Cocoa4Future

Sustainability of production systems and new dynamics in the cocoa sector.

Objectives of the project

The overall objective is to enhance the sustainability of cocoa farms while preserving the environment by tailoring cocoa cropping systems to the changing context in Côte d'Ivoire and Ghana. The aim is to contribute to the agro ecological transition of cocoa production in these countries by proposing research that will help trigger a shift towards production systems that are in tune with environmental sustainability, economic sustainability, social responsibility, and quality standards, including ethical imperatives.

Background

In 2017, Côte d'Ivoire achieved a record cocoa production level of 2 million tons (42% of world cocoa production). Cocoa provides a livelihood for about a million smallholder farmers in this country and in Ghana, the world's second largest producer. However, this production is taking place against a backdrop of growing pressure on land and forest resources. The historically dominant cocoa production model—based on the expansion of orchards often after total forest clearing and using very cheap labour (often migrant workers)—is coming to an end. The current situation may lead to a decline in cocoa production which could be explained by various factors. Indeed, alongside their commitments to protect the last remaining forests from clearing, these two countries are grappling with the problem of ageing cocoa stands and the loss of soil fertility. The goal of rehabilitating former cocoa stands is also hampered by the presence of cocoa swollen-shoot virus (CSSV) and the global climate change (CC) trend which lead to large inter-annual fluctuations in cocoa yields and thus in cocoa farmers' incomes. Climate change is worsening the impact of CSSV and leading to a reduction in areas suitable for cocoa production.

Meanwhile, Ivorian and Ghanaian cocoa is almost exclusively traded on commodity markets which limits the added value that cocoa farmers could bring to their product. Such a situation does not encourage them to go beyond the chocolate industry's cocoa bean quality requirements and to invest in more sustainable farming systems. Under pressure from civil society and consumers, however, these requirements are becoming more stringent in terms of ethical and environmental quality of cacao. This context leads to the increasing adoption of sustainability and traceability labels and programmes that pledge environmental protection, a ban on child labour and better remuneration for cocoa farmers. However, these social and environmental responsibility tools for chocolate producers have many shortcomings, as observed in the field. These structural weaknesses are compounded by the world cocoa price volatility, even though safeguards exist, such as the minimum farm-gate price set by the Coffee and Cocoa Council (CCC) in Côte d'Ivoire.

The theory of change to achieve the objectives

The aim of the Cocoa4Future Action is to identify, assess and promote cocoa agroforestry systems (AFS) that are efficient, resilient and adapted to the changing global cocoa sector context (specific objective 1) and to identify, test and promote levers for the socioeconomic sustainability of cocoa farms (specific objective 2). The Action will target cocoa farming systems (plot scale) and production systems (farm scale), while also intervening at the territorial and supply chain levels. The project will produce knowledge based on surveys and modelling on swollen shoot, agrocecological farming systems including farmers' practices, and quality management along the value chain. To integrate

farmers' knowledge and scientific knowledge, farming systems design (or re-design) will include participatory process. Cocoa farmers' groups will be formed to determine ideal systems that would enable them to meet the pre-established specifications. These workshops will lead to the redesign/co-design of prototypes whose performances will a priori be better than those of the current cocoa production systems. Some workshops will be devoted to designing possible and preferred transitions for implementation of the selected prototypes. To scale the project results by adapting proposals to the context of each area of intervention, a strong attention will be put on advisory services provided by public services, cooperatives and private firms. The project will propose new methods and tools for advisors to address the agro ecological transition and strengthen their capacities.

The project will therefore be conducted with the key stakeholders (cocoa growers, private sector, NGOs, etc.) to promote changes in practices and the acquisition of knowledge and skills, thereby contributing to longer term impacts. Five major results are essential to be able to initiate and oversee the agro ecological transition of cocoa production in Côte d'Ivoire and Ghana (Figure 1).

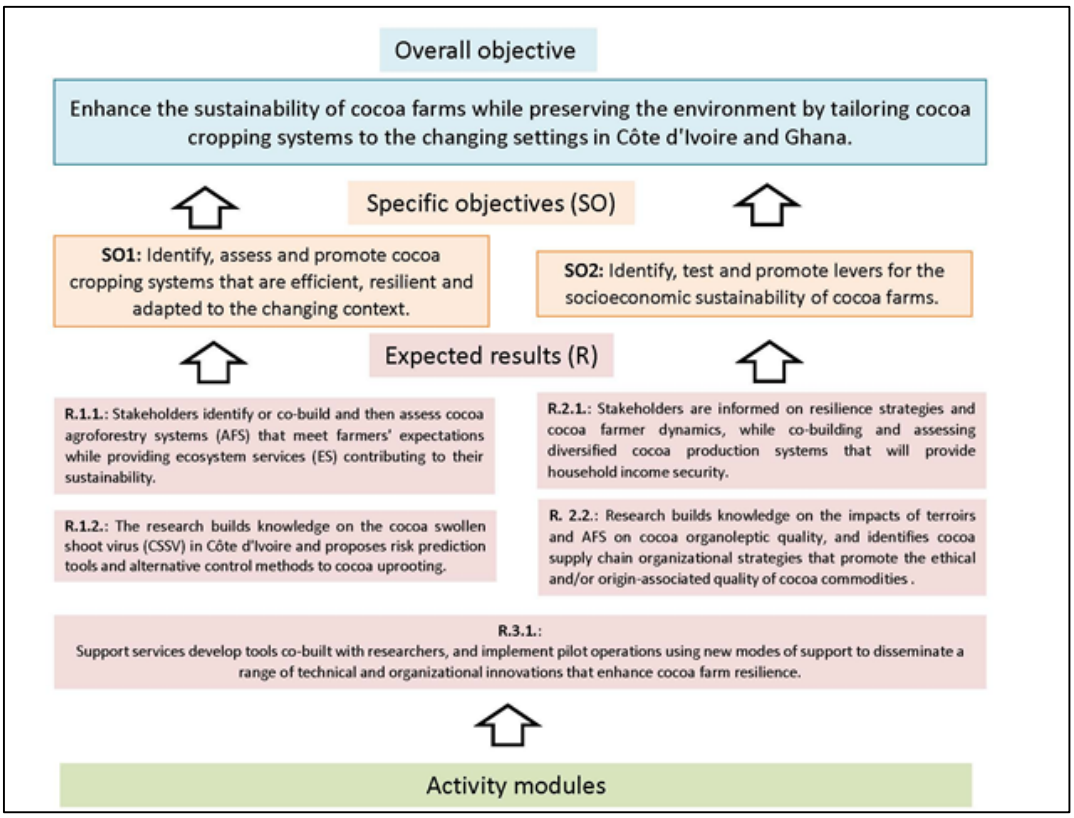

Figure 1: Impact pathway of the Cacao4Future Action

Main activities

The Cocoa4Future Action activities will be largely carried out in Côte d'Ivoire, with some also conducted in Ghana.

Firstly, a multi criteria assessment of current cocoa farming systems will be conducted to identify the most efficient ones, especially in terms of climate change, resilience and economic performance. It will be combined with the co-design (or re-design) of cocoa farming systems involving tree species associations whose benefits are in line with cocoa farmers' expectations and that could be disseminated by public or private advisory support services.

Secondly, an activity module will focus on the CSSV. It is indeed essential to measure the impact of plant diversity on mealybug vectors and determine the mechanisms involved to be able to elaborate integrated pest management guidelines, while also contributing to the co-design of cocoa AFS that meet cocoa farmers' expectations in terms of pest and disease control.

Thirdly, an *in situ* monitoring system will be set up to identify cocoa farmers' technical and social innovations, practices, constraints and decisions. Collection of this data will help gain further insight into current dynamics and identify existing practices, to draw inspiration from them, and even to disseminate the most efficient practices on a broader scale. The DeSIRA project will also identify or co-build more efficient cocoa production systems *via* diversification (rice growing/fish farming, recovery and efficient use of derivative cocoa AFS products, organic cocoa production, etc.).

Fourthly, the characteristics of some terroirs in Côte d'Ivoire could yield cocoa with features sought by chocolate makers, thus enhancing its development. The same applies if the positive effect of agroforestry practices on cocoa quality can be demonstrated. Meanwhile, identifying and analysing organizational innovations that enhance the organoleptic and ethical features of Ivorian and Ghanaian cocoa quality will help gain insight into the key factors of quality management, power relations within the sector, as well as how the socio-institutional contexts influence the different forms of quality management, particularly by farmers' organizations. Collection and analysis of this data will thus help to identify socioeconomic sustainability levers that could be used to boost cocoa farmers' incomes.

Finally, the support to advisory services (public or private) will facilitate the dissemination of knowledge and practices identified by research activities to boost innovation. The research will therefore investigate whether the advisory services have the methods necessary to support cocoa farmers, or if they need to adjust their intervention procedures or better coordinate their activities in order to improve and strengthen capacities of these farmers.

Organization

Cocoa4Future is organised around five modules to achieve the expected results. A coordination team will be established and will work under the direction of a coordinator posted in Côte d'Ivoire. The project coordinator will be assisted by a pair of coordinators for each module. The project also includes the establishment of a Steering Committee and a Scientific Committee.

Implementing organization

Centre de coopération Internationale en Recherche Agronomique pour le Développement (CIRAD).

Project partners

- ✓ training institutions (UFHB, INP-HB, UNA, ISSER, CIRES, UJLG and School of Agriculture), scientific national (CNRA, CRIG), and international (CIRAD, JRC) institutions renowned for their experience and recognized scientific expertise in agroforestry and cocoa production, as well as their training expertise;
- ✓ NGOs (Nitidae and Apdra) which support several cocoa farmers' cooperatives in Côte d'Ivoire and Ghana and intend to help identify technical solutions that could enhance the agronomic, ecological and social sustainability of cocoa farming systems.

Other stakeholders

private companies which support several cocoa farmers' cooperatives in Côte d'Ivoire and Ghana and intend to help identify technical solutions that could enhance the agronomic, ecological and social sustainability of cocoa farming systems.

Region
Côte d'Ivoire and Ghana

Funding and co-funding

EU	€ 6,000,000
Agence Française de Développement	€ 1,000,000
Total budget	€ 7,000,000

Duration
five years; February 2020 - January 2024