis.

AdjF Cacao	Factor (%)	Reasoning
Leakage	0%	See analysis and land cover assessment results below.
Uncertainty	40%	Aggregated uncertainty is calculated to be 40%, hence below 50%.
Pre-project	50%	Equations 1 – 3 of the methodology give us an outcome of 50%, hence an adjustment factor of 50% is applied to the CRU calculations.

2.1 Leakage Assessment

Estimated reduction in project productivity (%)	Cash crop(s) contributing most to project productivity	Proportion of project land used to grow cash crop (%)	Type of land production will be shifted to
0	Coffee	80%	Categorized as '0'
0	Cacao	70%	Categorized as '0'

I.) Describe the potential leakage situation of the project over its lifetime.

No leaks are expected because the idea of the agroforestry design is that the impacts on coffee and / or cacao production are minimal (please see Annex 16 in the validation folder)The producers are not likely to move to other areas because the producers recognize the benefits of the system. The great effort that solidaridad must make is to train producers in shade management. Because inadequate maintenance can cause the producer to have negative results in terms of coffee or cacao production (less coffee). Therefore, the expected result is that if people do poorly (without project intervention), they cut down the trees on their farm and revert to coffee under full sun exposure. People in Nicaragua already use shade in their traditional practices. So the change in the Solidaridad model is to improve the system that producers use on a day-to-day basis and ensure success of their agroforestry system. In Nicaragua, the fine for cutting down a tree costs USD 10,000. The law is difficult to implement/control, but people are at least afraid to do so for fear of negative consequences.

Context: in the project area it is estimated that producers dedicate 80% of their land exclusively to coffee and up to 70% to cacao The other 20% is used for least one other productive activity (secondary crops like fruit or vegetables, or livestock) and secondary forest.

Coffee in full sun requires more fertilizer and lives less long, a shade system requires less fertilizer and increases the life of the plant (by 5 to 6 years more), therefore increasing productivity (net result). The incorporation of organic matter from the shade (by the litter) helps to keep the crops and

specifically cacao and coffee plants healthier (savings in phytosanitary management). In full sun, there are more pests and diseases so the producer must invest more in pesticides and insecticides. However, coffee under a shade system could result in a reduction of coffee yield at 15% if not properly managed. Therefore, although coffee production may slightly decrease under shade in comparison with full sun, the coffee that is produced will be of better quality (not damaged from the UV) and less costly inputs would be needed.

Coffee prices fluctuate with the commodity market and it is impossible to evaluate the project only by the income of the producer (because prices are not in control of the intervention). What Solidaridad intends is that if cultivation under shade has a reduction in production (amount of coffee harvested/hectare) of up to 15%, this is compensated by an increase in the useful life of coffee trees for up to 5 years (by not having the wear produced by the sun) and less inputs needed such as fertilizers and pesticides. Solidaridad is in the process of establishing their own demonstration plots to carry out research with proven results. When the useful life of the crop ends, and the renovation is done. The producer has to wait 2 years for the coffee tree to become productive again.

There are three higher costs assumed in a full sun approach without coffee:

1. The cost of not having production (because the coffee trees are barely growing in the harsh weather conditions)
2. The cost of having to do the renovation 5 years earlier than a production system with agroforestry systems would do.
3. The cost involved in the renovation (plant material, fertilizers and labor to remove the old crop and establish the new plantation).

II.) Describe the land between farms and a maximum of 5 km outside of the project area (i.e. cropland, degraded land, forest).

Shrubland	Grassland	Cropland	Built-up	Bare/ Sparse vegetation	Permanent waterbodies	Tree cover <60%	Tree cover >60%
0.446	24.035	0.816	0.284	0.123	1.204	31.332	41.757
0,0002 *(Cacao)*	37,32 *(Cacao)*	0,005 *(Cacao)*	0,12 *(Cacao)*	0,008 *(Cacao)*	0,077 *(Cacao)*	23,44 *(Cacao)*	39,01 *(Cacao)*

III.) List farmer activities (performed before project implementation) that will be displaced from project interventions and lead to an increase in emissions outside of the project area, if any.

An impact on the displacement of producers is not expected. These producers have not been in tradition for years on their land and the level of roots is very high. What could happen in a very extreme cases where coffee cannot be produced, producers may switch to other types of agricultural activities resulting in land use change. However, this is extremely unlikely, especially with the planting of shade trees which reduce the risk of such an event from climate change and the promise of CRUs for maintaining and improving their current agroforestry system. It is possible that the producers, seeing the benefits of the coffee agroforestry system, decide to change some of their lots, degraded land that was destined for other activities (example: cattle) or secondary forest, to a coffee agroforestry system. Solidaridad aims to collect polygons from secondary forest areas to give the

producer the incentive to maintain those areas, while at the same time enjoying and benefiting from their coffee plots under agroforestry systems.

Displaced farmer activity	Area activity displaced to
Not applicable	Not applicable

IV.) If leakage is like to be significant, outline the leakage mitigation and monitoring plan below

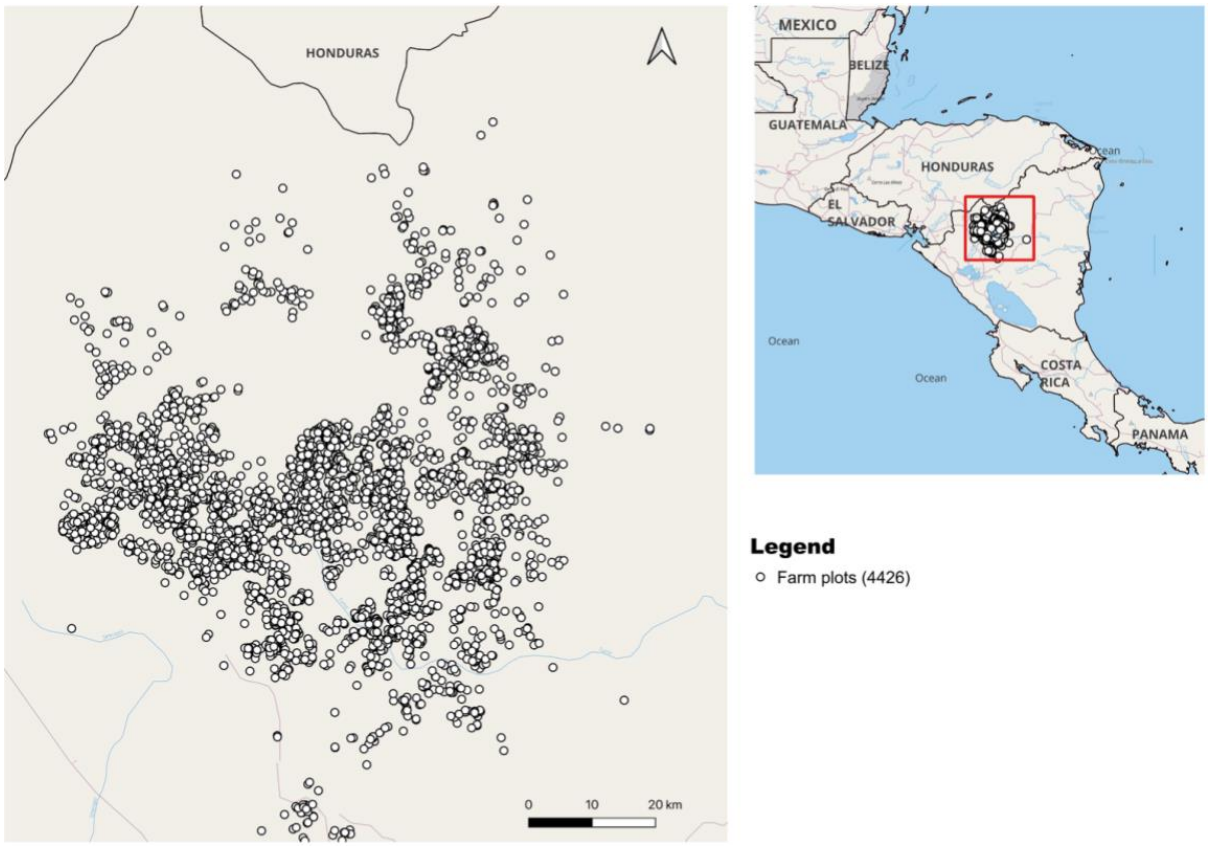
Source of leakage	Mitigation action	Monitoring Frequency	Responsible party
No significant sources	n/a	n/a	n/a

3. Root-Shoot

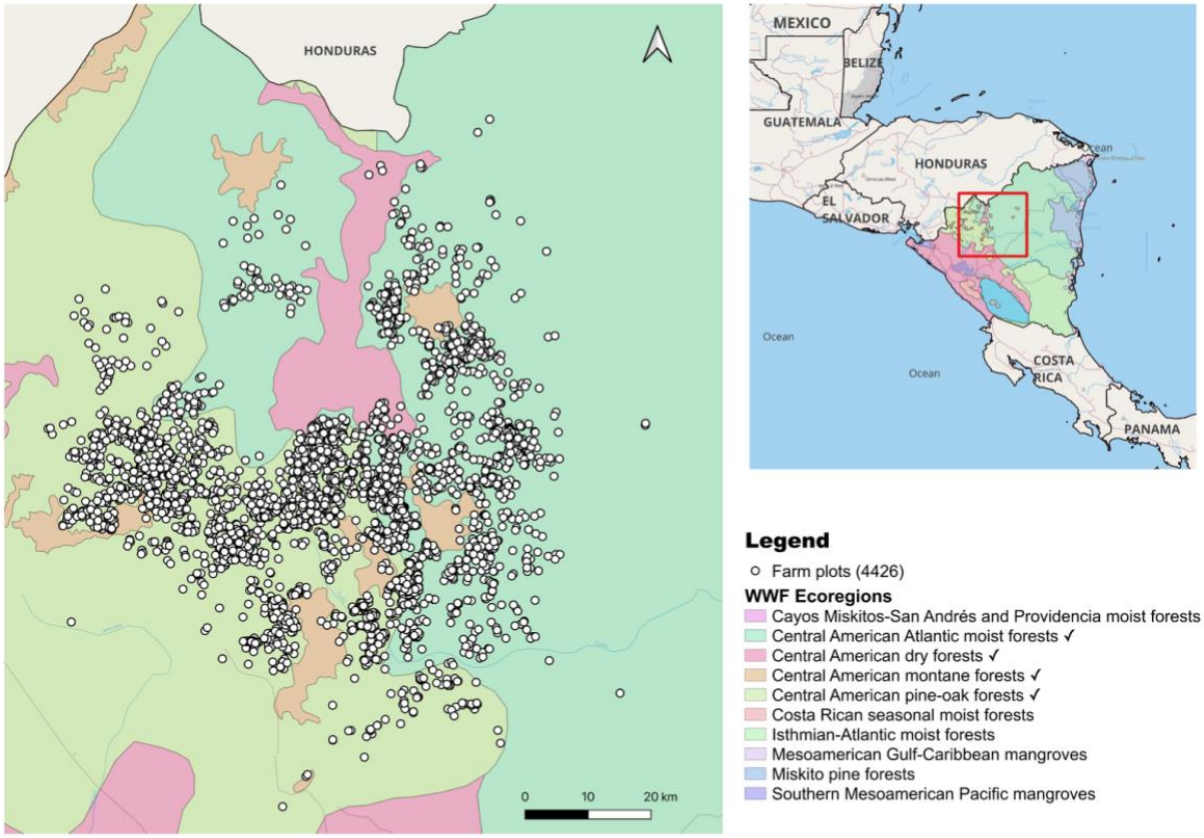
Ratio	Reasoning
0.32	The default value for root-shoot has been applied due to the absence of alternative relevant science based literature.

Annex 1: Map of project location & ecoregion(s)

The project area is marked on the land map below



Ecoregion map



Annex 2: Land Tenure Documentation (sample-based)

Provided. Concealed for data protection purposes.

Annex 3: Agroforestry system design/implementation plan

Provided. Concealed for data protection purposes.

Annex 4: Organization structure

Provided. Concealed for data protection purposes.

Annex 5: Local partner and farmer business case

Provided. Concealed for data protection purposes.

Annex 6: Letter to national government

Provided. Concealed for data protection purposes.

Annex 7: Project Council Reports

Provided. Concealed for data protection purposes.

Annex 8: Input data for adjustment factor calculations

Provided. Concealed for data protection purposes.

Annex 9: Farmer contract

Provided. Concealed for data protection purposes.

Annex 10: Local partner contract
Provided. Concealed for data protection purposes.

Annex 11: Failed T-5 plots
Provided. Concealed for data protection purposes.

Annex 12: Solidaridad code of conduct
Provided. Concealed for data protection purposes.

Annex 13: Aldea and Solidaridad contract
Provided. Concealed for data protection purposes.

Annex 14: Aldea gender policy
Provided. Concealed for data protection purposes.

Annex 15: Division of responsibilities
Provided. Concealed for data protection purposes.