FarmStrong-Ivory Coast

Soubre & Abengourou

2022

Rabobank

Introduction

This report represents a summary of the project details. It has been created in close collaboration between FarmStrong 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. For a more detailed insight into the project, Acorn Design Document information detailed in the project ADD (Acorn Design Document).

This Plan Vivo certified project run by FarmStrong in Ivory Coast has helped over 16,000 smallholder cocoa farmers in Soubre and Abengourou become more climate resilient by transitioning 35,000 hectares of cultivated land to agroforestry. These recently adopted agroforestry systems will offer farmers and their families food security and income diversification, while safeguarding biodiversity, mitigating climate change and indirectly reducing deforestation.

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Project Summary

Local partner

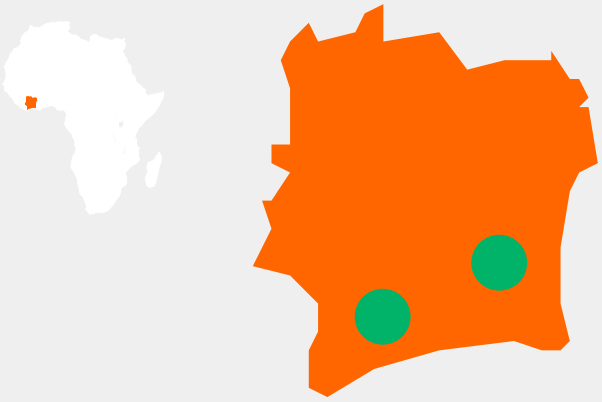
FarmStrong FOUNDATION

Project location

Côte d'Ivoire, Comoé, Abengourou
Côte d'Ivoire, Bas-Sassandra, Soubré

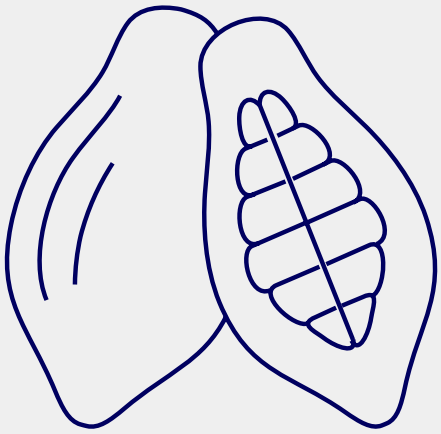
Ecoregion

Western Guinean lowland forests and
Eastern Guinean forests



Main crops

Cocoa



Number of existing participants

16,000

Potential number of additional participants

30,000+

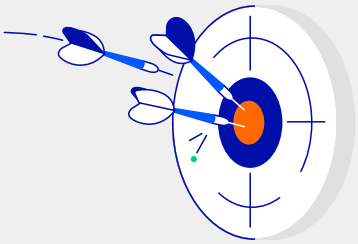
under the FarmStrong Foundation Umbrella

Estimated total size of project area

36,000 ha

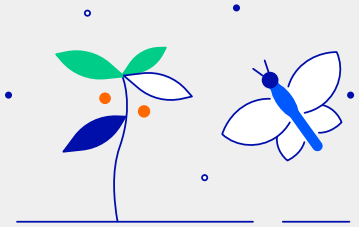
Project's aims and objectives

The aim of this project is to help remote farmers and communities build resilience to climate change by adopting agroforestry practises that will increase food and financial security, productivity and biodiversity, while indirectly reducing deforestation.



Impact to the farmer livelihood and environment

- Increased food security
- Increased farmer income
- Increase in gender equality
- Increased farmer access to resources
- Increased biodiversity on farms
- Increased total farm productivity Cocoa



Additionality

From the start of their project, until the time they connected with Acorn, FarmStrong have had the intention to scale their agroforestry project by offering farmers carbon finance for the trees they plant. As per FarmStrong's agroforestry design, the first shade and fruit trees were planted by lead farmers in 2018. This planting was undertaken in a slow and phased manner, with farmers planting their trees over multiple years based on the financial resources, funding available, and resources available. The carbon credits farmers receive for the trees planted in the project are ex-post based and will only be derived beginning from the period November 2020-2021.

Farmer Level

The project area is located in a region with a recent UNDP Human Development Indicator of 0.538. Cocoa yields of the participant farmers tend to be relatively low compared to the theoretical potential. Their current yield ranges between 350 - 500kg/ha of fermented and dried cocoa beans per year, and are not expected to significantly increase from project intervention. Although cocoa yields are not expected to change significantly, project intervention is expected to increase overall farm productivity and reduce the costs to farmers associated with chemical pesticides and fertilisers. Ivory coast farmers live below the poverty line with an income between Euro 1,250 – 1,500 per year and experience losses in their already minimal productivity and income due to the increasing effects of climate change. Even though most smallholder farmers are aware of looming climate/weather pattern changes that threaten their crops and productivity, without project intervention and the resulting carbon finance, there is no incentive whatsoever in the project area to develop agroforestry. These farmers significantly lack the financial capability to successfully transition to an agroforestry system and believe there is too much risk and effort involved in the adoption of such new practices, especially with their lacking income, resources and knowledge and no clear financial reward. This financial barrier is enhanced due to the current lack of projects that enable farmers access to international carbon markets when adopt agroforestry practices.

Project implementation costs (provision of training and sim cards, opening farmer bank accounts, supply of seedlings from nurseries, setting up women-led local nurseries, community engagement, expert and agroforestry advice) were covered through grant funding. Without expert based agroforestry training and advice, it is likely that 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. FarmStrong cannot sustainably continue to support these farmers overcome their financial barriers on temporary grant funding, let alone all 30,000 + farmers in their direct network who have the potential to transition to agroforestry with the scaling of this project. FarmStrong will direct the income they receive from carbon finance to ensure all farms have access to necessary training and supplies over the life of the project.

Although the training and resources offered by FarmStrong have helped encourage farmers to make the transition to agroforestry, the clear financial benefit in the form of carbon credits that this project offers farmers as a reward is the enabling factor. Carbon credits reward farmers for undertaking new sustainable farming practises, help them understand the long-term benefits of agroforestry, and turn them into leaders that act as role models to their community.

The additional income in the form of carbon credits ensures farmers have the physical resources necessary to maintain their trees over time and a financial buffer that prevents them from cutting them down in times of high volatility in commodity prices, low productivity and high risk of crop loss from extreme climatic events. Without a diversified income, farmers would rarely have the financial stability needed to overcome the socio-economic challenges associated with poverty and climate change and may need to make money by cutting down their trees in times of emergency. Without carbon finance, it is likely that trees in the project area and neighbouring forest would be cut down as most farmers in the region are not aware of the benefits that come from protecting shade trees. Research suggests that smallholder farmer deforestation behaviours in developing countries could stop if provided with carbon credits based on current carbon prices[1.] Therefore, carbon finance is essential to incentivise farmers linked to FarmStrong to keep their trees in the ground and to scale up agroforestry practices, not regress to behaviours contributing to deforestation. The long-term sustainability of recently implemented agroforestry systems and the first additional trees planted are jeopardized if Ivory Coast farmers don't receive compensation for the carbon they sequestered.

Project level

The first trees planted under the initial phase of this project are few compared with what will be planted over the following phases in FarmStrong's long-term agroforestry design, provided capital is available to support further scaling. The carbon credits received by the first farmers will encourage sustainable behaviours and create better practises at scale. If the first farmers who transitioned with FarmStrong are not rewarded with income from the carbon credits, both FarmStrong and the farmers may be discouraged from scaling up their agroforestry interventions using carbon credits after all their hard work and lack of significant benefits in the initial years. 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. Providing carbon finance to compensate Ivory Coast farmers is the only practical way to achieve scale and proof of concept.

Project Baseline

Land use

The project area consists of cultivated land (approx. 3 hectares per farmer) participating in existing agrisilvicultural agroforestry on which cocoa is the main cash crop. In addition to cocoa, the land is also used to grow cash crops including rubber and oil palm, and food crops such as cassava, corn, yam, plantain, and rice. Chemical fertilisers are currently doubling in price, leading to a reduction of inorganic fertiliser use. For the project area, current fertiliser application involves significant labour and does not make much impact on cocoa productivity. The least effective fertilisers are often promoted, with higher margins for the manufacturers and traders. Without project intervention, it is expected that farmers would continue to cultivate their land with highly marketable crops (rubber, cocoa, palm oil etc) and plant only invasive timber trees to be cut down and sold, moving away from the planting of fruit/medicinal trees. Farmers would also continue to use excessive amounts of fertilisers that are not ideal/suitable for the crops and land resulting in high costs and effort for the farmer with no increase in productivity. The increasing trend of reduced rainfall and increased temperatures in the project area due to climate change is resulting in the deterioration of soil health (physical and non-physical aspects such as organic material and structure etc.). These worsening soil conditions would result in the mortality of cocoa seedlings and eventually further reductions in cocoa quality and quantity produced by the farmer. Farming practices before project intervention were unsustainable, with farmers having the belief that more is better and applying this logic to result in heavy and unnecessary use of inputs which is not ideal for optimal soil health and can pollute nearby water sources especially in times of heavy rainfall or flooding.

Habitat species

The project area is considered previously degraded forestland due to unsustainable agricultural practices. Currently, biodiversity is at risk due to the lack of animals in the project area and therefore the lack of seed dispersal. The main animals found in the project area are snails, rodents, birds, antelope and snakes, including dangerous ones like mamba, cobra and python. If any animals are seen by farmers, they are normally hunted and consumed. Without project intervention (awareness and training), farmers would continue to see any wild animal species only as food to be consumed and abundance and variety of species would decline. Farmers would also prioritise the planting of only the same species of timber tree (the most profitable) for the biggest financial gain, which would reduce biodiversity and the health of the soil (microorganisms etc.). With losses in biodiversity comes losses in pollinators and higher vulnerability to disease resulting in further negative impacts to crops.

Socio-Economic Benefits

Area	Indicator	Result
Local livelihood	Nutritional variety	The average farmers consumes 7 food groups out of 13.
	Farmer income	The average farmer income received is 543,750 West African CFA Franc
	Agricultural land use productivity	450-500kg/ha/cocoa
Environmental improvement	Agricultural biodiversity	60.86 Gini Simpson Index Score

Nutritional variety

Currently, the farmers in this project cannot afford to eat a plentiful and nutritious diet, only consuming 7 food groups per day on average out of 13 (using the HDDS Index survey). They rely on subsistence crops on their farm and sometimes raised chickens. Nutritional intake in Soubre is worse than Abengourou. Intake of fruit is very low among farmers with approximately 50% of farmers consuming fruit. This is something FarmStrong hope to improve with the planting of fruit trees. Farmers are also lacking dairy sources in their diet with only 26% consuming this food group. Shade trees planted, and the carbon finance received by farmers will ensure consistent and increased farm productivity and farmer income. This income diversification and increase in consistency will increase the likelihood that farmers can afford to increase the variety of foods to consume and not have to skip meals or unequally share the food within the household.

Farmer income

Ivory coast farmers live below the poverty line with an average farmer income of 1,243,750 West African CFA Franc. This income is received from the sales of agricultural products. After deducting costs for the farmer (700,000), they are left on average with 543,750 West African CFA Franc per year. Costs for the farmers include health, education, family needs, farm maintenance, animal health, pesticides and fertilisers, and food. Project intervention is expected to positively impact this due to the income diversification and the additional revenue sources that the tree products and carbon credits offer. Farmer expenses such as pesticides and fertiliser (key costs), are also expected to drop significantly due to the increased agricultural awareness and knowledge that the project provides.

Agricultural land use productivity

The average farm output value for cocoa (fermented and dried cocoa beans) is low at 450-500kg per hectare. Project intervention is not expected to increase productivity of cocoa significantly. However, it is expected that the overall farm productivity will increase by at least 5-7% (production per hectare) over the life of the project due to the benefits of shade trees and tree-based products.

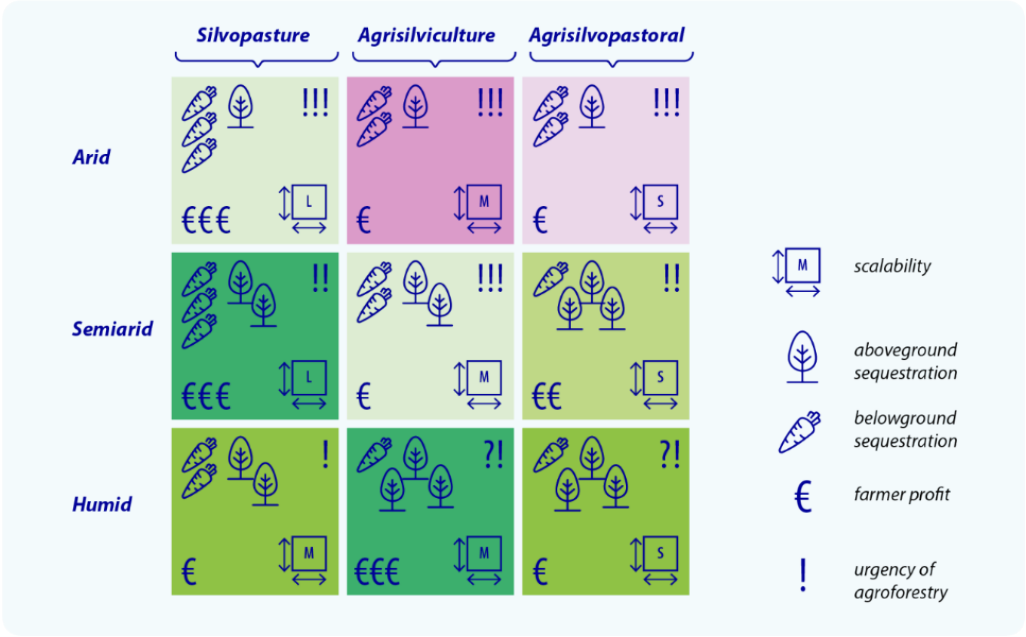
Agricultural biodiversity

The Gini Simpson index is calculated at 60.86. This score represents the diversity of crops already grown in the project area and the abundance of raised chickens and pollinators, and beekeeping activities. However, biodiversity is at risk due to the lack of diverse wild animals in the project area and therefore the lack of seed dispersal. The main animals found are rats, squirrels, birds and snakes, including dangerous ones like mamba, cobra and python. These species are ecologically or environmentally part of the ecosystem but not necessarily of high conservation value. This project is located in both the east and west of a country with

a significant amount of threatened species observed such as the leopard, wild dog and elephant. Although these species have been reported by farmers in the project area, they are not present on the farms. Increased family net revenue from carbon credits and increased productivity will allow farmers and their families to buy more meat of domesticated animals as source of protein instead of hunting which will release pressure on "bush-meat" as a source of protein. Further specific training on environmental stewardship in this project will also reduce the hunt of animals in this ecosystem. The planting of trees will provide shelter and habitat for many fauna species including threatened bird species.

Project Activities

The agroforestry system is classified as existing agrisilvicultural agroforestry in a humid environment on which cocoa is the main cash crop. The planting of shade and multi-purpose fruit trees are prioritised in this system.



There are 10 native and naturalised tree species promoted under the agroforestry design. These trees offer benefits to farmers in the form of provision of fruit, nuts, shade and medicine. They include:

- Ricinodendron heudelotii
- Irvingia gabonensis
- Cola nitida
- Cola acuminata
- Persea americana
- Mangifera indica
- Terminalia superba
- Terminalia ivorensis
- Triplochiton scleroxylon
- Cedrela odorata

Farmers are advised to plant between 50 to 100 non-cocoa trees among the cocoa trees on their farms as homogeneous as possible per hectare. Trees are planted each year by farmers in rainy season; may – October, dependent on humidity. The selection of trees species and the spacing of trees were taken into account to avoid overshading and competition. Farmers were consulted during the design of the agroforestry system to seek their input on the choice of trees planted (experience of plant disease or mortality, importance to farmer, effort required by farmer, impacts on the farm from climate change). The trees selected to be planted under the agroforestry system have also been assessed by an agronomist on their compatibility with native trees and cocoa crops to ensure trees do not perish due to competition. The agroforestry system established will lead to an increase in diversity of native tree species. This diversity enhances habitat suitability for local wildlife and pollinators in the face of climate change. The tree species prioritised under this agroforestry system will protect crops and soil from direct sunlight and extreme weather events.

Organisational Capacity

FarmStrong Foundation is registered in Switzerland as a Public Interest Foundation with an international focus. FarmStrong Foundation has local offices in Côte d'Ivoire, such as Abidjan and Soubré. Farmstrong are well known in the communities of Soubré and Abengourou as they have been active there under their former company since 2005. In the beginning, FarmStrong were positively contributing to smallholder farmer agricultural practises and wellbeing under their former company in these regions. Since 2016, FarmStrong has rebranded and directed their focus to agroforestry. Farmstrong has now reached out to 15,000 smallholder producers and their families in Côte d'Ivoire through a network of 20 experienced local technicians, two of which are in headquarters and 18 in upcountry offices in Soubré and Abengourou. Independent smallholders know that they can rely on FarmStrong Foundation's engagement capacity, and despite distances and topographical challenges, to deliver tailor-made support.

FarmStrong Foundation aims at designing, implementing and monitoring integrated agricultural production systems and rural sustainable development programs in the cocoa and coffee belt countries. One of FarmStrong's key values is to run their project with respect for the local cultural heritage, indigenous values and decision-making processes. FarmStrong Foundation have created an ad-hoc tailored program, through a comprehensive situational analysis undertaken with local producers, economic partners and authorities, that translates into a series of economic, social and environmental key interventions to benefit participants and communities. During this analysis, FarmStrong identifies both root causes as well as roadblocks that could be lifted for farmers in order to successfully diversify farmer income, increase farmer productivity, and increase food security in the community.

Farmer Payment and Benefit Sharing

Farmstrong will pay farmers through a combination of mobile digital payments (to ensure full transparency and accessibility of funds) and in-kind payment of purchasing land title certification. The latter will improve farmer livelihood by providing farmers with an official record of their land title and a feeling of long term security for them and their family on their land. The payment method of FarmStrong does not discriminate against those who do not yet have mobile banking as these farmers are supplied with a sim card as part of technical asssistance of FarmStrong. FarmStrong will split payments into two moments to ensure farmers receive payment during times that help them most (i.e. before schooling starts).

Participants have been actively engaged when determining an appropriate payment method to ensure farmers, their families and the community benefit from the carbon finance offered in a way that meets their needs in the local context. Feedback on the payment method will be encouraged during regular project council meetings where farmers are involved in the decision making process throughout project implementation.

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
33060	Nov 2020 - Nov 2021
96838	May 2021 – May 2021*

** New CRUs are all based on new plots, no re-measurement of plots has taken place yet.*

Leakage

Farmstrong is not expecting a displacement of farmer activities due to project interventions. They believe farmer activities would be more concentrated on each farmer's land as the entire system becomes more interesting and profitable. Farmstrong expects an increase in productivity of at least 5-7% (production per hectare) over the life of the project, even if the overall production of cocoa is low. Farmers have been experiencing a slight increase in total farm yield since 2020 (3 years after project start) and this is expected to gradually increase from 108 euro in 2020 to 900 euro in 2024 and remain relatively stable from there onwards. Farmers are unlikely to cut down their additional trees as they offer shade, reduce input costs and bear fruits and medicine that are consumed or sold by farmers. The tree species selected to be planted produce increase in productivity over their life, producing fruits for at least 20 and even up to 40 years.

Interested?

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