



## Strategy for sustainable cocoa value chain in West and Central Africa

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### **Towards a sustainable cocoa value chain for improved livelihoods and resilient cocoa landscapes**





# 1. Introduction: Rationale

## Background and context

Cocoa (*Theobroma cacao* L.) is cultivated for its beans which are used mainly to produce popular chocolate confectioneries and beverages consumed worldwide, particularly in high income countries. It is estimated that the equivalent of 4 kg of cocoa beans per capita are consumed annually in those countries<sup>1</sup>. Although cocoa is cultivated in many tropical regions globally, 70% of the world's cocoa is produced in only four countries: Côte d'Ivoire (40%), Ghana (20%), Nigeria (5%) and Cameroon (5%), located in West and Central Africa (WCA) (Figure 1), whose economies depend largely on cocoa. In Côte d'Ivoire, cocoa provides 14% of the gross domestic product, contributes to 1/3 of the income from exports and covers 10% of the national budget<sup>2</sup>. In Ghana, cocoa export accounts for about 25% of foreign exchange earnings<sup>3</sup>. Since the introduction of the crop in WCA in the 1920s, cocoa cultivation has been one of the most important sources of income for smallholder farmers who produce more than 90% of the cocoa in the region<sup>4</sup>. It is estimated that 800,000 of those smallholder farmers in Ghana derive 70-100% of their income from cocoa production.

Despite the importance of cocoa in WCA, the average yields are much lower than those achieved in South-East Asia and Central America, due to numerous biophysical, socio-economic, and institutional challenges. These yield gaps indicate an enormous potential for improvement in the region, and for increasing farmers' incomes and national revenues. Cocoa production in the WCA region is characterised by a persistent poverty among cocoa farmers and their families, often coupled with a high degradation of the landscapes.

In addition, full sun monocropping of cocoa practices based on extensionists' recommendations have been prevalent since the 1980s with the creation of elite hybrid varieties performing well under sun conditions. Earlier cocoa production systems in the region were mostly based on agroforestry practices. Yet, the performance of full sun cocoa depends on the use of high amount of external inputs (fertilisers, pesticides), which many smallholders cannot afford, and on good management

practices, of which they are not always aware. Full sun cocoa monocropping is also economically and environmentally less resilient compared to shaded production systems<sup>5,6</sup>. Indeed, cocoa trees grown in full sun systems have a shorter life span, and the systems maintain low biodiversity and offer limited possibility for on-farm diversification, compared to shaded (i.e. agroforestry) cropping practices<sup>7</sup>. Cocoa agroforestry is therefore an alternative to sustainably improve income and food security of rural households, and the resilience of the landscapes.

Another factor impinging on the cocoa sector in WCA is the effect of climate change. While cocoa production through deforestation is driving climate change, climate change itself also leads to shifts in potential cocoa cultivation areas. It has been predicted that the areas suitable for cocoa production may shrink significantly in Nigeria and Togo as well as in parts of Côte d'Ivoire and Ghana, while it could increase in Cameroon, Liberia and Sierra Leone<sup>8</sup>. This could lead to a pressure on the remaining forested areas (including protected ones) such as the Congo Basin<sup>9</sup>, the Tai National Park in Côte d'Ivoire and many other gazetted forests of the region. There is opportunity to transform the large cocoa monocropping cocoa systems across WCA into cocoa agroforestry systems with more ecological functionality, which also provide ecosystem services. The sustainability of such systems would reduce the need to create new cocoa farms at the expense of natural forests and could thus limit deforestation.

Cocoa production is a family business where labour derives primarily from the household members because agricultural labour remains a major challenge in the region. Most cocoa farmers are on average more than 55 years old and the sector attracts fewer young people. Besides, farmers have limited access to knowledge and also lack structured financing that would allow them to invest in the rehabilitation and the management of the degraded cocoa farms and landscapes.

<sup>1</sup> CCO: <http://www.icco.org>; ICCO provides up to date publications on production and grindings statistics.

<sup>2</sup> Banque mondiale. 2019. Au pays du cacao: Comment transformer la Cote d'Ivoire. Situation économique de la Cote d'Ivoire. 9eme edition. 61p.

<sup>3</sup> Essegbey GO and Ofori-Gyamfi E. 2012. Ghana Cocoa Industry—An Analysis from the Innovation System Perspective. Technology and Investment. 276-286 (doi:10.4236/ti.2012.34038)

<sup>4</sup> WCF. 2012. Cocoa market update (<https://www.worldcocoaoundation.org/wp-content/uploads/Cocoa-Market-Update-as-of-3.20.2012.pdf>)

<sup>5</sup> Bisseleua DHB, Begoude D, Tonnang H, Vidal S. 2017. Ant-mediated ecosystem services and disservices on marketable yield in cocoa agroforestry systems. Agriculture 247: 409 – 417.

<sup>6</sup> Andres C, Gattinger A, Dzahini-Obiatey HK, Blaser WJ, Offei SK, Six J. 2017. Combatting Cocoa Swollen Shoot Virus Disease: What do we know?. Crop Protection 98: 76 – 84.

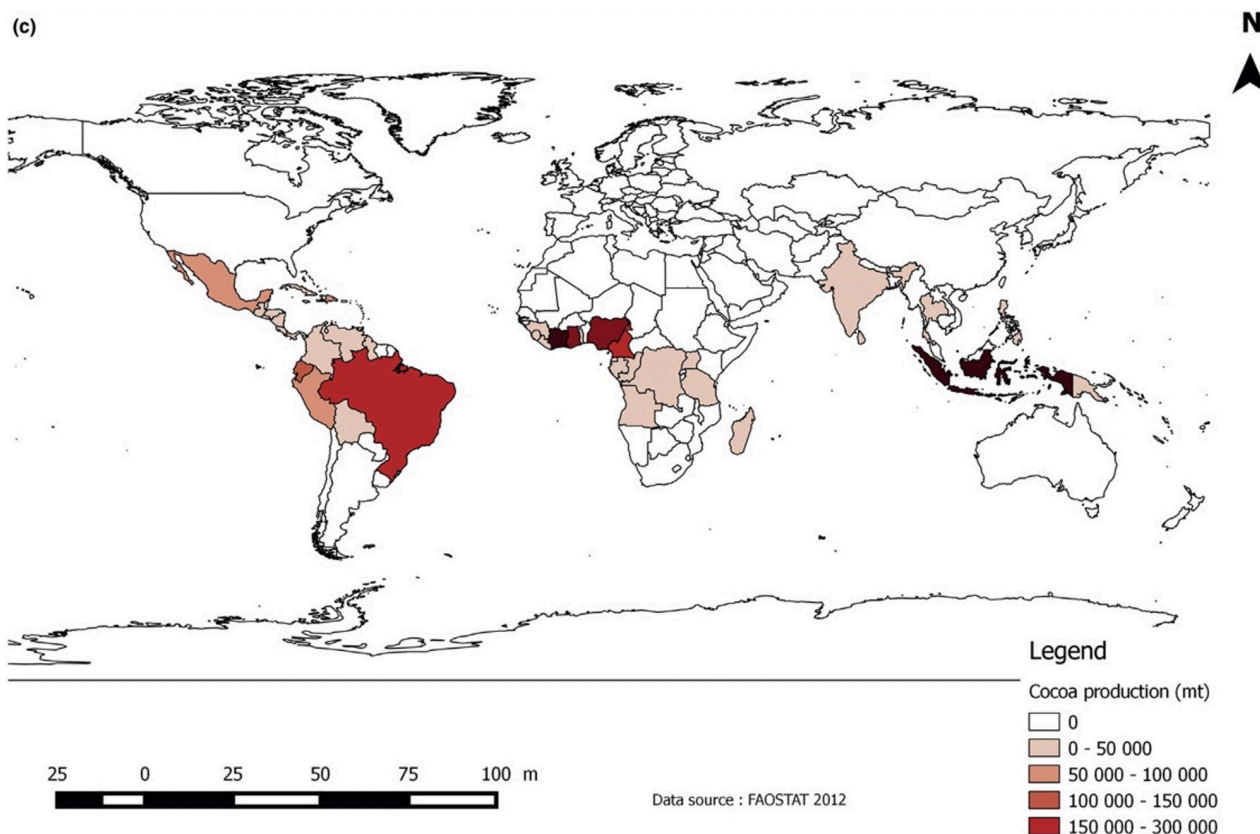


Figure 1: Importance of cocoa production in producing countries<sup>10</sup>

### Local and international market potential

The demand for cocoa is predicted to grow due to rising incomes in emerging markets like India and China, the emergence of a middle class in developing countries and the anticipated economic recovery in traditional consumer (high-income) countries. The growing demand for cocoa, which outstripped the supply in 2018/2019<sup>11</sup>, represents a good business opportunity for producing countries and for the millions of smallholder cocoa farmers in the WCA region. The global demand for beans is projected to reach 5.6 million tonnes by 2025, creating a global market value of raw and processed cocoa worth US\$ 67 billion compared to US\$ 43 billion in 2017<sup>12</sup>. It has been estimated that the global demand for cocoa will continue to increase at a rate of 3% per annum, buoyed by recent research findings that the consumption of cocoa in its various forms has confirmed health benefits.

### Bringing out the social and environmental potential

Cocoa plays an important socio-economic role in producing countries. Cocoa cultivation in WCA is a business for smallholder farmers with less than 4 hectares of land who produce about 90% of the cocoa beans in

the region. The livelihoods of these farmers rely heavily on the cocoa business. In Ghana, it is estimated that 800,000 smallholder farmers derive between 70-100% of their yearly income from cocoa production<sup>13</sup> and the sector employs about 3.2 million people. Cocoa cultivation offers a huge opportunity to lift producing countries out of poverty through job creation and increased foreign earnings that would allow them to finance their national development plans. However, this requires producing countries to take actions to encourage cocoa processing locally and, more generally, to professionalise the whole value chain.

In West and Central Africa, before the release of improved hybrid varieties adapted to full sun conditions, cocoa used to be traditionally grown in combination with shade trees and some other crops. There are several cocoa management systems along a gradient of intensification, ranging from low-input rustic cocoa-based agroforestry systems with medium to high levels of shade (e.g. in Central Cameroon) to full sun monocropping with minimum shade (e.g. mainly in Ghana and Côte d'Ivoire). However, full sun monocropping systems offer fewer socio-economic and environmental benefits compared to the agroforestry ones<sup>10,11</sup>.

<sup>7</sup> Schroth G and Harvey CA. 2007. Biodiversity conservation in cocoa production landscapes: An overview. *Biodiversity and Conservation* 16(8): 2237 – 2244.

<sup>8</sup> Schroth G, Laderach P, Martinez Valle AI, Bunn C, Jassogne L. 2016. Vulnerability to climate change of cocoa in West Africa: Patterns, opportunities and limits to adaptation. *Science of the Total Environment* 556: 231 – 241. <https://doi.org/10.1016/j.scitotenv.2016.03.024>.

<sup>9</sup> De Beule H, Jassogne L, van Asten P. Cocoa: Driver of Deforestation in the Democratic Republic of the Congo

<sup>10</sup> Diby L, Kahia J, Kouame C, Aynekulu E. 2017. Tea, Coffee, and Cocoa. *Encyclopedia of Applied Plant Sciences*, Second Edition, 2017, 420–425.

## Problem analysis

Despite the importance of cocoa in the producing countries and the opportunities for market growth, the sector is facing numerous interrelated challenges that affect the actors along the value chain. Here, we focus on the key challenges at the production, marketing/commercialisation and processing levels which are detailed in annex 1.

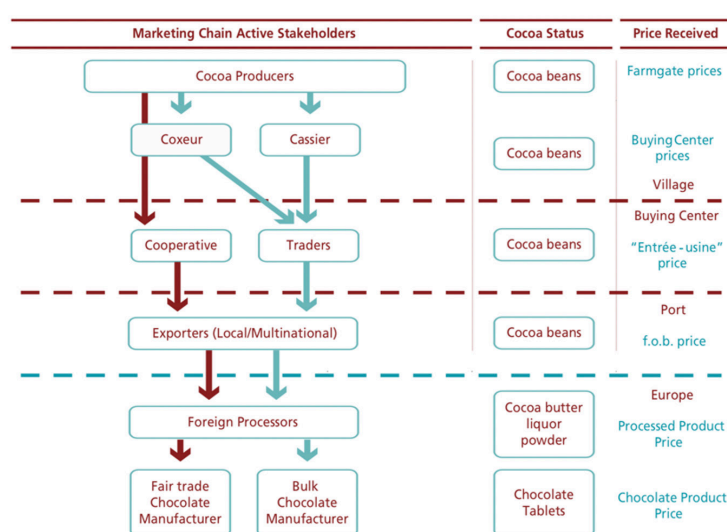
**At the production level,** it is well established that cocoa producers in the WCA region are trapped in a vicious poverty cycle, given the high degradation of the cocoa landscapes due to vast deforestation, depleted soil fertility, pressure from pests and diseases and the use of non-resilient farm management practices e.g. full sun monocropping. While several innovations have been developed in these countries to improve the sustainability of cocoa production systems, many farmers still stick to traditional practices such as using low yielding planting materials and inadequate management systems. This is essentially due to inefficient extension networks that do not adequately educate farmers on good agricultural practices. The resulting poor cocoa yields, coupled with the low farm gate prices (World Bank, 2019), lead to the low profitability of small-scale cocoa farming businesses who do not have the resources to reinvest in their farms, which, in turn, results in reduced yields. This situation is exacerbated by the lack of financing mechanisms adapted to small-scale cocoa farmers.

**At the marketing/commercialisation level:** The cocoa sector in the producing countries suffers from too many policy and institutional regulations which are not always equitable for all market actors, with farmers being the most vulnerable link along the value chain. The farm gate price is fixed by the government in each country, based

on different mechanisms, which do not necessarily reflect farmers' production costs but heavily rely on fluctuations in the international markets. In addition, the commercialisation of cocoa in the production countries involves many intermediaries between farmers and exporters, which reduces farmers' margins. However, this imbalance could be addressed by establishing strong farmers' groups/associations and by building good infrastructure to help producers connect directly with exporters. Cocoa is also subjected to high overhead charges (taxes) as it represents a critical portion of the countries' national revenues, which also limit the farms' profitability.

**At the processing level:** There are few incentives to encourage cocoa processing in producing countries, thus, the bulk of the crops harvest is exported as raw product. In 2015, the WCA region exported US\$ 5 billion worth of cocoa products, of which only 25% was processed in the form of cocoa butter, paste and powder<sup>1</sup>. As a consequence, only 7-10% of the value generated along the cocoa value chain is captured by these countries and the farmers<sup>14</sup>. It is estimated that a country like Côte d'Ivoire receives only 5-7% of this value although it contributes 40% of the world supply, the rest being earned by the processors and distributors<sup>3</sup>.

Figure 2 shows the intermediaries along the cocoa value chain in Cameroon, which is quite similar to the other main producing countries in WCA. In addition to these actors, other stakeholders intervene at different levels e.g. in the marketing of other non-cocoa products, or as enablers (policy makers, extension and other service providers, researchers). Our key focus is to address the persistent poverty at the producer level and the impact of climate change on the productivity of cocoa production.



Source: Abbott, Muir and Wilcox, 2006

Figure 2: Cocoa marketing chain in producing countries: the example of Cameroon

<sup>11</sup> <https://www.fortunebusinessinsights.com/industry-reports/cocoa-and-chocolate-market-100075>

<sup>12</sup> Anim-Kwapong GJ and Frimpong EB. 2008. Vulnerability of agriculture to climate change – impact of climate change on cocoa production. Cocoa Research Institute of Ghana, pp. 5-12.

<sup>14</sup> Banque Mondiale. 2019. Situation économique de la Côte d'Ivoire: Au pays du cacao, comment transformer la Côte d'Ivoire. 61p.

## 2. Main Interventions

The foreseen impact of the proposed interventions is to improve the livelihoods of smallholder cocoa farmers and the resilience of cocoa landscapes through value creation and the adoption of best cocoa agroforestry options according to the given context.

The table below summarises the anticipated outcomes, outputs and activities for achieving the foreseen impact, taking into account three different dimensions: productivity, environment, livelihoods and value addition.

Impact	Outcomes	Outputs
The livelihoods of cocoa smallholders and the resilience of cocoa landscapes improved through a sustainable value chain and the adoption of cocoa agroforestry best options	1. Best practices, methodologies for production and distribution of quality planting materials (PM) available and adopted	<b>Productivity</b>
		1.1. Improved cocoa and companion trees planting materials (PM) adapted to different environment are developed.
		1.2. Multiplication infrastructure established for production of improved planting materials
		1.3. Efficient production and distribution of improved PM for production established
	2. Adoption of diversified productive cocoa AF system	2.2 Options for diversification with respect to cocoa yield, quality, pests and diseases developed and tested
	3. Enhance used of best practices for cocoa rehabilitation	2.3 High value (economic, environmental, etc.) and compatible tree species integrated in cocoa farms
		3.1 Context specific pathways for sustainable cocoa AF rehabilitation adopted
		3.2 Business models for sustainable cocoa rehabilitation developed
		3.3 Integrated management options for cocoa cropping systems developed and promoted
		3.4 Sustainable cocoa landscape restoration promoted and adopted
		<b>Environment</b>
		4.1 Carbon sequestration and biodiversity potentials of cocoa AF systems reported
		4.2 Business models for payment for ecosystem services adapted to AF systems developed
		4.3 Advocacy strategies that enable sustainable cocoa production developed and promoted
	4. Ecosystems services and co-benefits of cocoa AF systems documented	5.1 Potential impacts of climate change projection on cocoa and other agroforestry species established
	5. Strategies to climate change adaptation and mitigation adopted	5.2 Effect of climate variability and climate change on cocoa production systems investigated
		5.3 Adaptation and mitigation options developed and disseminated to end-users
		<b>Livelihoods &amp; Value addition</b>
	6. Innovative income creation along cocoa value chain enhanced	6.1 Behavior change of stakeholders along the cocoa value chain
		6.2 Investments for value addition creation enhanced
		6.3 Business cases for local small, medium, and large-scale cocoa processing established
		6.4 Market and services of cocoa and non-cocoa products developed and/or expanded
	7. Food and nutrition security through diversification enhanced	7.1 Baseline information on current availability of nutritious food, nutritional status and behavior patterns are available
		7.2 Interventions to enhance food and nutrition security developed

## 3. Partners and Roles

The implementation of this strategy for sustainable cocoa value chains in West and Central Africa will be led by World Agroforestry (ICRAF) in collaboration with governments, with producers, with national technical institutions, with the private sector that is involved in the marketing, processing and manufacturing of cocoa beans, with donors and with investment institutions. These partners will have the following responsibilities:

- Governments will mainly ensure enabling policies for the development of cocoa value chains that improve the livelihoods of small-scale cocoa farmers and strengthen the resilience of cocoa landscapes. They will also provide financial support.
- Producers will be involved in the design and development of the innovations and implement them together with other actors.
- The technical institutions (National Agricultural Research Systems, Extension Agencies) will be involved in the development of the innovations and their dissemination to farmers.
- The private sector will contribute to the dissemination of the innovations and will also provide financial support by creating incentives for the adoption of good agricultural practices for sustainable cocoa production.
- Donors and investment institutions will essentially fund the budget needed to implement the strategy.



Key donors include:

- World Bank (cocoa rejuvenation, cocoa processing, climate change and forest restoration)
- Green Climate Fund (climate change adaptation and mitigation,)
- Cocoa industries (sustainability of the cocoa supply chain, traceability, zero-deforestation, Cocoa & Forest Initiative)

### 3. Stakeholder Engagement

There is an opportunity to transform the large cocoa monocropping systems across West and Central Africa into cocoa agroforestry systems with more ecological functionality thereby enhancing ecosystem services. Such sustainable systems would reduce the need to create new cocoa farms at the expense of natural forests and could thus limit deforestation.

Implementing a value-chain approach across cocoa-based production systems in West and Central Africa will contribute to improving the livelihoods of smallholders' households and will, at the same time, make cocoa landscapes more resilient to climate change. This calls for a transformative change along the entire value chain. Value-chain actors will have to move beyond 'business as usual' and adopt evidence-based recommendations for sustainable cocoa production and the enhancement of local processing of cocoa and by-products as well as cocoa-agroforestry products.

ICRAF hereby issues a 'call to action' across sectors to effectively engage with all partners for the implementation of its strategy on sustainable cocoa value chains in West and Central Africa

ICRAF will leverage its reputation as an organization that promotes inclusive and sustainable development of cocoa and agroforestry and as a trusted partner in developing sustainable cocoa value chains in West and Central Africa for governments and policymakers, donors and regional and international development organizations, the private sector and farmers and beneficiaries.

ICRAF will continue to develop and implement innovative rehabilitation practices for degraded cocoa landscapes that support national efforts in rehabilitating cocoa farms. ICRAF has successfully pioneered and tested effective technologies and models with more than eight years of experience on the ground supporting rehabilitation of cocoa landscapes in Côte d'Ivoire and with research on cocoa agroforests along a gradient of forest cover in Cameroon.

There have been clear, beneficial results for both farmers and ecosystems from ICRAF's efforts, increasing smallholders' yields from 500 to 1500 kg/ha, diversifying farmers' income, enhancing cocoa-producing households' food and nutritional security, and reducing pressure on forests and the environment.

The stakeholder engagement plan will communicate the above messages and also provide a platform for follow-up and tracking potential donors and investors to support the strategy for sustainable cocoa value chains in West and Central Africa.

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