Agroforestry at Barry Callebaut

Introduction

Barry Callebaut has committed to making sustainable chocolate the norm by 2025, which includes a commitment to be forest and carbon positive by 2025. For a full overview of our strategy, please visit our Forever Chocolate website. This policy paper sets out to explain Barry Callebaut's approach to agroforestry and why we deem it important. The Gold Standard Land Use & Forests Activity Requirements (Version 1.2, October 2019)[1] state: "A locally adapted agroforestry system refers to land-use systems and practices where trees are deliberately integrated with crops and/or livestock on the same land management unit adapted to the local geophysical and social conditions."

The benefits of agroforestry

An agroforestry system can have **various benefits**, such as the optimization of cocoa production through shade management, improved nutrient cycling and soil fertility, erosion control, longer productive lifespan of the cocoa trees and greater agro-biodiversity to make cocoa production more resilient. At the same time, it increases income from multiple revenue streams, reduces exposure to product and income risks and production costs.

There are also several environmental benefits, such as the capture of carbon from the atmosphere (sequestration), its long-term storage and the avoidance of further carbon emissions to the atmosphere by maintaining soil carbon and Above Ground/Below Ground Biomass (AGB and BGB). Another important component of agroforestry is that it fosters climatic resilience by helping to create favorable microclimatic conditions, facilitating water cycling, reducing run-off and erosion and providing multiple story arrangements. In terms of biodiversity, more niches for wildlife are provided, especially at forest margins, and forest tree species are regenerated and conserved. An agroforestry system aims to achieve higher yields with minimal inputs, to generate extra profit from the agronomic setup through intercropping and thus helps to prevent deforestation and forest degradation. Given the clear benefits, Barry Callebaut actively supports agroforestry systems all over the cocoa growing belt and adapts the approaches to the specific origins.

Application of Agroforestry

It is not possible to have one generic agroforestry model applied to all farms globally because it must be adapted to the local climate, soil type, biodiversity and geography, but in general, the following **guidelines** are respected by Barry Callebaut for planting trees along with cocoa:

[1] https://globalgoals.goldstandard.org/200-gs4gg-land-use-forests-activity-requirements/

1. A combination of various annual and perennial trees:
    a. 16-20 multi-purpose trees/ha that will provide shade to cocoa when mature
    b. A minimum of 3 different species: exotic species for commercial value and local species for not-for-profit use (species must be resistant to local diseases and preferably provide some nutritional benefit to the plantation)
    c. A ratio of 60 % slow- and 40 % fast-growth species
2. High productivity and income generation potential
3. Support preservation of diverse ecosystem functions
4. Adoption and implementation by communities and farmers involved in Barry Callebaut's programs
5. Introduction of tailored agroforestry models depending on the age of the trees to maximize the economic return of the farm

In **Côte d'Ivoire**, Barry Callebaut follows the recommendation of the Conseil du Café-Cacao (CCC):

1. Planting of barrier species around the cocoa plantations in order to limit the spread of Cocoa Swollen Shoot virus disease and to mark borders
2. Planting of non-cocoa trees on the cocoa plantations, given that
    a. the density of cocoa trees is not lower than 800 per ha
    b. the shade level on the plantation stays between 30 and 50 %
    c. the plant species planted next to the cocoa trees are biologically compatible
    d. the plant species are selected in partnership with the farmers

In **Ghana**, Barry Callebaut follows the guidelines of the Ghana Cocoa Board:

1. 30-70 % shade level in an established plantation
2. Managing 18-20 matures shade trees per hectare of recommended species

In **Indonesia**, Barry Callebaut adopts the following principles:

1. Shade is provided by permanent and temporary species: hardwood timber trees, coconut, perennials such as fruit trees, and other intercropped species such as bananas
2. Depending on the topography of the location (elevated or sloping ground), a suitable planting density is used to ensure a healthy growing environment with adequate sunlight and humidity for the cocoa trees
3. Terracing for each cocoa plant in a sloping area is provided to avoid erosion of nutrients and soil

In **Brazil**, Barry Callebaut promotes cabruca type agroforestry systems in the Bahía region, which support the production of cocoa while preserving the surrounding natural vegetation. The specifics are:

1. On average 1'111 cocoa trees per ha
2. Shade is provided by banana or açai plants

3. Sometimes between 20 and 40 trees of leguminous plants are planted per ha to provide temperature regulation
4. If cocoa is not planted alone with temporary shade, there are some common associations like cocoa and rubber, or cocoa and coconut

In general, for all **Rainforest Alliance/Sustainable Agriculture Network** farms, the following will be respected by Barry Callebaut:

1. At least 40 % shade
2. A minimum of 5 native species per ha

Finally, in the context of the **Cocoa and Forest Initiative (CFI)**, an agroforestry approach is being developed which will be subject to sample verification every two years. Barry Callebaut is actively involved in shaping this approach and giving advice from previous experience.