



CÉMOI: Promoting cocoa agroforestry in Côte d'Ivoire

CÉMOI and Transparence Cacao

In 2015, CÉMOI, a French chocolate manufacturer, launched the Transparence Cacao programme. The aim was to promote sustainability across the company's supply chain, from farmer to consumer. Through Transparence Cacao, CÉMOI supports agroforestry in Côte d'Ivoire. The programme also supports agroforestry in its other cocoa origins; Ecuador, Dominican Republic, Peru and São Tomé and Príncipe (see Table 1).

In Côte d'Ivoire, the Transparence Cacao programme is implemented together with 55,200 farmers, who are members of 92 cooperatives; they form CÉMOI's entire supply chain in the country (Figure 1). The programme involves other key actors and is based on four pillars: food quality and traceability; aromatic quality; farmers' quality of life; and environmental quality. The fourth pillar includes tackling cocoa related deforestation and promoting responsible cocoa and agroforestry.



Figure 1. Transparence Cacao – Fermentation centres (*maison du planteur*) in Cote d'Ivoire

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The opinions and views expressed in this publication are based on the company's input and do not necessarily reflect the views of Tropenbos International, Tropenbos Ghana or Nitidae.





CÉMOI was one of the earliest members of the Cocoa and Forest Initiative (CFI), joining CFI in 2017, the year it was established. Since 2019 CÉMOI has produced more than 1,131,000 tree seedlings for distribution to cocoa farmers in Côte d'Ivoire. Currently, 18% of farmers in the Transparence Cacao programme are implementing agroforestry. By the end of 2025, CÉMOI aims to achieve a target of 100% cooperatives trained in agroforestry, and 30% of farmers implementing agroforestry on 40,000 hectares in Côte d'Ivoire. In the long term, CÉMOI strives to have 100% of its farmers implementing agroforestry, but the company acknowledges the complexity of cocoa adoption by farmers and does not wish to push these targets in a top-down manner or in a way that is separate from other initiatives in Côte d'Ivoire. CÉMOI understands that collaboration and alignment with the Ivorian government is very important.

What is agroforestry and why is it important?

The threats of climate change and environmental degradation to cocoa production caused CÉMOI to adopt agroforestry as part of its environmental pillar since the beginning of the Transparence Cacao programme.

CÉMOI defines agroforestry as a dynamic, ecologically based system of managing natural resources. The system diversifies and sustains production — for increased social, economic and environmental benefits for farmers — through integrating trees on farms. Agroforestry in cocoa is a land-use system that combines growing cocoa with woody perennials (such as fruit and timber trees) and plants with high nutritional, therapeutic and market value on the same cocoa plot. Agroforestry systems offer an alternative to intensive farming and support sustainable cocoa production, while also providing additional economic and environmental benefits, such as improved food security and additional household income from fruit and timber trees.

The agroforestry models that are promoted under Transparence Cacao were developed in 2018, together with ECOTIERRA and other key partners such as World Agroforestry (ICRAF), the National Centre for Agronomic Research (CNRA), the National Extension Service (ANADER), the Forest Development Corporation (SODEFOR), and Le Conseil du Café-Cacao (the Ivorian cocoa and coffee board). The productivity of the cocoa trees is the priority, and the selection of tree species is based on their potential to improve cocoa production and income for the farmer.

Three categories of trees can be included in agroforestry systems in Transparence Cacao:

- Group A: slow-growing, high-quality timber trees that provide high levels of shade when established, and eventually provide income to farmers;
- Group B: faster-growing species (often fruit trees) that provide shade in the short term; and
- Group C: fast-growing leguminous trees that have a fast regeneration rate and can be used as a renewable source of wood energy for household use.

The Transparence Cacao programme includes five possible models for agroforestry, each with specific requirements for species selection and spacing: 1) trees inside the farm; 2) trees around the farm; 3) trees inside and around the farm; 4) alternating strips of cocoa and other trees; and 5) improved fallow or micro-forest.

CÉMOI's strategy for promoting agroforestry

CÉMOI developed an agroforestry manual in 2018 that includes these five agroforestry models. Based on this manual, more than 150 demonstration plots, each one hectare, were set up, together with cooperatives and with the support of ECOTIERRA and ICRAF. Moreover, 84 nursery workers were trained by ICRAF to produce high-quality tree seedlings, and 50 nurseries were established. Since 2019, 1,143,000 seedlings of 27 tree species have been sold by the nurseries.

CÉMOI collaborates with the cooperatives in the Transparence Cacao programme to promote agroforestry among the members. In 35 cooperatives, ICRAF and ECOTIERRA have trained field officers; they in turn are responsible for training farmers in agroforestry practices.



CÉMOI also has set up committees to further strengthen the promotion of agroforestry. At the cooperative level there are environmental committees (in 35 cooperatives), which consist of cooperative managers, nursery owners and field officers. These committees are responsible for promoting agroforestry, upkeep of the demonstration plots, and coordination of the nursery activities. There are also committees at the community level, which are linked to fermentation centres (called *maison du planteurs*; see Figure 1). This is where activities such as training and health checks of farmers are carried out, as well as agroforestry promotion. Each centre carries out agroforestry training and coaching, and has a tree nursery and an agronomist who gives support to farmers. Both levels of committees have been set up as permanent structures, not on a project basis. In the coming years, the two types of committees will be merged into one in order to establish a more comprehensive approach to farmer support.

To make farmers more aware of the benefits of agroforestry, and to encourage them to adopt it, CÉMOI organizes regular awareness campaigns. In 2021, the company reached leaders of 58 cooperatives this way, in collaboration with SODEFOR and the Ministry of Water and Forests. The campaigns focused on deforestation, tree ownership, climate change and the country's 2019 forestry code. In 2022, a further 3,500 farmers took part in the campaigns in collaboration with AGROMAP, including a visit to cocoa agroforestry farms established many years previously by SODEFOR.

Since 2017 CÉMOI and one of its partner cooperatives have collaborated with a timber company to promote tree planting on cocoa farms. The timber company provides seedlings and support to farmers to plant and nurture the trees. In return, it has the first right to buy the timber. So far, the joint project has reached 220 farmers, who planted 60 timber trees per hectare (at least three different species) on 568.82 ha between 2017 and 2022. An additional benefit of this collaboration is that it helped to establish a positive relationship between cooperatives and timber companies, which is usually not the case.


Key lessons and challenges

Nurseries need to be run as businesses: To ensure the availability of high-quality seedlings in the long term, it is important that nurseries have a solid business case. However, in some places the poor sale of tree seedlings has discouraged nursery owners. One reason for these lower sales is that the nursery owners did not have sufficient insight into the market demand for the seedlings. CÉMOI has followed up by strengthening the connection between the cooperatives and the nurseries. This includes developing a directory of tree seedling nurseries that provides their location and contact details; this is provided to the cooperatives and farmers. Moreover, TechnoServe, one of CÉMOI's technical partners, is currently preparing a business plan for the nurseries and the demonstration plots.

Farmers need to know their tree ownership rights: Often, farmers are not aware of their rights of ownership of the trees they plant on their farms. CÉMOI has worked with the Ministry of Water and Forests on sensitization of farmers of 57 cooperatives on the 2019 Forestry Code, which gives stronger tree ownership to farmers.

Raising awareness and changing behaviour takes time: CÉMOI sees that often cocoa farmers are not aware of all the benefits of having trees on their farms. Generally, farmers are aware of benefits related to drought resiliency, but there are many more advantages, such as improved food security and additional household income. It takes time to increase farmers' awareness and convince them to plant more trees. CÉMOI has noticed that when the cooperative board and managers are convinced of these benefits and are motivated to promote agroforestry, this has a strong influence on the success of awareness activities.

Cooperatives need capacities and resources to promote agroforestry: Many of the environmental committees at the cooperative level are not functioning well. Although the cooperatives recognize the importance of these committees, they are not able to manage them effectively. Merging



committees and linking them to the fermentation centres can be part of the solution to make the structure more robust, and so far this has given positive results. CÉMOI will further develop their approach and work with relevant stakeholders on ways to strengthen the effective integration of agroforestry in the business operations of the cooperatives and how the distribution of shade tree seedlings can be further integrated as a service to the members.

Next steps

Maintain the number of nurseries: By 2025, CÉMOI aims to maintain 50 nurseries under the Transparence Cacao programme, which will meet the demand for tree seedlings for 30% of the farmers under the programme. CÉMOI will support these nurseries through training and by linking them to cooperatives and their members. If relevant the number of nurseries will be expanded.

Better understanding of the costs and benefits of agroforestry: Demonstration plots (each plot is 1 ha) were established in 2017 and 2018. Data collection is ongoing and will be further strengthened in the coming years. Through this data, CÉMOI aims to assess the agronomic, economic and environmental impact of the agroforestry models and get a better understanding of the costs and benefits of agroforestry for farmers. Currently, the cost of tree seedlings and maintenance during the first year have been estimated as follows:

- between 250 and 500 CFA francs/seedling, depending on species, availability and demand;
- the average cost for land preparation (weeding, staking, planting hole) and planting is 50,000 Central African CFA francs per plot; and
- on average, plot maintenance is 100,000 CFA francs per year (after the plot is established).

Improved monitoring of agroforestry: CÉMOI and its cooperatives have explored new monitoring software, by carrying out a proof-of-concept of a digital tool to collect data from farmers, including on sustainability, and by linking this data to farm polygons. This has been successful and therefore this software will be rolled out among all the cooperatives. Moreover, CÉMOI collaborated with ICRAF to develop five key indicators for agroforestry on cocoa farms: annual survival rate during the first three years after planting; number of trees and species per hectare; stem height and diameter at ground level; canopy diameter; and age of first flowering or fruiting (for fruit trees).



Agroforestry in other cocoa origins

Since 1993 KAOKA (a subsidiary of CÉMOI) has been working in long-term partnership with cocoa farmers' organizations in Ecuador, São Tomé and Príncipe, Dominican Republic and Peru. The operations of cocoa plantations and the challenges to implementing agroforestry practices differ in each country; see Table 1 for information on Ecuador, Peru and São Tomé and Príncipe. It is estimated that currently in circa 80% of farms in these four origins agroforestry is implemented.

Table 1. Agroforestry in Ecuador, Peru and São Tomé and Príncipe

São Tomé and Príncipe	<p>Virtually all cocoa plantations are operated under an agroforestry arrangement. Since the colonial period, cocoa has been associated with shade trees, mainly leguminous species (such as <i>Erythrina</i>), fruit trees (citrus, banana trees, jackfruit) and timber species (such as <i>Cedrela odorata</i>, <i>Carapa procera</i> and <i>Milicia excelsa</i>).</p> <p>These agroforestry systems can be quite complex and it can be challenging for farmers to renovate old cocoa trees and manage shade. Since 2010 KAOKA and its local partner in São Tomé and Príncipe, CECAB (a cooperative of more than 3,000 cocoa farmers), have been implementing a large-scale renovation programme. It has renovated more than 1,000 ha of old cocoa plantation under agroforestry. CECAB is collaborating in the implementation of a project funded by the Global Environment Facility, "Restoration for ecosystem functionality and climate change mitigation in the Republic of São Tomé and Príncipe." The project has established 12 nurseries operated by trained farmers, aiming to produce and distribute 18,000 shade trees of 17 different species.</p>
Peru and Ecuador	<p>KAOKA is leading a regional programme called "Agroecological Regenerative Cocoa," in collaboration with the Alliance Bioversity International - CIAT, part of CGIAR. The programme promotes agroforestry practices to regenerate landscapes, through the restoration of degraded soils and the planting of cocoa in an agroforestry system to recreate ecological corridors between forested areas.</p> <p>With the support of ICRAF, KAOKA is promoting a participatory approach to the design of agroforestry systems. Using this approach farmers identify their needs and the constraints to implementing agroforestry. In a second step, the use of the PlantSAF tool helps farmers design their own system using species that are appropriate to the agro-ecological conditions of their plots and to their circumstances. In Peru, a total of 150 ha of full-sun cocoa plantations have been converted to agroforestry systems, and more than 50 ha of degraded soils are being regenerated in order to plant cocoa agroforestry. In 2021, KAOKA and its partners renovated and/or installed 68 ha of cocoa agroforestry in Ecuador and 80 ha in Peru and distributed 26,122 shade trees to farmers.</p>