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Côte d'Ivoire profile

Enabling environment drivers for achieving zero deforestation and climate change mitigation and adaptation in the cocoa value chain

The case of Côte d'Ivoire

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Summary

Côte d'Ivoire, the world's leading cocoa producer, supplies over 40% of the international market, yet this economic pillar faces critical sustainability challenges. Cocoa farming is a major driver of deforestation, with the country suffering a drastic reduction in its original forest cover over the last six decades. Climate change further threatens the sector: Droughts and crop diseases are impacting the livelihoods of 2 million smallholder producers who depend on cocoa production. The impending European Union Deforestation Regulation (EUDR), effective 2026, adds urgency, restricting market access for commodities linked to deforestation.

This study examines whether and how Côte d'Ivoire's policy and institutional environment enable the transition to a zero-deforestation and climate resilient cocoa value chain. The methodology employs a qualitative approach, combining a review of 10 national policy documents and scientific literature with a national workshop that included farmers, cooperatives, exporters, and government officials. The analysis focused on stakeholder development priorities in the cocoa value chain, promoted practices and innovation bundles, policy and institutional frameworks, incentives, and barriers affecting the adoption and scaling of sustainable cocoa systems.

Findings show strong policy recognition of deforestation and climate risks: eight out of ten policies target deforestation and six address climate change, with agroforestry, reforestation and climate-smart agriculture positioned as core solutions. Cocoa is identified as a priority crop within forestry and climate strategies, especially in key forest regions. Stakeholders broadly share the objective of a zero-deforestation, climate-resilient cocoa sector, but their priorities differ. Farmers and cooperatives emphasize land tenure security, access to quality planting material, training, and higher and more stable incomes. Government agencies and NGOs prioritize agroforestry, traceability, EUDR compliance, forest protection, and climate action.

Agroforestry emerged as the central practice promoted across policies and stakeholders, valued for its ability to restore tree covers, stabilize yields, enhance soil fertility, conserve biodiversity and sequester carbon. Complementary practices include pruning, composting, mulching, water management, and organic inputs. Stakeholders emphasize bundled innovations, such as agroforestry combined with composting, water retention, biochar, and organic production, as the most effective way to achieve both environmental and livelihood outcomes.

The enabling environment is supported by a robust institutional framework, led by the Coffee and Cocoa Council; the Ministries of Agriculture, Environment and Forests; the National Agency for Rural Development Support's extension services; and research bodies such as the National Center for Agronomic Research and the Interprofessional Fund for Agricultural Research and Extension, complemented by public-private partnerships like the Cocoa and Forests Initiative and certification bodies such as Rainforest Alliance and Fairtrade.

Incentives presented in policy documents include payments for ecosystem services, carbon credits, reforestation contracts, sustainability certification, financial inclusion schemes, and emerging green finance instruments, but with low levels of implementation. The private sector partly compensates for the government's lack of implementation. Despite this, adoption of sustainable practices remains constrained by significant barriers. These include insecure land tenure, weak enforcement of forest laws, limited access to credit, high cost of inputs and innovation, low mechanization, fragmented institutional coordination, insufficient traceability systems, and limited farmer training.

To achieve scalable zero-deforestation value chains, this study recommends moving beyond policy formulation to concrete on the ground implementation and monitoring. Coordination among value chain actors must be strengthened to align efforts and support producers efficiently. Furthermore, promoted practices must be paired with tangible economic incentives for farmers. Finally, ensuring that farm-level intervention address income generation alongside environmental goals is essential for the long-term resilience of the sector.

Contents

Acronyms

AICS – Italian Agency for Development Cooperation

ANADER – National Agency for Rural Development Support (Agence Nationale d'Appui au Développement Rural)

ASPCA-CC – Association of Chairmen of the Boards of Directors of Coffee and Cocoa Cooperatives

CAADP – Comprehensive Africa Agriculture Development Programme

CCC – Coffee and Cocoa Council (Conseil du Café-Cacao)

CDN / NDC – Nationally Determined Contribution (Contribution Déterminée au Niveau National)

CFI – Cocoa and Forests Initiative

CIAT – International Center for Tropical Agriculture

CNRA – National Center for Agronomic Research (Centre National de Recherche Agronomique)

CSA – Climate-Smart Agriculture

ECOWAP – ECOWAS Common Agricultural Policy

ECOWAS – Economic Community of West African States

EUDR – European Union Deforestation Regulation

FAO – Food and Agriculture Organization of the United Nations

FCPF – Forest Carbon Partnership Facility

FIRCA – Interprofessional Fund for Agricultural Research and Extension (Fonds Interprofessionnel pour la Recherche et le Conseil Agricoles)

GHG – Greenhouse Gas

GCF – Green Climate Fund

LPPRE – Programming Law for the Preservation, Rehabilitation and Extension of Forests

MINADER – Ministry of Agriculture and Rural Development

MINEDD – Ministry of Environment and Sustainable Development

NGO – Non-Governmental Organization

PNCC – National Climate Change Program (Programme National de Changements Climatiques)

PNIA – National Agricultural Investment Program (Programme National d'Investissement Agricole)

PNReb – National Reforestation Program

PPREF – Policy for the Preservation, Rehabilitation and Extension of Forests

REDD+ – Reducing Emissions from Deforestation and Forest Degradation

SDGs – Sustainable Development Goals

SNAIC – National Strategy for Climate-Smart Agriculture (Stratégie Nationale pour l'Agriculture Intelligente face au Climat)

SPREF – Strategy for the Preservation, Rehabilitation and Expansion of Forests

UNFCCC – United Nations Framework Convention on Climate Change

UN-REDD – United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation

1. Introduction

The understanding of enabling environmental drivers for the adoption of zero deforestation and climate change practices is crucial for the cocoa value chain. Indeed, as the global food system is a major contributor to climate change and is responsible for approximately one-third of all anthropogenic greenhouse gas (GHG) emissions (Amahnui et al., 2024), the issues of deforestation and climate change are relevant to address the sustainability of the food systems and for the reach of Sustainable Development Goals (SDGs). In this context, the adoption at scale of practices that address deforestation and climate challenges by farmers are needed (Amahnui et al., 2024). To do that, understanding context in terms of policies, regulations, value chain related barriers that foster or limit the adoption is key (Amahnui et al., 2024). Indeed, to prevent cocoa farming from contributing to deforestation, it has been recommended that governments and supply chain actors "discourage forest frontier dynamics and should help cocoa farmers adapt to environmental change by adopting more intensive and diversified farming practices, building on farmers' own risk mitigation and adaptation strategies" (Ruf et al., 2015).

This reflection is all the more relevant for cocoa value chain since cocoa farming has been a major driver of deforestation in West Africa, notably in Côte d'Ivoire, the world's leading cocoa producer (Ruf et al., 2015; Kroeger et al., 2017). In order for Chocolate manufacturers to cope with global consumption which represents around 3 million tons per year and a demand which grows by 2 to 5% annually, they often obtain their supplies via illegal cocoa exploitation systems set up in the main producing countries including Ivory Coast (Kouadio & Singh, 2021). Indeed, the cocoa value chain is associated with deforestation since cocoa, as a "pioneer crop", is usually grown after forest clearing and because farmers usually migrate to the forest frontiers to establish new cocoa farms instead of replanting aging plantations (Ruf et al., 2015). Thus, the cocoa frontier moved towards the wetter southwest of Côte d'Ivoire, boosted by massive waves of immigration, replacing forest with farmland over vast areas (Ruf et al., 2015; Yao Sadaiou Sabas et al., 2020). Indeed, cocoa production is an essential livelihood activity for 2 million producers, providing 70–100 percent of their annual income (FAO, 2025). Producers are mainly vulnerable, low-income smallholders who are mostly unorganized and lack secure land tenure. This precarious situation particularly affects women due to their more limited land rights and reduced access to assets, inputs, and services. In addition, small farmers depend on rain-fed agriculture for their livelihoods, which increases their vulnerability to the effects of climate change (FAO, 2025).

Achieving zero deforestation cocoa value chains becomes more urgent for cocoa producing countries with the proposed European Union Deforestation Regulation (EUDR) that restrict the entrance of cocoa among other commodities linked to deforestation practices (such as cattle, coffee, palm oil, and soybean) (de Oliveira et al., 2024). This regulation will begin to be implemented by December 2026. Governments and their national policies will play a key role in facilitating compliance with the regulation. Traceability systems and legal frameworks are central areas that producing countries should strengthen in order to keep exporting to EU countries by then.

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Understanding the enabling context for adoption of zero deforestation and climate related practices is relevant and innovative to address deforestation, climate change and the new international regulation. Indeed, few research aims at understanding the interrelated challenges of deforestation and climate change for cacao value chain in the context of the EUDR (de Oliveira et al., 2024). According to Kalischek et al. (2023), there is limited information available for improved sustainability governance.

Côte d'Ivoire is of particular interest as it is the world's leading cocoa producer, representing nearly 50% of the international supply (Ruf et al., 2015; Kroeger et al., 2017; Kouadio & Singh, 2021; Kalischek et al., 2023). The country passed from having one of the richest biodiversity in Africa (dense forests and endemic animal species) in 1960 to losing 90% of its forest just six years later (Kouadio & Singh, 2021). The cocoa industry, characterized by an intensive and uncontrolled cultivation of cocoa, is partly responsible for this situation (Kouadio & Singh, 2021). In Côte d'Ivoire, cocoa farming started in the eastern part of the country and spread to the central-western and then south-western regions (Yao Sadaiou Sabas et al., 2020). Massive land clearing, cultivation in national parks or classified forests, and the use of pesticides has led to the disappearance of most of the Ivorian forest (Kouadio & Singh, 2021). Yet, cocoa constitutes the primary perennial crop, providing income to almost two million farmers (Kalischek et al., 2023). Thus, the objective of this policy brief is to examine zero deforestation practices in the cocoa sector, climate change mitigation and adaptation practices coupled with the policy, social (gender and youth), institutional and incentives enablers or dis-enablers critical for creating an enabling environment for scaling a bundle of innovations.

The research question guiding this study is: What are the priorities of stakeholders such as government institutions, farmers, processing companies, civil society organizations, and consumers and how do they align with the goal of achieving a zero-deforestation cocoa value chain and the implementation of practices that contribute to climate adaptation and mitigation?

Specifically, this profile examines: (1) stakeholders (across the value chain) development priorities regarding achieving zero-deforestation cocoa value chains, and climate mitigation and adaptation; (2) sustainable cocoa production practices or the zero deforestation practices; (3) enabling environment drivers relating to policies, institutions, social inclusivity; (4) incentives for implementing the bundle of innovations, scale practices to achieve zero deforestation value chains and build resilience to climate change; and (5) barriers and opportunities for scaling zero deforestation cocoa value chain.

2. Methodology

The methodology is based on Step two of the "Six-step Approach for scaling low-emission food systems: Evidence and guidelines" (Amahnui et al., 2024: 10). Step two aims at "Understanding stakeholder development priorities" by identifying thematic and geographical areas where development priorities overlap with food system GHG-mitigation opportunities and reviewing governance models and identifying key delivery partners.

Information sources include literature, policy document review, and a national workshop held in Abidjan on December 2–3, 2025 (see Table 1). Participants included cocoa farmers, cooperatives, representatives of exporting companies, civil society representants, and public organization officials. They all provided their oral informed consent before participating in these activities. Regarding policy documents, we compiled a national-scope inventory of public policies across cocoa, agriculture, forests, deforestation, climate, and sustainable development, through a systematic search of official government websites, complemented by a snowball search across institutional reports and the scientific and grey literature (Table 2). Then, we conducted qualitative document analysis looking for: the inclusion of climate change and deforestation in policy goals; the mention of cocoa and forestry as policy targets; the promotion of practices addressing climate change and deforestation issues; indicators designed to monitor and evaluate policy implementation; barriers to promoted practices adoption; the mention of national and international frameworks related to climate change and deforestation; the mention of participatory mechanism and processes; and incentives to foster adoption of promoted practices.

Table 1. Source of information.

Source of Information	Details
Literature Review	15 journal articles or institutional reports reviewed
Policy Document Review	10 policy documents
National Workshop	2 days-workshop with 18 participants (public sector, producers, cooperatives, exporters, NGOs, civil sector organizations, and research organizations)

Table 2. List of policy documents assessed.

ID	Policy	Policy domain	Ministry in charge	Year
1	Nationally Determined Contributions CDN-COTE D'IVOIRE	Climate change	Ministry of Environment and Sustainable Development (MINEDD)	2022–2030
2	National Strategy for Climate-Smart Agriculture (SNAIC)	Climate change	Ministry of Agriculture and Rural Development	2019
3	Côte d'Ivoire's National REDD+ Strategy	Climate change, mitigation deforestation	Ministry of Environment and Sustainable Development	2017
4	Cocoa and Forests Initiative – Action Plan	Forestry, deforestation	Ministry of Water and Forests	2022–2025
5	Forest preservation, rehabilitation, and expansion – National Policy	Forestry, deforestation	Ministry of Water and Forests	2018–2045

ID	Policy	Policy domain	Ministry in charge	Year
6	Implementation plan for the joint framework of action	Forestry, deforestation	Ministry of Water and Forests	2018–2020
7	National Policy on the Environment and Sustainable Development	Environment, sustainable development	Ministry of Environment and Sustainable Development (MINEDD)	2018
8	Strategy for the Contribution of the Coffee and Cocoa Sector to Reforestation in Côte d'Ivoire	Agriculture, environment, climate change, forestry	Ministry of Agriculture, Rural Development and Food Production	2025–2035
9	Second generation National Agricultural Investment Program	Agriculture, rural development, food security	Ministry of Agriculture and Rural Development (MINADER)	2018–2025
10	National Strategy for the Preservation, Rehabilitation and Expansion of Forests	Forestry, agriculture, climate change	Ministry of Water and Forests	2018

Notes: In the results section, the ID associated with each policy document is reported as indicated in the first column, such as [1].

We triangulated the different sources of information for data analysis, seeking consensus and disagreement among actors and sources. This allowed us to identify shared vision and complementarity among sources, but also different or even contradictory opinions on the development and problems of the cocoa value chain in Cote d'Ivoire.

3. Results

In this section, we present results regarding Cote d'Ivoire's cocoa sector, stakeholder priorities, stakeholder development priorities, promoted cocoa practices, and the enabling environment.

3.1. Brief background on Cote d'Ivoire's cocoa sector

Studies showed that the development of the cocoa economy led to deforestation in (Yao Sadaiou Sabas et al., 2020; Kalischek et al., 2023). Cocoa cultivation is an underlying driver of over 37% of forest loss in protected areas in Côte d'Ivoire (Kalischek et al., 2023) and of 60.8% forest cover degradation in the East, 46.39% in the Centre-West, 20.76% in the South-West, and 51.18% in the West of the country (Yao Sadaiou Sabas et al., 2020). The creation of new cocoa farms in the West of Ivory Coast is governed by non-native people (51.13%) settled between 2010 and 2018 (Yao Sadaiou Sabas et al., 2020).

> "Cocoa production is presented as one "of the major causes of the degradation of the Ivorian forests" [4] and as a low yields production [10].

In policy documents, the embedded issues of deforestation [1, 3, 4, 5, 6, 7, 8, 9, 10] (not mentioned by Stratégie nationale pour l'agriculture intelligente face au climat (SNAIC)) and climate change [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] are mentioned. The magnitude of national deforestation is highlighted: "Forest cover has declined from 12 million hectares in 1960 to 7.9 million hectares in 1990, to 3.4 million hectares in 2015 and to 2.97 million hectares in 2021" [4] [5]. In addition, the degradation rate was calculated as a "deforestation rate of 2.69% (95,000 ha/year)" [6] and future scenarios show that "at this pace, Ivorian forest will have disappeared within a decade" [5]. Links between deforestation and agriculture (cacao, coffee, rubber trees, and oil palms) [10] and cocoa production [4, 10] are also established in the policy documents. Cocoa production is presented as one "of the major causes of the degradation of the Ivorian forests" [4] and as a low yields production [10]. Other factors for deforestation are presented such as mining [6], illegal artisanal logging and wood energy [10], and poorly coordinated and ineffective policies [10]. Policy documents also emphasized the need to consider farming activities and livelihoods to address deforestation issues. Thus, it is key to improve agricultural productivity in rural areas and to promote the sustainable use of forest resources and determining measures for the development of forest environments and their rational management [7] and agroforestry systems [8]. Indeed, agriculture remains the main basis for economic development in Côte d'Ivoire, employing more than 80% of the working population [10].

The contribution of deforestation to climate change is also indicated: "12% of global emissions of greenhouse gases result from deforestation" [5]. In addition, the vulnerability of forests to climate change [10] was mentioned. Climate change and deforestation are embedded challenges for agricultural sector affecting rural development [3]. The role that forests play in the fight against climate change is recognized through sequestration of carbon [5, 6, 7, 9], climate regulation and the provision of essential ecosystem services that support the resilience of agriculture [6].

As for climate change, it is presented as a priority issue in the agricultural sector [2, 4, 7] and the influence of climate change on agriculture is underlined and the need to adapt [2, 9]. Indeed, climate change is presented as a constraint to productivity and food security [9]. The Nationally Determined Contributions (NDC) objectives are shared: "28.25% reduction in greenhouse gas (GHG) emissions by 2030" noting that "forestry sector is not included in these contributions and, given its high potential, is positioned as a source of assurance and enhancement for achieving climate change mitigation and adaptation objectives" [10].

3.2. Stakeholders' development priorities

Stakeholder mapping

Through the review of literature (Kouassi, 2023; Nitidae, 2021; Bockel et al.,2021), official government websites and a national workshop we were able to identify policy influencing key actors related to the cocoa value chain (see Table 3).

Table 3. Key actors involved in cocoa value chain.

Actor	Organization type	Description
Ministry of Agriculture, Rural Development and Food production	Government	Oversees agricultural development and governance of the cocoa sector.
Ministry of Environment, Sustainable Development and Ecological Transition	Government	Oversees environmental policy. It coordinates environmental assessments, develops and implements national sustainable development strategies, and represents Côte d'Ivoire in international climate negotiations.
Ministry of Water and Forests	Government	Responsible for guaranteeing sustainable use of forest resources. It defines and implements the national reforestation plan and promotes forestry development.
Ministry of Trade and Industry	Government	Manages imports and exports of regulated products, including cocoa, and participates in the design of tariff and non-tariff measures. It monitors Côte d'Ivoire's engagement with international organizations in commodity trade and promotes access to foreign markets for Ivorian products.
The Coffee and Cocoa Council	Government	Holds the regulatory role of the cocoa and coffee sector. It is responsible for policy design, implementation, and regulation related to agricultural production and environmental management to trade.
The National Agency for Rural Development Support (ANADER)	Government	Responsible for delivering agricultural advisory services, professionalization programs, and innovations to promote sustainable rural livelihoods.
The Interprofessional Fund for Agricultural Research and Extension (FIRCA)	Government-research institution	Supports research, agricultural advisory services, and capacity strengthening of farmers' organizations.
National Center for Agronomic Research (CNRA)	Government-research institution	Conducts agricultural research, develops and adapts technologies, transfers scientific knowledge, preserves research assets, and undertakes related agronomic and commercial activities supporting Côte d'Ivoire's agricultural and agro-industrial sectors.
The Forest Development Company (SODEFOR)	Government	Focuses on forest plantation development, biodiversity protection, and the promotion of sustainable forestry practices.
The Cocoa and Forest Initiative	Public-private partnership	Public-private partnership between the governments of Côte d'Ivoire and Ghana and leading cocoa and chocolate companies that aim toward zero deforestation cocoa production.
The World Cocoa Foundation	International organization	Includes cooperatives, processors, traders, and chocolate manufacturers. It promotes collaboration across all actors across the value chain to improve sustainability and improve farmer livelihoods.

Actor	Organization type	Description
Rainforest Alliance	Non-governmental organization	International NGO that provides certification systems and auditing services. It promotes sustainable agriculture and the improvement of farmers' livelihoods.
Fairtrade International	Certification international organization	International certification organization that promotes standards to guarantee minimum prices, premiums, and fair labor practices.
The International Cocoa Initiative	Non-governmental organization	International NGO that works to eliminate child labor and forced labor in cocoa-growing areas.
Solidaridad	Civil society organization	International civil society organization that supports farmers and workers to achieve stable livelihoods through collaboration across global supply chains.
Private Sector (including grinding companies such as Barry Callebaut, Touton)	Large grinding companies	Private-sector actors, including grinding companies like Barry Callebaut and Touton, invest in local processing capacity, operate major grinding facilities, and support value-addition efforts within Côte d'Ivoire's cocoa supply chain.
The Association of Chairman of the Boards of Directors of Coffee and Cocoa Cooperatives (ASPCA-CC)	Producer organization	Unites cocoa cooperatives in Côte d'Ivoire, mobilizing producers, partnering with government and industry, and promoting sustainable cocoa through organized production, collection, marketing, and participatory development initiatives, nationwide multi-stakeholder collaboration.
Italian Agency for Development Cooperation (AICS)	Governmental development agency	Funds and manages development projects in Côte d'Ivoire's cocoa sector, supporting sustainable value chains, community resilience, child protection, and socioeconomic inclusion.
Scopakam (Divo); CANN (Adzopé); SCINPA (Agboville); Socoopago (Aboisso)	Farmers' organizations	Represent producers, organize production and marketing, strengthen capacities, improve livelihoods, and promote sustainable practices through collective action and engagement with government and industry partners.

Stakeholder development priorities

During the national workshop, participants were invited to prioritize actions regarding cocoa value chain development (see Table 4). Table 4 shows common priorities (highlighted with colors) and specific priorities among actors. For instance, climate action is mentioned by three groups (civil society, international NGOs, and the Ministry of Environment), cooperative support is mentioned by three groups (farmer cooperatives and civil society), land titling is mentioned by two groups (farmer cooperatives and regulator and policy makers), agroforestry and EUDR compliance are mentioned by two groups (regulator and policy makers and ministry of environment), and support of farmer livelihoods is mentioned by two groups (farmer cooperative and regulator and policy makers).

Table 4. Stakeholder priorities regarding cocoa value chain.

Farmer cooperative (group 1)	Farmer cooperative (group 2)	Civil society	International NGO	Regulator and policy makers	Ministry of environment
Land tenure certification	Increase cooperative margins	Improving farmers' living conditions	Crop diversification	Fighting Swollen Shoot Disease	Climate resilience and climate change adaptation
Soil quality improvement	Support farmers' social infrastructure	Economic and climate resilience	Climate-smart technologies	Traceability systems	Payment for environmental services to incentivize farmers
Provision of quality planting material	Farmer training and capacity building	Structuring cooperatives and access to markets	Market access	Ensuring decent income for producers	Large-scale agroforestry
Training in good agricultural practices (GAP)	Access to input and investment (not subsidies)	Financial inclusion and access to funding		Agroforestry	Alignment with EU policies
Respect for and compliance with cocoa prices	Professionalization of cooperatives	Local processing and consumption		EUDR compliance	
				Land titling	

Notes: The colors indicate different priorities. Orange shows land tenure, red agricultural inputs, dark green training, dark blue cooperatives, light blue climate-related, brown market access, purple income and living conditions, and gray EU policies.

Policy goals

To assess government priorities, we analyzed the inclusion of the issues of deforestation and climate change in policy goals (general and specifics) (Table 5). The priorities stated in policy goals focus on deforestation issues (8/10 documents) and climate change issues (6/10 documents) with objectives related to agroforestry, resilience and mitigation. This shows that the government is putting priorities on these issues.

Table 5. Policy goals related to deforestation and climate change issues.

Policy document	Deforestation	Climate change	Mention
[1]		X (Adaptation/ mitigation)	"A 28.25% reduction in greenhouse gas (GHG) emissions by 2030." "Improving the resilience of eleven (11) strategic sectors." "Low-carbon and climate-resilient development trajectory."
[2]		X (Resilience)	"Sustainable growth in the productivity of the agricultural, forestry, livestock and fisheries sectors, food security and climate resilience."
[3]	X (Deforestation, agroforestry)		"Reducing deforestation and degradation of classified forests; and restoring protected areas. Re-establishing forest cover by reintroducing trees into agricultural and rural landscapes."
[4]	X (Deforestation, agroforestry)		"Halt deforestation and promote forest protection and restoration in the cocoa supply chain in Côte d'Ivoire."
[5]	X (Deforestation, agroforestry)	X (Adaptation/ mitigation)	"Preserve biological biodiversity" (animal and plant). "Ensure "national climate" conducive to agricultural activities and living conditions." "Protect classified forests." "Enforce the logic of classified forests and restore the classified forests degraded." "Apply the agroforestry concept in the rural area."
[6]	X (Deforestation, agroforestry)		"Support the government's ambition to achieve 20% forest cover by 2030" (in the cocoa and forest management). "Publication and enforcement of the new Forest Code." "Implementation of the national cocoa traceability system."
[7]	X (Deforestation)		"To protect, preserve and restore the capacity of ecosystems to provide essential goods and services, particularly to populations."
[8]	X (Deforestation, agroforestry)	X (Resilience, mitigation)	"To increase the resilience of the coffee and cocoa sectors to climate change by promoting agroforestry, reforestation, and sustainable land-use practices that ensure the durability of production systems and the well-being of rural communities."
[9]	X (Deforestation, agroforestry)	X (Resilience)	"Foster sustainable management of natural resources and resilience to climate and economic shocks."
[10]	X (Deforestation, agroforestry)	X (Resilience, mitigation)	"To protect and restore the forests of the protected forest area." "To mitigate the effects of climate change and strengthen resilience."

Notes: In Table 5, "X" indicates that the policy document mentions challenges of deforestation, climate change or other.


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Target

We assessed priorities in policy documents related to targeting (Table 6). In the policy documents, targeting is related to sectors, geographic areas, crop and socioeconomic groups, where agriculture (for mitigation and adaptation), forestry (for mitigation and adaptation), forest areas, cocoa, smallholder producers, women, youth and civil society are specified. These are aligned with objectives of zero-deforestation cocoa value chains, and climate mitigation and adaptation.

Table 6. Targets in policy documents.

Sectorial	Geographic	Crop	Socioeconomic
Energy (Mitigation) [1] [3]	Guémon (forest conservation) [4] [6]	Cacao [5, 6, 8, 10]	Smallholder producers [8]
Waste (Mitigation) [1]	Cavally (forest conservation) [4] [6]	Coffee [8]	Women/ women's organizations [8, 10]
Agriculture (Mitigation, adaptation) [1] [3]	Nawa (forest conservation) [4] [6]		Youth entrepreneurs [8]
Forestry (Mitigation, adaptation) [1] [3]	San Pedro (forest conservation) [4] [6]		Civil society [10]
Aquaculture (adaptation) [1]	La Mé (forest conservation) [4] [6]		
Water resource (adaptation) [1]	National coverage [9]		
Health (adaptation) [1]			
Coastal areas (adaptation) [1]			
Extractive Industries [3]			

3.3. Promoted cocoa practices, innovations for achieving zero deforestation cocoa production and climate change mitigation and adaptation

Promoted practices

Practices are promoted in policy documents to address deforestation and climate change issues (Table 8). The most promoted practices are agroforestry and reforestation (mentioned in seven policy documents) followed with Climate Smart Agriculture (CSA) and practices related to improving forest governance/ clarification and securing land tenure (mentioned in six policy documents). As explained in policy document [5], the promotion of agroforestry aims not only at promoting the forest industry and agriculture in the forest but also to protect the forest heritage. The underlying assumption is that the combination of forestry and agriculture will strengthen the control of deforestation and will contribute to take care of cultures in forest [5]. During the national workshop, participants prioritized practices and their related benefits (Table 7). Based on these prioritized practices, participants designed bundles of practices:

- Agroforestry and organic input production.
- Agroforestry, mulching, water management, climate-adapted seed, biochar, autonomous and electric weeding devices.
- Pruning, composting, agroforestry, farmer support groups, organic production, improved cookstoves, renewable energy.

In addition, social and cross-cutting issues practices have been identified such as preventing child labor and increase women participation. In the literature, non-remnant herbicides are promoted as well as labor saving technologies and yam and cocoa intercropping (Ruf, 2001).

Table 7. Practices prioritized during national workshop and their related benefit.

Practice	Benefit
Agroforestry	• Increased income and productivity • Improved soil management • Biodiversity conservation • Climate change mitigation and adaptation
Organic input and soil fertility management	• Reduces dependence on agrochemicals and protects biodiversity
Pruning	• Improves: ◦ Access to sunlight ◦ Air circulation ◦ Tree strength and productivity ◦ Resistance to pests and diseases • Reduces moisture buildup and insect pressure, limiting pesticide use • Supports climate resilience by: ◦ Maintaining photosynthesis ◦ Helping trees regenerate food reserves between seasons
Water management and climate adaptation practices	• Mulching helps: ◦ Maintain soil moisture ◦ Improve soil fertility ◦ Reduce erosion ◦ Adapt to climate change • Combined with: ◦ Compost ◦ Vegetable cover crops ◦ Crawling leguminous plants (used for soil management, not consumption
Banana-based water retention technique	• Increased water retention • Improved seedling survival • Enhanced soil moisture during dry seasons (October–November)
Small-scale irrigation	• Simple, low-cost irrigation methods help seedlings become more resilient • Irrigation significantly increases productivity, but affordability remains key
Climate-adapted seeds and planting material	• Allow resilience

Table 8. Practices promoted to address deforestation and climate change issues identified in national policies.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Reforestation / Restoring degraded lands and forests	X	X	X				X	X	X	X
Private and Community Forests, Urban and Peri-Urban Forestry		X								X
Agroforestry		X	X	X		X		X	X	X
Improved forest governance clarification and securing of land	X		X			X	X	X		X
M&E forests (monitoring)		X								
Development of ranches, stations and exclusive grazing areas / Participatory management system for agropastoral dams		X								
Support for the wood industry (machinery and tools) for the processing of small-diameter timber			X							
Producing and making available forest seeds			X							
Satellite monitoring system strengthening protected area monitoring and enforcement actions				X						
Updating maps of forest cover and land use						X			X	
Establishment of a national traceability system				X						
Geo-localisation of plantations and cocoa farmers						X				
Strengthening the enforcement of the Forest Code										X
Climate smart practices (improved seeds, bio-fertilizer, bio-pesticides, improved irrigation) and research	X	X	X	X		X			X	
Climate insurance	X									
Agrometeorological information	X	X							X	
Climate-resilient tree species								X		X
Enrichment planting and protection of riparian forests, mountain slopes, and ecologically fragile zones										X
Promotion of short-rotation species and improved carbonization techniques										X
Forest and climate topics are introduced in school curricula and technical training programs	X		X					X		X

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Use of geospatial technologies and forest inventories to track forest dynamics and anticipate climate-related risks										X
Inclusion of climate adaptation in strategic planning	X									X
Soil mapping and conservation techniques			X						X	
Water management (water reservoirs, small irrigation equipment, development of lowlands and water points)		X	X						X	
Valorization of agro-sylvo-pastoral and fisheries waste	X	X							X	
Intermittent aeration of permanently flooded rice paddies	X									
Carbon certification and commercialization								X		
Promotion of Payments for Environmental Services (PES)								X		
Carbonization techniques and alternative energy sources (solar, biogas)								X		X

Deforestation related practices **Adaptation related practices** **Mitigation related practices**

Indicators

Indicators designed to monitor and evaluate policy implementation are shown in Table 9. Note that there were only three policy documents (6, 8, 9) out of the 10 examined in this profile that mentioned indicators. The lack of mention of indicators in other policies raises the question of how the implementation and outcome of the policies are assessed.

Table 9. Indicators to monitor and evaluate policy implementation.

Climate change/ deforestation	Cacao production	Socioeconomic	Financial
Carbon sequestration and forest cover growth rates [6]	Cocoa production meeting sustainability standards [6]	Income level of cocoa producers benefiting from the activities of the initiative [6]	Sustainable financing mechanism of the initiative [6]
Carbon credits issued and commercialized (target: 250 million tCO_2e) [8]	Area of cocoa-based agroforestry plantations [6]	Number of women'sW organizations and youth enterprises supported (450 SMEs, 300 women's groups) [8]	Level of commitment (monetary) of the signatories in the implementation of the projects and implementation of the initiative [6]
Forest area conserved through interventions of the initiatives [6]	Number of hectares converted to agroforestry (target: 2.5 million ha) [8]	Number of infrastructures and projects implemented for population (disaggregated by sex) [6]	Functionality of the Integrated Agricultural Development Poles and their investment coverage [9]
Forest area rehabilitated and restored through interventions of the initiative [6]	Rate of adoption of good agricultural practices in cocoa farms in the zones of the initiative [6]	Increase in agricultural GDP and productivity per hectare [8]	
Number of trees planted and surviving (target: 100 million) [8]	Adoption rate of agroforestry by producers [6]	Reduction in rural poverty and food insecurity [9]	
	Functional unified traceability system [6]	Number of youth and women beneficiaries of training and financing [9]	
	Production from protected areas and classified forests [6]		
	Area under sustainable land and water management [9]		
Functionality of coordination platform and monitoring system [8]			

Note: The ID number of the policy document is indicated in brackets.

Barriers

In policy documents specific barriers to adoption of promoted practices are mentioned (Table 10). These barriers are related to economic and social factors, incentive and scaling, regulatory issues, limited awareness, knowledge and skills, coordination and governance challenges, financial limitations and infrastructure and equipment shortage. In addition, some barriers are related to poverty and poor remuneration of cocoa farmers, worsened by the lack of incentive, training, financial capacities and limited infrastructure. Precarious land tenure system (particularly for women) combined with weak governance led to no-compliance with forestry regulation and frauds as well as conflict between smallholders and other land users.

Evidence from the literature and stakeholder consultations reveals additional challenges that hinder adoption. The literature emphasizes socioeconomic constraints, such as low remuneration for farmers and the dominance of intermediaries, which reduces motivations to adopt sustainable practices. It also highlights failures in reforestation projects due to poor consultation and mistrust, as well as land tenure insecurity, which also discourages investment in long term practices. Farmers' lack of skills in agroforestry and restoration, combined with insufficient funding and limited access to financial systems, further restricts progress.

Insights from the national workshop are aligned with the barriers identified in the literature and policy documents but add practical concerns. Participants reported high input costs, lower yields from organic farming, and expensive certification requirements that discourage adoption. Limited market access, lack of training, and unfamiliarity with agroforestry were also mentioned. Governance problems, such as poor coordination between ministries, lack of reliable data, and weak transparency were seen as serious obstacles. Across all sources, financial limitations, insecure land tenure and weak governance appear as the most critical barriers, while technical gaps and lack of incentive make scaling sustainable cocoa practices even harder.

Table 10. Barriers to adoption of promoted practices.

	Economic and social	Incentives and scaling	Regulatory	Awareness, knowledge and skills	Coordination and governance	Financial	Infrastructure and equipment
Policy documents	Gender gap related to access to arable land [1]. Low capacity of farmers to adapt to the effects of climate change [2]. Poor distribution of profits from forest exploitation among local communities [3]. Relocalisation of population may create social unrest [6]. Low youth engagement and migration from rural areas [8].	Limited incentives for CSA innovations [2] and to address deforestation [3]. Difficulties in scaling up and disseminating AIC practices and technologies [2].	Precarious land tenure system leading to land conflicts [1, 3, 6, 10]. Inadequacy of the legislative and regulatory framework specific to CSA [2]. Lack of knowledge of the laws and absence of implementing decrees to clarify certain legal provisions [3, 5]. Lack of capacity and resources to enforce laws and monitor forests [3]. Non-compliance with forestry regulations, prevalence of illegal practices, and fraud in forestry controls [10].	Limited knowledge of soils [1]. Farmer's lack of technical capacities [1]. Insufficient studies and scientific research projects on CSA [2]. Lack of knowledge about the vulnerability of ecosystems and agricultural systems to climate change [2]. Low level of knowledge of GHG emission mitigation measures in all agricultural production sectors [2]. Lack of a reforestation monitoring system [3, 8] and national forest monitoring system [4, 10]. Boundaries of classified forests and protected areas are poorly understood and contested due to a lack of awareness among local communities [3]. Lack of citizen's awareness on the importance of preservation of forests [5].	Low level of coordination and synergy between the actors involved in CSA [2]. Lack of a formal framework for involving local communities in forest management [3]. Existence of multiple initiatives and projects/programs on the same theme [4]. Strengthening of good governance in the forest sector is a significant challenge [5, 10]. Lack of public and private partnerships like the cocoa-forest [5]. Weak coordination among institutions and initiatives [8, 9]. Institutional weakness in forest governance (managed exclusively by the state) and centralized forest management [3].	Farmer's lack of financial capacities [1, 9]. Lack of national financial capacities [2, 4, 10]. Limited or late availability of funds could result in delay in implementation [6]. Limited access to finance for smallholders to adopt agroforestry [8].	Limited rural infrastructure [9]. Low levels of mechanization [9].

	Economic and social	Incentives and scaling	Regulatory	Awareness, knowledge and skills	Coordination and governance	Financial	Infrastructure and equipment
Literature	The very poor remuneration of small producers or the too large number of intermediaries constantly looking for profits as a key barrier (Kouadio & Singh, 2021).	Reforestation projects failure: e. Farmers and cooperatives are not consulted about the tree species, and they received many seedlings they did not know or want (Ruf & Varlet, 2017). f. Farmers just let the seedlings die (Ruf & Varlet, 2017). g. Farmers fear that loggers will come back in 15 years to cut them down (Ruf & Varlet, 2017).	Land tenure issue (that particularly affect women, by clearing the forest migrants aim to secure land ownership) (once migrants have entered a forest, it becomes socially and politically difficult to expel them) (FAO, 2025) (Ruf & Varlet, 2017) (Atangana et al., 2025).	Farmers' lack of skills and experience in agroforestry and forest restoration (FAO, 2025).		Insufficient funding available for policy implementation (FAO, 2025). Farmers' lack of access to financial systems (FAO, 2025).	
National workshop	High input costs. Lower organic yields. High cost of innovation. Limited market access.	Certification requirements that may discourage farmers.	Conflicts between smallholders and other land users.	Limited familiarity with agroforestry practices. Lack of farmer training and information.	Lack of coordination ministries (agriculture, environment, trade). Lack of consolidated data. Lack of transparency in public funds execution	Limited access to finance.	Limited access to equipment.

3.4. Enabling environment to achieve zero deforestation value chains and build resilience to climate change

National and international frameworks

The enabling policy environment for zero deforestation, climate mitigation, and climate change was examined through an analysis of policy documents where the alignment and mention of national and international laws, policy, programs and frameworks was assessed (Table 11). The most mentioned national policy related to climate change is the national adaptation plan, while the one related to deforestation is the Forest Code. Regarding international framework, the most mentioned related to climate change and deforestation are the Paris Agreement, the NDC and the REDD+ strategy.

Table 11. National and international laws, policy, programs, and frameworks mentioned in policy documents.

	National level	International level
Climate change related	National Climate Change Program (PNCC) [1] National Adaptation Plan [1, 4] National Gender and Climate Change Strategy [1] The Sustainable Development Framework Law No. 2014–390 [1]	Convention Cadre des Nations Unies sur les Changements Climatiques (CCNUCC) [1, 3] Kioto protocol [1, 7] **Paris Agreements [1, 2, 4, 5, 7, 8]** SDG 13: Climate action [8, 9, 10] **Contributions déterminées au niveau national (CDN) [3, 8, 4, 10]** **United Nations Framework Convention on Climate Change (UNFCCC) [1, 3]** **Kioto Protocol [1, 7]** **Paris Agreements [1, 2, 4, 5, 7, 8]** **SDG 13: Climate Action [8, 9, 10]** **Nationally Determined Contributions (NDCs) [3, 8, 4, 10]**
Deforestation related	Forest Policy Statement incorporated into Law No. 2014–427 establishing the Forestry Code [3] Forest Code [3, 4, 6, 10] Strategy for the Preservation, Restoration and Extension of Forests (SPREF) [4] National Reforestation Program (2006–2015) developed for forest rehabilitation and sustainable reforestation management [7] Policy for the Preservation, Rehabilitation and Extension of Forests (PPREF) [10] National Reforestation Program 2006–2017 (PNReb) [10] Programming Law for the Preservation, Rehabilitation and Extension of Forests (LPPRE) – to be adopted [10]	Framework for joint action (CAC) to fight against deforestation [4, 6] EU regulation on deforestation [4] Convention on Biological Diversity [4] United Nations Convention to Combat Desertification [4, 7] ECOWAS Forest Investment Program [10]
Both		**REDD+ strategy/mechanism [1, 2, 3, 5, 6, 10, 8]** UN-REDD Programme (FAO/UNDP/UNEP) [3] FCPF Programme (World Bank) [3]

	National level	International level
Development	National Agricultural Investment Program (PNIA) [2, 3, 10] National Policy on Sustainable Development [8] Comprehensive Africa Agriculture Development Programme (CAADP) [9]	SDG 1 No poverty [8, 9] SDG 2 No hunger [1, 8, 9] SDG 3 Good health and well-being [1] SDG 5 Gender equality [1, 9] SDG 8: Decent work and economic growth [9] SDG 12: Responsible consumption and production [9] SDG 15: Life on land [8] ECOWAS Common Agricultural Policy (ECOWAP) [9]
Cacao	Cocoa sector strategy [6]	Cocoa and Forests Initiative (CFI) [4]

Note: Lines in bold show the most mentioned ones.

Participatory processes

Besides, we considered contributing to enabling environment the use of participatory processes. In policy documents, several mechanisms were mentioned:

- For the development of policy documents:
  a. National Strategy on Gender and Climate Change (2020–2024) ("initiatives to mobilize and engage key stakeholders") [1].
  b. National Strategy for the Preservation, Rehabilitation and Expansion of Forests [10].
- For articulating action between the Ministry of Environment and the Ministry of Women [1].
- As guiding principle for policy implementation:
  a. NDC [1] and climate action (women, youth, NGO…) [7].
  b. Involvement of women and youth for reforestation efforts [3, 4, 5, 6, 8, 10] and monitoring efforts [6, 8, 10].
  c. Agricultural development program (producers' organizations, women's associations, and youth groups) [9] and monitoring efforts [9].

During the national workshop, participants identified as a cross cutting action the promotion of women involvement in coca value chain and the need for gender-sensitive approaches.

Incentives

Incentives are also considered as fostering enabling environment toward sustainable and zero deforestation practices. In policy documents are mentioned the following:

1. **Economic (tax and non-tax) incentives [1, 2, 3, 4, 6, 8, 10]**
   a. (PSE) [1, 2, 3, 4, 6, 8, 10].
      i. PES Modality "Agroforestry" (trees in cocoa, palm, or rubber tree systems and living hedges) (5-year contract) [3].
      ii. PES Modality "Village Reforestation" (individual or collective reforestation by local communities) (10-year contract) [3].
      iii. PES Modality "Assisted Natural Regeneration" (ANR) (10-year contract) [3].
      iv. PES Modality "Forest Conservation" (conserve a minimum of one (1) ha of land evolving in a natural dynamic) (contract for 5 years) [3].
   b. Carbon credit and finance [4, 8].
   c. Financial inclusion/credit access/microfinance (men, women, youth) [6, 8, 9, 10].
      i. Encouraging the involvement of banks (green finance, new insurance products, etc.) [10].
   d. Tax incentives
      i. For agribusiness investments [9].
      ii. Exempt from the outset all those who wish to register their forests [10].
   e. Annual regulation of wood prices according to species and quality [10].
   f. Reward mechanisms for agents who perform well in combating deforestation at the local level and strict enforcement of penalties against unscrupulous agents [10].
2. **Promotion of CSA start-ups/entrepreneurship funding in agroforestry [2]**
3. **Regulatory**
   a. Code forestier enforcement [3].
   b. Simplification and adaptation of regulatory requirements (registration, approval, management plan for areas of 20 ha or more, guaranteed access to resources at maturity, etc.), procedures, and taxation to stimulate private forestry [10].
   c. Certification.
      i. Certification of sustainable products [8].
      ii. Facilitating the acquisition of land certificates for residual forests, old fallow land, and forest plantations in rural areas [10].
4. **Conduct development projects based on the level of preservation or rehabilitation of forests in the territories [4, 5, 10]**
   a. As enabling environment for investment (protection and restoration projects will be developed for collective investment by stakeholders) [4].
   b. Compensatory reforestation programmes [6].
5. **Public-private partnerships for infrastructure and value chain development [9]**
6. **Surveillance [5]**
   a. Special Brigade for Surveillance and Intervention of the Ministry that will be equipped to secure forests but also to intervene in case of offences [5].

During the national workshop, participants mentioned that an incentive is that exporters are already prefinancing a lot of activities in the sector. In addition, the representative from the Ministry of Environment mentioned available climate funds such as the Green Climate Fund, and the need to monitor other available funds. In that sense, it has been recommended to organize training on proposal writing.

4. Discussion

Climate change and deforestation represent crucial challenges for the cocoa value chain as major contributors to GHG emissions and deforestation (Yao Sadaiou Sabas et al., 2020; Kalischek et al., 2023) and for the sector's sustainability according to researchers and policymakers. The magnitude of deforestation in Cote d'Ivoire and contribution of cocoa production is highlighted in policy, research and confirmed by key stakeholders. In the same way, the issue of climate change is identified as a critical risk for value chain sustainability, but the value chain is also presented as having a great potential for mitigation actions.

Sustainability of the value chain is key at the farm level for producers' livelihoods (which greatly depend on cocoa farming) (Kalischek et al., 2023), at the national level (the country is world's leader in cocoa production), at the international trade level (EUDR) (Ruf et al., 2015; Kroeger et al., 2017; de Oliveira et al., 2024), and at the global bioversity level (the country used to have richest biodiversity in Africa) (Kouadio & Singh, 2021). In this context, the adoption at scale of practices that address climate change and deforestation is needed. Understanding enabling environment in terms of policies and regulations that foster adoption and barriers is thus key.

> "A diversity of actors is involved in the cocoa value chain that hold different priorities for its development.

A diversity of actors is involved in the cocoa value chain that hold different priorities for its development. While farmers shared priority at the production level (land tenure, access to planting material, training), other actors (civil society, international NGO, policy makers) focus more on global issues, such as climate change, exportation, market access, and EUDR compliance. This can be seen as potential for complementarity if articulation, dialogue, and coordination are ensured.

Research and government actors (in policy documents) argue that the government and supply chain need to play a role in stopping the cocoa frontier and also need to promote intensive and diversified farming practices that respond to climate challenges (Ruf et al., 2015). Indeed, policy documents goals show a focus on deforestation and in a lesser extent climate change with objectives related to agroforestry, resilience, and mitigation. Cacao is targeted in policy documents illustrating an interest in supporting the value chain, within specific geographic areas and sector (forestry and agriculture) and focusing on social groups (stallholders, women, and youth). This illustrates the interest and focus put by the government on the cocoa value chain.

Practices have been identified in the literature, policy documents, and during the national workshop. Agroforestry is the consensual practice mentioned in policy documents and during the national workshop. Policy documents mention more practices addressing deforestation than adaptation and mitigation practices. However, CSA is the 3rd most mentioned practice in policy documents. Organic production and practices were mentioned during national workshops and in literature as key practices

However, barriers to adoption related to economic and social factors, incentive and scaling, regulatory issues, limited awareness, knowledge and skills, coordination and governance challenges, financial constraints, infrastructure challenges, and equipment shortages have been identified. These barriers lead to low adoption of sustainable and resilient practices by smallholder farmers. There is consensus among literature, policy documents, and national workshop testimonies.

As for the enabling environment, we can mention the promotion of participatory processes within the policy documents with a specific focus on women and youth for the development of policy documents, articulating actions and as a guiding principle for policy implementation. In addition, promotional incentives are promoted in policy documents (mainly PES, financial inclusion). However, only three policy documents shared indicators which can constitute an issue for measuring implementation and outcomes. Furthermore, low coordination and governance and lack of transparency in public fund execution can constitute a challenge to achieve these recommendations. It appears that the main support for cocoa farming is given by exporters. However, it is not clear to what extent their support includes environmental and climate considerations. In this sense, the EUDR can constitute an influence on these actors.

5. Conclusions

This document aims to provide key insights into the enabling environment drivers necessary to achieve zero deforestation and enhance climate adaptation and mitigation within Côte d'Ivoire's cocoa sector. Specifically, it examines stakeholder development priorities, sustainable cocoa production practices and practice bundles, the policy, institutional, and social enabling environment, as well as the incentives and barriers to adopting and scaling innovations that support zero-deforestation value chains. The analysis was conducted through a literature review, policy content analysis, and a national workshop, which enabled triangulation of information across sources and offered a comprehensive view of Côte d'Ivoire's policy landscape.

> "Côte d'Ivoire plays a pivotal role in the global cocoa market, supplying approximately 40% of the world's cocoa exports.

Cocoa is of critical importance to Côte d'Ivoire, providing income for millions of Ivorians and generating significant revenues that finance national development policies. However, climate change poses serious challenges, including droughts and the spread of crop diseases, which threaten yields and the long-term sustainability of cocoa production. Moreover, Côte d'Ivoire plays a pivotal role in the global cocoa market, supplying approximately 40% of the world's cocoa exports. With the implementation of the EUDR, which imposes stringent requirements on zero deforestation, traceability, and due diligence, the country faces mounting pressure to ensure the sustainability of its cocoa value chain to maintain access to its primary export market and preserve its global leadership.

These concerns are clearly reflected in national policy frameworks. Deforestation and climate change are identified as key priorities across relevant policies, with eight out of ten analyzed documents including goals related to deforestation and six addressing climate change. Despite this strong policy emphasis, only three of the ten policies reviewed include indicators that enable effective monitoring and evaluation of their implementation. Stakeholders that participated in the national cocoa value chain workshop identified priorities consistent with policy analysis findings, including land tenure certification, agroforestry, EUDR compliance, market access, improving farmer livelihoods, quality inputs, local processing and consumption, financing, and capacity strengthening.

The enabling policy environment is supported by a robust institutional framework, notably the Coffee and Cocoa Council, which regulates the sector by setting cocoa prices, issuing licenses, managing forward sales on international markets, and promoting sustainable practices. Additional support comes from ministries and research institutions, such as the Ministry of Agriculture and ANADER which provide policies, guidelines, and technical assistance for transitioning to a zero-deforestation cocoa value chain. This infrastructure is complemented by NGOs, international certification bodies, and civil society organizations working to improve producer livelihoods and sustainability.

Zero deforestation practices identified in policy documents include agroforestry, reforestation, and climate-smart agriculture. Participants in the national workshop highlighted additional techniques such as pruning, mulching, composting, cover cropping, and water retention strategies using banana plants. They also proposed bundles of innovations that combine agroforestry with organic input production, water management, climate-adapted seeds, biochar, and other complementary practices.

Barriers to the adoption and scaling of these practices were identified through both policy analysis and stakeholder consultations. These barriers are primarily economic, social, regulatory, financial, and those related to governance fragmentation and lack of sufficient awareness, skills, and equipment. Economic and social constraints include low youth engagement, poor remuneration for smallholders, high input and innovation costs, and low organic yields. Regulatory challenges involve insecure land tenure, absence of implementing decrees, and limited enforcement capacity. Technical limitations, such as lack of awareness, insufficient skills, and weak cooperative professionalization, further complicate progress. Systemic issues include fragmented coordination among actors, inadequate data and

traceability systems, limited financing, poor infrastructure, low mechanization, and restricted access to equipment.

Several incentives could support the uptake of zero-deforestation practices. These include payments for ecosystem services, access to carbon finance and carbon markets, access to credit and microfinance, fiscal incentives, performance-based reward mechanisms, entrepreneurship funding in agroforestry, sustainability certification schemes that enable access to premium prices, and development programs focused on forest conservation and restoration.

Based on our results, we provide the following recommendations:

- The priorities set in policy documents and backed by research for cocoa value chain to address climate change and deforestation issues need to be implemented on the ground and monitored to avoid undesired outcomes.
- Coordination and dialogue among actors involved in the cocoa value chain as well as deforestation and climate change issues are key to aligning effort and efficiently supporting cocoa producers.
- Farm-level practices that are to be promoted must address not only climate change and deforestation issues, but also productivity and income generation for farmers that remains the poorest actors of the value chain.
- The promotion of practices must be accompanied by concrete incentives for farmers.
- Monitoring and evaluation of policy are key to assess policy implementation and outcomes.

This country profile on the policy landscape for implementing zero deforestation cocoa value chains and climate adaptation and mitigation practices can be useful to local, national, and international stakeholders to understand opportunities and barriers and thus guide future strategies.

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