



# *Solidaridad-Colombia*

Risaralda

2022

# *Introduction*

This report represents a summary of the project details. It has been created in close collaboration between Solidaridad and Acorn. A more detailed Acorn Design Document (ADD) for the project will be made available on the Acorn platform and can be requested by validation and verification bodies and certifiers for third-party oversight or quality checks. The number of participants described in this document reflects only those in the first year of the project. For the real-time number of participants at scale please see the Acorn website.

This Plan Vivo certified project run by Solidaridad in Colombia is currently helping approx. 4000 smallholder coffee farmers on 2,500 hectares in Risaralda who have recently begun the transition to agroforestry but do not have the necessary technical skills, resources and finances to successfully continue their efforts, achieve an optimal agroforestry system that will be maintained long-term. Under project intervention, farmers will plant native shade and medicinal trees in coffee plantations to improve soil quality, create a better micro-climate, increase the amount of pollinators, increase the carbon storage on farms, increase total farm productivity and income, and enhance farmer livelihood.



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# Project Summary

Local partner

**Solidaridad**

Project location

Colombia, Risaralda

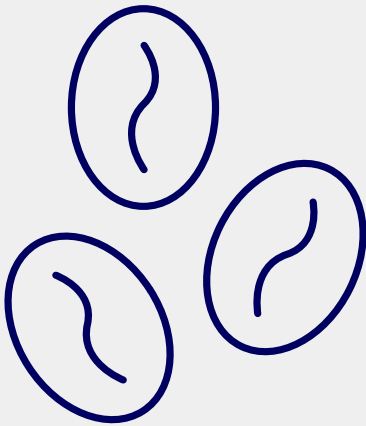
Ecoregion

Cauca valley montane forests and Cauca valley dry forests



Main crops

Coffee



Minimum number of participants



4,000+

### Potential number of additional participants



25,000+

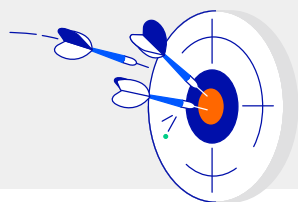
### Estimated total size of project area



2,500 ha

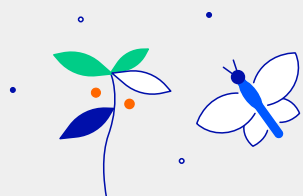
### Project's aims and objectives

- Enable smallholder farmers to increase quality and productivity of farm output, earn a living income, shape their own future, and produce in balance with nature.
- Support farmers in adapting their farmland to an agroforestry system to build resilience to climate change, avoid deforestation, and reduce and sequester carbon emissions.



### Impact to the farmer livelihood and environment

- Ability to afford diverse nutritious foods
- Increased farmer income
- Increased farm and livelihood resources
- Increased productivity and yields
- Reduced deforestation and biodiversity loss



# *Additionality*

The agroforestry transition project led by Solidaridad was established in 2018, with tree planting beginning in 2019. The project area has now grown to 2500 hectares, with farmers planting trees in 2019, 2020, 2021 and 2022. The collaboration between Acorn and Solidaridad Colombia began in 2020 to provide carbon finance as an incentive for the first 1000 farmers to maintain and enhance their agroforestry systems. From the start of their project, until the time they connected with Acorn, Solidaridad have had the intention to scale their agroforestry project by offering farmers carbon finance for the trees they plant. Therefore, this agroforestry project was initiated and the first trees planted, in response to a promise of smallholder farmers receiving carbon credits. 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.

## **Farmer Level**

Besides from a small minority of farmers, smallholder farmers in Risaralda, Colombia, do not have the financial means to implement a successful agroforestry project on their own. This barrier is enhanced due to the current lack of projects that enable farmers access to international carbon markets. Colombian farmers live below the poverty line with an income between 3000 and 4000 USD and experience losses in productivity and income due to the increasing effects of climate change. The participant farmers in this project couldn't have made a successful or long-term shift to agroforestry without the financial support provided by Solidaridad in collaboration with Acorn. The project implementation costs at the farm level were initially covered through temporary grant funding. Without consistent grant funding, Solidaridad cannot sustainably continue to support these farmers, let alone all farmers in their expansive network who have the potential to transition to agroforestry with the expected scaling of their agroforestry project. Without project interventions and carbon finance, it is likely that a part of the shade-trees and neighbouring forest would be cut down to plant more coffee or other crops for self-consumption and trading, such as bananas or sugar cane, or to extract wood to use.

Given the promise of carbon finance by partnering with Acorn, Solidaridad direct their grant funding to overcome the costs that have been restricting growth in farmer agroforestry knowledge and preventing them from implementing such practises. Solidaridad employs local agronomists to provide agroforestry training and advice to farmers, including what type of trees they should plant according to their land and crops. Such advice would have been too costly to receive if a farmer was to seek this from an agronomist themselves. This training and advice provided to farmers is only possible due to Solidaridad bearing the costs. The carbon finance that Solidaridad receives from Acorn throughout this project positively reinforces their continuous efforts to train farmers, especially while scaling. This is important as farmer knowledge and skills are the most important determinants of successful long-term agroforestry schemes. To enhance farmer knowledge of and dedication to agroforestry practises further, this project organises farmer visits to other agroforestry locations to witness the benefits for themselves, overcoming the transport costs that would normally restrict farmers from such a learning experience. Without the necessary expert based training, that is normally too costly for farmers, it is likely than any transition to agroforestry a farmer would have attempted to make without the support of this project would have failed and left them in

a more dire financial state than before. The clear financial benefit in the form of carbon credits that this project offer farmers as a reward for their mitigation action is an enabling factor for their transition to a successful long-term agroforestry system.

### Project level

Solidaridad do not work with a fixed number of smallholder farmers but a constantly growing and expanding network. Solidaridad's aim for this project is to increase the uptake of climate smart agriculture in the coffee supply chain through agroforestry, resulting in higher productivity and grain quality, lower carbon emissions and avoid deforestation. The first trees planted under the initial phase of this project are few compared with what will be planted over the following phases in Solidaridad's agroforestry design, provided capital in the form of carbon finance is available to support further scaling. Only focusing on the initial farmers who plant the first trees takes away from the additionality of the full project. The farmers expected to transition to agroforestry with the scaling of the project must also be considered. If the first farmers who transitioned with Solidaridad are not rewarded with income from the carbon credits, they may be discouraged from scaling up their agroforestry interventions after all their hard work and lack of significant benefits. 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. The success of the first farmers, who are financially compensated for the carbon they have sequestered, will work as an extra stimulus to increase the participation of the wide range of farmers that Solidaridad has access to, roughly 25,000 in the coming 5 years. Additionally, the project as a whole will not receive investment unless funders have proof of and faith in the carbon credit system. Providing carbon finance to compensate Colombian farmers is the only practical way to achieve scale and proof of concept.



# Project Baseline

### Land use

The project intervention will take place on land that is used by smallholder farmers for the purpose of coffee cultivation. Farmers also use a section of their land for livestock, including chickens, pigs and rabbits. Between 2-5% of the project area is planted with crops other than coffee. These secondary crops include sugar cane, cocoa and bananas for trading and self-consumption, and citric fruits, beans and corn as a staple food. Without project interventions, farmers would possibly be inclined to cut down their shade-trees in



times of financial hardship to sell for wood. However, this is unlikely on some farms due to unfavourable slope conditions. The likely situation without project intervention is that farmers would not continue to plant more trees on their land, instead placing more focus on the expansion of coffee crops for trading. Before project intervention, most farmers in the region were not aware of the benefits that come from protecting shade trees. It is likely in this situation that farmers would not have sufficient knowledge, skills or awareness to care for and maintain the existing trees on their farms successfully long-term. Without the project intervention, the number of trees and crops currently on the land would remain the same, no additional trees would be planted because farmers would have expected coffee to be grown better in full sunlight. The productivity levels of the coffee crops would remain unstable and decrease slowly due to the impacts of climate change. Without further planting of additional trees, there would be less shade and protection from extreme weather and the impacts on crop, soil, flora, and fauna health.

#### Habitat species

Participant land is located in a Colombian Sub tropical Andean ecosystem and consists of crops, native trees and livestock. The most prevalent tree species in the project area include:

- *Cordia alliodora*
- *Inga edulis*
- *Inga spectabilis*
- *Cedrela odorata*
- *Persea Americana*

Without project intervention, the tree species would be expected to remain the same. However, biodiversity in terms of pollinators and wild animal species abundance would be expected to slowly decline without project interventions due to climate change. Animal species regularly observed in the project area include squirrels, possums, sparrows, owls, snakes and armadillos. Threatened species such as the Military Macaw and Giant Anteater have also been observed in the project area. Without project intervention, threatened species observed in the project area expected to decline, according to IUCN Red list, include:

- *Momotus aequatorialis*
- *Caenolestes convelatus*
- *Myrmecophaga tridactyla*
- *Ara militaris*

# Socio-Economic Benefits

Area	Indicator	Result
Local livelihood	Nutritional variety	The average farmer consumes 7 food groups daily
	Agricultural land use productivity	875kg/ha/year
Environmental improvement	Agricultural biodiversity	51% acceptable (under Gini-Simpson Index)

## Nutritional variety

Participants in Colombia have household income constraints that affect their possibilities to afford diversified and nutritious meals, leading to the consumption of a diet with little variation and poor nutrition. Farmers currently consume on average 7 food groups, with some consuming as little as 4 food groups daily. Project intervention will result in increases in food security due to the expected increases in productivity/coffee yields and income diversification from carbon credits, which help farmers to afford a variety of nutritious food. In addition, Solidaridad gave nutritional kits, including seeds (beans, maize, etc.) and chickens to be shared on a communal basis.

## Agricultural land use productivity

Farmers with an average size of 1 hectare in coffee have an average output of 1000 kg/hectare/year of dry parchment coffee. Solidaridad assumes that over the project lifespan, meaning from the implementation of agroforestry until trees are fully grown over a 20 year period, an expected increase in productivity will occur for all farmers up to 20%. In the initial (1-3) years the productivity may be slightly lower (losses of less than 5%) due to the establishment of the new agroforestry systems. From the third year onwards, productivity and the quality of the coffee produced should increase. However, it must be noted that in general, productivity levels change per year and are strongly impacted by climate (rainfall). Therefore, it will not be 100% clear what the impact of a transition to agroforestry would be from one year to another. Some farmers are worried about excessive shading reducing coffee productivity, so training in shade management and monitoring in the field is relevant and is currently part of the technical assistance provided by Solidaridad.

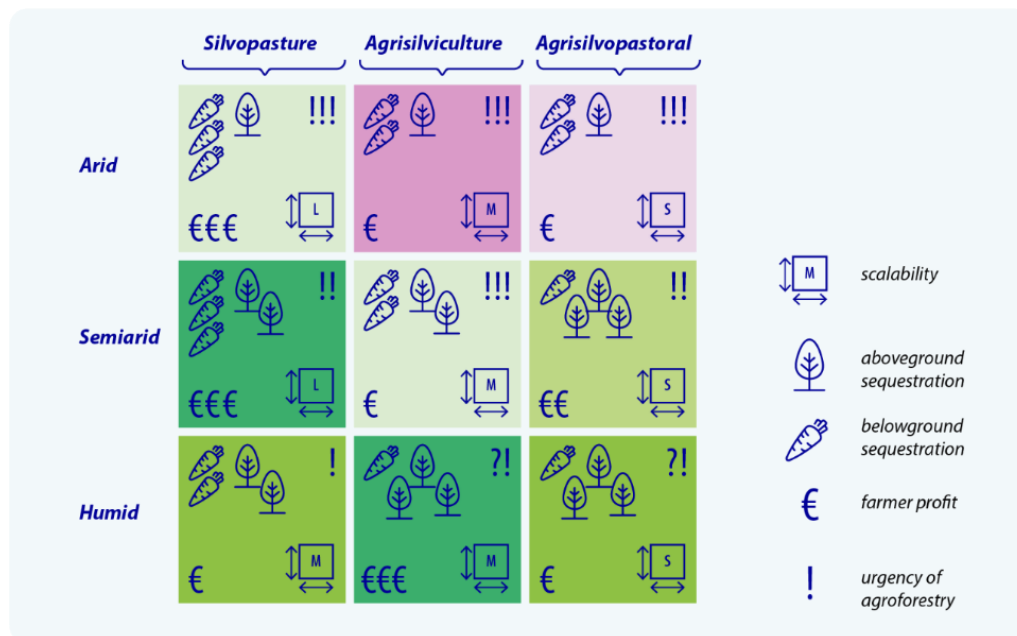
## Agricultural biodiversity

Based on the Gini-Simpson Index of 50%, the state of biodiversity in the project area is classified as average but bordering unsustainable. This result of 50% is due to the high domination of coffee crops over other crops. In the project area there is a high level of pollinators including bees, beetles, butterflies, etc. and wildlife including squirrels, possums, sparrows, owls, snakes and armadillos. The impacts of project interventions will be highly positive for biodiversity. There will be greater farmer motivation and awareness for planting a variety of trees in the productive area and taking care of the forests to create a better micro-climate for the farms and for coffee growing, soil conservation, economic benefits for farmers, and articulation with other projects. These benefits will ensure farms become a more suitable habitat or corridor for local fauna species.



# Project Activities

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 shade trees is prioritised in this system.



There are 5 native tree species promoted under the agroforestry design that provide shade, nitrogen fixation, improved soil quality and protection of coffee crops and watersheds

- *Cedrela odorata*
- *Albizia carbonaria britton*
- *Handroanthus chrysanthus (jacq.) S.O. grose*
- *Inga ornata kunth*
- *Inga spectabilis (vahl) willd*

These species are been chosen based on the input of the community and farmers, in terms of ancestral and indigenous knowledge, agronomist advice after assessing the suitability of land conditions, and the National Coffee Research Center (Cenficafe). This agroforestry design promotes the planting of 50 native shade trees per hectare among the farm over a period of 1-5 years for an optimal agroforestry design with coffee. However, the amount and type of trees they plant each year is up to them and varies depending on farmer resources and needs. For farmers with very steep land and erosion problems, shade trees are concentrated at the top of the hill; while farmers in need of organic matter will have shade trees throughout the coffee crop. Finally, as trees are also ornamental, they can be planted in the boundaries of the farm too. The ideal moment for planting shade trees is during the coffee renovation season.

# *Organisational Capacity*

Solidaridad is an international civil society organization (NGO) with over 50 years of experience in developing solutions to make communities more resilient. 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 have more than 10 years of experience working with communities in terms of agroforestry systems, climate change projects, and carbon footprint projects. With their previous project, Coffee of the Future, they have been active in the different local municipalities in the project area since 2014 working with young people, women, families, other organizations, and farmer cooperatives. Solidaridad has experience engaging, forming and strengthening groups of young lead farmers to reach and train a greater number of producers. Their programme Coffee of the Future helped them to understand their stakeholders better and gain experience working with farmers in coffee before this agroforestry project with Acorn. 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. They do this through technical visits to the farms, dialogues with the coffee growers and their families, and meetings with the community

Solidaridad pilots new approaches and methodologies in the field of social inclusion of women and young people. This helps to ensure that producers from marginalized groups cover their costs and earn at least a living income. Solidaridad believes that women can play a decisive role in improving their families' livelihoods. To increase their participation and formal leadership in agroforestry, Solidaridad developed a gender-inclusive approach to their project management and technical assistance. In this agroforestry coffee project, Solidaridad reinforces ongoing gender-focused interventions and is initiating an entrepreneurship school for young people. Solidaridad ensure participants are not excluded due to their partnership with institutions that are already in the field and have standards for inclusivity, such as the regional office of the National Coffee Federation (FNC in Spanish), which is the largest farmer association in Colombia. As farmers in the region were targeted with FNC, there is low risk of discrimination. FNC have a variety of trainings and policies for projects and leaders in the coffee sector in regards to inclusion, diversity and equity.

Solidaridad ensure knowledge sharing by training lead farmers who inspire other farmers in their communities to adopt climate-smart agriculture in their coffee crops. Solidaridad developed a strategy of "Puntos verdes" (Green points in English) in which communities may receive additional incentives to keep their practices in the long term. Green Points is a methodological strategy to encourage community work and the implementation of climate-smart practices at the farm level, as is proven that farmers influence each other. The accumulation of points is given by activities carried out by the producer and his family. The points are then exchanged for work tools, fertilizers with a low carbon footprint, etc.

# *Farmer Payment and Benefit Sharing*

Solidaridad received grant funding for the design and initial implementation of this project. The 10% of carbon finance will cover Solidaridad's costs of maintaining farmer engagement. Once received, the 80% of carbon finance will be paid to farmers and clearly earmarked for that purpose for future monitoring and evidence. It is not permitted for Solidaridad to take more than a maximum of 10% of CRU revenue, which is stated in the signed local partner contract. Payments to farmers will be done by using conventional bank accounts or digital wallets (apps installed into farmers' phone) for full transparency. Solidaridad Colombia is committed to paying back all farmers in measurable way, therefore in-kind payment will not be applicable in this project.



# Technical Specifications

## Carbon Removal Units

The number of CRUs that have been sold and retired to date are found in the table below:

Amount of CRUs retired	Crediting Period
5605	2020 - 2021

## Leakage

As described on page 10 under Socio-economic Benefits, Solidaridad assumes that over the project lifespan farmers will see up an increase of up to 20% in productivity levels. However, in the first 3 years there may be a temporary drop in productivity of no more than 5%. This is due to the fact that trees are planted in coffee renovation season (when coffee crops are pruned significantly). The reason behind this is to ensure the trees and coffee trees grow in sync. Although productivity losses of 5% may be experienced in the first years, farmers are educated on how shade trees are very important for coffee growers because of their benefits in coffee cultivation, providing organic matter to the soil, improving its fertility, improving coffee quality, improving the microclimate of the farm and improving the landscape. This education, in combination with the promise of carbon credits and the harsh slope conditions of the farms (reduced tree cutting profitability), ensures farmers activities will not be displaced to outside of the project area in these initial years. Following the initial years, the increased productivity Solidaridad expect over the life of the project will result in a reduction in deforestation for fuelwood production and greater farmer awareness for natural resource conservation. The proposal is that coffee farmers do not cut down the forests to use fuel wood that is produced in the shade trees on the farms.



[Interested?](#)

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