Cocoa Agroforestry at Ofi:
An opportunity for ecologically, economically and socially resilient landscapes

ICCO Symposium,
Montpellier 5 December 2022
Léonie. Bonnehin Verrier
Arsène Gondo Gbogbo
Andrew Brooks

Femmes transportant des plants aux champs pour le plantage. Hermankono Garo. Photo Soro Gnegnigui 15 septembre 2021

Context: Cocoa, the driver of deforestation in West Africa.

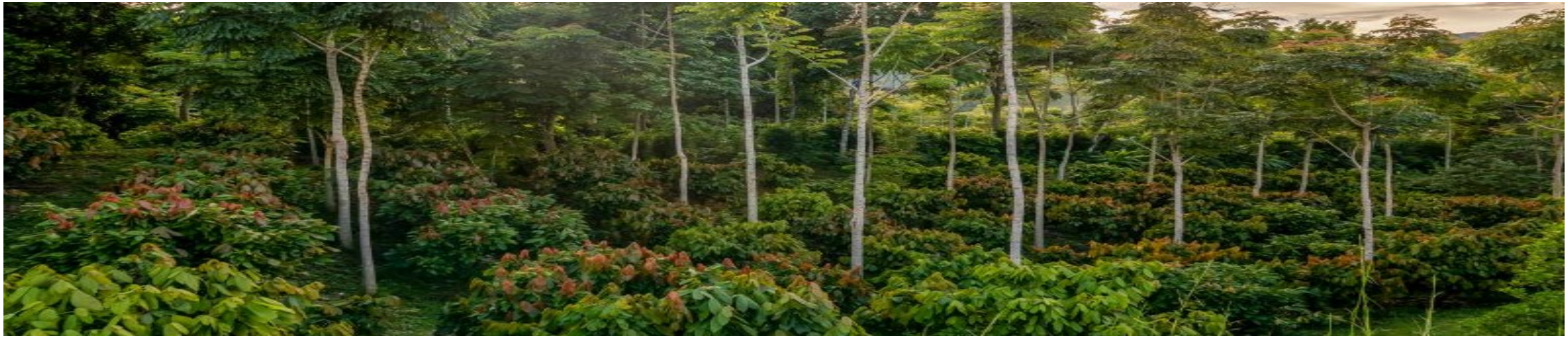
Côte d'Ivoire and Ghana are the two main cocoa producers with about 60% of the world production. These countries are also known to be the countries with the highest and fastest rate of deforestation linked to agriculture. In Côte d'Ivoire, agriculture is responsible for 62% of deforestation, of which 38% is in the cocoa sector (SEP - REDD+CI 2016).

It has been clearly established that growing cocoa in full sunlight contributes to deforestation and to the emission of greenhouse gases responsible for global warming. It is therefore necessary to change the paradigm: fight against the effects of climate change on cocoa farming, reduce carbon emissions to create favourable conditions for agriculture, including cocoa farming.

Facteurs directs de la déforestation en Côte d'Ivoire		
Expansion de l'agriculture		62 %
Dont :		
1	Cacao	38 %
2	Hévéa	23 %
3	Palmier	11 %
4	Anacarde	7 %
5	Riziculture	6 %
6	Café	5 %
7	Cultures vivrières	5 %
8	Autres cultures	4 %
Source : SEP -REDD+CI FAO, 2016		

Cocoa as a potential driver for reforestation through agroforestry

- Due to its status as a driver of deforestation, cocoa now accounts for the majority of agricultural land in West Africa:
  - about 75% of cultivated land in Côte d'Ivoire (SEP-REDD+, FAO 2016)
  - 2522170 Ha of cocoa farms (CCC 2020) in Côte d'Ivoire
- Its ecology makes it a natural candidate for cultivation under tree cover:
  - shrubby species native to the understorey of the Amazon forest
- Cocoa farming employs the largest number of rural workers;
  - about 1000000 of producers in Côte d'Ivoire (CCC 2020)



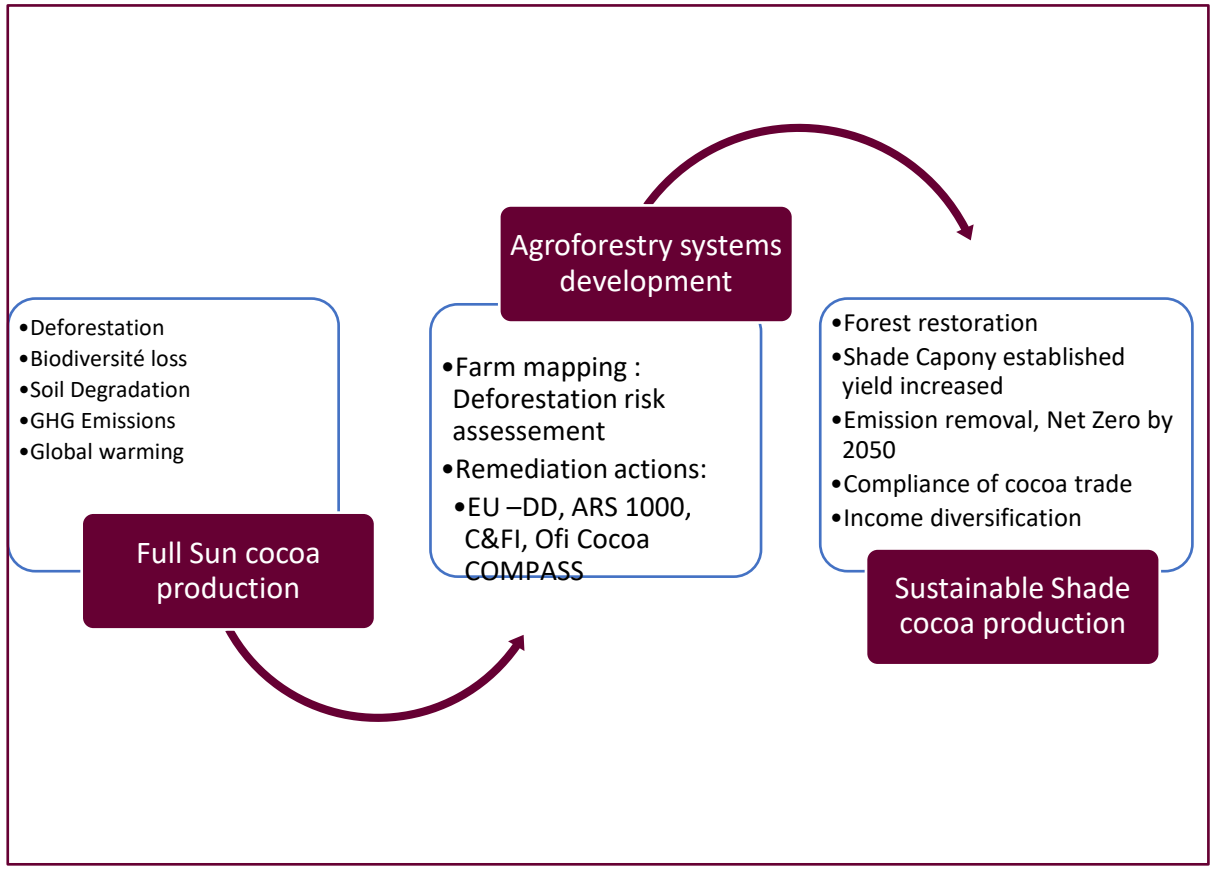
The Agroforestry action plan in Ofi supply chain :

Our Objective:

- Putting the entire supply chain under agroforestry by 2025:distribution of shade trees to coopératives and producers . Performance payment for tree planting
- Monitor tree survival rate from year N+1 after the planting over 3 years, 80 % survival rate assumed
- Satelitte monitoring (Global forest Watch Pro) ; Ground truthing /sylvicultural monitoring

On- farm agroforestry in the sustainability programmes: Where are we? What are we doing and what is expected?

A transitional phase from full sun Cocoa to shade Cocoa production (2019 to 2025)

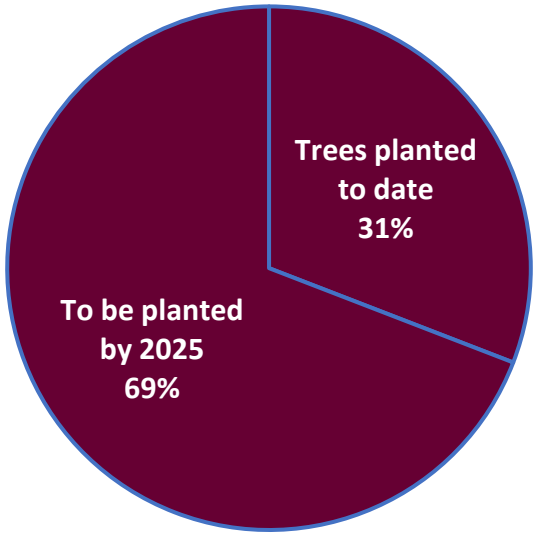


Our Interventions

- Farms Mapping
- Agroforestry on-farm requirement assessment for all sustainability programmes
- Awareness raising and training of extension agents and producers
- Production and distribution of shade trees to cooperatives and producers
- Planting in cocoa plots and maintenance by producers (20 plants/Ha)
- Digitalization of the distribution and planting process (OFIS DSE and ODK records)
- Monitoring and evaluation (survival rate in year N+1 after planting over 3 years: 80% assumed; silvicultural monitoring: ground truthing by tierce party; satellite monitoring with GFW- Pro)
- Reporting

On- farm agroforestry in the sustainability programmes in Côte d'Ivoire : Where are we? What are we doing and what is expected?

Status of shade trees distribution in all sustainability programmes in Côte d'Ivoire (Ofi & Clients) N= 5 923 085 treeS



Summary of the baseline data of the suplpy chain and tree distribution scheme

Designation	Shade trees		Trees already distributed	Trees to be distributed by 2025
	Quantity	%		
Trees requirements (20 trees/ha)	5923085			
Trees distribution scheme				
18-19	571291	10	*1865609*	
19-20	469634	8		
20-21	824684	14		
21-22	993858	17		4057476
22-23	1021206	17		
23-24	1021206	17		
24-25	1022206	17		
Total				
%		100	31	69

Nota Bene: The remaining 69% of trees are the targets for all sustainability programmes from 2022 to 2025 .(N=4 057 476)

On- farm agroforestry in Ofi sustainability programmes: Where are we? What are we doing and what is expected?

On-farm shade trees

With Agroforestry, "let's kill five birds with one stone"

- Mitigating the effects of global warming: Resilience of cocoa plantations to high tem stress with the shade canopy
- Sequestration of CO2 , Reduction / removal of GHG =SBTi Scope3 40 to 50 % by 2030; Net Zero by 2050
- Compliance of the cocoa trade with the regulations of the main cocoa markets (EU UK USA)
- Biodiversity in the agroecosystems = use of native tree species of which somes are vulnerable or endangered according to the IUCN red list
- Management of water quality and quantity (reduction of runoff speed, enhancing rainwater infiltration)
- Diversification of productions =Development of new less carbon value chains based on non-timber forest products

Forest shade tree species distributed in cocoa agroforestry in Ofi's sustainability programmes in Côte d'Ivoire since 2021. Names in italics are native forest fruit species

N°	Common name	Scientific name	Family
1	Fraké	Terminalia superba	Combretaceae
2	Framiré	Terminalia Ivorensis	
3	*Niangon*	*Heritiera utilis*	*Sterculiaceae*
4	Ilomba	Pycnanthus angolensis	Myristicaceae
5	*Akpi /Eho,*	*Ricinodendron heudoelotii*	*Euphorbiaceae*
6	Bété	Mansonia altissima	Sterculiaceae
7	Acajou	Khaya spp	Meliaceae
8	Ako	Antiaris africana	Moraceae
9	*Makoré*	*Tieghemella heckellii*	*Sapotaceae*
10	*Poivre long / Poivre africain*	*Xylopia aethiopica*	*Annonaceae*
11	Poé	Strombosia pustulata	Olacaceae
12	*KPlé /Boborou*	*Irvingia gabonnensis ; Irvingia grandifolia*	*Irvingiaceae*
13	Aniégré	Pouteria spp ex Aninguera spp	Sapotaceae
14	*Bitei, Bilè, Atiokouo*	*Beilschmiedia Bitei ; Beilschmiedia mannii*	*Lauraceae*
15	*Petit Cola /Aoulié/bitter kola*	*Garcinia kola*	*Clusiaceae*
16	Pouo	Futumia africana, Futumia elastica	Apocinaceae
17	Assamela	Pericopsis Elata	Sapotaceae
18	Azobé	Lophira alata	Ochnaceae
19	Okouro	Albizia sp	Mimosaceae

Research Questions

The research questions to be addressed to ensure the compliance of agroforestry systems and the achievement of our objectives relate to the growth and development of planted trees according to species, agroecological zones and agricultural practices

- At what age will the shade canopy become established? (Fast versus slow-growing species; non-pioneer light demander species)
- Will the expected carbon volume be achieved? (depending on annual growth indices in height and diameter of planted trees; the density and hardness of the wood of the species used)
- What is the income diversification potential of agroforestry in cocoa basins? (what are the populations of forest fruit tree species by landscape)
- What is the biodiversity index in the cocoa landscape? (number of vulnerable, endangered species on cocoa farms / landscapes)
- What is the biodiversity index in the cocoa landscape? (number of vulnerable, endangered species on cocoa farms)
- What is the phytosanitary status of cocoa agroforestry landscapes: Which diseases are developed by shade tree species?
- What are the tree-cocoa interactions: impact of cocoa tree pruning on the growth of shade trees (amount of daily light radiation reaching the seedling under mature cocoa trees; impact of shade on the productivity of cocoa farms)

Conclusion

This agroforestry programme is of significant importance to Ofi in that it contributes to

- ensuring the compliance of our cocoa business with the regulatory requirements of the main markets
- meet our customers' demand to reduce SBTI Scope 3 emissions
- and even if it's not a Biodiversity Action Plan as define in the state of arts by CBD, “IT IS PART OF THE SOLUTION # FOR NATURE” in the framework of our COCOA COMPAS strategy

In conclusion, at the end of this first phase 2020 -2025 of our programme, I am convinced that Ofi's cocoa agroforestry experiences in West Africa can be included in the edition in 2030, if there is one planned, of the book by Christian Küchii (1997):

THE FOREST OF HOPE. Stories of Regeneration

Thank you

www.ofi.com