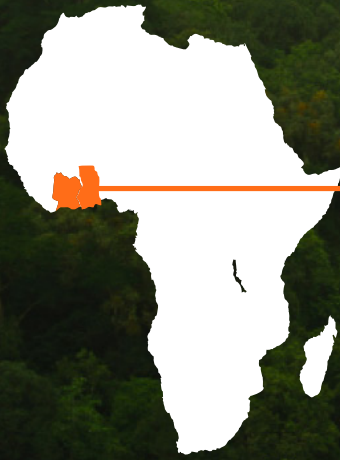


SUSTAINABILITY INITIATIVES



**COCOA
NECT.**

Forest Conservation Initiative, Ivory Coast & Ghana



REGION: Taï National Park, Ivory Coast & Kakum National Park, Ghana

FARMERS: 2,450

STARTED: 2016

CERTIFICATES: UTZ Certified, Organic in preparation

PARTNERS: The World Agroforestry Center (ICRAF), The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), The Wild Chimpanzee Foundation, Societé de Commercialisation de Café et Cacao (S3C), Cocoa Merchants Ltd, Agro-Eco.



In West Africa, decades of deforestation and environmental degradation have led to considerable biodiversity losses. In Ghana only 4% of primary forests remain relatively intact, while in Ivory Coast this is just 2%. Cocoa cultivation has been a key driver in this process. Farmers enter forests to plant the shade-tolerant crop and gradually remove the canopy. Although cocoa is known for its high potential for diverse agroforestry, light shade systems dominate the Ivorian and Ghanaian cocoa areas. Combined with decades of intensive bush meat hunting, the region has quickly lost most of its unique flora and fauna. To protect what remains, national parks play a vital role.

The Ivorian Taï National Park represents the largest remnant of Upper Guinean rainforest in West Africa. It is listed as a UNESCO World Heritage Site because of its extensive diversity: 47 of the 54 species of large mammals known to inhabit Guinean rainforests can be found in the Taï National Park. However, the unique flora and fauna of the park is under serious threat now that more than 80% of the surrounding forest has been cleared and cocoa farms occupy 53% of its borders.

As part of the Forest Conservation Initiative, Cocoonect started to implement a biodiversity-friendly cocoa programme along the Hana River on the western side of the Taï National Park. The river flows from the park to forest reserves in Liberia 25 km downstream and has long functioned as a wildlife corridor thanks to its dense riverbanks. Various animals including antelopes, duikers, elephants, and even the rare pygmy hippo have been spotted in this area. However, in the past 10 years, most of the riverbanks have been cleared by cocoa farmers and many plantations now stretch to the very edge of the riverbank. This results in streambank

erosion and pesticides directly entering the riverine system. The cocoa farms near the riverbanks also have few shade trees; surveys counted an average of only two trees per hectare.



Together with the GIZ, The Wild Chimpanzee Foundation, ICRAF, financial support from BMZ, and local exporter S3C, Cocoonect has started to restore Hana's riverbanks. Cocoa farmers have been asked to leave a 15-meter band of land from their farms along the river for reforestation, with an additional 10-meter buffer zone where no agro-inputs will be used. Agroforestry practices are being developed for use in the remaining farm area.

The programme uses Payment for Ecosystem Services (PES) where farmers receive training, access to improved planting materials, and access to chemical and organic inputs to compensate for output losses due to the river restoration project.

The Forest Conservation Initiative focuses on research and strategy evaluation. Little is known about the ►



potential of cocoa farms for biodiversity conservation. Most studies are restricted to Latin America, despite West Africa's leading producer role and high deforestation rates. Our programme is the first in West Africa to quantify trade-offs between biodiversity and cocoa productivity. 28 farms are piloting organic and chemical fertilizers, and yields are monitored in 159 pod counting plots. Insect, amphibian, and reptile diversity is sampled on these plots. We monitor organic and non-organic cocoa farms, restored riverbanks, and secondary forest patches, in order to evaluate the potential of land-sharing and land-sparing strategies.

The first-year results show higher average yields varying from 21% to 84% for five different fertilizer applications compared to control plots, as well as promising results for next midcrop looking at the increase in cherelles (see figure below). It is estimated that the main PES package applied (system A) increased the average farmer income by 1,105 Euro compared to baseline studies. Surprisingly, even the compost treatment has already seen a substantial yield increase of 40%, probably because of its nitrogen-rich chicken manure. Although all farmers clearly benefited from the fertilizer treatments, results varied significantly between farms. When considering the high costs of chemical fertilizers, this suggests a risky investment; if the selected farmers had financed all fertilizers themselves, one third of them would have not seen a return on their investment this year. Longer-term effects remain to be tested, but this emphasises the need for careful consideration of fertilizer.

A total of 36 amphibian species, seven reptile species, and 84 insect families were collected. So far, all amphibians and reptiles identified in the secondary forest were also found in cocoa farms. The scattered wasteland patches within cocoa farms seem to play a key role in their presence, signifying the conservation value of non-exploited sites in cocoa growing areas. The importance of refuge areas was confirmed when more species were found in farms closer to forest remnants and the Tai National Park, including an African rock python and even pygmy hippo tracks.

After a successful start in Ivory Coast, we have expanded the initiative to the areas around the Kakum National Park in Ghana. This park is home to a wide range of endangered fauna species, including the densest population of forest elephants in Ghana. Bird Life International recognised the park as an important bird watching area and it has become a popular tourist attraction. Protecting the unique biodiversity is vital.

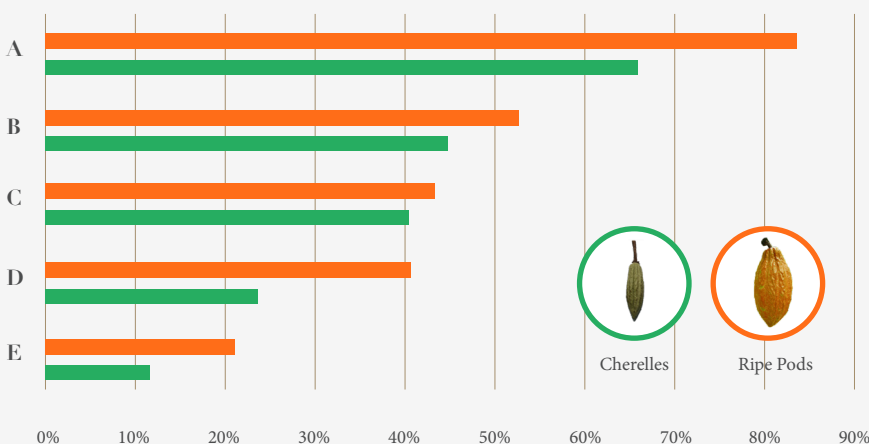


We will also expand the initiative by integrating poultry farming with local women groups to produce nitrogen-rich compost. Having witnessed the positive results of chicken manure-based compost, and its high potential to reduce costs by local production, we see this as a new opportunity to increase the profitability of cocoa farming, increase food security, and reduce our ecological footprint.



First Year Fertilizer Results

% INCREASE COMPARED TO CONTROL PLOTS



- A: 300 gr compost + 150 gr NPK + foliar fertilizer
- B: 200 gr NPK + foliar fertilizer
- C: 150 gr NPK + foliar fertilizer
- D: 500 gr compost + foliar fertilizer
- E: foliar fertilizer only

Notes: Fertilizers applications started in Sept '14 and were applied twice per year. Pod counting data presented from Sept '15 to mid Jan '16, n=26 farmers for A,B,C,E, n=12 farmers for D. All plots were treated with BIO pesticides (NEEM based).

COCOA NECT.

Connecting the world of Cocoa