VCA4D
VALUE CHAIN ANALYSIS FOR DEVELOPMENT

agrinatura for European Commission

Analysis of the cocoa value chain in Liberia

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LA RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

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The information and knowledge produced through the value chain studies are intended to support the Delegations of the European Union and their partners in improving policy dialogue, investing in value chains and better understanding the changes linked to their actions

VCA4D uses a systematic methodological framework for analysing value chains in agriculture, livestock, fishery, aquaculture and agroforestry. More information including reports and communication material can be found at: https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d-

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ACRONYMS

CARI	Central Agricultural Research Institute
CDA	Cooperative Development Agency
CVC	Cocoa value chain
DG INTPA	Directorate-General for International Partnerships of the European Commission
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FU	Functional unit
GHG	Greenhouse Gas
	GST Goods and services tax
GWP	Global Warming Potential
Ha	hectares
ILO	International Labour Organization
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
	LACRA Liberia Agriculture Commodity Regulatory Authority
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
M	Million
MoA	Ministry of Agriculture
	MOCI Ministery of Commerce and Industry
MT	Metric Mega-ton
t	tonne
VC	Value chain

DEFINITION OF ECONOMIC TERMS

Economic terms	Definition
Net operating profit (NOP) (without valuing unpaid family labour)	(Revenues – Expenses) – Depreciation
Direct value added (VA)	The sum of the VA generated by all the actors operating within the VC limits (i.e. actors producing, processing or channeling the VC product)
Indirect VA	The sum of the VA generated by all the suppliers external to the VC (i.e. actors providing intermediate goods and services to the VC actors, therefore not handling nor processing the VC products)
Total VA	The sum of the direct and indirect VA
Rate of integration within the domestic economy	The portion of the value of the VC production which eventually remains within the national economy Rate of integration = Total VA / Production of the VC
Driving effect ratio	It informs on the involvement of domestic business in supporting the activities of the VC. Driving effect ratio = Indirect VA / Direct VA
Public funds balance	Impact on public funds= Benefits [*Total taxes + Total OP of public companies*] - Costs [*Subsidies + other public outlays*]

Balance of trade	Impact of the VC on balance of trade = VC exports – VC Total imports (inputs/ good and services/intermediate consumptions)
Nominal Protection Coefficient (NPC)	It compares the national and international prices of every VC product. NPC= Domestic price of the product / International parity price of the product
Domestic Resource Cost Ratio (DRC)	It compares (i) the actual internal cost for the economy given by the actual remuneration of the domestic non-tradeable factors (e.g. labour, capital, land, environmental goods) mobilised in the VC, and (ii) the net value created within the economy: estimated using international parity prices (of IC and production), i.e. from the opportunity standpoint of international markets. DRC= Non-tradeable domestic factors at market price (excluding transfers) / (Production at international price – Tradeable intermediate goods and services at international prices)

EXECUTIVE SUMMARY

Introduction

This report provides an analysis of the cocoa value chain (CVC) in Liberia. The cocoa industry is often regarded as one strong candidate to stimulate Liberia's economic growth. It provides income for around tens of thousands of farmers, as well as export revenues for the government. However, the industry is poorly understood, documented and regulated, for a number of historical and current reasons.

This study was implemented over a period of roughly one year in 2023 and reports on the current producing situation, with limited insights on the evolution of the value chain (VC) in the coming five years. The methods used in the study aim at generating evidence, supported by a list of indicators measured quantitatively or based on expert assessments that together provide an answer to four framing questions: (1) What is the contribution of the VC to economic growth? (2) Is this economic growth inclusive? (3) Is the VC socially sustainable? (4) Is the VC environmentally sustainable?

These thematic analyses are preceded by a functional analysis of the CVC in Liberia, that provides a general mapping and description of the main actors, activities, and operations in the VC, an overview of the products and product flows, the major production systems, as well as a description of the main governance mechanisms.

The team carried out, personally and through field agents, surveys on 95 cocoa farms and 12 traders, throughout the three main producing areas: (1) the counties of Bong, Nimba and Lofa, referred to as "the cocoa belt" because the bulk of the national production takes place there; (2) Grand Gedeh and River Gee, referred to as "the Southeast"; (3) Grand Cape Mount, Bomi and Gbarpolu, referred to as "the West".

Functional analysis

Available national and international sources of data on cocoa production and exports in Liberia present high variations, which are explained by informal flows of cocoa and lack of public monitoring. Just to name a few variables, the number of producers varies between 13 000 and 40 000, the surface area of cocoa plantations between 25 000 and 99 000 ha and national production between 4 000 and 16 000 tonnes of dry beans.

The team did interviews with 95 farmers, with 20 key informants, and two workshops were held in Monrovia to receive the feedback from participants while presenting the initial and final results of the study. These results gave an overall, updated and consistent picture of national cocoa production with 35 000 small producers, 81 491 ha of cocoa plantations in production, and an annual production volume of 11 589 tons of dry beans. National production must therefore be supplemented by imports of 12 411 tons of cocoa from Côte d'Ivoire to reach a volume of 24 000 tons of cocoa exported by Liberia in 2023.

The massive expansion of cocoa farming in the south-eastern counties is a recent development in the CVC, although it will generate a very little impact on the volume produced in 2024, since these new cocoa farms will only come into production in the next few years. Some 13 000 km² of dense forests were degraded in Liberia between 2000 and 2018, while 15% of Liberian deforestation in 2001-2020 can be attributed to cocoa. There is an influx of migrant cocoa farmers who are acquiring land, through a range of arrangements, associated with severe environmental impacts through deforestation.

Actors and products

- Suppliers

There are three types of "suppliers" to cocoa farmers in Liberia, whose influence vary depending on the way the cocoa is produced. Firstly, several public organisations have a direct or indirect mandate to supervise and support cocoa production in rural areas, but they are little effective in the field. Secondly, international public funding partly compensates for the low level of involvement of national public bodies with cocoa producers. The start-up phase of sustainability certification for cocoa is often supported by international donors, but it remains rare in Liberia. Finally, the private sector - exporters' sales agents and traders based in rural areas - appears to be the main supplier to all types of cocoa producers in Liberia.

- Producers

Small-scale cocoa production is overwhelmingly dominant but this does not mean that there is only one model. Our interviews with producers and with key informants led us to construct an *ad hoc* typology based on three major criteria: external support, creation of a new farm versus management of an old farm, and nature of labour, as depicted in the table below.

Criteria	**Commercial farms (COM)**	**Collective work farms (COL)**	**Family labour dependant farms (FAM)**	**External labour dependant farms (EXT)**	**Semi-abandoned farms (ABA)**
External support	Yes	Yes	No	No	No
Farm age <8 years	Yes	No	Yes	Yes and No	No
Main labour	family and external	family	family	external	family and external
Revitalisation of farm	No	Yes	No	Yes and No	No
Average in our sample (n=95)					
Active surface of the farm (ha)	*3.4*	*2.9*	*2.4*	*1.4*	*2.8*
Yield/ha in dry beans (kg)	*174*	*146*	*141*	*88*	*159*
% in our sample	*2%*	*7%*	*24%*	*29%*	*37%*
Computed total number of farmers in Liberia	*1 050*	*3 500*	*8 400*	*9 800*	*12 250*

Table 1: Typology of the cocoa farms in Liberia

This typology of cocoa producers diverges from most of the observations made previously for the cocoa sector in Liberia, in which producers benefit fairly from external support and interact within or with cooperatives. Our surveys, carried out without the intermediation of existing projects and also outside the cocoa belt, show a different reality: the vast majority of producers receive no

support from extension services, projects or private partners, and consequently adopt low-intensity, undemanding production methods, often similar to picking cocoa pods from plantations with little or no maintenance.

- Cooperatives

Despite their advantages in theory, cooperatives and the various formal organisations of cocoa producers are rare and not very effective in Liberia. Even in the production basins that benefit from international support, around 70% of producers do not belong to or use a farmer-based organisation. As a matter of fact, cooperatives are of little interest to a large majority of producers compared to competing forms of cocoa bean marketing, such as licensed buying agents or informal traders.

In total, the national cocoa stakeholders' platform registered 85 cooperatives in 2023.

- Traders

Farmers have little access to markets and transport facilities. Itinerant traders therefore play a crucial role in evacuating cocoa to Monrovia or to foreign markets. Two types of traders perform this intermediary function, but with different statuses and financial and technical resources.

On the one hand, licensed traders are recognised by the public authorities and are affiliated with an exporting company based in Monrovia. There are less than 100 commercial agents, since each of the exporting companies relies on a small network of 10-20 trusted traders. These official traders have the financial resources to invest in long-term partnerships with farmers, either directly or through cooperatives, or with unofficial buyers. The licensed traders provide training and pre-finance the activities of farmers or local unlicensed traders who should sell them in return under a forward contract at an agreed-upon price, so they can recover their investment.

On the other hand, many unlicensed traders are also active in the cocoa VC. They complement licensed traders by being present in isolated areas and compete with them by acquiring cocoa from the same producers.

The number of licensed and unlicensed buyers has increased and there are strong indications that this has led to fiercer competition among buyers for cocoa produced by smallholders. This is good news for farmers, who can sell their cocoa to the highest bidder, which pushes up the farm gate price. It also means that the cocoa trade network extends to the most isolated farmers. But it is also bad, because all these traders want to acquire the maximum volume of cocoa, regardless of the quality of the beans or the previous business commitments made by the producers. The flexibility and exacerbated competition of the current cocoa trade in rural areas is a major obstacle to any system of bean traceability.

- Exporters

The number of cocoa exporting companies has been historically low in Liberia. In 2023, there were only eight of them that were registered and licensed to export. Only one company is affiliated with a multi-national company based in Côte d'Ivoire. The other companies are family-run or individual, all medium- or small-sized. The small number of exporters likely contribute to driving down the prices offered to cocoa producers. These low export prices can also be explained by the low quality of the cocoa marketed in Liberia.

Cocoa flows

Key mass flows among the various actors of the CVC are summarised in the figure below.

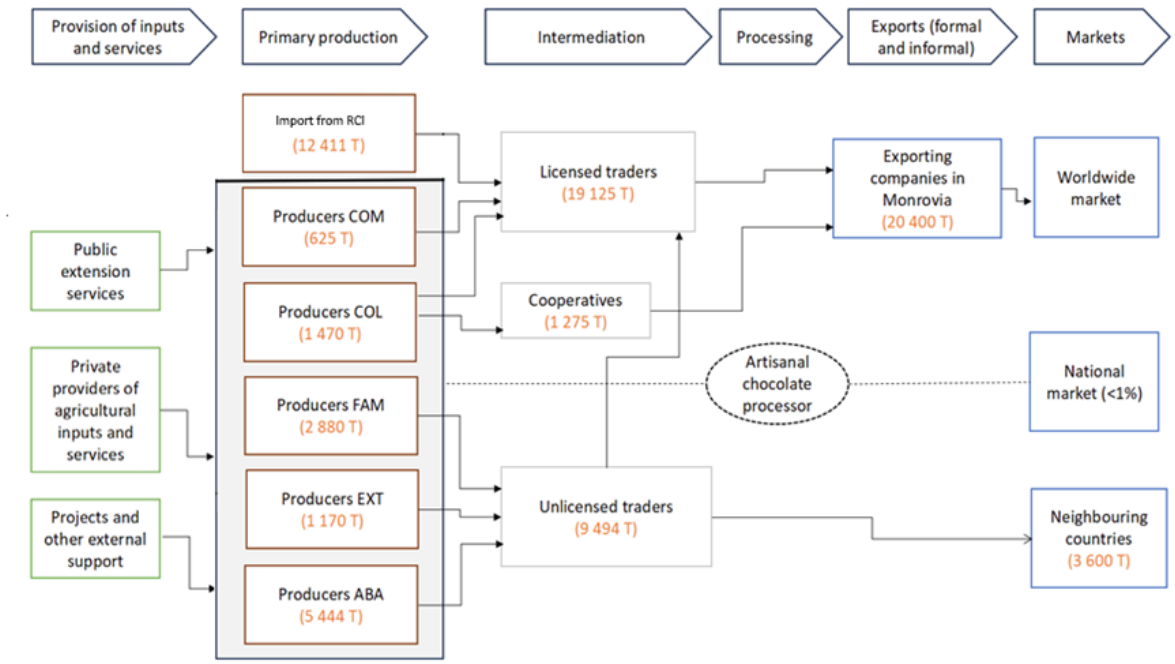


Figure 1: Flow chart of the cocoa VC in Liberia

Formal cocoa bean exports were in the order of 24 000 t. in 2023, according to both FAOSTAT and TradeMap. Important unrecorded volumes of cocoa beans flow from and towards Liberia. Three sets of variables have a major influence on the size and direction of these flows:

- The cocoa price differential between the neighbouring countries and Liberia. For example, the delay in adjusting if the Ivorian farmgate to higher international price creates incentives for Ivoirian suppliers to market their cocoa through Liberia.
- The cost of transporting cocoa to Monrovia and San Pedro, depending on where it is produced. For example, during the rainy season, it is much cheaper for producers in south-eastern Liberia to transport their cocoa to San Pedro than to Monrovia. The reverse is also true for Ivorian producers who are located close to Nimba county and to an excellent road to Monrovia.
- The facilities offered by traders to producers in terms of finance and equipment.

The geographical flows of cocoa in 2023 are shown in the map below.

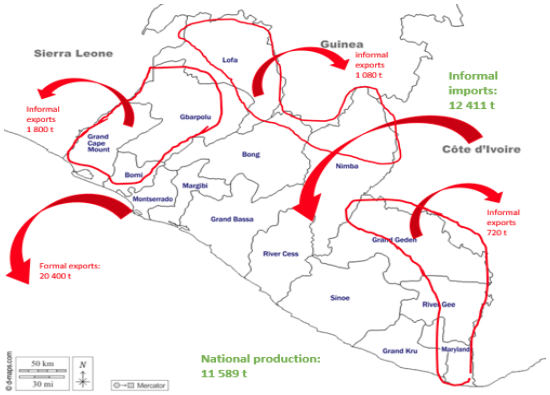


Figure 2: Geographical flows of the cocoa

Governance

The cocoa sector was lacking an effective institutional lead and applied regulations, along with limited opportunities for coordination between the VC actors. It was clear that the internal market for cocoa has mainly been influenced by the operations of a small number of dominant exporters, the limited incentives and capacity for post-harvest processing and challenges (and disincentives) in accessing the formal exports via Monrovia compared to cross-border trade.

The institutional framework surrounding the cocoa VC in Liberia is made up of many administrations: MOA, LACRA, CDA, CARI, MOCI… that are deprived of enough financial and logistical means to be active on the field or to provide regular public statistics. They all have the mandate to contribution to the implementation of the National Agriculture Development Plan 2024-2030 and to invest in the cocoa sector, focusing on five counties (Bong, Nimba, Lofa, Grand Gedeh, River Gee and River Cess).

Several public-private initiatives have taken place to strengthen coordination and leadership within the cocoa VC over the latest 5 years, for instance the National Cocoa Public-Private Partnership Platform as part of the four-year Liberia Cocoa Sector Improvement Programme. 11 international programmes and projects were launched to support the cocoa VC during the last years in Liberia.

However, the large number of public or private organisations formally involved in the governance of the cocoa sector in Liberia should not hide their weak influence on the vast majority of producers. Our survey among 95 producers chosen at random - i.e. without going through the intermediary of support projects - showed that less than 10% of them had received any support. This shortfall is due, on the one hand, to the limited resources of public organisations to be active on the ground and, on the other, to the small number of cooperatives and producers that each of the support projects can assist. Moreover, exporting companies and their networks of licensed traders have not set up any private mechanisms (certification, good practices, premiums, traceability, etc.) to make up for these shortcomings.
The governance of the cocoa VC in Liberia, at least in its upstream part, is in fact characterised by a liberalised informal economy, with weak or non-existent means of regulation. Several factors lead to inefficient relationships between farmers and traders, which hampers the development of the sector and its possible move towards sustainability: unfair practices among traders, little interest in the quality of the beans, widespread practice of side selling, volatility of the cocoa purchase price, general lack of farmers' groups for coordinated sales, and total informality of cocoa sales, with no identification of farmers, no registration of acts of sale, and no geolocation of plantations. All these shortcomings are major obstacles to move the sector towards sustainability and zero deforestation making the cocoa VC in Liberia very little attractive to investment.

FRAMING QUESTION 1: WHAT IS THE CONTRIBUTION OF THE VALUE CHAIN TO ECONOMIC GROWTH?

Profitability for the VC actors

Nine types of national stakeholders are involved in the cocoa VC in Liberia, whose individual and global production capacities are shown in table below.

Actor	Acronym	Number of individual actors	Annual capacity per individual actor (ton of dry bean)	Total annual volume for all actors (ton of dry bean)
Producer – Commercial	ProdCOM	1 042	0.60	625.00
Producer - Collective work	ProdCOL	3 500	0.42	1 470.00
Producer - Family labour	ProdFAM	8 471	0.34	2 880.00
Producer - External labour	ProdEXT	9 750	0.12	1 170.00
Producer - Semi-abandoned	ProdABA	12 373	0.44	5 444.00
Producer - Côte d'Ivoire	ProdRCI	1	12 411.00	12 411.00
Cooperative	TCOOP	85	15.00	1 275.00
Unlicensed trader	TUnlic	1 512	6.28	9 494.00
Licensed trader	TLic	75	256.00	19 117.00
Company exporting worldwide	ExpWW	8	2 550.00	20 400.00

Table 2: Profitability of the VC activities for the actors

The informal import of a large volume of cocoa beans from the Republic of Côte d'Ivoire at the moment is a feature of the VC's current configuration, but it generates limited national wealth since it is captured only by commercial intermediaries and exporters of these beans via the port of Monrovia.

Almost all stakeholder categories derive a significant operational profit in volume or percentage from the production, intermediation or marketing of cocoa beans in Liberia, as shown in the last column of the table below.

Actor	Value of production	Subsidies	Intermediate consumption	Value Added (net)	Wages	Taxes	Interest on loan	Depreciation	Net operating profit (NOP)
ProdCOM	1 125 000	35 366	73 171	1 051 829	212 195	16 463	0	0	858 537
ProdCOL	2 190 300	0	211 809	1 978 491	547 174	47 069	47 069	0	1 337 180
ProdFAM	4 432 320	0	373 895	4 058 425	1 025 684	111 158	0	0	2 921 583
ProdEXT	1 364 220	0	366 955	997 265	1 313 591	106 364	0	0	-422 689
ProdABA	7 730 480	0	507 616	7 222 864	2 015 751	205 989	14 714	0	4 986 410
ProdRCI	23 580 900	0	23 580 900	0	0	0	0	0	0
TCOOP	2 932 500	8 419 590	3 208 750	-276 250	2 363 340	205 870	30 600	763 555	4 779 975
TUnlic	18 513 300	0	14 476 421	4 036 879	371 899	92 219	0	777 057	2 795 705
TLic	45 403 540	14 935	38 102 264	7 301 276	527 144	180 046	4 481	161 153	6 443 388
ExpWW	59 545 458	95 964	50 779 795	8 765 663	1 367 482	3 228 146	593 775	356 625	3 315 598

Figure 3: Consolidated account of the cocoa VC in Liberia (in USD)

Only producers who depend on external labour do not make a profit from their activity. The paid cost of labour is almost the same as their value of production, which is low because of the small level of production volume. The case of cooperatives is also problematic from a financial point of view. They only make a profit thanks to the subsidies they receive.

The other types of small producers have very high profit rates which can be explained by the very low level of intermediate consumption. Primary cocoa production that receives no external support is very little capital-intensive. This production method, which uses very few inputs, enables high profit rates to be achieved, but the absolute amount of profit remains low, around 400USD/year for the COL-FAM-ABA-type producers. The COM producers do much better, with an annual profit of around USD 820 from the sale of cocoa, which demonstrates the positive impact of the support they receive to increase at least the quantity of their cocoa production.

Licensed and informal traders show similar profit rates of around 15%, but the average annual profit is USD 1849 for an informal trader, compared with USD 86 285 for a licensed trader.
Similarly, the average net operating profit (NOP) for exporting companies is relatively low in percentage terms (5%) but high in absolute terms, at an estimated USD 414 612 per year.

Macro-economic impact of the cocoa value chain

The total net value added (VA) generated by the cocoa VC in Liberia is around USD 38 million per year, including direct VA of USD 35 million. Indirect effects amount to USD 3 million, or less than 10% of total VA. This is due to the high level of imports of many intermediate inputs such as equipment, chemicals and cocoa beans purchased from Côte d'Ivoire.
The NOPs generated by the stakeholders make the largest contribution to the creation of total VA while wages are the second largest contributor. Subsidies also have a substantial impact on the VA, since the balance of taxes less subsidies is negative at around USD 4.3 million per year.

Total VA is distributed relatively evenly between the three stages of the VC: primary producers generate 44% of total VA, 31% comes from commercial intermediation, followed by 25% from formal exporters.

The current cocoa VC in Liberia contributes to 2.7% of agricultural GDP and 0.1% of national GDP. Despite its small size, this VC is well integrated into the national economy: the VA represents 58% of the value of production generated by cocoa exports. However, if we exclude the informal imports from Côte d'Ivoire, the VA reaches 91% of the value of production generated at national level. This high level of the VA reflects the small level of imported intermediate consumption and the current low sophistication of the cocoa industry in Liberia.
The general and specific taxes applied to cocoa in Liberia bring in USD 4.2 million a year for the Liberian government.
It is difficult to assess national public spending to support the development of the cocoa VC in Liberia, as this spending is carried out by several public organisations that all cover a wide range of agricultural commodities. In addition, there is a high level of international subsidies that are transferred to several stakeholders, that is estimated at around USD 8.5 million, mainly to cooperatives.

In total, if we deduct national and international public expenditure from the amount of taxes paid by the cocoa VC in Liberia, the public funds balance comes to - USD 4.3 million. However, another interpretation can be made of these figures, especially if we depart from the rigours of public accounting: while the national authorities probably spend at best a few hundred thousand USD to support the cocoa VC, the sum of the taxes generated and international subsidies provides a 'fiscal resource' of the order of 12.7 million USD per year.

Since the domestic market is negligible for Liberian cocoa consumption, the sector's turnover comes solely from formal exports from Monrovia and informal exports to neighbouring countries. These export revenues amount to USD 66 million in 2023.

Most of the equipment and inputs used to produce and trade Liberian cocoa are imported. But by far the biggest import expense is the purchase of cocoa beans in Côte d'Ivoire, which accounts for almost 90% of the total amount. All these imports amount to around USD 25.8 million per year. Overall, the sale of cocoa in Liberia generates a trade surplus of around USD 40.2 million a year.
This VC appears to depend very little on domestic factors of production, since the Domestic Resource Cost is only 0.058. This is essentially due to the majority of Liberia's exports being cocoa beans originating in the Côte d'Ivoire, which require very little labour or capital to trade. In such economically favourable conditions, the Liberian cocoa VC may be attracted by the role of commercial intermediary for a proportion of Ivorian cocoa, which benefits from favourable prices and does not have to meet any quality requirements. This high-performance sub-chain is likely to act as a brake on the sector's efforts to take the more difficult path of increasing the volume of national production, or of improving the quality of Liberian cocoa beans.

FRAMING QUESTION 2: IS THIS ECONOMIC GROWTH INCLUSIVE?

Income distribution across actors

Rural income from cocoa production is made up of the profit of the cocoa producers. This total farm income amounts to USD 9.6 million per year, or around 27% of the direct VA of the VC.

Employment

Unpaid domestic labour accounts for 43% of the working time spent for the CVC, with an assessment of 7 316 full-time jobs. Even excluding domestic labour, primary production offers the largest number of paid jobs, with 70% of the jobs in the entire CVC, but with low rates of pay.
The role of women varies along the VC: while they are quite heavily involved in primary production of the FAM-EXT-ABA types, even often owning cocoa farms, their role diminishes when support is provided to increase cocoa yields and sales (COM and COL type of farms). They have very little involvement in the downstream part of the VC, where most jobs involve physical tasks.

Impact of the governance systems on income distribution

The upstream part of the VC is largely deregulated, as the majority of small producers (FAM-EXT-ABA type) do not have stable commercial relations with traders. For these producers, sales are made on the basis of existing opportunities, which explains the great flow of cocoa to

neighbouring countries. The possibility of selling cocoa without contractual or loyalty constraints tends to keep the price of cocoa fairly high for primary producers, given the quality of the beans: excluding COM-type producers who sell directly to licensed buyers, the selling price of cocoa at the farm gate fluctuates around USD 1,400 per t. This corresponds to 48% of the FOB price in Monrovia. Each of the three following stakeholders in this VC - unlicensed buyers, licensed buyers and exporters - increases the price by around USD 500 per t before the beans are exported via Monrovia.

Licensed traders play a decisive role in the operation of this VC. As they are contractually linked to the exporting companies, they have financial and logistical resources which they can commit in advance to many informal traders (and to certain COM-type producers) in order to secure large volumes of cocoa. This is particularly the case for cocoa imported informally from Côte d'Ivoire, which is shipped in large unit volumes. Their total profit is the highest of all the stakeholders in the VC, not so much because of a high profit rate but because they apply this average profit rate to a large volume of beans.

Exporters also follow the same rationale - a low rate of profit on a large volume of beans - but they suffer from the poor quality of the beans exported from Monrovia. The selling price of a t of beans in Monrovia was USD 2,920, while the average international price in 2023 was around USD 3,300, i.e. a discount of 12%.

FRAMING QUESTION 3: IS THE VALUE CHAIN SOCIALLY SUSTAINABLE?

The cocoa VC is dominated by smallholder production. It provides an important source of cash income from the sale of cocoa and informal labour (paid in cash or kind, but also through reciprocal social capital). The VCA4D study found evidence that smallholder farmers, youth and women see cocoa (among other tree crops) as an opportunity for social advancement, and that the income derived from it helps to cover household food needs, education and medical expenses. This is important because rural communities experience significant challenges in terms of poverty, food insecurity, limited access to markets and services along with limited livelihood options. There are marked differences in the severity and impact of these issues across the counties where cocoa is grown. They determine how smallholder households respond to opportunities and shocks, and describe the vulnerability of different geographic areas, and socioeconomic groups to potential changes in the CVC. It is difficult to judge the CVCs socio-economic impact. Without reliable, up to date data, it is not possible to verify exactly how many farmers are involved in cocoa production or are benefitting from labour. At the stakeholder level, the CVC is not well coordinated or regulated. The VCA4D social analysis provides further insights into the sustainability of the CVC:

Working conditions - The vast majority of labour takes place at the smallholder producer level. Most of it is unpaid family labour. Paid labour is informal and based on verbal arrangements that are only enforceable in the context of the local community and social norms. It is paid in cash, kind (e.g. food) or through reciprocity (e.g. Kuu). There is a high degree of dependency on relationships of trust to ensure these arrangements work, so there is a preference for employing family or other

members of the community. Household labour capacity and the ability to pay for additional labour are significant barriers to participation in cocoa production and increase the risk of child labour. Injury is also a significant risk at smallholder production level, and the impact on the individual and household can be catastrophic. Liberian labour law largely conforms to international standards, including preventing child labour, but is almost impossible to enforce at smallholder level.

Land and water rights - The Land Rights Act of 2018 has created a progressive legal and governance framework which recognises customary rights, promotes equality, and gives greater responsibility to communities for planning, decision making and dispute resolution. Consultation, representation and inclusion are required by law as part of any outside investment involving land. However, the roll out of land registration is slow and expensive, so is dependent on external support. Corruption and the creation of overlapping titles are a significant risk. There have been significant improvements in women's land rights, greater acceptance of women taking possession of land and being part of land related decision making. Discrimination still exists within other areas of Liberian law and customary systems particularly relating to divorce, inheritance, that contradicts the Land Rights Act.

Gender equality - Women are less visible in the CVC than men and are more likely to earn an income from off-farm activities and informal labour. Considerable work has been done by development partners to improve women's participation in cocoa farming over the years, particularly in Bong, Nimba and Lofa counties. When women do farm cocoa, their farms are smaller, and they (and youth) still face challenges (particularly so for female headed households) in terms of labour capacity, ownership of assets, decision making, access to training and services, participation in farmer groups. Lower levels of literacy among women are also a disadvantage.

Food and nutrition security - Levels of food insecurity, childhood malnutrition and stunting remain high in many parts of the country. Many rural households depend on buying food from the market to meet needs. It is estimated that 90% of subsistence farming households in Liberia will at some point compromise on food quality and variety, skip meals or go without food as a coping strategy during periods of food insecurity, which exhibits a strong seasonal pattern – coinciding with the rainy season when people have less money, find it more difficult to access markets and prices are high. Nationally, food price inflation, dependence on imports, and increasing cost of fuel, exacerbate food insecurity and smallholder household spending power. Cash income from cocoa can help households mitigate against food insecurity, although it was not possible to assess to what extent this was the case.

Social capital - Formal and informal farmer groups, including cooperatives and associations, are a feature of the CVC. There has been substantial investment in the rehabilitation of farmer organisations and smallholder cocoa farms since the end of the civil war. Despite this, most cooperatives still lack sufficient capacity to independently increase the productivity of their members' farms. Grassroots self-help groups such as Kuu and Susu are prevalent. The CVC is not well coordinated or regulated, and currently has no functioning platform through which CVC actors can come together to discuss issues and plan. Knowledge of the policy and regulatory

environment for cocoa is low in many areas. Word of mouth and traders are the most common sources of information.

Living conditions – The poor condition of the rural road network is one of the most significant limiting factors for rural communities and the CVC. Despite considerable investment in the road network, many rural areas become cut off during the rainy season, limiting access to markets and services. As a result, market integration is weak. Many communities have easier access to markets in neighbouring countries. The Human Capital Index estimated that a child born in Liberia in 2020 would only achieve 32% of their productive potential as an adult, compared to what might be possible if they could enjoy complete education and full health. While access to healthcare and education statistics have also improved, access is still an issue for many rural communities resulting in low school attendance, high drop-out rates and poverty.

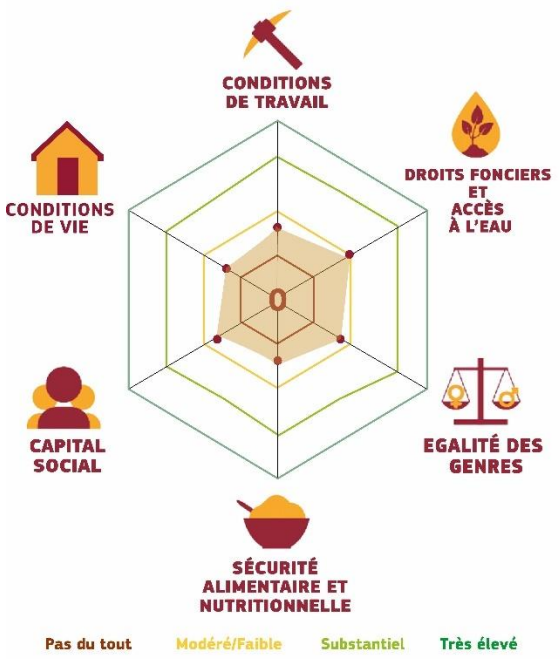


Figure 3: Social profile of the cocoa VC in Liberia

FRAMING QUESTION 4: IS THE VALUE CHAIN ENVIRONMENTALLY SUSTAINABLE?

Environmental sustainability is a dynamic goal without fixed thresholds, where reducing a product's ecological footprint signifies progress. Life Cycle Assessment (LCA) links causes and the environmental consequences of a product by quantifying the emissions and resources used during each step of its whole life (including inputs manufacturing, crop, different agricultural practices, post-harvest practices, transport, until a specific point of the VC or even until disposal). The results are presented for five different indicators: Mineral and Fossil Resource scarcity, Ecosystem Quality, Human Health, Climate change and Biodiversity loss. The latter is based on a complementary approach to LCA.

LCA purpose is to identify, quantify, and mitigate the burdens associated with a product or process. Positive effects, such as ecosystem restoration or carbon sequestration, are complex to standardize and quantify within LCA's cause-effect framework. Additionally, LCA aligns with the precautionary principle, prioritizing harm reduction to support sustainable decision-making.

In Liberia there is no cocoa processing, so the consumption and use of resources necessary for agricultural production and the trading of cocoa beans are considered until arrival at the port of export. **The national traditional cocoa** production (11 600 tons of cocoa beans that creates USD 35 137 million of direct VA) **shows low impacts and damages over the environment**. Even if the consequences of the CV are small, it is possible to identify main sources to continue to reduce them and avoid potential damages in further development strategies.

In LCA, the results are related to a specific function. In agricultural value chains, efficiency is measured either by product volume (metric tons) or added value ($). Using the calculated added value for each stakeholder, impacts can be expressed in monetary terms, allowing for a trade-off between economic growth and environmental impact. The figure below shows the contribution to environmental damages and impact of agricultural production and trading activities for the VA (USD 35 million) of CVC in Liberia.

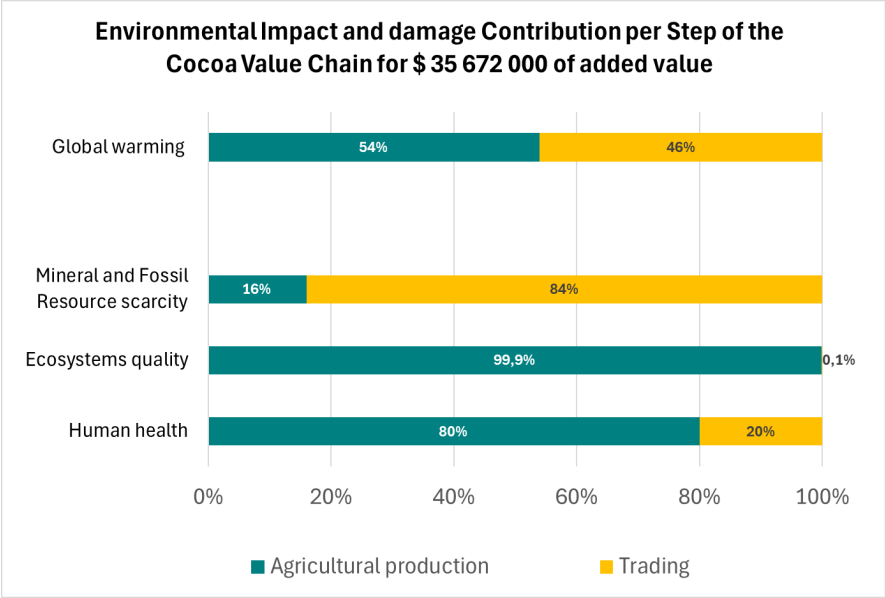


Figure 4: Contribution of the cocoa VC stages to environmental impacts and damages

The agricultural stage of the cocoa value chain, particularly the burning of residues, is the primary contributor to **human health damage**, mainly through fine particle emissions during burning crop residues (pruning) and pods. Even if less than 23% of farms use those practices, they represent the most important hotspot. The damages on human health from the CVC Liberia is minimal, accounting for only 0.06% of the national burden of disease, estimated about 57 207 DALYs in 2016 (Ilesanmi, 2018). The trading operations represent 20% of damages on health for the national cocoa beans and this proportion reduces to 1% when informal cocoa is included. Most of damages are originated by transport combustion emissions.

The damages over **ecosystem quality** involves two main effects on terrestrial species: changes in land cover and the actual use of the land. Although less than 20% of farms undergo land use change from woodland or forest, this transformation accounts for over 40% of the ecosystem damage. Certain farms show more than 74% when land use change has been made over the past 20 years. This result points out an important choice to revitalize plantations on previous farmland instead of clearing forests.

The endpoint indicator **resource depletion** (mineral and fossil) assesses the long-term impact of resource extraction on the availability of mineral and fossil resources. At the national VC scale, 99% of damages are attributed to fossil resources, primarily from fuel use in pesticide manufacturing (72%) even if quantities used are minimal and trading operations (21%) for informal cocoa beans. The importance of impacts of manufacturing inputs outside the country illustrates another environmental advantage of Liberian agroforest systems.

A fourth indicator is the **climate change** potential impact which is linked to greenhouse gases emissions (GHG). Agricultural production is the main source of GHG emissions in Liberia's CVC, accounting for 64% to 78% of total emissions, with land use change and burning residues further contributing to climate change. Recent estimates place GHG emissions from the national cocoa VC at 5.5 million t of CO_2eq per year, rising to 19.21 million t when land use change is included (Jones et al., 2024). With estimations of our analysis, total CVC represent only 0.006% of the country's total emissions. Using international databases (WFDB represent agricultural practices of at least 10 years statistics), it is possible to compare the GHG emissions of 1 t of Liberian cocoa with 1 t of cocoa dried beans from Ivory Coast or Ghana. Liberian cocoa has a very low level of emissions. This presents an opportunity to enhance the VC through improved sorting and processing without intensifying inputs, as promoting intensive practices would drastically increase environmental impacts. On the other hand, this also presents a potential risk of increasing the environmental footprint of the CVC when taking into account emissions linked to informal cocoa flows from Côte d'Ivoire in 2023 (12 400 t), where agricultural systems rely significantly on higher input practices.

Biodiversity in Liberia is under pressure due to deforestation and land-use changes. Some studies estimate that cocoa farming contributes to 15% of tree cover loss in Liberia (Masolele et al. 2024). The national Mean Species Abundance (MSA) is 0.44, suggests significant biodiversity loss, particularly in cocoa-producing regions like Nimba, River Gee, and Grand Gedeh. Sustainable intensification and cocoa farm rehabilitation are crucial to balancing production with conservation, but challenges like weak infrastructure, limited data, and lack of traceability hinder effective decision-making.

The Liberian traditional CVC has very low potential environmental damages and impacts mainly due to minimal use of chemical inputs, limited management practices, old and not revitalized crops. Sustainable strategies to enhance CVC productivity are essential, but they must also include actions to reduce residue burning, develop local inputs, and revitalise previously cultivated land. Two important additional challenges were identified and they need better understanding: (i) A better quantification and characterisation of Informal flows of cocoa from Côte d'Ivoire, (ii) the

cocoa plantation expansion in south-eastern Liberia, often replacing forests, poses a serious long-term threat to sustainability in the following years.

Conclusions

Overarching insights

Liberia's cocoa VC, dominated by smallholders, is hindered by low yields, poor quality, and limited economic impact, contributing less than 0.1% to GDP. Fragmented and informal, it suffers from inadequate infrastructure, outdated practices, and weak market integration, leaving most farmers unable to reinvest or improve. Despite these challenges, emerging intensive production areas and informal trading routes offer growth potential, though environmental risks and regulatory compliance issues, such as the EUDR, must be addressed. Strengthening intermediaries, improving traceability, and fostering sustainable practices are critical to revitalizing the sector.

Areas requiring further in-depth analysis

The cocoa VC in Liberia requires deeper analysis in key areas to guide its development. A comprehensive typology of cocoa farms is needed to capture the diverse production systems and tailor interventions effectively. Understanding cross-border cocoa flows drivers is crucial for policy design, particularly given significant informal trade influenced by price differentials, transport costs, and trader support. Governance gaps, exacerbated by inactive coordination platforms and limited public-private cooperation, hinder sectoral alignment, especially in underserved south-eastern regions. Land and forest regulations offer opportunities for sustainable practices, but strategies must reflect Liberia's regional diversity, balancing socio-economic goals with environmental preservation. Improved data and tailored strategies are essential.

Possible development pathways

The Liberian CVC is at a crossroad facing several challenges and opportunities. The current trend and lack of monitoring capacities of the cocoa production area expansion based on deforestation lead to high reputational risks which will affect market access for the whole CVC. It remains to be seen to what extent this new production could be exported through Monrovia (accessibility issue) and could be absorbed by non-regulated import markets (Asia...).

However, the implementation of a monitoring systems tracing cocoa origin is a key issue for the Liberia CVC as this would maintain access to high value cocoa market that could reward public and private investment toward sustainable and socially inclusive cocoa production practice.

1. INTRODUCTION

This report provides an analysis of the cocoa value chain in Liberia. The assessment is part of a larger project, funded by the European Commission's Directorate-General for International Partnerships (DG INTPA), entitled “Value Chain Analysis for Development” (VCA4D). The VCA4D project is part of the European Union’s “Inclusive and Sustainable Value Chains and Food Fortification” Program. The objective of this study is the description and analysis of the cocoa value chain in Liberia, using an evidence-based methodology developed by DG INTPA (Fabre et al. 2021) that assesses key economic, environmental and social aspects of the value chain to gain insights into its contribution to economic growth, and the sustainability and inclusiveness of the sector. This diagnosis of the cocoa value chain is intended to support the European Commission and the Government of Liberia in structuring their policy dialogue around the strategic opportunities and issues that presently hinder the sustainable development and growth of the value chain. It also highlights relevant issues and risks for the value chain, and areas for more in-depth analysis.

The cocoa industry is often regarded as one strong candidate to stimulate Liberia’s economic growth. It provides income for around tens of thousands of farmers, as well as export revenues for the government. However, the industry is poorly understood, very poorly documented and poorly regulated, for a variety of both historical and current reasons. This study is therefore of great interest in providing as realistic an overview as possible of the sector, with a view to developing an effective public policy. It complements the various projects supported by international donors, which, interesting though they are, only concern a small number of actors and pilot sites. Liberia's cocoa sector will be affected by the implementation of the EUDR in 2026. This study will provide some elements for assessing the country's level of preparedness for this regulation.

This assessment was implemented over a period of roughly one year, between 2023 and 2024, and included missions by the team and individual team members. The team who implemented this study consisted of the following members:

- Guillaume Lescuyer, Cirad, France, economic expert and team leader
- Catherine Allen, UK, independent social expert
- Ivonne Acosta-Alba, France, independent environmental expert and Angel Avadí, Cirad, France, environmental expert
- Albert Mwenda Kazadi, Liberia, national expert

1.1 Methods

The methods used in the assessment aims at generating evidence, supported by a list of indicators measured quantitatively or based on expert assessments that together provide an answer to four framing questions:

1. What is the contribution of the value chain to economic growth?
2. Is this economic growth inclusive?
3. Is the value chain socially sustainable?

4. Is the value chain environmentally sustainable?

The analytical process comprised four components:
Functional analysis: provides a general mapping and description of the main actors, activities, and operations in the value chain, an overview of the products and product flows, the major production systems, a description of the main governance mechanisms in the chain, and a short description of (known) constraints. The functional analysis formed the basis for the analyses in the other three components. The analysis was mainly based on key informant interviews and structured questionnaires with both value chain actors and key experts, complemented with secondary data.

Economic analysis: firstly, consists of a financial analysis of each actor type (financial accounts, return on investment), as well as an assessment of the consolidated value chain (total value of production, global operating accounts). Secondly, it assesses the economic performance (contribution to economic growth in terms of direct and indirect value added generated, and the sustainability/viability for the national economy within the international economy (Domestic Resource Cost Ratio). Finally, it addresses inclusiveness of growth by examining income distribution (business income, wages), and employment creation and distribution. Data were derived from secondary data sources (articles, reports, statistics), key informant interviews, and structured questionnaires. The analysis was (partially) conducted with the support of the Agri-Food Chain Analysis (AFA) software, developed by CIRAD.

Social analysis: explores whether the value chain is socially sustainable. It also contributes to discussion on whether economic growth in the value chain is socially inclusive. The social analysis drew on multiple information sources, including secondary data and field data from farmers, private sector, government and non-government stakeholders. The social analysis followed the six domains and associated questions specified in the methodology and social analysis software: working conditions, land and water rights, gender equality, food and nutrition security, social capital and living conditions.

Environmental analysis: evaluates the environmental sustainability of the value chain. The analysis was conducted using Life Cycle Assessment (LCA). LCA consists of 4 phases, after which the environmental analysis was organised, namely Goal and scope, Life Cycle Inventory (LCI), Life Cycle Impact Assessment (LCIA) and Interpretation (ISO 2006; EC-JRC 2010). The scope of LCA focused on three areas of protection: Human health, Resources and Ecosystem quality, to which a set of environmental impact categories and corresponding indicators are associated. The calculation of relevant environmental impacts in LCA was based on an exhaustive and quantitative inventory of all input and output fluxes over the entire life cycle of the studied system, based mainly on field-collected primary data and complemented with secondary data (scientific and grey literature).
In the last section of the VCA4D reports, these four packs of methods are combined to put forward a number of prospects for the development of the value chain, either in the form of scenarios or recommendations.

1.2 Data strategy

1.2.1 Data collection

The team carried out, personally and through field agents, surveys on 95 cocoa farms and 12 traders of different sizes, throughout producing areas in the most relevant districts (Figure 2-1) and counties (see Figure 1-1).

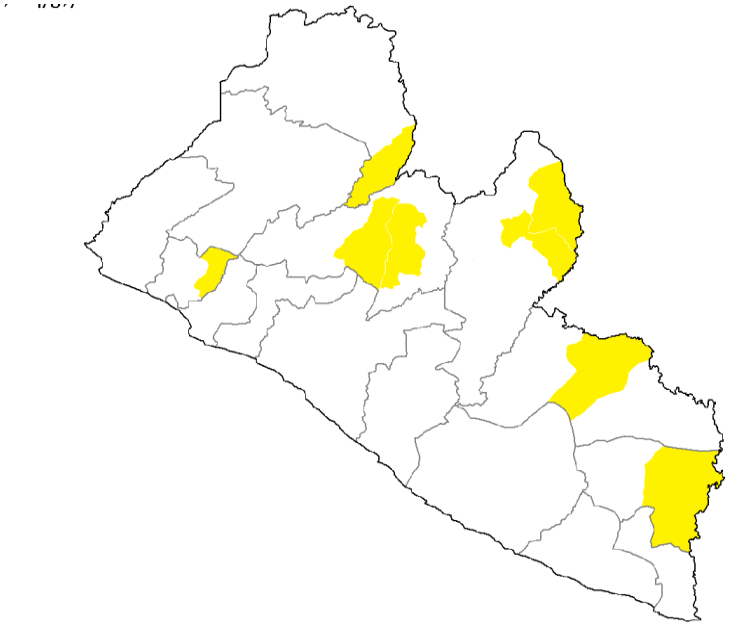


FIGURE 1-1 SURVEYED DISTRICTS

Regarding secondary data, it was obtained mainly from the scientific and grey literature (i.e. reports by NGOs, international statistics), and through key informant interviews with cocoa sector stakeholders, as the national statistics systems is very weak, and almost no data is publicly available. The project timing coincided with the execution of a national agricultural census, but the results were not made available by the projects' end.

1.2.2 Data quality and reliability

As a result of the limitations of the available data, the VCA4D study team had to make a series of assumptions in order to satisfy the requirements of the methodology. For instance, due to the lack of records by farmers, the inconsistencies found and the importance of informal exchanges, a number of assumptions were made to complete data gaps and solve apparent incongruences among data sources:

- The producer-declared cocoa bean yields were assumed to represent a mix of partially dried beans: 50% raw wet beans and 50% dry beans.
- The producer-declared surfaces were assumed to be 90% smaller.
- Several flows of cocoa beans entering and leaving the country informally were estimated based on expert and stakeholder opinions (see section 2.3.1).

2. FUNCTIONAL ANALYSIS

2.1 Overview of the Liberian agriculture sector

Liberia's GDP is around 4 billion USD, with a GDP per capita of ~650 USD, according to the World Bank statistics. In 2022, agriculture and fisheries accounted for the second largest share of Liberia's GDP (29.7%). Liberia's economy is less and less dependent on agriculture but still 60%-70% of the population rely on farming for livelihoods. Many households engage in cassava, rubber, rice, oil palm, cocoa, or sugarcane production. Most agriculture is small-scale and overall agricultural productivity is low. The main cash crops are rubber, rice, oil palm, cocoa, and sugarcane. The primary exports are rubber, cocoa, and timber. The main staple food crops are cassava and rice (ACET 2023).

The Government of Liberia has considered agriculture as a government key priority area for economic growth and development.

2.2 Overview of the Liberian cocoa sector

Cocoa contributes in some places to 30% of farmers income (after food crop sales 42%) (Dahn 2023). As with the agriculture sector in general, smallholder cocoa farmers and local cooperatives suffer inadequate farm-to-market roads, lack of familiarity with measurement and quality standards, lack of storage facilities, and limited access to updated price and market information. There has been investment in the rehabilitation of cooperative and smallholder cocoa farms over the years, with funding provided by development partners such as EU, USAID, etc.

2.2.1 Current situation

Liberian cocoa production takes place throughout the country, concentrated in the following counties (Figure 2-1):

- Bong (zone 1), Nimba (zones 1 and 2) and Lofa (zone 3), referred to as "the cocoa belt" (including parts of River Cess), because the bulk of the national production takes place there;
- Grand Gedeh and River Gee (zone 4), referred to as "the Southeast";
- Grand Cape Mount, Bomi and Gbarpolu (zone 5), referred to as "the West".

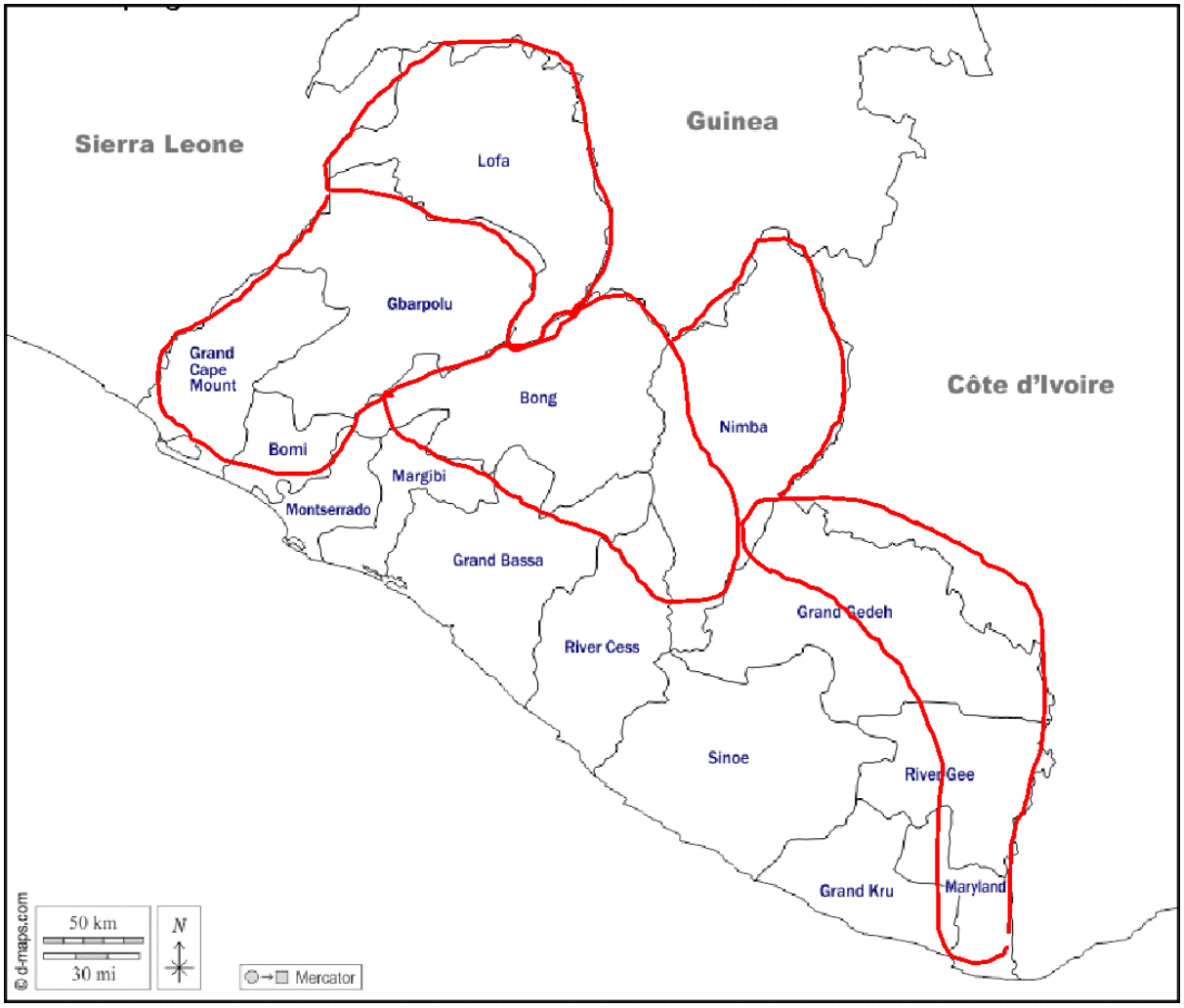


FIGURE 2-1 ZONING OF LIBERIA'S COCOA PRODUCTION. SOURCE: STAKEHOLDERS' OPINIONS, ACET (2023)

There are few available and updated records on agricultural production in general and cocoa in particular. According with the GROW Liberia programme (http://www.growliberia.com/), i.e. an agribusiness and investment advisory programme that partnered with businesses, investors, associations and government agencies to accelerate inclusive economic returns within high-growth industries in Liberia, which concluded in 2022, over 30 000 farming households rely on cocoa as their main source of income in Liberia, and cocoa is the second largest agricultural export (ITC 2022). GROW estimated as well that in 2020 the mean cocoa farm size was 1-1.3 ha, yield was 200 kg/ha, and the area under cocoa cultivation was 25-30 000 ha. In contrast, according with the International Cocoa Organisation (ICCO), in 2021 the mean yield was 150 kg/ha, mean farm size was 2 ha, total cocoa area was 30 000 ha exploited by 10 000 farmers. Different sources present high variation often explained by informal flows of cocoa (Table 3-1).

	FAOSTAT average data 2014-2022 (FAOSTAT 2024)	(MOA 2022) data 2016	(ACET 2023) data 2014-2020	LACRA 2023 data
Number of producers		13 000	40 000 (year 2008)	40 000
Total Area (ha)	98 873	28 328	88 000	25 000 - 30 000
Total production (t)	16 055	7 700	<15 000	4 046
Yield (kg/ha)	161	275	159	159
Farm area (ha)			0.4 to 1.5 ha	1.5

TABLE 2-1 MAIN PUBLISHED FIGURES ON THE LIBERIAN COCOA SECTOR

One of the difficulties, but also one of the advantages, of conducting a value chain analysis on a national scale is to obtain a coherent overall analysis of the cocoa sector. For Liberia, this means, firstly, that the figures for yield per hectare, the number of plantations and the surface area of plantations provide a credible figure for national production, i.e. one that is consistent with what secondary data and interviews with key informants tell us. A second difficulty is trying to integrate the diversity of cocoa production methods in Liberia, since not all farmers have the same production factors or the same interests. And a last difficulty in the case of Liberia is to ensure that the volume of beans exported formally and informally is consistent with the sum of the volume produced in the country and the volume of beans imported informally.

TABLE 2-2 summarizes the national cocoa production data based on interviews with 95 farmers, with twenty key informants, including feedback from participants in the workshop held in Monrovia to present the initial results of the study, and drawing on available secondary data.
Two assumptions were made in order to arrive at a coherent and realistic estimate of national cocoa production: (1) half the cocoa sold by farmers is made up of dry beans and half of wet beans; (2) the production areas by farmers are overestimated by 10%.

Variables	Com-mercial (COM)	Collective work (COL)	Family dependant (FAM)	External labour dependant (EXT)	Semi-abandoned (ABA)	TOTAL	Bench-mark
Average stated surface of the farm (ha)	3,8	3,2	2,7	1,5	3,1		
Average active surface of the farm (ha)	3,4	2,9	2,4	1,4	2,8		
Average yield of half dry / half wet beans (kg/ha/yr)	258	216	209	131	236		
Average yield of dry beans (kg/ha/yr)	174	146	141	88	159		
Number of households	1 050	3 500	8 400	9 800	12 250		35 000
Total production stated surface (ha)	3 990	11 200	22 680	14 700	37 975	90 545	
Total production active surface (ha)	3 591	10 080	20 412	13 230	34 178	81 491	80 000
Total production of dry beans (t/yr)	625	1 470	2 880	1 170	5 444	11 589	12 000

TABLE 2-2 SOURCES AND OVERALL ASSESSMENT OF NATIONAL PRODUCTION OF COCOA IN LIBERIA

Source: Authors

These data and assumptions provide an overall picture of national cocoa production in line with generally formulated average estimates, with 35 000 small producers, 81 491 hectares of cocoa plantations in production, and an annual production volume of 11 589 tons of dry beans. National production must therefore be supplemented by imports of 12 411 tons of cocoa from Côte d'Ivoire to reach a volume of 24 000 tons of cocoa exported by Liberia in 2023.

Liberian cocoa beans are not of great quality, due to poor post-harvest processing. According to ACET (2023), Liberian farmers do not prioritize improving post-harvest processes, such as bean fermentation and drying, which are critical for quality and flavour enhancement, due to the absence of corresponding price incentives. For instance, grade A is seldom reached by Liberian producers (USAID 2017). Liberia has moreover a reputation for poor quality cocoa, discounted on the world market by up to 300 USD/t.

Poor quality and low cocoa yields have not always been a feature of the Liberian cocoa sector. Before the war, Liberia's cocoa sector operated along the same lines as Ghana and Côte d'Ivoire, under tight regulatory control by Liberian Produce Marketing Corporation (LPMC). LPMC bought cocoa from farmers at fixed prices and exported the graded product to the world market. Since LPMC ceased to operate, the sector has been mainly in the hands of private buyers who operate without coordination. LPMC instituted a reference price system for cocoa that was broadly observed by the market, given strong export demand (GROW 2016). Though a new regulatory body has been put into place, the Liberia Agricultural Commodities Regulatory Authority (LACRA), enforcement of cocoa trade regulations remains weak to non-existent in some areas (Miehlbradt and Prasad 2022), and the cocoa sector faces many difficulties (GROW 2016, ACET 2023):

- Highly fragmented and costly supply chain
- Senescent growing stock, compounded by neglect, scarcely reaches 30% of potential production, and far less (< 20%) of what medium input replanting could offer
- Inputs of agro-chemicals are currently very low, with consequent low yields and prevalence of disease and insect infestation
- Imperfect (if any) post-harvest handling and processing
- Market access roads rarely reach the farm gate, resulting in expensive transport and local storage
- Low economic viability, lack of attractive livelihoods to younger workers

Over the last decade, public and private sector initiatives have aimed at improving the Liberian cocoa value chain:

- In 2015, the cocoa sector working group produced a Plan of Action to Deliver Inclusive Growth in the Cocoa Sector, aiming to increase the national production from ~12 to 28 kt in the short term.
- The Ministry of Agriculture (MOA) 2016 strategy calls for attracting investors along the cocoa value chain, reforming institutions and streamlining cocoa regulations, providing sustainable access to inputs, extension, business development services and financing for

cocoa smallholders, improve quality and yield of existing cocoa; modernising business practices in cocoa sector, leveraging regional partnerships, and improving infrastructure.

- In 2017, the Liberian government prioritised the development of the cocoa sector under the Liberia Agriculture Transformation Agenda (LATA).
- In 2018, Solidaridad and the European Union Delegation in Liberia launched the 4-years Liberia Cocoa Sector Improvement Programme (LICSIP).
- In 2021, public and private sector stakeholders developed a roadmap called "Sustainable Cocoa Sector in Liberia". The roadmap creates a public-private partnership platform and focuses on three thematic pillars: investment and cocoa marketing, sustainable production and quality control, and environment and climate change.
- Also in 2021, Solidaridad and the European Union Delegation in Liberia launched the Cocoa Value Chain Development Programme (COVADEP), a four-year intervention that seeks to increase incomes, improve livelihoods, and boost the resilience and competitiveness of the Liberian cocoa sector.
- Until recently, the key development blueprint was Liberia Vision 2030. The Pro-Poor Agenda for Prosperity and Development 2018-2023 is the second in a series of five-year national development plans envisioned by the Liberia Vision 2030 framework. From July 2024, the new plan is the National Agriculture Development Plan (NADP) 2024-2030 (MoA 2024) (see section 2.6.5 for this and other governmental initiatives).

2.2.2 Exploited ecosystems and the new EUDR pressure

Most of Liberian ecosystems consist of Guinean forests, which have been exploited for hundreds of years. Some 13 000 km2 of dense forests have been degraded (i.e. converted into more open canopy classes) in Liberia between 2000 and 2018 (de Sousa et al. 2023), while 15% of Liberian deforestation in 2001-2020 can be attributed to cocoa (Masolele et al. 2024) (FIGURE 2-2). The conversion of natural ecosystems, and especially forests, into cocoa plantations represents by definition a reduction in ecosystem services and implies damages to the natural biodiversity. Depending on the type of cocoa system, these damages may vary in intensity: for instance, a monocrop cocoa plantation hosts less biodiversity than an agroforestry system.

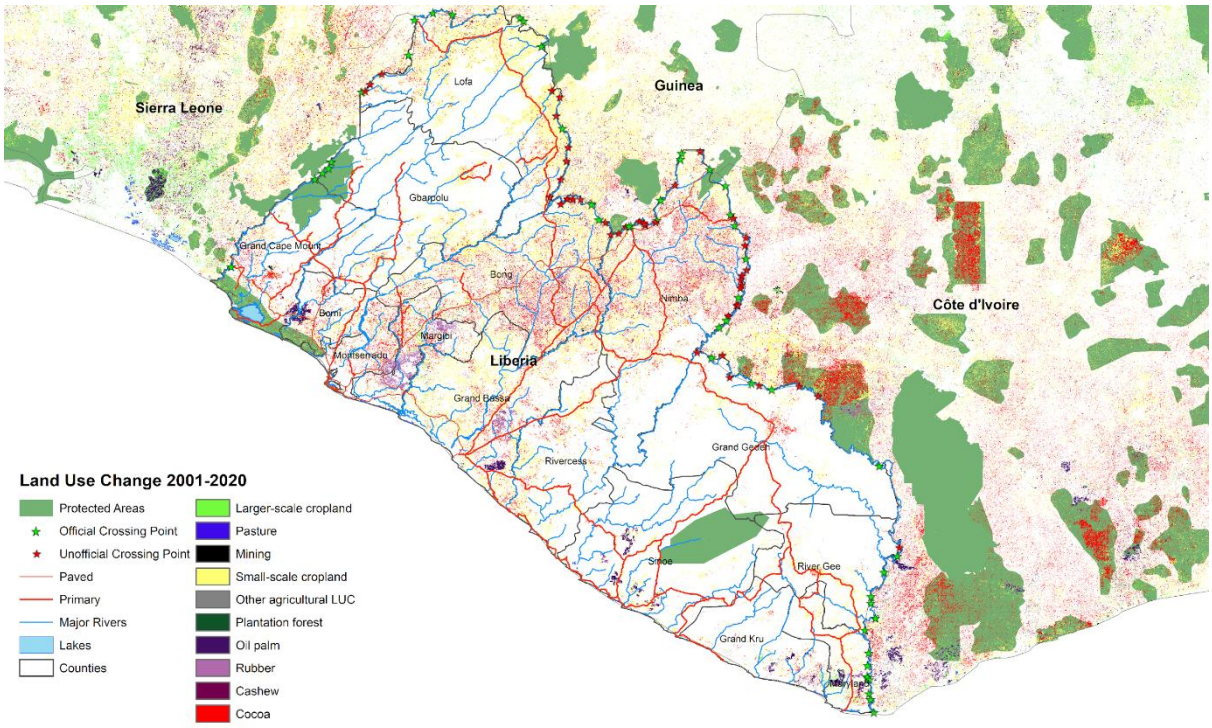


FIGURE 2-2 EXTENT OF COCOA FOLLOWING DEFORESTATION IN THE PERIOD 2001-2020 IN LIBERIA. RECENT DEFORESTATION IN THE SOUTH-EASTERN REGION IS NOT DEPICTED

Source: Masolele et al. (2024)

The European Union Deforestation Regulation (EUDR) should take effect on December 30, 2025. Traceability is a key requirement, and importers into the EU must prove that commodities were produced in an area which was converted into forest after 2020. Required due diligence includes evidence of sustainability, legality, and value chain transparency. Public and private certification schemes are recognized to be helpful in meeting EUDR requirements. The EU has programs in West Africa focusing on sustainability and EUDR and is now ready to integrate Liberia into those programs. In addition to support for operators' due diligence compliance, there is also going to be awareness raising on EUDR, in Grand Gedeh for example, where it was noticed that some farmers and middlemen are not aware, suggesting that information dissemination should be undertaken nationwide.

The EUDR may seem like a constraint, but it is also an opportunity for operators to get greater responsibility for a more sustainable agricultural sector. Currently, the Americas and Asia are currently the major markets for Liberian cocoa (ITC 2022). How that would change if Liberia were able to add value to their cocoa, or offer a traceable production system, is another matter, but at the moment, if the EU market becomes inaccessible, the country would have to strengthen its export share on other destinations.

2.2.3 The south-eastern front

There is an influx of migrant cocoa farmers who are acquiring land, through a range of arrangements, and using environmentally unsustainable cocoa production and cultivation

practices (Ruf 2024; Ruf and Galo 2025). These authors document the parallel between Liberia and the development pattern of the cocoa booms over the last 4 centuries and in particular with Ivory Coast history. From an environmental perspective, the situation is worsening leading to deforestation and eventually increase the risks of pollution by chemical inputs, in particular by pesticides. According to migrants' statements, 98% of cocoa plantations are created by clearing forests, using migrant knowledge of plantation experience. According to surveys carried out in Côte d'Ivoire in 2020/21, thousands of migrants, mainly from Burkina Faso but also Côte d'Ivoire, are crossing the border into Liberia to clear the forests and plant cocoa trees. Their main method of accessing land seems to be a mixture of sale contracts and "sharecropping" arrangements. A migrant who can afford it buys 50, 100 or even 200 ha, and redistributes them as sharecropping plots to other migrants with no financial means. Under this model, the tenant asks for 10 or 20 ha of forest, clears the land and plants cocoa trees, to be shared equally with the (new) owner of the forest when the plantation starts producing. However, compared to Ivory Coast history, the Liberian landowners seem to have better control and advantages in land access conditions. In 2022, the power dynamics resulted in an average transfer of 10 hectares of forest for 4 hectares of cocoa to the indigenous landowner, reflecting a 40% return. This rate also highlights the indigenous population's negotiation ability. It is estimated that 10 000 migrants from Burkina Faso are currently working in cocoa farming in Liberia. Some of the migrant workers are children aged 14-16 (Ruf 2021; PAPFor 2023).

This dynamic started in 2016, as Liberia's cocoa boom began that year. The cocoa economy relies on massive migration, and almost all the migrants are young men with little or no schooling: 88% of them come from Burkina Faso, with only 7% of Ivorian nationality, and 5% from Mali, Guinea and elsewhere (Ruf 2024).

The vast majority of plantations in the south-eastern front are not (yet) in production. Surface areas generally vary between six and eight hectares, with a clear trend towards 8 ha. The main reason for this is that most of the plantations have been created by migrants, who are given the forest plots by the Liberian communities on the principle of sharecropping. The communities in the target villages and most decentralised authorities seem to take a positive view of the arrival of external cocoa producers in their villages (IDEF 2024).

2.3 Actors and products

2.3.1 Suppliers

There are three types of "suppliers" to cocoa farmers in Liberia, whose influence will vary depending on the way the cocoa is produced.

Firstly, several public organisations have a direct or indirect mandate to supervise and support cocoa production in rural areas. These institutions are listed in sections 2.6.1 and 2.6.2. Their actions are in line with the implementation of public policies and also with the Roadmap to a Sustainable Cocoa Sector in Liberia (2021- 2026), validated in October 2021 with the facilitation of IDH. However, all the existing studies (GROW 2016; ACET 2023) and the interviews we conducted found that public regulators are constrained due to lack of human and financial resources on the

ground. Extension services are piecemeal and not widely available. The MoA or CARI for instance provide very limited services to cocoa farmers due to its constrained budget and restricted capacity. During our field surveys, almost no farmers stated that they had received technical or financial support directly from a public organization.

Secondly, international public funding partly compensates for the low level of involvement of national public bodies with cocoa producers. Over the last twenty years or so, projects to support cocoa production, trade and governance have been successively funded by international public funds (ITC 2014, PAP For 2023). But these projects are almost always only implemented in the three counties of Nimba, Bong and Lofa, where most of the producers who have benefited from external support are to be found, very often to pool their production or trade in cocoa beans.

The start-up phase of sustainability certification for cocoa is often supported by international donors, but it is still very rare in Liberia. We were aware of only three cooperatives that currently have sustainability certification, one in organic farming near the town of Gbarnga, and two others with the Rainforest Foundation standard, also in the cocoa belt. The volumes produced under certification are currently extremely low and have therefore not been specifically addressed in our analysis.

Finally, the private sector - exporters' sales agents and, above all, traders based in rural areas - appears to be the main supplier of all types of cocoa producer in Liberia. Access to equipment such as cutlasses, wheelbarrows, sprayers and chemical products is provided by agricultural input retailers (GROW 2016). All these products are imported. Most retail outlets for equipment are located in Monrovia, with no distribution channels in cocoa areas. These firms generally do not offer embedded services on usage, servicing/maintenance, spare parts, or after-sale support.
There are major issues with quality at rural points of sale, as many of the local traders break bulk product to re-package these products in smaller quantities, leading to opportunities for moisture or foreign matter to impact quality, or opening up opportunities for adulteration of products.
Access to credit is also virtually non-existent in Liberia's rural areas (GROW 2016; ACET 2023). Commercial banks do not lend directly to smallholder farmers because of lack of traditional collateral, track record, identification, and the high transaction costs involved in handling small, individual loans.

2.3.2 Producers

Surprisingly, the literature describing the cocoa sector in Liberia has never yet distinguished between different types of producers, apart from the ACET report (2023), which separates smallholder farmers and medium-scale farmers (> 15 ha), mainly to point out that the latter are very rare. We made the same observation, which is why we have not included this type of farmer in our analysis. But if small-scale cocoa production is overwhelmingly dominant (as in most countries in the world), this does not mean that there is only one model. Our interviews with producers in the 6 counties surveyed and with key informants based in Monrovia led us to construct an *ad hoc* typology based on major criteria: external support, creation of a new farm versus management of an old farm, and nature of labour (*Table 2-4*).

Criteria	Commercial farmers (COM)	Collective work (COL)	Family labour dependant (FAM)	External labour dependant (EXT)	Semi-abandoned farm (ABA)
External support	Yes	Yes	No	No	No
Farm age <8 years	Yes	No	Yes	Yes and No	No
Main labour	family and external	family	family	external	family and external
Revitalisation of farm	No	Yes	No	Yes and No	No
Average in our sample (n=95)					
Active surface of the farm (ha)	*3.4*	*2.9*	*2.4*	*1.4*	*2.8*
Yield/ha in dry beans (kg)	*174*	*146*	*141*	*88*	*159*
% in our sample	*2%*	*7%*	*24%*	*29%*	*37%*
Computed total number of farmers in Liberia	*1 050*	*3 500*	*8 400*	*9 800*	*12 250*

TABLE 2-3 TYPOLOGY OF SMALL-HOLDERS OF COCOA FARMS
Source: Authors

Another model of small-scale cocoa production also exists in Liberia but, due to its recent appearance, it does not yet contribute to the current cocoa production at the national scale: the "sharecropping" model is an arrangement between customary landowners and external agents (usually migrants) who will convert forest/agricultural land into cocoa plantations, with the migrants sharing in production and acquiring the land. This is the predominant model in the pioneering front in the south-east of the country (Ruf 2024). However, this system is recent, and the vast majority of cocoa farms are not yet productive. This type of producer therefore makes only a very marginal contribution to current national production. Of the 95 interviews conducted, we met only one farmer who had adopted this system. Because of its currently marginal role, this production system has not been taken into account in our analysis. This methodological choice will very probably no longer be possible in the next few years as cocoa farms in the south-eastern counties come into production.

This typology of cocoa producers diverges from most of the observations made previously for this sector in Liberia (ACET 2023), in which producers benefit fairly from external support and interact within or with cooperatives. Our surveys, carried out without the intermediation of existing projects and also outside the cocoa belt, show a different reality: the vast majority of producers receive no support from extension services, projects or private partners, and consequently adopt low-intensity, undemanding production methods, often similar to picking cocoa pods from plantations with little or no maintenance.

However, two types of cocoa growers adopt techniques to revitalise their old plantations, although revitalisation may take different forms (Taplah and Philips 2020):

- Rehabilitation: This is the process of bringing existing trees into better production via maintenance (perform under-brushing, pruning of cocoa trees, remove too much shade and all diseased and pest infected pods and mistletoes as well as fern).
- Regeneration: Grafting new genetically improved superior high yielding germplasm onto old but disease resistant rootstock.
- Replanting: Replanting of old unproductive trees by block planting annually.

Globally, technical practices are poorly recorded and monitored by actors, in particular producers. Data from our survey is presented in Table 2-3. The main varieties of cocoa used are local and old for Semi-abandoned and Family labour types, while Collective and commercial prefer Ghana selected variety. For most types, cocoa plantations are among 23 and 29 years old, only Commercial and Sharecropping are younger (<10 years) reflecting the rehabilitation path. Most of cocoa plantations are replacing other crops (perennial and annual) excepting Collective work and Commercial types were in 50% or more farms, woodland and forest was the previous land use. The level of shading in farms is mostly medium and high, with half of low densities in the Commercial type. Crop and post-harvest residues are most of the time left on field, and a small portion is burned in Collective work and Semi-abandoned types. Only one third of producers use at least one chemical product, mostly insecticides. However, the quantities and frequencies are not well known by the producers, reason why they were not included in the analysis.

Only 17% of producers surveyed are members of cooperatives and 6% received any subvention (COL and COM types). Only 4% received any external support or/and training exclusively in COL type of farms.

Criteria	Variable	Unit	Semi-abandoned (ABA)	External dependent labor (EXT)	Collective work (COL)	Commercial (COM)	Family labour (FAM)
Cocoa main variety (%	Ghana (French and Ivorian)	%	35	28	70	100	40
	Local and old		57	60	30		53
	Others		6	22	0	0	7
Cocao crop age	Average years since creation	years	27	27	28	7	23
Years since rehabilitation	<5	%	2	21	100	-	63
	5 to 10		5	5	-	-	37
	>10 to 20		14	17	-	-	-
	>20		81	81	-	-	-
Land use before cocoa	Farmland (perennial crops)	%	15	25	0	0	21
	Farmland (annual crops)		54	39	17	50	57
	Bushes		11	3	17	0	4
	Forest		17	32	67	50	18
	Others		3	3	0	0	0
Level of shading in the farm	High	%	29	39	0	50	29
	Medium		54	43	50	50	50
	Low		17	8	50	0	21
Crop residues management	Burned	%	2	2	17	0	0
	Left on field		98	98	83	100	100
Post-harvest residues management	Processed	%			3	0	36
	Left on field				67	100	64
Use of chemicals	No	%	64	75	33	0	71
	Yes		31	21	67	100	29
Type of chemicals	None	%	72	79	33	0	71
	Insecticide		24	18	67	100	11
	unknown		3	1	0	0	18
	Fungicide		0	0	0	0	0
Member of a cooperative	No	%	77	90	83	100	86
	Yes		33	10	17	0	14
Subsidies received	No	%	100	100	33	0	100
	Yes		0	0	67	100	0
External support and training	No	%	100	100	33	100	100
	Yes		0	0	67	0	0

TABLE 2-4 CHARACTERISTICS OF SURVEYED COCOA PLANTATIONS (DETAILS)

Source: Authors

After harvesting, fermentation and drying (if carried out at all) are done in farms, but often very superficially (for instance, it can be observed that semi-wet beans are frequently sold to traders). It is unknown the proportion of farmers actually performing fermentation and/or drying. The lack

of standardized quality control processes among farmers is a significant challenge. Practices for pod breaking, fermentation, and drying vary widely, leading to inconsistent results (ACET 2023). The diverse equipment and surfaces used for fermentation further contribute to the uneven quality of the output.

2.3.3 Cooperatives

Cooperatives or formal producer groups play an important role in structuring the sector and facilitating certain tasks that concern all producers in a given area, such as traceability or certification of cocoa beans, access to credit, group sales, etc. Various types of farmer organisations are present in Liberia, especially in the main production areas (ACET 2023). They come in various different forms and sizes, with differing levels of membership and services offered. Marketing cooperatives link farmers or members to buyers such as Licensed Buying Companies (LBCs) or exporters. Production cooperatives provide hybrid seedlings to their members and offer or facilitate training in best practices on- and off-farm. Financial cooperatives are established solely to provide loans or assist in accessing finance and also sell shares to members. There is a fourth group, the multi-purpose, which links members to the market through LBCs and exporters, provides loans, sells shares to members, and also facilitates training and provides or facilitates inputs to their members.

Despite their advantages in theory, cooperatives and the various formal organisations of cocoa producers are rare and not very effective in Liberia. Even in the production basins that benefit from international support, around 70% of producers do not belong to or use a farmer-based organisation (USAID 2017; ACET 2023). And where cooperatives do exist, they do not appear to be working on behalf of their members (Wilcox 2012). Generally, no services are provided to members, transparency among the leadership is lacking and the premium, theoretically derived from collective bargaining, is not being passed back to the membership. Cooperatives are therefore of little interest to a large majority of producers compared to competing forms of cocoa bean marketing, such as licensed buying agents or informal traders (USAID 2017). Producers' lack of interest in joining a cooperative is also due to the unregulated nature of the industry that allows producers to sell and buyers to buy from any source, without much concern about the quality of cocoa beans. In total, the national cocoa stakeholders' platform registered 85 cooperatives in 2024.

2.3.4 Traders

Farmers have little access to markets and transport facilities. Itinerant traders therefore play a crucial role in evacuating cocoa to Monrovia or to foreign markets. Two types of traders perform this intermediary function, but with different statuses and financial and technical resources.
On the one hand, licensed traders are recognised by the public authorities and are affiliated to an exporting company based in Monrovia. There are relatively few of them, since each of the exporting companies relies on a small network of 10-20 trusted traders, whose licence must be paid every year. These official traders have the financial resources to invest in long-term partnerships with farmers, either directly or through cooperatives, or with unofficial buyers. The licensed traders provide training and pre-finance the activities of farmers or local unlicensed

traders who should sell them in return under a forward contract at an agreed-upon price, so they can recover their investment (GROW 2016, ACET 2023).

The other major advantage of licensed traders is their direct and secure link with the exporting companies, which buy the cocoa from them and can provide them with logistical resources such as transport (GROW 2016). Their aim is to maximise the volume of cocoa they deliver to exporters in Monrovia, with little regard for the quality of the beans. The quest for large volumes of cocoa explains why many of these licensed traders source large quantities from Côte d'Ivoire, particularly when the price of cocoa in Liberia is higher than the price in Côte d'Ivoire, which has been the case for at least two years.

On the other hand, a large number of unlicensed traders are also active in the cocoa chain. They are based in rural areas and carry out this activity on a part-time basis, especially just before and during the cocoa bean collection season. They complement licensed traders by being present in isolated areas, and compete with them by acquiring cocoa from the same producers. Unlike official traders, unlicensed buyers pay for cocoa on the spot in cash, with no regard for quality. They often buy raw or wet cocoa and capture the value added through fermenting and drying. These informal traders - who are both domestic and foreign - act independently to source and procure cocoa from farmers or traders, disregarding formal contractual arrangements that farmers may have signed with other buyers (GROW 2015, Leissle 2018). Side-selling is also a problem for farmers' organisations and can be significant, accounting for about 70 percent of production (ACET 2023).
The number of licensed and unlicensed buyers has increased and there are strong indications that this has led to fiercer competition among buyers for cocoa produced by smallholders (ACET 2023). This is good news for farmers, who can sell their cocoa to the highest bidder, which pushes up the farm gate price (Skoog 2015). It also means that the cocoa trade network extends to the most isolated farmers. But it is also bad news, because all these traders want to acquire the maximum volume of cocoa, regardless of the quality of the beans or the previous business commitments made by the producers. The flexibility and exacerbated competition of the current cocoa trade in rural areas is a major obstacle to any system of bean traceability.

2.3.5 Exporters

The number of companies exporting cocoa is historically low in Liberia, with estimates ranging from a few dozen to around fifteen in recent years (GROW 2021). In 2023, there were only eight of them that are registered and licensed to export. Only one company is affiliated to a multi-national company based in Côte d'Ivoire. The other companies are family-run or individual, all medium- or small-sized. Every year, a few new companies start exporting cocoa, while other exporters withdraw, which tends to indicate the low investment required to enter this market, and the low quality of the management systems of these companies. Contrary to what Skoog (2015) described ten years ago, in 2023 there were no longer any large companies in Liberia investing in lasting relationships with farmers and their organisations.

Of the eight companies officially registered, three belong to a single family, which therefore plays a central role in the export of Liberian cocoa. The small number of exporters and the major role played by one group in this link in the value chain likely contribute to driving down the prices

offered to cocoa producers. These low prices can also be explained by the low quality of the cocoa marketed in Liberia. However, the prices paid to Liberian producers on a quasi-oligopolistic but liberalised market were around 40% higher in 2023 than those offered in Côte d'Ivoire, as shown in our surveys.

Monrovia-based export companies share the same modus operandi by advancing sums to their LBC or cooperatives in order to purchase cocoa from producers. The LBC and cooperatives aggregate the bags of cocoa beans acquired from the producers and other traders until a sufficient volume is reached to be transported to Monrovia.

2.4 Flows

Key mass flows are summarised in Figure 2-3.

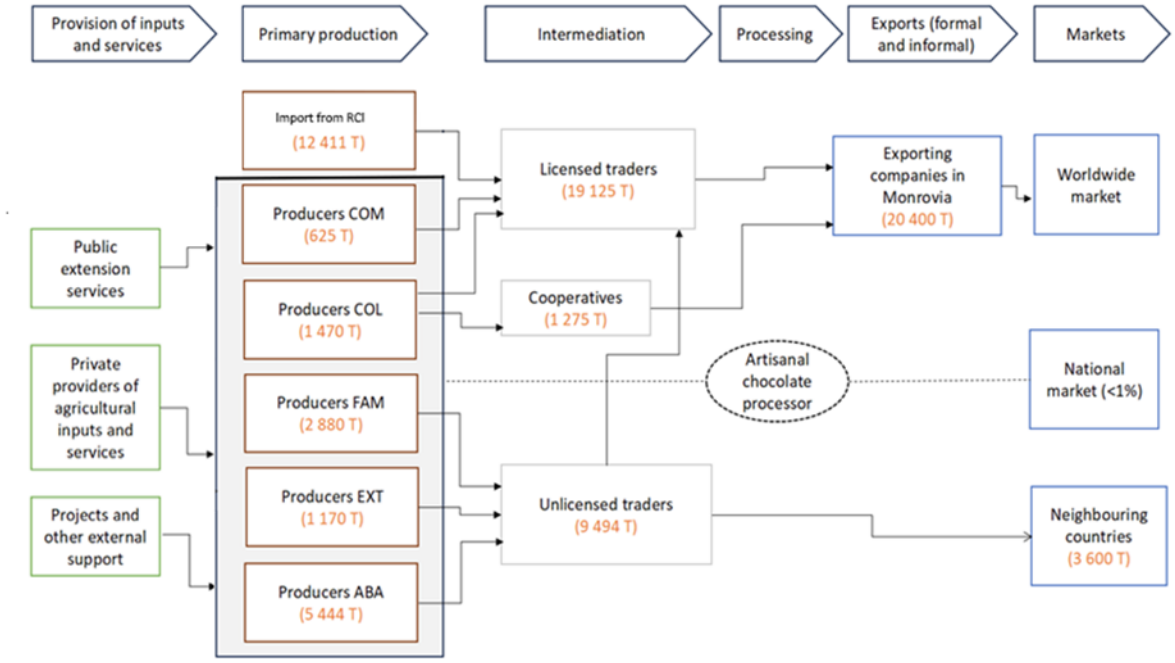


FIGURE 2-3 MASS FLOW DIAGRAM OF THE LIBERIAN COCOA VALUE CHAIN (2022-2023)
Source: Authors

2.4.1 Formal flows

Formal cocoa bean exports were in the order of 24 000 t, according both FAOSTAT and TradeMap (https://www.trademap.org/). No official national statistics accurately estimates cocoa production nor exports.

2.4.2 Informal flows

Liberia features many agricultural informal flows with her neighbouring countries. The largest flow consists of cassava products entering the country from Sierra Leone, but important volumes of cocoa beans flow from and towards Liberia (IGC 2017; USAID 2018; GROW 2019; IDEF 2024). Inbound cocoa flows originate in Côte d'Ivoire, reportedly due to price differentials *FIGURE 2-4*. In 2018, Bloomberg already reported that about 25 kt of cocoa were smuggled from Côte d'Ivoire's western borders into Liberia and Guinea where traders offer better prices.

According to Ruf et Galo (2024) before the global price surged in 2024, Liberian cocoa was transferred to Ivorian cooperatives, mainly due to the lack of buyers and poor road infrastructure in Liberia, especially in the south-east counties. Large producers like Côte d'Ivoire and Ghana rely heavily on cocoa for export revenue and economic development, requiring taxation and marketing systems to capture value in regulated national market prices. However, these systems limit their ability to benefit from global price spikes, unlike countries with no regulated prices like Liberia. As a result, producer prices in Liberia have risen significantly, reaching 2000 to 2200 FCFA/kg by late April 2024, while Côte d'Ivoire increased its price from 1000 to 1500 FCFA/kg only in June 2024.

The cocoa season in Côte d'Ivoire also extends beyond the season in Liberia which further promotes cross-border smuggling. In the latest years the GROW program estimated that 25% of Liberian cocoa exports originated in neighbouring countries. As much as 38%-40% (ACET 2023) of Liberian cocoa exports are estimated to originate in Côte d'Ivoire (~9 000 t). Smaller outbound flows, amounting to up to 19% of the national production, have been reported, notably from the Southeast to Côte d'Ivoire during the rainy season (when the road to Monrovia becomes impractical), from Lofa and northern Nimba towards Guinea, and from the West towards Sierra Leone (*FIGURE 2-4*).

The smuggling of cocoa from Liberia tends to dilute the quality of cocoa in Côte d'Ivoire. Despite various reports that provide estimates, the exact volumes and magnitude of this traffic are not known because of the informal nature of the trade. There are three main reasons for the presence of Liberian-produced cocoa in the Côte d'Ivoire supply chain, even in the case of a lower price in Côte d'Ivoire: the proximity of the villages in Grand Gedeh to main towns in Côte d'Ivoire, the lack of road infrastructure in this part of Liberia to link cocoa producers to Monrovia based exporters, and the currency factor (getting CFA franc is a necessity for Liberians borderers, as they do all their purchases in Côte d'Ivoire) (IDEF 2024).

It is difficult to anticipate the volume of cocoa flows between Liberia and Côte d'Ivoire over the next few years. However, the current production expansion of cocoa farms in the south-eastern counties will likely be marketed through Côte d'Ivoire. Four sets of variables have a major influence on the size and direction of these flows:

- The cocoa price differential between the Côte d'Ivoire and Liberia and more precisely the speed of adjustment of national price in each country to the international price The slower adjustment of the Ivorian price to the increasing international price favoured in the last years the marketing of Ivoirian cocoa through Monrovia.
- While price differential is on the long term a key determinant of the cocoa informal flows, this factor is compounded by logistical and marketing issues. The cost of transporting cocoa to Monrovia and San Pedro, depending on where it is produced. For example, during the rainy season, it is much cheaper for producers in south-eastern Liberia to transport their cocoa to San Pedro than to Monrovia. The reverse is also true for Ivorian producers who are located close to Nimba county and its excellent road to Monrovia.
- The facilities offered by traders to producers in terms of finance and equipment.
- The parity between the euro (and the CFA franc to which it is pegged by a fixed exchange rate) and the US dollar (and the Liberian dollar to which it is informally pegged). The

gradual appreciation of the US dollar against the euro in recent years has boosted Liberian cocoa prices in comparison to the F.CFA Ivoirian prices.

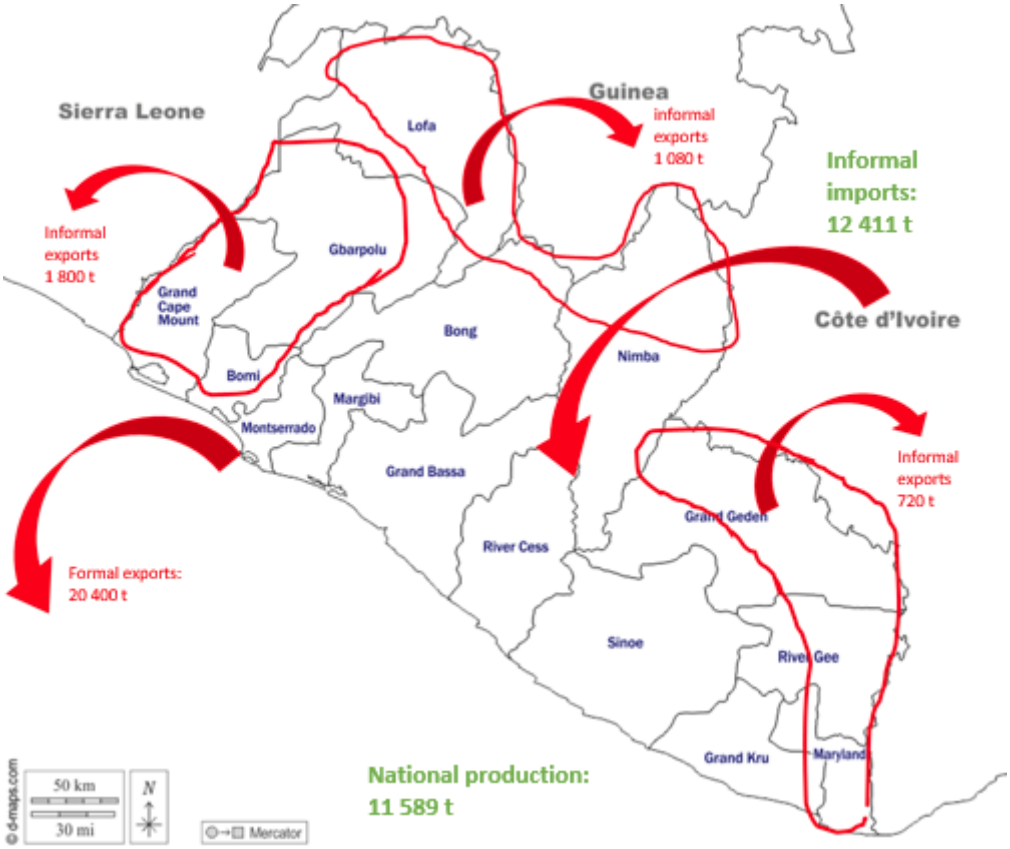


FIGURE 2-4 ESTIMATION OF FORMAL AND INFORMAL IMPORT/EXPORT COCOA FLOWS IN LIBERIA FOR THE YEAR 2023. Source: Authors

There is also controversy over the scale of cocoa flows between Liberia and Sierra Leone, in particular to feed the large volume of organic and certified cocoa supposedly produced in Sierra Leone. Unlike Liberia, the cocoa value chain in Sierra Leone is largely regulated, in collaboration with private companies and several international programmes (Fairtrade International 2024). As a result, in 2022 Sierra Leone had 162,498 ha of organic cocoa plantations and 13,795 tonnes of organic cocoa exported to Europe (Willer et al. 2024). The porous nature of the border with Liberia, the quality of the (by default) organic cocoa produced in the west and north-west of Liberia, and the difficulties for Liberian producers to reach Monrovia make informal exports to Sierra Leone much easier. There are no statistics on the scale of this flow, but it is likely contributing to the success story of organic cocoa 'made in Sierra Leone'.

When the level of the national production is not well monitored, as it is the case in Liberia, international database usually estimate production on the bases of exports, thus assuming that all exports are sourced from the country. The assessment of the respective share of domestic production and informal imports in the Liberia volume of exported cocoa requires to estimate the level of production independently from the export level.

For the reference year 2023, during the data validation workshop, stakeholders in the sector estimated a national production of 11,600 tons which means that there is an inflow of 12,600 tons of informal cocoa imports from Côte d'Ivoire to achieve the level of cocoa officially exported by Liberia in the same year.

The temporary or permanent feature of these informal imports, or even their expansion, is an issue for the expected impact of the EUDR on the promotion of more sustainable cocoa production practices. Do these flows represent a durable exit option for Ivoirian CVC stakeholder located nearby Liberia that would like to evade compliance with the traceability systems implemented in Cote d'Ivoire? Would these flows also jeopardize the efficiency, and the reputation of Liberia exports if a traceability system is set up Liberia?

The review of the Liberia export history during the last decade provides some insights on the feature of these flows (*Figure 2-4*). If we assume that the 11,000 tons represents the maximum level of production achieved in Liberia in the last decade, we observe that informal imports have logically significantly contributed to Liberia exports around 2015 and since 2020. As discussed above, these episodes are associated with increase on the cocoa international price to which the Ivoirian cocoa producer prices adjust with delay. The Euro (and thus CFA) depreciation against the Dollar has also provided further incentives to Ivoirian stakeholder to be paid in USD rather than in CFA (*Figure 2-6*). The 2016 cocoa export surge in Liberia is also corresponding to the limited drop in Ivoirian export, confirming the linkages between the CVC situation in Côte d'Ivoire and the existence of informal imports in Liberia. It should be noted that once the producer price in Côte d'Ivoire has adjusted to the international price, the incentives to export from Côte d'Ivoire to Liberia does not play anymore. The same configuration prevails for the latest years. On-going price farm gate adjustment in Côte d'Ivoire will likely reduce the incentive to Ivoirian stakeholders to export their cocoa through Liberia; some informal imports may remain due to logistical and exchange rate trends incentives and also the interest of Liberian exporters to secure larger volume of cocoa for exports in order to strengthen their position on the cocoa world market.

However, the larger threat to the efficiency of cocoa flows traceability mechanisms remains the forthcoming marketing of the output of Liberian cocoa from newly planted areas in the Southeast region near the Ivoirian border that would most likely be exported through Côte d'Ivoire.

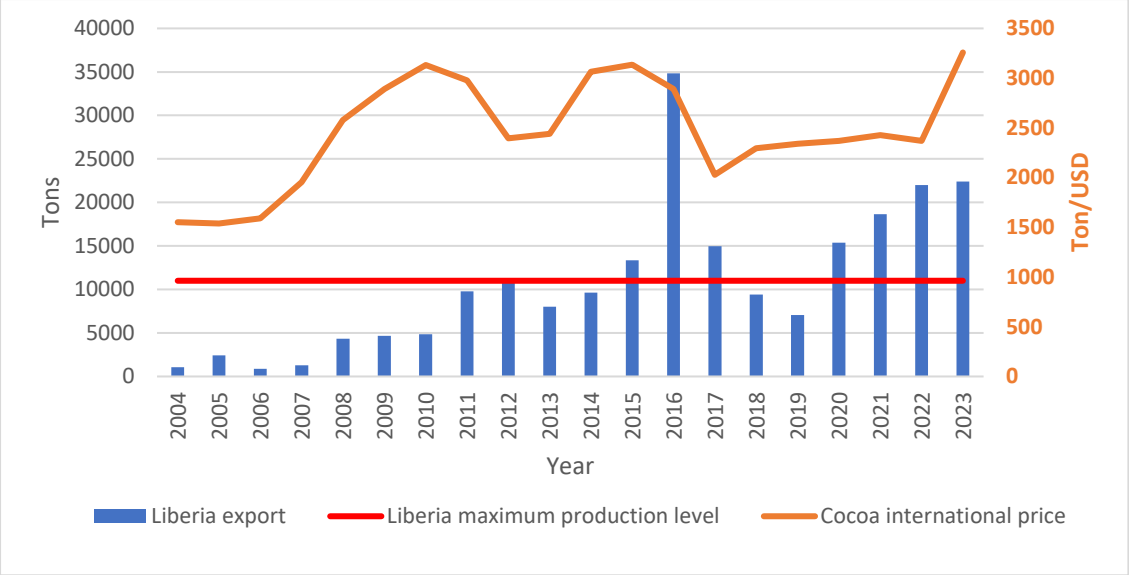


FIGURE 2-5 VARIATION OF PRODUCTION, EXPORT VOLUMES AND AREAS HARVESTED IN LIBERIA IN INTERNATIONAL DATABASES

Sources: TradeMaps, IMF (2024)

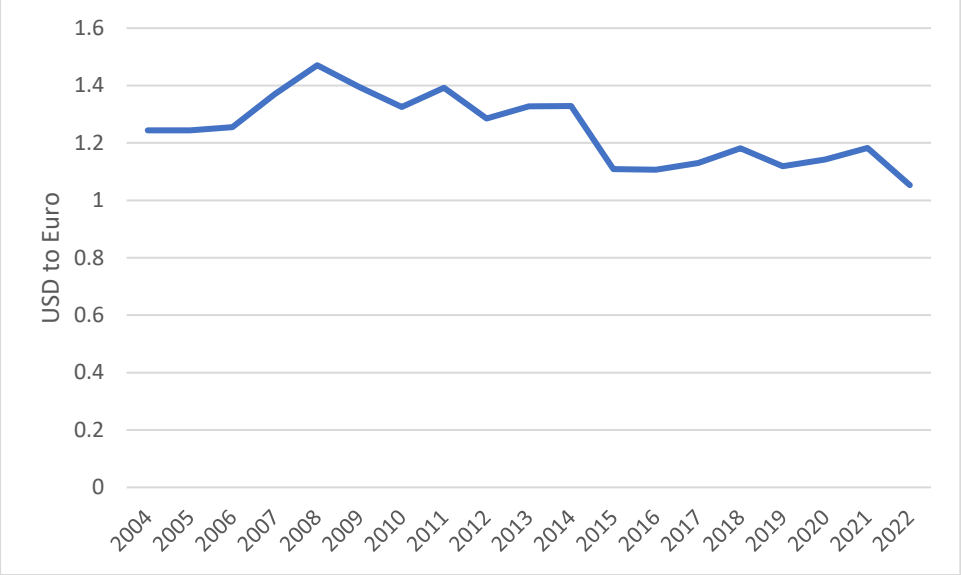


FIGURE 2-6 USD TO EURO PARITY SOURCE: EUROPEAN CENTRAL BANK(2024)

Sources: TradeMaps, IMF (2024)

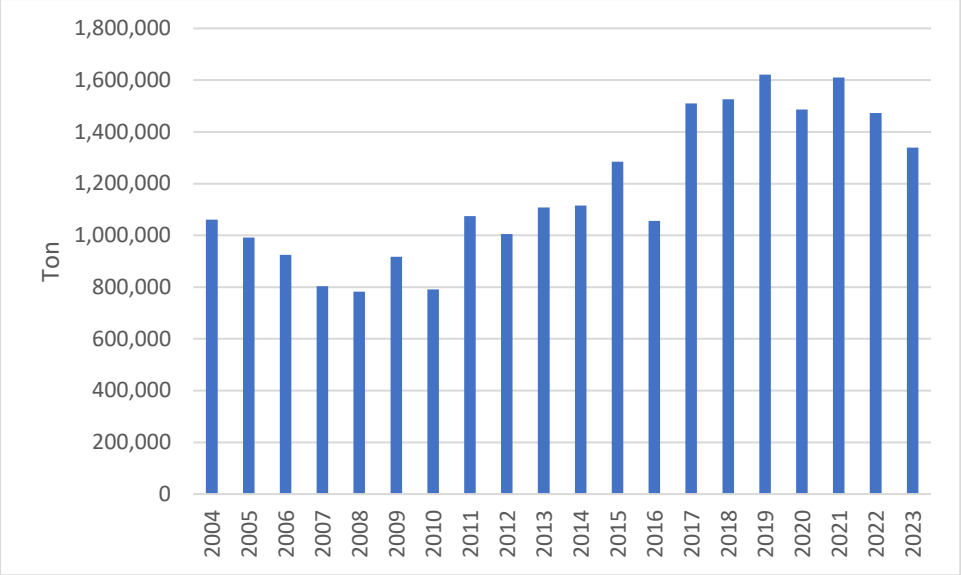


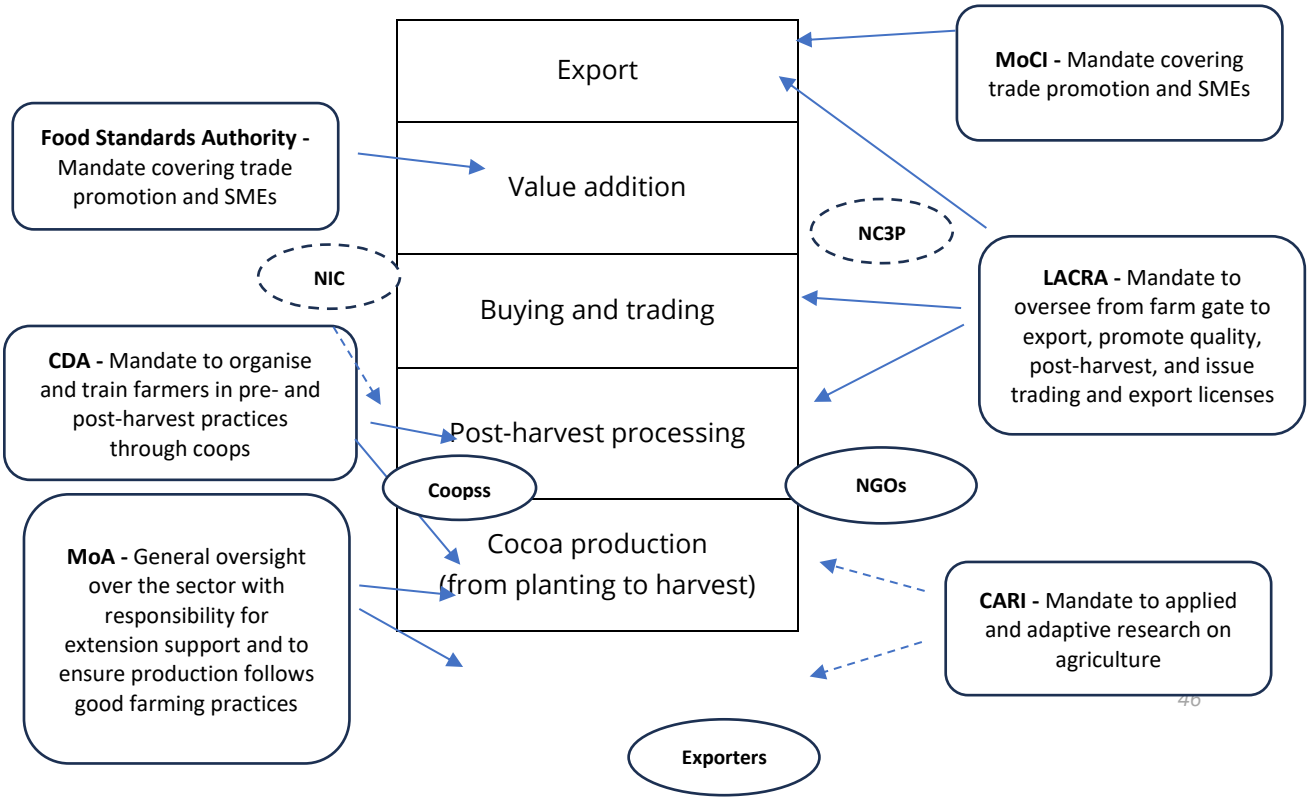
FIGURE 2-7 COTE D'IVOIRE COCOA EXPORTS (SOURCE : TRADEMAP 2024)

2.5 Governance

2.5.1 Current organisational framework

At the time of the VCA4D study, the cocoa sector was considered to be lacking an effective institutional lead and applied regulations, along with limited opportunities for co-ordination between sector actors. It was clear that the internal market for cocoa has mainly been influenced by the operations of a small number of dominant exporters, the limited incentives and capacity for post-harvest processing and challenges (and disincentives) in accessing the official market in Monrovia compared to cross-border trade.

In principle, the institutional framework surrounding the cocoa value chain in Liberia is made up of the key actors listed in *FIGURE 2-8*.



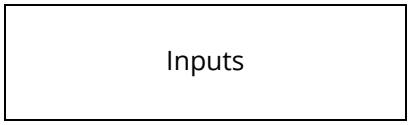


FIGURE 2-8 KEY ACTORS IN THE LIBERIAN COCOA INSTITUTIONAL FRAMEWORK

The two key Government institutions who have a leadership role in the cocoa sector are:

- **Ministry of Agriculture (MoA)** – At present, MoA provides general oversight. It is recognised for its role at the production/farmer level, where it takes the institutional lead on policy support and infrastructure provision (e.g. extension support), and ultimately for ensuring production follows good farming practices. Through the Minister for Agriculture, who serves as Chair on the board of many of the other, more "junior", agriculture-focused organisations, the MoA is able to exert a strong influence over the cocoa sector.
- **Liberia Agricultural Commodity Regulatory Authority (LACRA)** – is mandated to serve as the regulator of all agricultural trade, particularly those involving cocoa, coffee, and oil palm. In principle, this would allow LACRA to influence activities from farm gate to export, and play a lead role in the promotion of, and improvement in, the quality of cocoa production by incentivising post-harvest processing. LACRA issues licences to cocoa traders: i) Buying Agents (agents associated with specific cocoa exporting companies) and ii) Licensed Buying Companies (companies which purchase produce from farmers or Cooperatives and trade internally); and it also licences Exporting Companies (those responsible for the external marketing of cocoa only).

However, cocoa sector stakeholders interviewed as part of the VCA4D study acknowledge that LACRA does not currently have the capacity, both in terms of technical know-how and resources, to carry out its mandate effectively, and its ability to generate revenue for re-investment and sectoral development is also constrained. Anecdotal evidence from engagement with sector stakeholders supports the perception that LACRA is struggling to function effectively and provide the necessary leadership, particularly at the local level where this is some distance from Monrovia (e.g. in the South- East). LACRA's challenges have been well understood for some time. By the late 2000's (as the Liberian Produce Marketing Corporation) its statutory mandate for local procurement was transferred to private traders in order to address these issues. Many efforts have been made to develop LACRAs capacity since then, in order that it could fulfil its sectoral leadership role, but these do not appear to have resulted in sustained changes.
Other organisations that play an influential role in the sector are:

- **Cooperative Development Agency (CDA) –** which regulates, registers and provides legal, technical, educational and administrative support to Cooperatives and apex organisations, including farmer organisations. In relation to the cocoa sector, CDA has worked with Cooperatives to encourage pre- and post-harvest practices. It is currently the main agency for cocoa certification in the country. It also has a key role to play in the design, financing and establishment of mechanisms that are intended to protect farmers and financial intermediaries, and limit side-selling among Coop members and improve overall monitoring.

- **Central Agricultural Research Institute (CARI)** – The mission of CARI is to contribute to increased productivity, commercialization, and competitiveness in the agricultural sector overall. As a semi- autonomous institution, it can operate independently, outside the administration of the Ministry of Agriculture. It is acknowledged that CARI has faced challenges in meeting its mandate, including a lack of research infrastructure, insufficient staff capacity, and weak research extension linkages.
- **Ministry of Commerce and Industry (MoCI)** – Is responsible for establishing and regulating commodity and trade standards. It promotes the development of foreign and domestic trade and issues import and export permits. Through the Liberia Standards Authority, it controls the quality of goods and commodities imported into and exported from the country. It is the authority that implements trade management systems including pre-shipment inspections and monitoring prices of essential goods.
- **Liberia Food Standards Authority (LFSA)** – The Liberian Food Standards Authority (which is part of MoCI) plays a role in the value additional component of the cocoa value chain, where cocoa is processed into cocoa butter, chocolate and other products. As part of a broader effort to align Liberia's agricultural standards with national best practices, the Liberia Standards Authority have recently (2024) been reviewing the 32 standards that govern various aspects of the production, processing, packaging and labelling of cocoa, coffee, tea and related agricultural products. The review is intended to result in updated guidance that will support the improvement of the quality and competitiveness of Liberian goods and enhance domestic, regional and international market access. While value addition is still a relatively small component of the cocoa value chain in Liberia at present, it represents an area with significant opportunity for development in future. Defining a clear roadmap for grading cocoa would help to ensure consistency and reliability in quality assessments.
- **National Investment Commission (NIC) -** NIC is the Government agency responsible for promoting investment opportunities; increasing value-added foreign direct investments and advocating for and strengthen the domestic private sector. NIC acknowledges agriculture and agro-processing (rubber, oil palm, rice, cassava, marine fisheries, aquaculture, horticulture, cocoa) as priority sectors. Manufacturing/value addition (at least 60% of local raw material content) and the cultivation and processing of cocoa and coffee are the most relevant aspects of the value chain that fall within NICs mandate. However, the majority of investment within the agricultural sector has tended to focus on plantation estates (e.g. palm oil) rather than the predominantly smallholder production-oriented cocoa sector. According to the Economic Empowerment Tax Amendment Act of 2016, to qualify for investment incentives through NIC, applicants would need to hold at least USD 500 000 in investment capital, which is a considerable sum. One notable gap identified by cocoa sector stakeholders during the VCA4D study was the lack of protection/safeguarding for private sector investment in the cocoa sector.

2.5.2 Sector coordination and leadership

Recognising the need for greater coordination and leadership within the cocoa sector, several initiatives have taken place to strengthen this over the last 5 years.

The **National Cocoa Public-Private Partnership Platform (NC3P)** was launched in 2019 as part of the four-year **Liberia Cocoa Sector Improvement Programme (LICSIP)** initiative supported by the European Union. NC3P represents the only dedicated, multi-stakeholder body in the country for the cocoa sector. The NC3P brought together representatives from the Government of Liberia, private sector, farmers' organisations, civil society organisations, research institutions, development partners and other stakeholders. The establishment of the NC3P was instrumental to the creation of the "Roadmap to a Sustainable Cocoa Sector in Liberia" (IDH 2021) which sets out a collective ambition for the sector. LICSIP aimed to create a vibrant, competitive and profitable cocoa economy driven primarily by farmer groups/associations and private cocoa supply chain companies, within a robust national regulatory and institutional framework.

Signatories to the overarching Statement of Intent agreed to work together, under the supervision of LACRA and the National Investment Commission (NIC) to implement the roadmap achieve a number of structural changes that would have lasted positive impact for the sector. However, Covid-19 disrupted the process and at the time of writing this report, NC3P was not functioning due to lack of funding, which has further limited the opportunities for coco sector stakeholders to coordinate effectively.

Without leadership and coordination, the VCA4D study observed that many of the key institutions are effectively competing for development funding. For example, CDA, MoA and CARI were all reported to be engaged in cocoa seedling nurseries and distribution and are potentially overlapping their geographic activities and efforts. This is also likely to be the case for NGOs implementing programmes to support cocoa producers.

2.5.3 The new Government and changing political context

Liberia underwent a democratic election during October- November 2023, followed by a peaceful transition to the Government of President Joseph Boakai on January 22nd, 2024. With the change in government came changes in the leadership of institutions that are key to the cocoa value chain. Their priorities (where known), knowledge of the agricultural sector, and specifically of cocoa production and the associated value chain are therefore important to understand as they could have a bearing on the sector.

In July 2024, President Boakai and the Ministry of Finance and Development Planning (MFDP) initiated the formal process for developing the ARREST Agenda for Inclusive Development (AAID): a comprehensive five-year medium-term strategy spanning from 2025 to 2029, which will include a National Development Plan (NDP), a Public Sector Investment Plan (PSIP), and specific development agendas tailored to each of Liberia's fifteen counties. It is not possible to assess the extent to which the AAID will influence the cocoa sector until the plans are developed and more details are released. However, as a significant piece of new policy, it will need to be monitored.
At the time of writing this report, the new Minister for Agriculture is Dr. J Alexander Nuetah. He is described as:

> *…. an experienced Agricultural Economist [Assistant Professor of Agricultural Economics at the University of Liberia] with more than twenty years of professional experience working with the Ministries of Agriculture and Finance and Development Planning of the Republic of Liberia. He*

has served as an Economist at the International Monetary Fund (IMF), held various positions with the World Food Programme and worked as a Food Security Consultant with the World Bank office in Liberia.

Since taking office, the **Ministry of Agriculture** (MoA) has announced several significant initiatives that will affect the cocoa sector. The most critical of these is the launch of the National Agriculture Development Plan (NADP) 2024-2030 (MoA 2024) by President Boakai in July 2024, which sets out the Government's ambition for reinvigorating Liberia's agricultural sector and reducing the nation's dependence on food imports. The plan places a strong emphasis on empowering farmers, promoting modern agricultural technologies, and creating opportunities for large-scale cooperative farms. The implications for the cocoa sector are discussed in more detail further on in this section.

The Ministry of Agriculture have also announced the signing of several Memoranda of Understanding (MoU) which will contribute to achieving the ambition set out in the NADP. These include:

- Several Korean multinational companies[1], securing investment in agricultural research to enhance food productivity and seed development,
- An agreement with the International Institute of Tropical Agriculture (IITA) to provide capacity development for staff at the Central Agricultural Research Institute (CARI) and the Ministry of Agriculture (MoA)[2] in areas such as breeding, agronomy, extension services, food processing for varietal development and trials, value chain development support, and empowering farmers for improved productivity.
- The Ministry of Agriculture and Rural Affairs (MARA) of the People's Republic of China[3] to foster collaboration towards improving agricultural productivity, promote bilateral trade, diversify agricultural products and increase overall output.

The new Director General of the Liberia **Agriculture Commodity Regulatory Authority** (LACRA) is Christopher D. Sankolo. He was not well known among the cocoa sector stakeholders who contributed to the VCA4D study. Many considered him to be a 'surprise' candidate to lead such a critical institution and his knowledge of the agriculture sector was questioned.

At the time of writing this report, it was felt that, while the Ministry of Agriculture is being led by someone with a good understanding of Liberia's agriculture sector and food security issues, it was unclear to what extent LACRA would engage with some of the current institutional and resource constraints that the VCA4D team observed to be affecting the cocoa sector.

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1 https://www.emansion.gov.lr/media/press-release/government-liberia-signed-seven-memoranda-understanding-improvements

2 https://www.moa.gov.lr/media/press-releases/liberia-signs-mou-iita-fertilizer-and-soil-health-hub-launch-nigeria

3 https://www.moa.gov.lr/media/press-releases/liberia-and-china-sign-memorandum-understanding-enhance-agricultural

2.5.4 Implications of the National Agriculture Development Plan 2024-2030 on the cocoa sector

The National Agriculture Development Plan 2024-2030 (NADP) sets out the Government of Liberia's ambitious plan to invest in the cocoa sector, focusing on five cocoa-producing counties (Bong, Nimba, Lofa, Grand Gedeh, River Gee and River Cess) at a cost of just over 31 million USD)

Component / Priority	Total (USD)
25 000 ha cocoa landscape cultivation : increase production	26 250 000
National cocoa gardens established in five cocoa-producing counties to provide improved planting materials for cocoa farmers	3 570 000
National cocoa research institute to support cocoa VC development	815 000
National cocoa board established to provide guidance for the development of the VC	640 00
TOTAL	31 275 000

TABLE 2-5 INVESTMENT COST FOR COCOA VALUE CHAIN DEVELOPMENT

Source: NADP (2024-2030)

If fully funded, the NADP will have a significant impact on the governance of the cocoa sector if the following stated aims are implemented:

- Establishment of a **National Cocoa Board** tasked with overseeing the development of the sector, which would bring Liberia's cocoa sector in line with that of its neighbours - Cote d'Ivoire, Ghana and Cameroon – in terms of marketing, incentivising quality, etc. It is unclear to what extent the NCB would take on the regulatory responsibilities of LACRA, or if its mandate would be limited to the provision of financing and responsibility for aggregation and export.
- Creation of a dedicated **National Cocoa Research Institute**, which would have the effect of significantly boosting national capacity to support the development of the sector and effectively remove this responsibility from the semi-autonomous Central Agricultural Research Institute (CARI) which currently holds this function.
- Establishment of **national cocoa gardens** in the five key cocoa-producing counties[4], which has the potential to replace (or consolidate) the current 'ad hoc' provision of seedling production by various actors including MoA, LACRA and NGOs.
- Tasking the Ministry of Agriculture with:
- Facilitation of cocoa-specific extension services. There is currently no dedicated facility for this, and cocoa-specific extension is being offered by a range of actors.
- Responsibility for strengthening capacity for post-harvest practices and promoting value addition. This goes beyond what was reported to be the current scope of the MoA, which placed responsibility for promoting post-harvest activities with LACRA.
- Supporting the work of the new National Cocoa Board through facilitating access to finance, supporting private-sector intervention and collection of data / market research.
- Acknowledging and actively engaging with youth as the primary drivers of the future of Liberia's cocoa sector, and the need to pay particular attention to gender issues across the value chain as it develops.

[4] Bong, Nimba, Lofa, Grand Gedeh, River Gee and River Cess

- The overall stated impact of NADPs investment in the cocoa value chain (in addition to the above) is to achieve a 25 000 ha increase in productive area made up of new cocoa farms over the next 5 years. The plan specifically identifies that these should be the result of rehabilitating existing farms, as opposed to opening up new ones (which would have implications for Liberia's ability to show EUDR compliance).
- The NADP acknowledges that sustainable growth and resilience of the cocoa sector will require a holistic approach that addresses productivity constraints, improves market access and efficiency, and fosters modernization across the entire value chain. It also notes that over the last 5 years, there has been increased participation in cocoa farming. Time will tell whether the proposed improvements in extension, planting materials and market access can limit growth in the sector to existing cocoa farms, or if it will result in smallholder farmers developing new farms.

2.5.5 Initiatives benefiting the cocoa value chain in Liberia

TABLE 2-6 presents an overview of key international initiatives on the Liberian cocoa sector during the last years in Liberia.

	Project name	Source of funding	Sub-sectors	Implementing agency	Location	Duration	Value in USD	Projected beneficiaries
1	Cocoa Value Chain Development Programme (COVADEP)	EU	Cocoa	Solidaridad West Africa Liberia (SWA-L)	Grand Gedeh, River Gee, Lofa, Bong, and Nimba	December 2019 to December 2023		3 000
2	Building Climate Resilience Project	International Fund for Agricultural Development (IFAD)	Rice Cocoa	Programme Management Unit of The Ministry of Agriculture	8 Districts in Nimba, Lofa, and Bong	6 years (2019-2026)	8.84 million	-25 000 in total-10 000 rice farmers -5 000 cocoa farmers and -10 000 farming --enterprises (mainly women and youth)
3	Tree Crops Extension Project (TCEP II)	International Fund for Agricultural Development (IFAD) Government of Liberia (GoL)	Cocoa Road Rehabilitation	Programme Management Unit of The Ministry of Agriculture	Lofa (7 districts)	6 years (2019-2025)	47.6 million	-10 000 cocoa farmers -5 000 households benefiting from access to roads, inputs, and market linkages.
4	Rural Community Finance Project	International Fund for Agricultural Development (IFAD)	Access to finance	Programme Management Unit of The Ministry of Agriculture	12 existing RCFIs in 8 counties	5 years (2017-2022)	10.86 million	24 000 beneficiaries
5	Smallholder Agriculture Transformation and Agriculture Revitalization Project (STAR- P)	Loan to the Government of Liberia (GoL) from the World Bank	Rice Oil Palm, Horticulture	Programme Management Unit of The Ministry of Agriculture	Bomi, Grand Cape Mount, Lofa, Nimba and Margibi County	6 years (2019- 2024)	25 million	17 500 beneficiaries (30% women)
6	Improving Rice Production for Smallholders Project (LibRice)	Ministry of Agriculture Department of Regional Development, Research and Extension	Rice	JICA	Bong County	5 years (2021- 2025)		
7	Promoting MSME Development and Employment Opportunities in Liberia through a Market System and Cluster Development Approach in agro-industry value chain (Grow 2)	Sida	Cocoa Vegetables Rice	UNIDO	Bong, Nimba Lofa	5 years (2022- 2026)	7.2 million EUR	12 000

	Project name	Source of funding	Sub-sectors	Implementing agency	Location	Duration	Value in USD	Projected beneficiaries
8	Liberia Forest Sector Project	Government of Norway Norway International Climate and Forest Initiative	Cocoa Vegetables	IDH- SCNL Joint Venture	Lofa, Gbarpolu, and Grand Cape Mount County	18 months		5 000 farmers
9	Liberia Economic Policy Dialogue Activity	USAID	Concessions, special economic zones, financial markets, trade facilitation/ports, import policies, etc.	Nathans Associates	Nationwide	4 years (2019- 2023)		
10	Rural Liquidity and Financial Inclusion Activity in Liberia	USAID	Access to finance in underserved areas Financial literacy	Access Bank	Lofa, Nimba, Margibi and Bong	3 years (2019- 2021)		
11	Liberia Cocoa Cooperatives Development Project	Société de Coopération pour le Développement International (SOCODEVI)	Cooperative Governance	SOCODEVI	Bong and Nimba	2 years (2021- 2023)	370 000	2 500 farmers

TABLE 2-6 KEY INTERNATIONAL INITIATIVES ON THE LIBERIAN COCOA SECTOR

Source: Authors

2.5.6 Practical rules and institutional arrangements on the ground

The large number of public or private organisations formally involved in the governance of the cocoa sector in Liberia should not hide their weak influence on the vast majority of producers. The survey we conducted among 95 producers chosen at random - i.e. without going through the intermediary of support projects - in eight districts showed that less than 10% of them had received any support whatsoever. This shortfall is due, on the one hand, to the limited resources of public organisations to be active on the ground and, on the other, to the small number of cooperatives and producers that each of the support projects can assist. For their side, exporting companies and their networks of licensed traders have not set up any private mechanisms (certification, good practices, premiums, traceability, etc.) to make up for these shortcomings.
The governance of the cocoa value chain in Liberia, at least in its upstream part, is in fact characterised by a liberalised informal economy, with weak or non-existent means of regulation. There is no transparent information system on prices, regulations or the quality of cocoa beans (ACET 2023). Several factors lead to inefficient relationships between farmers and traders, which hampers the development of the sector and its possible move towards sustainability:

- The fierce competition between traders (both licensed and unlicensed) to acquire the maximum volume of cocoa (USAID 2017) leads to unfair practices and little interest in the quality of the beans, which are very often sold raw or wet. Competition among buyers is further exacerbated by the porousness of Liberia's borders with Ivory Coast, Guinea, and Sierra Leone (Leissle 2018).
- The widespread practice of side selling, where producers do not sell cocoa to traders who have pre-financed their investments or with whom a contract has been established. There is little reason to presume farmer loyalty, even with demonstrated investment and a commitment to buy (GROW 2015, Leissle 2018).
- The volatility of the cocoa purchase price, which varies with each new transaction depending on the opportunities available at the time and the highly fluctuating quality of the beans (ACET 2023).
- The general lack of grouping of farmers for coordinated sales, apart from in the few operational cooperatives.
- The total informality of cocoa sales, with no identification of farmers, no registration of acts of sale, and no geo-location of plantations.

All these shortcomings make the cocoa value chain in Liberia very little attractive to investment and are major challenged for moving the sector towards sustainability and zero deforestation.

3. WHAT IS THE CONTRIBUTION OF THE VALUE CHAIN TO ECONOMIC GROWTH?

Nine types of national stakeholders contribute to the cocoa value chain in Liberia, whose number and production capacities are shown in table TABLE 3-1.

Actors	Acronyms	Number of individual actors	Annual capacity per individual actor (ton of dry bean)	Total annual volume for all actors (ton of dry bean)
Producer – Commercial	ProdCOM	1 042	0.60	625.00
Producer - Collective work	ProdCOL	3 500	0.42	1 470.00
Producer - Family labour	ProdFAM	8 471	0.34	2 880.00
Producer - External labour	ProdEXT	9 750	0.12	1 170.00
Producer - Semi-abandoned	ProdABA	12 373	0.44	5 444.00
Producer - Côte d'Ivoire	ProdRCI	1	12 411.00	12 411.00
Cooperative	TCOOP	85	15.00	1 275.00
Unlicensed trader	TUnlic	1 512	6.28	9 494.00
Licensed trader	TLic	75	256.00	19 117.00
Company exporting worldwide	ExpWW	8	2 550.00	20 400400.00

TABLE 3-1 MAIN STAKEHOLDERS IN THE COCOA VALUE CHAIN IN LIBERIA

Source: Authors

The informal import of a large volume of cocoa beans from the Republic of Côte d'Ivoire is a key feature of this VC, but it will generate limited national wealth since it is captured only by commercial intermediaries and exporters of these beans via the port of Monrovia.

Most actors derive a significant operational profit in volume or percentage from the production, intermediation or marketing of cocoa beans in Liberia, as shown in the last column of **Error! Reference source not found.**.

The individual operating accounts of the actors are presented in Appendix 9.1.

Actor	Value of production	Subsidy	Intermediate Consumption	Value Added (VA)	Wages	Taxes	Interest on loan	Depreciation of equipment	Net operating profit (NOP)
ProdCOM	1 125 000	35 366	73 171	1 051 829	212 195	16 463	0	0	858 537
ProdCOL	2 190 300	0	211 809	1 978 491	547 174	47 069	47 069	0	1 337 180
ProdFAM	4 432 320	0	373 895	4 058 425	1 025 684	111 158	0	0	2 921 583
ProdEXT	1 364 220	0	366 955	997 265	1 313 591	106 364	0	0	-422 689
ProdABA	7 730 480	0	507 616	7 222 864	2 015 751	205 989	14 714	0	4 986 410
ProdRCI	23 580 900	0	23 580 900	0	0	0	0	0	0
TCOOP	2 932 500	8 419 590	3 208 750	-276 250	2 363 340	205 870	30 600	763 555	4 779 975
TUnlic	18 513 300	0	14 476 421	4 036 879	371 899	92 219	0	777 057	2 795 705
TLic	45 403 540	14 935	38 102 264	7 301 276	527 144	180 046	4 481	161 153	6 443 388
ExpWW	59 545 458	95 964	50 779 795	8 765 663	1 367 482	3 228 146	593 775	356 625	3 315 598
Value chain	**66 580 512**	**8 565 855**	**31 444 068**	**35 136 444**	**9 744 260**	**4 193 323**	**690 638**	**2 058 389**	**27 015 687**

TABLE 3-2 CONSOLIDATED ACCOUNT OF THE COCOA VALUE CHAIN IN LIBERIA (IN USD)

Source: Author

Only producers who depend on external labour do not make a profit from their activity. The paid cost of labour is almost the same as their turnover, which is low because of the small level of production.

The case of cooperatives is also problematic from a financial point of view. They only make a profit thanks to the subsidies they receive. This is not a surprise, since the revival and multiplication of cocoa cooperatives requires a major overhaul of governance and management systems, which is almost always disconnected from the volume of cocoa production. However, care must be taken to ensure that subsidies are provided to cooperatives on a short period of time, enabling them to move towards economic efficiency after a few years of support. The adoption of a profitable business model for cooperatives hardly comes naturally, particularly in a context where many donors are prepared to invest funds to provide them with support.

Figure 3-1 shows the financial rates of return on turnover for each of the stakeholders to provide a better answer to the question of the profitability of the value chain.

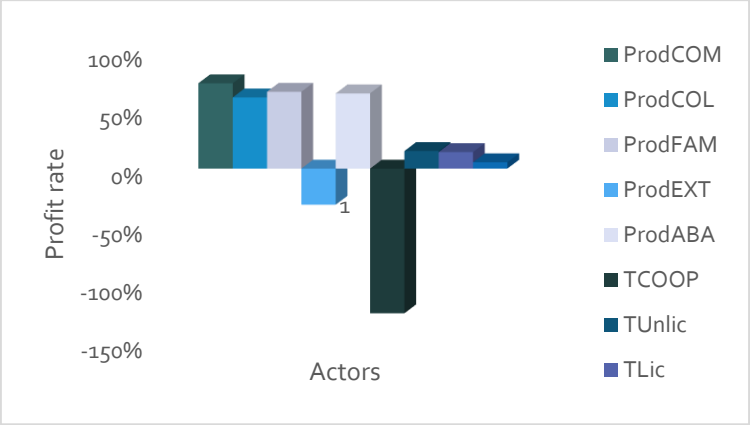


FIGURE 3-1- RETURN ON TURNOVER
Source: authors

Two stakeholders - the producers with external labour and the cooperatives - have strongly negative returns, either because the cost of labour is too high in relation to the low volume produced, or because the provision of subsidies is too high in relation to the level of turnover.

The other types of small producers have very high profit rates which can be explained by the very low level of intermediate consumption. Primary cocoa production that receives no external support is very little capital-intensive. The use of pesticides, fertilisers and technical equipment is very low, as ACET (2023) already pointed out. Cocoa is produced by picking the beans, often from old and poorly maintained plantations. This production method, which uses very few inputs, enables high profit rates to be achieved, but the absolute amount of profit remains low, around 400USD/year for the producers COL-FAM-ABA. The COM producers do much better, with an annual profit of around USD 820 from the sale of cocoa, which demonstrates the positive impact of the support they receive to increase at least the quantity of their cocoa production. There is no reason to think that equivalent support could not be extended to FAM and ABA producers - who

currently receive no support from anyone - and have equally positive effects on the quantity produced and their incomes.

Licensed and informal traders show similar profit rates of around 15%, but here again the average annual profit is USD 1849 for an informal trader, compared with USD 86 285 for a licensed trader. Similarly, the average net profit for exporting companies is relatively low in percentage terms (5%) but high in absolute terms, at an estimated USD 414 612 per year. The ACET study (2023) mentioned gross margin of 14% for exporters worldwide, without including capital depreciation.

The cocoa value chain therefore appears to be profitable for the vast majority of the national stakeholders, opening up both opportunities to increase production yields and real scope for improving the overall governance of the sector.

3.1 Total effects within the national economy

The total net value added generated by the cocoa value chain in Liberia is around USD 38 million per year, including direct value added of USD 35,1 million. Indirect effects amount to USD 3 million, or less than 10% of total value added. This is due to the high level of imports of many intermediate inputs such as equipment, chemicals and cocoa beans purchased in the Côte d'Ivoire.

As shown in FIGURE 3-2 the profits generated by the stakeholders make the largest contribution to the creation of added value. Wages are the second largest contribution to total value added. Subsidies also have a substantial impact on value added, since the balance of taxes less subsidies is negative at around USD 4.3 million per year.

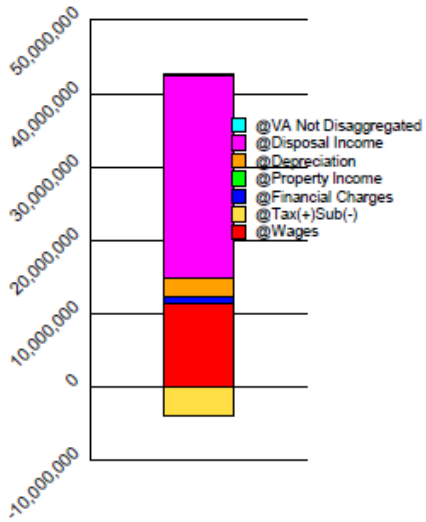


FIGURE 3-2 DISTRIBUTION OF THE TOTAL VALUE ADDED BY ACCOUNTING CATEGORIES (IN USD)

Total value added is distributed relatively evenly between the three stages of the value chain: primary producers generate 44% of total value added, 31% comes from commercial intermediation, followed by 25% from formal exporters. The study conducted by GROW (2015) estimated that farmers made 65% of the value added for the 2014-2015 season. It is possible that the production of added value has shifted further down the value chain over the last ten years,

most likely thanks to the import of a large volume of beans from Côte d'Ivoire generating value added at the marketing level.

Unsurprisingly, profit and wages are the two categories that contribute most to the value added created by each of the stakeholders, except for the cooperatives, which depend heavily on subsidies received from support organisations (*FIGURE 3-3*).

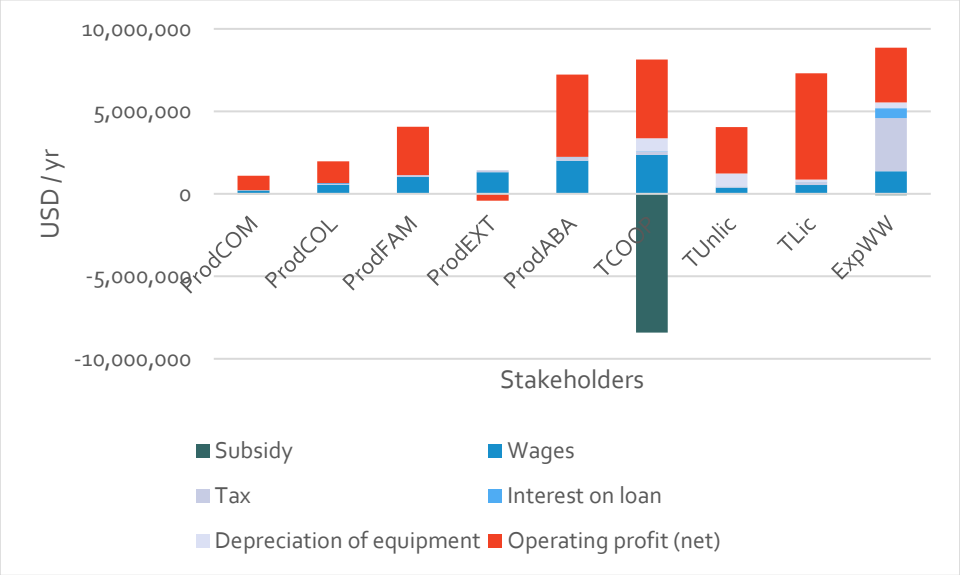


FIGURE 3-3 COMPOSITION OF THE VALUE ADDED FOR EACH GROUP OF STAKEHOLDERS

3.2 Comparison of sub-chains

Three sub-chains deserve to be distinguished as they follow different dynamics:

- Small national producers market their beans (sometimes with the support of cooperatives) to licensed or informal traders and then to exporters based in Monrovia. These stakeholders are now in the minority in the value chain, accounting for only 33% of the volume of cocoa exported by Liberia.

- Small national producers market their beans to informal traders for export to Liberia's neighbouring countries. These commercial outlets are much easier to reach for many producers than evacuation via Monrovia. This sub-sector currently accounts for 15% of the volume exported by Liberia. This share could rapidly increase in the direction of the Côte d'Ivoire when cocoa farms in the south-eastern counties come into production.

- Licensed traders import large volumes of Côte d'Ivoire beans for resale to Monrovia exporters. This sub-chains supplied 52% of Liberia's cocoa exports.
Each of these sub-system is now profitable from a financial point of view, except in the case of cooperatives and EXT producers, which together account for only 10% of total production volume.

3.3 What is the contribution of the VC to the GDP?

In total, the current cocoa value chain in Liberia contributes 2.7% of agricultural GDP and 0.1% of national GDP.

Despite its small size, this value chain is well integrated into the national economy, with VA representing 58% of the value of the production generated by cocoa exports (less subsidies). However, the VA reaches 91% of the value of production if we exclude the informal imports of cocoa beans from Côte d'Ivoire. This high level of VA reflects the small level of imported intermediate consumption and the current low sophistication of the cocoa industry in Liberia.

3.4 What is the contribution of the VC to the public finances?

Two types of taxation apply to the cocoa sector in Liberia. On the one hand, specific taxes on cocoa are applied when cocoa beans are formally exported from Monrovia. This specific taxation relates in particular to royalties and export licences levied by LACRA. But general taxation, which applies to the consumption/importation of everyday products and to income, is more important than specific taxation on cocoa. General taxation includes the Goods and Services Tax (GST) of 10% on all goods and services (with 15% for telecommunications) and on imported goods. In total, the general and specific taxes applied to cocoa in Liberia bring in USD 4.2 million a year for the Liberian government.

It is difficult to assess national public spending to support the development of the cocoa sector in Liberia, as this spending is carried out by several public organisations (LACRA, CDA, CARI, MOA, MOCI, etc.) and they all cover a wide range of agricultural commodities. By way of illustration, in the 2018/2019 financial year, LACRA received a total allocation of $551,000, that were 93% oriented to staff salaries (Steijn & Francisco 2021). Overall, the level of national public spending on cocoa is probably low, or even virtually non-existent in rural areas (Leissle 2018).

In addition, there is a high level of international subsidies that are transferred to several stakeholders, that is estimated at around USD 8.5 million, mainly to cooperatives.

In total, if we deduct national and international public expenditure from the amount of taxes paid by the cocoa sector in Liberia, the public funds balance comes to - USD 4.3 million. However, another interpretation can be made of these figures, especially if we depart from the rigours of public accounting: while the national authorities probably spend at best a few hundred thousand USD to support the cocoa sector, the sum of the taxes generated and international subsidies provides a 'fiscal resource' of the order of 12.758 million USD per year.

3.5 What is the contribution of the VC to the balance of trade?

Since the domestic market is negligible for Liberian cocoa consumption, the sector's turnover comes solely from formal exports from Monrovia and informal exports to neighbouring countries. These export revenues amount to USD 66 million in 2023.

Most of the equipment and inputs used to produce and trade Liberian cocoa are imported. But by far the biggest import expense is the purchase of cocoa beans in Côte d'Ivoire, which accounts for almost 90% of the total amount. All these imports amount to around USD 25.8 million per year. Overall, the sale of cocoa in Liberia generates a trade surplus of around USD 40.2 million a year.

3.6 Is the VC viable in the international economy?

The cocoa economy in Liberia is liberalised and therefore has most of the characteristics of pure and perfect competition. Two main factors prevent the prices of goods and services used in this value chain from being considered as the reference prices of a perfectly competitive economy. Firstly, the goods and services consumed as well as imported goods are subject to GST, and their national prices are therefore different from their supposedly competitive international prices. Secondly, a number of players, the majority of which are cooperatives, receive public subsidies to carry out their activities, which distorts their real contribution to national wealth.

The application of the parity prices and removal of the transfers makes it possible to calculate the economic performance of the cocoa value chain on the basis of international prices and to compare it with that previously evaluated using current domestic market prices.

in USD	Tradable goods and services		Domestic factors		Tax and subsidy	Profit
	Outputs	Inputs	Labour	Capital		
Market price	199 741 530	6 891 709	7 878 087	3 520 314	4 372 531	185 823 951
Social price	199 741 530	4 006 848	7 878 087	3 520 314		184 336 281
Transfer	0	2 884 861	0	0	4 372 531	1 487 670

TABLE 3-3 POLICY ANALYSIS MATRIX VALUES AT MARKET AND PARITY PRICES

Source: Authors

The application of international prices, with no tax on domestic consumption or imports, reduces the cost of intermediate consumption and should increase the overall level of profit. However, this gain is more than offset by the disappearance of subsidies and other taxes, the balance of which represents a transfer of USD 4.3 million. In total, greater market liberalisation based on the elimination of taxes and subsidies would generate a transfer of USD 1.7 million to the detriment of stakeholders in the cocoa sector in Liberia.

This VC appears economically efficient as it uses domestic factors (labour and capital) generating a high level of VA: the Domestic Resource Cost, i.e. the ratio between non-tradable national resources (labour + capital) and VA (tradable output - inputs), is only 0.058. The low level use of domestic resources is largely due to current weight of the informal import from Côte d'Ivoire, which require very little labour or capital to be re-exported. In such economically favourable conditions, the Liberian cocoa VC may be attracted by the role of commercial intermediary for a (small) proportion of Ivorian cocoa, which benefits from favourable prices and does not have to meet any quality requirements. This high-performance sub-chain is likely to act as a brake on the sector's efforts to take the more difficult path of increasing the volume of national production, or even the even more difficult path of improving the quality of Liberian cocoa beans.

Summary table of indicators for framing question 1 (For the definitions of economic terms see the table Executive Summary)

Framing Question 1: What is the contribution of the VC to economic growth?		INDICATORS	RESULTS
CQ1.1	How profitable and sustainable are the VC activities for the entities involved?	**Operating Accounts of every type of actor**	**See Annex 9.1**
		Net operating profit by type of actor	**ProdCOM: 824** **ProdCOL:382** **ProdFAM:345** **ProdEXT:-43** **ProdABA: 403** **ProdRCI: 0** **TCOOP: 56,235** **TUnlic: 1,849** **TLic: 86,285** **ExpWW: 414,612**
		Return on turnover (operating profit/production)	**ProdCOM: 76%** **ProdCOL:61%** **ProdFAM: 66%** **ProdEXT:-31%** **ProdABA: 65%** **ProdRCI: 0%** **TCOOP: 163%** **TUnlic: 15%** **TLic: 14%** **ExpWW: 6%**
		Benchmarks for farmers' net income (minimum wage, livelihood needs, job opportunities…)	

Framing Question 1: What is the contribution of the VC to economic growth?		INDICATORS	RESULTS
CQ1.2	What is the contribution of the VC to the GDP?	**Value of final VC production**	**USD 66,580,512 million**
		Direct VA	**USD 35,137 million**
		Total VA	**USD 38,770 million**
		Total VA creation per stage	**Primary production: 44%**

			Commercial intermediation: 31% **Formal exporters: 25%**
		Total VA and components:	**Wages/salaries: 29%** **Financial Charges: 3%** **Taxes on operations: -11%** **Depreciation: 6%** **VC actors' operating profits: 71%** **Suppliers' operating profits :2%**
		Total VA in percentage of the GDP	**0.1%**
		Rate of integration into the Economy (total VA/VC production)	**58%**
CQ1.3	What is the contribution of the VC to the agriculture sector GDP?	**VC agricultural actors' Value Added in percentage of the agriculture sector GDP**	**2.7%**
CQ1.4	What is the contribution of the VC to the public finances?	**Receipts of the government (taxes, etc.)**	**USD 4.2 million**
		Outlays of the government (subsidies, etc.)	**USD 8.5 million**
		Public Funds Balance	**Negative (USD 4. million)**
CQ1.5	What is the contribution of the VC to the balance of trade?	**VC exports**	**USD 66.5 million**
		VC total imports (goods and services)	**USD 25.8 million**
		Balance of trade of the VC	**Positive (USD 40.7 million)**

Framing Question 1: What is the contribution of the VC to economic growth?		**INDICATORS**	**RESULTS**
CQ1.6	Is the VC viable in the international economy?	**Nominal Protection Coefficient (NPC)**	**1**
		Domestic Resource Cost Ratio (DRC)	**0.058**

4. IS THE ECONOMIC GROWTH INCLUSIVE?

4.1 How is income distributed across actors of the VC?

Table 3-2, which breaks down the VA for each of the stakeholders, help to estimate the total income generated for rural populations by cocoa production in Liberia. This income is made up of the profit made by producers. This total farm income amounts to USD 9.6 million per year, or around 25% of the VA.

Cocoa farmers also pay salaries and remuneration in kind to casual workers, who contribute directly to the income of rural populations. The total amount of cocoa-related rural wage was about USD 5 million over the latest campaign.

The cocoa VC has a Gini coefficient of 0.64, which indicates that 90% of the stakeholders in the value chain earn around 35% of the total profit, which is not surprising given the large number of primary producers and informal intermediaries compared with the number of actors downstream in the value chain.

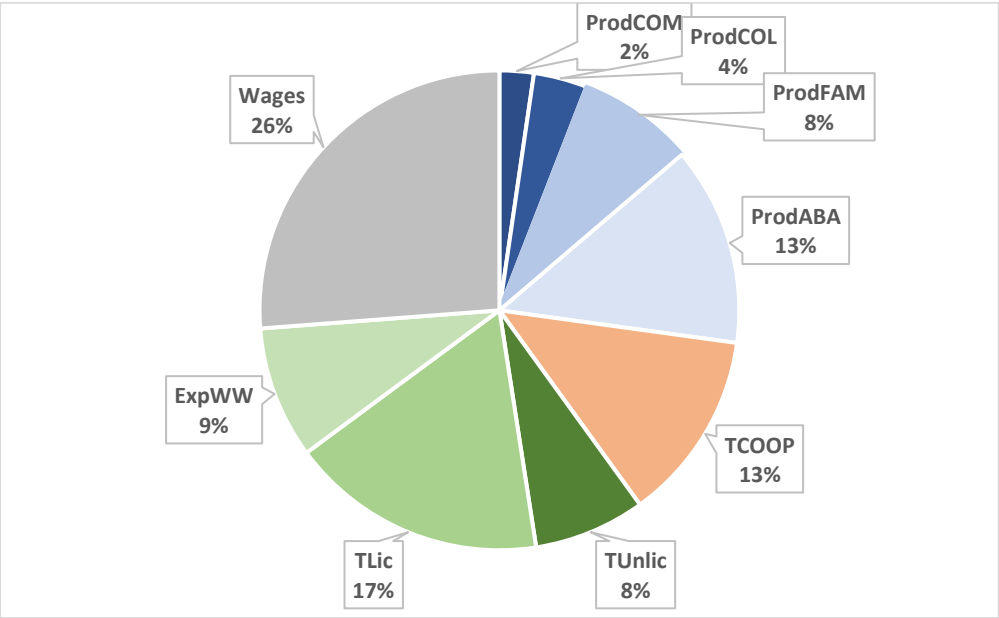


FIGURE 4-1 INCOME DISTRIBUTION AMONG ACTIVE POPULATION IN THE COCOA VC (ENTREPRENEURS AND LABOURERS)

4.2 How is employment distributed across the VC?

It is not easy to estimate employment in a sector that relies heavily on unpaid domestic work and part-time jobs. Several conversions were therefore necessary to assess the number of full-time jobs generated by this value chain. Firstly, unpaid working time was recorded during rural surveys. This domestic working time was divided by 250 working days per year to calculate the equivalent number of full-time jobs. Secondly, at the downstream end of the chain, the wages paid to part-time workers were also recorded during the surveys. These wages were converted into full-time

jobs by dividing the wage bill by an average daily wage of USD 10 and applying this to 250 working days per year.

Table 4-1 shows the distribution of jobs created by the value chain. Unpaid domestic labour accounts for 43% of this working time. Even excluding domestic labour, primary production offers the largest number of paid jobs, with 70% of the jobs in the entire VC, but with low rates of pay (around USD 3 per day).

Actor	Number of actors	Wages (in USD)	Number of jobs		% women
			Family (unpaid)	Full-time equivalent	
ProdCOM	1 042	212 195	204	283	<30%
ProdCOL	3 500	547 174	796	730	<30%
ProdFAM	8 471	1 025 684	2 094	1 368	50%
ProdEXT	9 750	1 313 591	1 703	1 751	40%
ProdABA	12 373	2 015 751	2 518	2 688	50%
TCOOP	85	2 363 340	0	595	40%
TUnlic	1 512	371 899	0	1 663	<5%
TLic	75	527 144	0	284	<5%
ExpWW	8	1 367 482	0	376	<5%
TOTAL			7 316	9 737	

TABLE 4-1 EMPLOYMENT IN THE COCOA VC IN LIBERIA

Source: Authors

The role of women varies along the value chain: while they are quite heavily involved in primary production of the FAM-EXT-ABA type, often owning cocoa farms, their role diminishes when support is provided to increase cocoa yields and sales (COM and COL type farms). They have very little involvement in the downstream part of the value chain, where most jobs involve physical tasks.

In Liberia, the minimum wage is governed by the Decent Work Act of 2015. This Act provides a framework for a Minimum Wage Board to determine and set minimum wage rates. The provisional rate applied to unskilled labourers is currently set at $0.25 per hour for industrial labourers and $1.50 per eight-hour day for non-industrial labourers. For skilled labourers, the minimum wage is slightly higher. However, these are applicable and enforceable in the formal sector, rather than the informal sector where compliance with labour laws is almost impossible to enforce. In 2022, IDH commissioned a study to calculate Living Income (LI) and Living Wage (LW) benchmark and household income and livelihood baseline for North-West Liberia. The outcome from this does not appear to have been made publicly available, and the VCA4D study team could find no other references to LI and LW studies for the Liberian agriculture sector.

Farm labour is an important source of income for many smallholder households. In terms of cocoa production, men currently benefit more from these opportunities than women because of the nature of the tasks (mainly very physical – clearing and brushing – with limited post-harvest processing taking place). Women are more active in off-farm activities such as buying and selling

farm produce, storing crops, carrying and packing farm produce[5]. This, in addition to household responsibilities (childcare and household well-being) puts greater pressure on women's time, if they are more engaged in cocoa production (such as FHH).

Rural women in particular are disadvantaged on the labour market and earn less than men. They are often constrained by household responsibilities, tend to be self-employed (e.g. petty trading) and are overrepresented in non-wage employment (family labour). As a result, women earn less than men. In the CVC, it is men who are most frequently employed to carry out the more physically demanding tasks such as clearing and brushing and are also involved in transportation. WFP reported in March 2024[31] that men were paid slightly higher wages then their female counterparts for similar unskilled agricultural jobs including, brushing, clearing, weeding, planting, etc. Wage labour data shows on average, men received LRD 670 per day while women get LRD 540. There are geographic differences, with highest agricultural wages being recorded for men in Margibi County (up to LRD 990) and only LRD 960 in Grand Bassa County. For women, rates were recorded at LRD 900 in Maryland County and LRD 860 in Margibi County.

4.3 What is the impact of the governance systems on income distribution?

The upstream part of the value chain is largely deregulated, as the majority of small producers (FAM-EXT-ABA type) do not have stable commercial relations with traders. For these producers, sales are made on the basis of existing opportunities, which explains the great flow of cocoa to neighbouring countries, since evacuation to Monrovia would be less profitable. The possibility of selling cocoa without contractual or loyalty constraints tends to keep the price of cocoa fairly high for primary producers, given the quality of the beans: excluding COM-type producers who sell directly to licensed buyers, the selling price of cocoa at the farm gate fluctuates around USD 1400 per t. This corresponds to 48% of the FOB price in Monrovia. Each of the three following stakeholders in this value chain - unlicensed buyers, licensed buyers and exporters - increases the price by around USD 500 per tonne before the beans are exported via Monrovia (Table 4-2). ACET (2023) gave the same analysis on the prices distribution by VC actors.

[5] Tokpah, D.P, et al. Assessment of cocoa farms and rehabilitation techniques in Bong, Lofa and Nimba countries (Liberia). World Journal of Advanced Research and Reviews, 2022, 13(03), 162–169

Actor	Selling price of one ton of dry bean	Total Subsidies	Net operating profits (total)	Average net profit for an individual actor	Return on turnover (Profit-subsidy/Value of production)
ProdCOM	1 800	35 366	858 537	824	73%
ProdCOL	1 490	0	1 337 180	382	61%
ProdFAM	1 539	0	2 921 583	345	66%
ProdEXT	1 166	0	-422 689	-43	-31%
ProdABA	1 420	0	4 986 410	403	65%
TCOOP	2 300	8 419 590	4 779 975	56 235	-124%
TUnlic	1 950	0	2 795 705	1 849	15%
TLic	2 375	14 935	6 443 388	86 285	14%
ExpWW	2 920	95 964	3 315 598	414 612	5%

TABLE 4-2 OPERATING PROFIT DISTRIBUTION ACROSS THE VALUE CHAIN (IN USD)

Source: Authors

This distribution of the price per t of cocoa in the VC enables most actors either to obtain excellent return rates (upstream in the chain), or to make substantial profits in monetary terms (downstream in the chain).

Licensed traders play a decisive role in the operation of this VC, as already stressed by ACET (2023). As they are contractually linked to the exporting companies, they have financial and logistical resources which they can commit in advance to many informal traders (and to certain COM-type producers) in order to secure large volumes of cocoa. This is particularly the case for cocoa imported informally from Côte d'Ivoire, which is shipped in large unit volumes. Their total profit is the highest of all the stakeholders in the value chain, not so much because of a high profit rate but because they apply this average profit rate to a large volume of beans.

Exporters also follow the same rationale - a low rate of profit on a large volume of beans - but they suffer from the poor quality of the beans exported from Monrovia. The selling price of beans in Monrovia was USD 2920/t, while the average international price in 2023 was around USD 3300/t, i.e. a discount of 12%.

4.4 Governance and farmers' empowerment

The "Roadmap to a Sustainable Cocoa Sector, 2019", stresses the need to increase the organisational capacity of cooperatives and other producer organisations in the sector and strengthen their entrepreneurial and managerial skills in order to increase bargaining power and improve trading practices. This comes in the context of also needing to support and strengthen other key actors – such as licenced buying agents, public agencies (Ministry of Agriculture, LACRA, CDA and CARI) and other service providers in the cocoa sector. The National Agriculture Development Plan 2024-2030 (NADP) also puts a great deal of emphasis on the role of farmer organisations, and cooperatives in particular, in the transformation of Liberia's agricultural sector and the ongoing need to develop their capacity.

Examples of initiatives that are considered to have had significant impact on developing smallholder cocoa cooperatives and farmer organisations include (but are not limited to) the Liberia Livelihood Improvement for Farming Enterprises Project, funded by the US Department of Agriculture (USDA) and implemented by ACDI/VOCA which facilitated the formation of 32 new farmer organizations, representing about 8,000 cocoa farmers, in Bong, Nimba, Lofa, Grand Gedeh, River Gee and Gbarpolu counties. The Smallholder Tree Crop Revitalization Support Project which targeted poorer smallholders in Lofa County who cultivate less than 2 ha of land as households headed by women, young people, and war-wounded and disabled people. Strengthening the capacities of farmers' organizations was a key aim of the project.

The main advantages of being part of a farmer organisation, from the farmers perspective, include training, pooling resources, provision of tools and equipment and information. It was felt that farmer organisations might perform the role of 'closing the knowledge gap' resulting from low education levels. However, literacy levels can also act as a barrier to playing an active part in an organization that requires record keeping, etc.

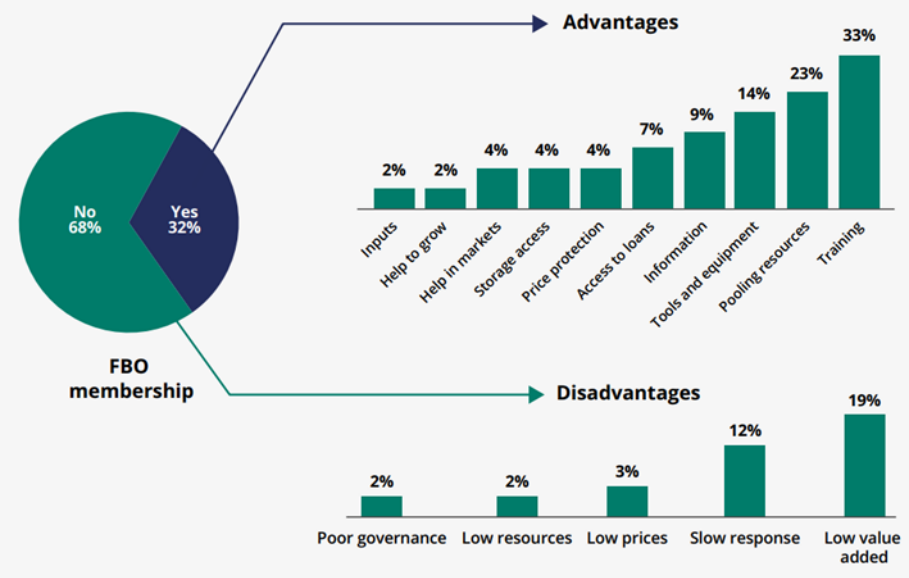


FIGURE 4-2 PERCEIVED ADVANTAGES AND DISADVANTAGES OF MEMBERSHIP OF FARMER-BASED ORGANISATIONS.
Source: ACET (2024)

4.5 The attraction of cocoa production

Cocoa production provides an important source of cash income for smallholder farmers and the Roadmap to a Sustainable Cocoa Sector in Liberia (2019) acknowledges the '*importance of the cocoa sector in Liberia's national economic development, for the reduction of rural poverty, and the creation of sustainable livelihoods for the thousands of Liberian smallholder farmers who grow cocoa*' and gain employment from the sector. A study by Mercy Corps in 2017 confirmed that tree crops (including cocoa) were seen as a means of social status and socio-economic advancement among smallholder farming communities (see quote below).

"*It depends, if you are into rice or cassava farming, you are looked down upon because it is usually associated with poor, dirty people. But if you are a large-scale rubber, cocoa or oil palm farmer, then you are likely to attract more respect and popularity from the people because then you also become an employer*." Elder from a village in Bong County, close to the border (Mercy Corps, 2017).

The availability of land in the southeast Liberia is attracting young farmers from outside the country (Ruf, 2023). A study carried out by IDEF in 2024 found that at least 183 smallholders (Burkinabe and Baoule/Ivorians) had moved to the 3 villages they surveyed. About 60 of those had arrived between December 2023 and January 2024 (IDEF, 2024). The host communities in Liberia saw the arrival of these new farmers as a positive thing (see quote, above) and associated the increase in cocoa production with future development for the communities. The migration from Ivory Coast to Liberia began is thought to have begun around 2018 with a small vanguard of producers who are thought to be acting as recruiters and intermediaries between new arrivals and local Liberian communities.

"*Cocoa has developed Ivory Coast. There are roads, hospitals, health centres and even electricity in the most remote villages. That's why we're delighted to welcome these people* [Burkinabe migrants]*. They are going to help us produce wealth and the government will come and open the road for us because there will be a lot of cocoa here. They don't look at us because they don't see any interest in our district. But thanks to cocoa, our district will soon be prosperous. We have no drinking water because there are no boreholes. The roads are non-existent, even for two-wheelers like motorbikes. Walking can be difficult on certain tracks. If we develop cocoa like in Ivory Coast, we'll soon have better living conditions*. " A village chief from River Gee County (IDEF, 2024)

A 2022 study of the household benefits of cocoa rehabilitation in Bong, Nimba and Lofa Counties concluded that it was not so much a question of whether or not farmers are interested in cocoa rehabilitation, but rather whether or not they are aware of and are eligible for assistance (Tokpah, 2022). Rehabilitation is only part of the picture. VCA4D study has found evidence that cocoa is present in many other parts of Liberia, not just the NADP focus counties – for example: Bomi and Grand Cape Mount. From an agroecological perspective, cocoa can grow in most parts of the country, although there are areas that are sub-optimal or not suitable (e.g. Sinoe). If communities see cocoa farming as a viable strategy for socio-economic improvement, and can overcome potential barriers, such as labour constraints, they are likely to try growing it. For example, the VCA4D social expert spoke to one farmer in Bomi who was trying to establish his own cocoa farm using seeds from his and neighbours' trees. He had no assistance to do this, but was optimistic that this would be a successful venture as he knew buyers were easily accessible (he said he had seen them 'passing our village') and cocoa was much less effort than rubber, once the farm was established.

Summary table of indicators for framing question 2 (For the definitions of economic terms see the table before the Executive Summary)

Framing Question 2: Is this economic growth inclusive? *(To be completed with Social Analysis results)*		**INDICATORS**	**RESULTS**
CQ2.1	How is income distributed across actors of the VC?	**Disaggregated Value Added**	**Primary production: 44%** **Commercial intermediation: 31%** **Formal exporters: 25%**
		Total farm income	**USD 9.6 million (farmers' net operating profits)**
		Wages and salaries (at every stage, all activities)	**USD 11 039 880 (direct and indirect wages)**
		Total income accruing to marginalized and vulnerable groups	**USD 7,907,993 (income of family and semi-abandoned farms)**
CQ2.2	What is the impact of the governance systems on income distribution?	**Income distribution among actors**	**ProdCOM: 3%** **ProdCOL: 5%** **ProdFAM: 11%** **ProdEXT: -2%** **ProdABA: 19%** **ProdRCI: 0%** **TCOOP: 18%** **TUnlic: 10%** **TLic: 24%** **ExpWW: 12%**
		Share of farm gate price in the final price (%)	**48%**
CQ2.3	How is employment distributed across the VC?	**Number of jobs (family, self- and formal employment) at different VC stages (permanent/ temporary, skilled/unskilled…)**	**Number of actors: 36 815** **Full-time equivalent (FTE):7316**
		Employment of women	**Women are largely involved in primary production of the cocoa in FAM-EXT-ABA types of farms.**

5. IS THE VALUE CHAIN SOCIALLY SUSTAINABLE?

The following section provides an analysis of the social context and impacts related to the activities of the cocoa VC in Liberia, using the tools and methods set out in the "Methodological Brief for Agri-Based Value Chain Analysis" (Agrinatura 2021). The VCA4D methodological framework for the social analysis consists of a robust diagnostic system that attempts to answer the question: Is the cocoa value chain in Liberia socially sustainable?

An analysis of six domains is used to derive an answer to the framing question – (i) working conditions, (ii) land and water rights, (iii) gender equity, (iv) food and nutrition security, (v) social capital, and (vi) living conditions.

This analysis of the cocoa VC in Liberia is based on information and data harvested from three sources – (1) peer reviewed and grey literature, (2) first hand stakeholder feedback gathered through engagement with Government, private sector actors, NGOs and smallholder farmers (both men and women) through key informant interviews and focus group discussions, as well as (3) additional primary data collected through a small survey carried out as part of the VCA4D study. Further details of the data collection strategy can be found in Section 2.2.

5.1 Working conditions

5.1.1 Labour Rights

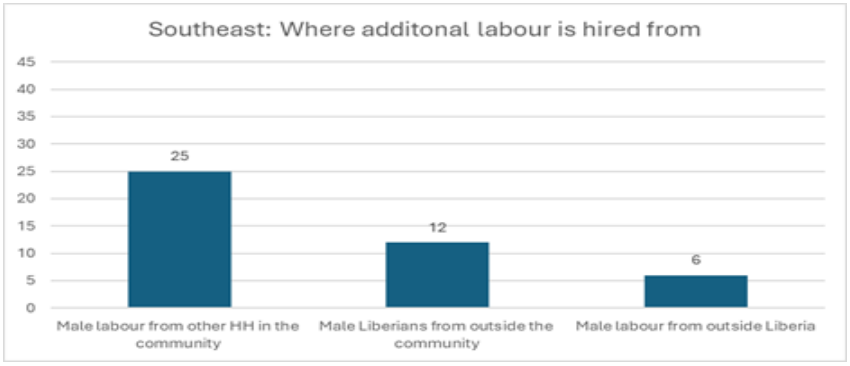
Liberia has ratified 27 of the ILO Labour Standards[2], including eight of the ten fundamental conventions (See Appendixes 9.2). The majority of these were signed into effect before the first civil war in 1989 but significantly, the two (2) conventions focused on Child Labour (CL) did not come into force until after conflict ended in 2003. It is also worth noting for the future that although the CVC is not currently characterised by cocoa plantations, Liberia has denounced the ILO Convention on plantations[3]. Prior to this, Liberia and Cote d'Ivoire were the only West African countries to have ratified this convention. It still remains in force in Cote d'Ivoire. Liberia is also party to the International Covenant on Economic, Social and Cultural Rights (ICESR) and the International Covenant on Civil and Political Rights (ICCPR), which covers access to education, health and an adequate standard of living, among others. The ILO Conventions, ICESR and ICCPR have influenced the legal and regulatory framework for employment conditions in Liberia as expressed in the Decent Work Act, 2015[4].

Although the legal and regulatory frameworks exist to uphold human and labour rights, significant challenges exist in their application (US Department of State, 2022), including: (i) Enforcement: The government does not always enforce labour laws effectively., (ii) Penalties: Penalties for violating labour laws are not commensurate with other civil rights violations, and violators are rarely punished., (iii) Judicial procedures: Judicial and administrative procedures are often delayed or appealed and can be subject to outside interference. (iv) Protection for strikers: The law does not adequately protect strikers, and some protections are dependent on whether property damage occurred. (v) Retaliation: Strikers who comply with the law can be retaliated against if they commit a criminal offense or defamation, or if they were dismissed for a valid reason. In 2022, Assessing

how Government and the business sector were discharging their respective duties and responsibilities under the UN Guiding Principles on Business and Human Rights (UNGPs), the UN Working Group on Business and Human Rights (UNWGBHR, 2022) concluded that it was not uncommon for private sector to neglect human rights, and workers found it difficult to hold businesses accountable. They also found that communities were not meaningfully participating in decisions that affected them. Overall, the team found a low level of awareness of the UNGPs and the a follow-up report on Liberia's compliance with the ICESCR (2024) found that further progress was still needed to establish effective systems of accountability and prosecution of human rights violations.

As the majority of employment in the CVC takes place in the informal sector and at the production level, often in areas that are remote from organisations and institutions that can provide regulation and monitoring, enforcement of human and labour rights in the CVC is particularly challenging. In these circumstances, employment is based on verbal agreements which do not offer any legal protection in terms of the prevailing laws. Instead, they will follow locally applicable rates of remuneration for the task and will be dependent on the ability of both parties to negotiate acceptable terms. Breaking a verbal agreement of this nature is likely to have consequences in the local context and social norms, but they cannot be legally upheld.

Trust is therefore a major factor in the CVC labour market. Family labour is to be trusted more than a hired labourer from outside the community. If it is necessary to hire someone who is not part of the household for work, a person who comes from within the community can (in principle) be trusted more than an outsider because of the potential social impact of breaking an agreement within their own community.



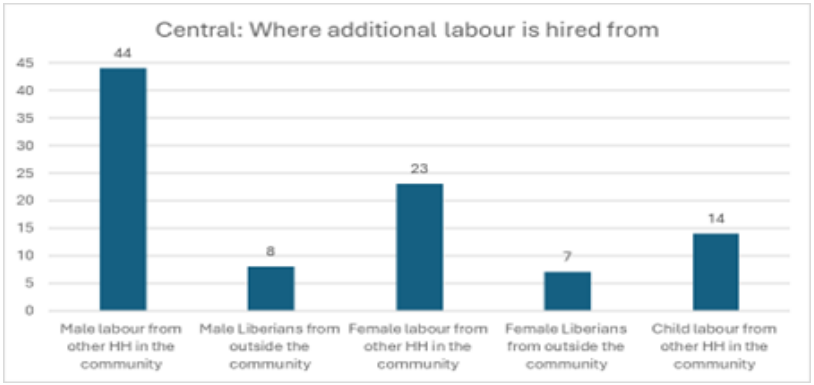


Figure 5-1 Comparing geographical differences in the sourcing of additional labour among farmers surveyed during the VCA4D study in 2024.
Source: Authors

Although only a small sample (N= 79), the VCA4D study survey among cocoa producers shows the clear demand for paid, informal labour for the more physically demanding work of brushing, while harvesting and post-harvest activities are accommodated within the capacity of family labour (*Table 5-1*). The most common source of labour was men from other households in the community (68 percent of respondents) sourcing labour in this way. *Figure 5-1*shows the source of additional labour. There were some notable differences between farmers in the south-east sample (Grand Gedeh and River Gee) and those from the central sample (Lofa, Bong and Bomi). Several respondents from the central area reported hiring female labourers, both from within and from outside the community. Hiring women from other households in the community was quite commonplace among respondents from the central sample (just under 50 percent of respondents) indicating that they do this. It was the second most common source of additional labour, after men from other households in the community (94 percent). In the southeast, 15 percent of respondents reported hiring labour from outside Liberia. Although there did not appear to be a strong correlation between family size, size of cocoa farm and ability to hire labour, the socioeconomic status of the household will almost certainly influence farmers ability to access paid labour in the pursuit of cocoa production which will in turn limit the extent of cocoa they can grow and put greater pressure on household labour capacity for other activities, including subsistence crops.

	South-East Liberia			Main cocoa production area			
	Total (%)	**Grand Geddeh**	**River Gee**	**Total (%)**	**Nimba**	**Lofa**	**Bomi**
Under brushing	84	100	67	87.5	100	89	80
Pruning	66	70	60	60	53	61	30
Harvest	16	18	13	35	421	28	10
Post harvest activities	6	12	0	0.5	0	0	20

Table 5-1 Proportion Of Surveyed Farmers (Expressed As A Percentage) Who Pay For Labour To Carry Out Tasks Associated With Cocoa Production, Based On The 2024 VCA4D Study Survey Of 79 Farmers.
Source: Authors

5.1.2 Child Labour

The Children's Law of Liberia, 2011 Section 3, defines a child as any person below the age of 18 years of age. Children under the age of 15 are not legally allowed to work more than 2 hours of "light work" a day. All work is prohibited for children under the age of 12 years. Child labour is a significant risk for the CVC, because the use of child labour in agriculture is still widely practiced and is well understood to be perpetuated by poverty and food insecurity. Children often play a significant role in the livelihoods of many poorer and more food insecure households in rural areas where cocoa is grown. Enforcement of child labour laws have not been effective to date due to the informal nature of employment in the agricultural sector and the very real challenge of oversight and 'reach' by authorities and value chain actors. School attendance and drop-out rates

in rural Liberia are impacted by poor infrastructure, and many households being unable to afford to send their children to school (Section 6.7.2), which makes them more vulnerable to labouring.

According to the 2022 Liberia Population and Housing Census (LPHC) 41.5 percent of the population is under the age of 18 years, with 24 per cent of the population aged between 10 to 19 years (UNPF). Although up to date statistics are difficult to find and quoted figures cannot easily be verified, using the Demographic and Health Survey 2019-20, the Liberia Institute of Statistics and Geo-Information Services (LISGIS), estimated that 40.5 per cent of Liberian children were working and 29.5 per cent of those were involved in hazardous occupations (Freedom Fund, 2024). This differs from figures published by UNICEF for 2024, which estimates child labour to be at 28 per cent. In either case, the rate of child labour in Liberia is high. The 2016 Labour Force Survey found that of economically active children, 78.5 per cent worked in agriculture (Winrock International, 2022). The significance of agriculture is not surprising, as poverty is heavily concentrated in rural areas and approximately 55 per cent of rural households are food insecure.

In a report on the worst forms of child labour in Liberia (US Department of Labour, 2023)[6], it was acknowledged that "*the* [Liberian] *government's… labour and criminal law enforcement efforts are hindered by a lack of financial resources*". The Government, with support from partners such as UNICEF, has successfully increased the number of children who are registered at birth. Registration was estimated to be 66 per cent in 2020 (UNICEF, 2024). However, a significant proportion of children who are currently working in the agricultural sector (and could be part of the CVC) will be unregistered. In 2010 the registration rate was reported at only 4% of births and the Ebola Virus outbreak in 2014 also resulted in a significant drop in registrations (UN Africa Renewal). This is important because, without a birth certificate, children are more vulnerable to child rights violations, including child labour and trafficking, as well as making it more difficult to obtain identity documents and access basic health and social services.

The VCA4D survey found that cocoa farmers from the central sample (Lofa, Nimba and Bomi) were more likely to hire labour for farm activities (96 percent) than those from the southeast sample, although in the southeast it is still quite common in the Southeast (70 percent). None of the farmers in the southeast sample reported hiring children, while 14 respondents from the central sample reported hiring children for labour from other households in the community. However, there is clearly child labour taking place among the southeast sample, as 45 per cent reported that a member(s) of their own household were working away from home. Of those, 43 per cent were youths and 20 per cent were children under 15 yrs of age. Unfortunately, this data was not collected among the central sample for comparison.

5.1.3 Job Safety

Occupational health and safety (OHS) in Liberia is a developing field, with the Decent Work Act (2015) and the National Environmental and Occupational Health Policy being the main policies. However, they lack specific standards or implementation mechanisms. In the absence of robust national standards, Liberian entities often adopt and adapt international standards such as the

[6] https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2023/Liberia.pdf

International Labour Organization (ILO) Occupational Safety and Health Standards and industry-specific standards. Implementing health and safety measures in the informal agriculture sector of rural Liberia is a significant challenge, and no data is available that would allow an estimation of the social and economic costs of injuries, morbidity and mortality caused by hazards associated with the CVC.

A rapid assessment of occupational safety and health conditions in Liberia's agriculture sector was carried out on behalf of the United States Department of Labor's Action to Reduce Child Labor (ARCH) project in 2015 (Koon, 2015). It found that the majority of people were well aware of the risks associated with different agricultural tasks, and of the impact that injury or ill health would have on themselves and their families. The study also identified certain behaviours that increase the risk of injury. These include intoxication, sleep deprivation, hunger, worry and depression. The study estimated that between 60-80 per cent of injuries associated with agricultural tasks were the result of intoxication.

Box 6.2: During one of the VCA4D community visits in Bomi County, the Social Expert spoke with a female cocoa farmer who had been forced to take on responsibility for running the family farm as a result of her husband sustaining a permanently debilitating injury while clearing land two years earlier. A tree had fallen on him, leaving him unable to work. As a result, they had to hire labour which had increased the household outgoings.

Minor injuries, major traumatic injuries and illnesses that disable people for months, and death resulting from injuries sustained while working in agriculture are all very common occurrences with serious economic and psychosocial costs due to lost labour productivity, lost income, and lost capacity to care for children. The effects of injury can often persist for years, due to chronic pain and disability for the person involved, and a change in household workload dynamics as other members of the family (including children) are required to take on additional responsibilities (Box 6.2). Families with members who are injured experience a higher rate of poverty, exacerbated by severe hunger, and low social status within their communities.

Personal protective equipment such as rubber boots, eye goggles, gloves, long trousers and shirts are available to buy. However, many smallholder farmers and agricultural workers cannot afford them and will prioritise other forms of expenditure (e.g. for food security, medical expenses or for education). As a result, many people work without adequate protection. Health and safety hazards related to the CVC fall into two broad categories: those associated with basic agricultural tasks that are common across the majority of crop-based agriculture, and those that are unique to the value chain (see Economic Analysis Annexes p 138).

Processing cocoa beans into products like cocoa powder, butter and chocolate, falls within the remit of legal hygiene standards. Liberia has a number of policies and laws to ensure food safety, the most important of which is the Food Law of Liberia of 2017 which establishes the general principles for food safety, including risk assessment, communication, and management. It applies

to all stages of food production, processing, and distribution. The National Food Safety Authority is responsible for ensuring the safety of food and feed in Liberia.

5.1.4 Attractiveness of cocoa

Informal employment is a consistent feature of the rural economy, and the communities involved in the CVC. The informal sector provides the majority of labour opportunities and is defined as 'people working for themselves (self-employed), working as unpaid family labour, or working for others without a formal contract'. The World Bank estimated that employment in the informal sector in rural areas was as high as 93 per cent in 2016, and that in 2020 youth and women made up the majority of those in informal employment. The majority of labour used in farming activities is provided by family labour, with informal employment of labour making up the shortfall. Therefore, employment in cocoa production is driven largely by necessity rather than it being an active choice. Once a smallholder household make the decision to include cocoa within their household livelihood portfolio, the workload is absorbed by the household labour capacity and any shortfall is made up from the informal labour market.

5.2 Land and Water Rights

Adherence to VGGT

The Land Rights Act 2018 has established a progressive land governance legislative framework that is rooted in the African Union's Framework and Guidelines on Land Policy in Africa and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests (VGGT). In terms of biodiversity and conservation, the Gbehzohn Declaration (February 2023), which was supported by the key Liberian government ministries and authorities as well as other stakeholders, also calls for the mainstreaming of the VGGT principles of good governance as well as other international instruments.

The CVC is not currently characterised by extensive landholdings but the potential expansion of smallholder production and impact of regulations such as EUDR, which will put more emphasis on traceability, makes land rights an important issue. At the time of writing this report, the VCA4D study was only aware of one large scale farm in Grand Cape Mount County and three comparatively modest commercial farms in Lofa and Bong Counties, two of which include out-grower schemes as a way to increase their production (see Economic Analysis Annexes p 138 for examples). Very little information was available on how these farms were established and no reference was made to VGGT during key informant interviews.

Although the framework exists to hold any future investors in the CVC to account, and ensure community participation in decisions that might affect them, there are still gaps in regulation and challenges for enforcement. Examples from other sectors present a cautionary note for enforcing human and land rights (e.g. rubber and palm oil). The dual tenure systems (recognising customary land rights as well as legal title), lag in implementation of legislation and constrained access to effective dispute resolution can allow the interest of investors and elites to override local people's rights. Communities find it difficult to get cases through the justice system unless they are

supported by other actors, leaving the VGGT principals of rule of law (7) and accountability (9) not fully achieved in practice.

Land rights will be an important consideration for the future of the CVC. There are clear indications of increased smallholder engagement as farmers continue to reclaim and rehabilitate their farms for commercial and subsistence uses, and in some cases, establish new farms. The vast majority of smallholder cocoa is grown on customary land. Customary tenure is now recognised, so Liberians in rural areas can now formally register their land. While a great deal of progress has been made, the process of registration and determining the actual demarcation of land across the country using the principles in the law is far from complete due to challenges with capacity and enforcement. This has implications for inclusiveness and traceability within the CVC. It is not necessary for farmers to have title in order to use land, and farmers are not required to register their cocoa farms (as is the case in Ghana). This could make it very difficult to evidence land-use rights as part of a traceability system. Customary land-use rights are legally recognised under the Land Act 2018, but many farmers will not have proof of these rights because arrangements are based on traditional, oral agreements.

Communities can define the boundaries of their customary land based on oral and written history, customs, and locally recognized norms. Through Community Land Development and Management Committees (CLDMCs) they can develop land use plans, register and govern customary land, and more. Communities can also designate protected areas within their customary land, such as forests, wetlands, and water sources. Very little information is available to indicate exactly how much customary land has been registered so far but in 2020, it was estimated that while 72.6 percent of Libiera's total land area was community land (7.0 Mha), only 31.7 percent was formally 'recognised' (Rights and Resources Initiative, 2021).

5.2.1 Transparency, participation and consultation

Article 33.3 of the Land Rights Act 2018 requires Free Prior and Informed Consent (FPIC) from communities before any action or development that interferes with use of the land can be allowed to go ahead. If respected, this forms the legal basis for the meaningful involvement of communities in decisions making over land and other associated natural resources. The various laws are still being tested, interpretation of the law is still in development and monitoring and evaluation still require donor support to be effective, but the potential to improve the way in which land tenure will progress in future is huge. However, at present there have been concerns that some customary rights documents have been issued without the due and representative process – that it is possible for local elites to register land before proper and representative CLDMCs have been set up. Nearly 70 percent of Liberia's 3.3 million citizens live in rural areas and own their lands collectively according to customary laws. With much of the historical documentation having been destroyed or lost due to the civil war, and the ongoing registration and demarcation process still only covering a small proportion of Liberia's rural population, there is a risk that multiple, overlapping and fraudulent land allocations are taking place [51].

National and international organizations have collaborated and supported communities and national leadership to put the Land Rights Act into practice, including helping to raise awareness,

provide training and capacity-building. Headquarter and county land offices have been renovated and equipped, and the process of digitizing land records has been established. As an example of these efforts, in July 2024, the Liberian Land Authority (LLA) announced the beginning of the Customary Land Formalization (CLF) process in sixty communities in Grand Gedeh, Niba, Grand Cape Mount, Gbarpolu and Bomi Counties. This has been possible with funding support from the United Nations Peacebuilding Fund and UNDP.

The LLA has simplified the process of customary land registration to help scale it up more easily, by producing the Operational Field Manual for the Formalisation of Customary Land Rights (2021). The Manual translates the legal, institutional, social, technical and operational aspects of customary land tenure into an easy-to-follow process. It follows international good practices and aims to provide guidance for national stakeholders, NGOs and private operators working in the land tenure field. The Liberia Land Rights Act Regulations (2022) also sets out the framework by which confirmatory surveys should be used to identify, inventory, map, probate and register community land claims, the process for communities to set aside public land; best practices for community negotiations over concessions; dispute resolution and judicial review in respect of community land; and the inventory of government land and harmonization of its boundaries.

5.2.2 Equality, compensation and justice

The Land Rights Act and Land Policy legislates that there should be no discrimination based on gender (see Section 5.3 – Gender equality - for more details). Women should be included in Community Land and Development and Management Committees (CLDMC). In 2024, a study identified the potential for a power struggle at the community level between the 2009 Community Rights Law, which establishes Community Forest Development Committee, and the CLDMCs, both of which have the power to make decisions about development initiatives that can affect communities.

One area where VGGT and Liberia land law does differ, is in relation to actions to address historic and continuing violation of tenure rights (VGGT clauses 14 and 15). It is understood that Liberian land law currently excludes the review of past land injustices. Despite good progress towards securing land rights, the abuse of power is still possible. Concerns have been raised that there has not been proper representation and consultation before some customary rights documents have been issued. It has been suggested that local elites are managing to register land before proper and representative CLDMCs are set up. The concern is exacerbated by the lack of a national land registry covering communal land; it currently only covers urban land. This leaves a greater risk of multiple, overlapping and fraudulent land allocations. The Land Act does not apply rights to past land concessions (see articles 33: 3 and 48: 1), so poorly executed agreements will potentially remain unchallenged.

The VCA4D study has identified another possible source of future land dispute, caused by confusion over the arrangement for sharing land and the benefits derived from it. In southeast Liberia, Burkinabe are being given land to farm by their Liberian hosts through verbal agreements. However, there is evidence that the Liberian landowners and the Burkinabe migrants have a different understanding of the nature of the agreements they have entered into. Without any

formal, documentary evidence it will become the word of the Liberian owner against the migrant in any future land dispute. The risk then is that the grandchildren of locals will consider that their parents did not sell land, while the grandchildren of migrants who have settled in the community, will consider that the land is theirs [pers comm].

5.3 Gender Equality

5.3.1 Economic activities

Women in general, and female headed households in particular, face greater disadvantages when it comes to cocoa farming than their male counterparts (*Figure 5-2*), with labour capacity (capacity of the household combined with ability to pay for labour) being a critical disadvantage. Clearing and brushing are very labour-intensive activities, which can prevent female cocoa farmers from engaging with the CVC. Women tend to have smaller farms than men and are disadvantaged in terms of land acquisition and inheritance.

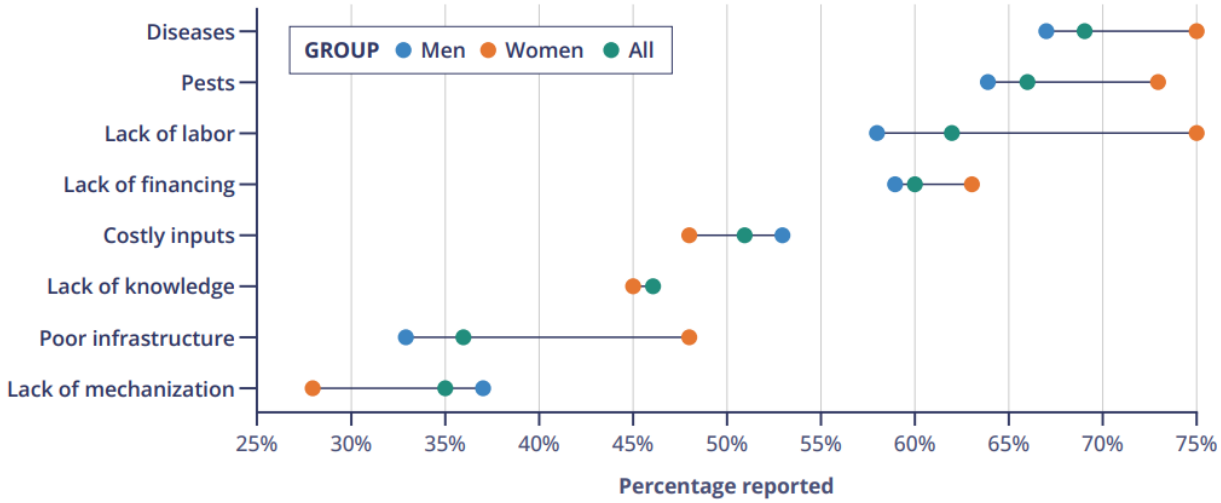


Figure 5-2 Production challenges of female and male Liberian cocoa farmers.
Source: ACET 2021

The VCA4D survey found that farms in Bong, Nimba and Bomi were older than those in the southeast, with only a quarter of the total being created less than 30 years ago. In comparison, almost all of the farms in the southeast were created in the last 20 years (93 percent), and over half (58 percent) in the past five to ten years. The majority of southeastern farmers said their cocoa farm had been forest (58 percent), with another 10 percent saying it had been 'bush' land. Just over 60 percent of all women who responded to the VCA4D survey were the heads of their households. Only one FHH had adults working away from the home (and sending money back), compared to 16 male headed households (MHH), reflecting the need to retain labour capacity for FHH to cope with household needs.

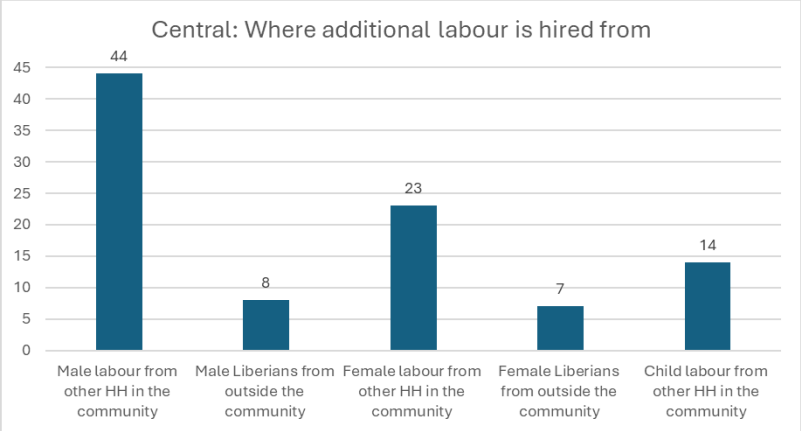


FIGURE 5-3 SOURCES OF LABOUR AMONG VCA4D SURVEY RESPONDENTS IN BOMI, BONG AND NIMBA. Source: Authors

In the southeast, none of the VCA4D survey respondents hired women or children as labourers. However, several smallholder households in Bong, Nimba and Bomi were hiring women labourers, both from within and from outside the community (*FIGURE 5-3*). Hiring women from other households in the community was quite commonplace (just under 50 percent of respondents). It was the second most common source of additional labour, after men from other households in the community (94 percent of respondents).

5.3.2 Access to resources and services

Female headed households own fewer and lower value assets (Tpkpah, 2022), with the value of household goods across all households being higher in Lofa and Nimba Counties than in Bong County, indicating regional differences. Families who live further away from district markets have fewer and lower value assets. There is a strong association between food security and cocoa income, and the gender of the household head (male-headed households are more food secure), and size of farm (women have smaller farms). The most food secure households are in Nimba County, while the least food-safe households are in Bong County. Female youth in particular can find it difficult to accumulate (and have control over) assets, particularly land, because they are 'considered to be visitors' within the household because they will eventually be 'taken' by their husband's family on marriage (Mercy Corps, 2017).

The VCA4D survey found some interesting differences in mobile banking use among respondents. However, when broken down by gender or age group, the majority (77 percent) of respondents among older farmers (aged 66+ years) were found to not use mobile banking at all. In the southeast, there was a clear relationship between educational status and mobile banking use - only 30 percent of the 20 respondents who had no schooling stated that they use digital banking, compared to an average of 77 percent across the other groups (primary, secondary or university level). Literacy plays an important role in enabling smallholder farmers to access services such as mobile banking. The VCA4D survey showed a distinct difference in education level between male and female cocoa farmers from the southeast sample, with 87.5 percent (or 7 out of 8) saying they had no formal education, compared to 40 percent of male respondents. All the remaining female respondents had gained 'primary level' education, but no further. It is not unreasonable to

conclude that women's level of education disadvantages them when it comes to accessing mobile banking and other mobile enabled tools and services.

The main strategy used by government and NGOs to improve cocoa production at the household level has been through training, with provision of inputs such as improved cocoa seedlings (or seeds) and agro-chemicals. Women have been found to be disadvantaged when it comes to accessing training offered. For example, in 2019, GROW Liberia investigated[7] why only one in five participants in their GAP training was female and found that male heads of household did not consider it necessary for their wives to attend, if they themselves were also participants (the investigation also found that men did not pass on what they had learned to their wives). In addition, women often had to prioritise short-term earning activities such as petty market trading, and household responsibilities. Training to improve production, conform to GAP, and in practices that would prepare farmers for engagement with high value, international coco markets will be crucial for the CVC and ways will need to be found to mitigate against the barriers to access to training for women.

According to the COVADEP baseline survey, about 6 percent of households they surveyed indicated they were prepared through GAP training. About 0.1 percent said they were able to engage in traceability initiatives and 0.3 percent said they were trained in record keeping about their farm activities. Low levels of literacy and school attendance among women farmers significantly disadvantage them from benefitting from training in these areas, while female farmers also prefer to be trained by women in an all-female group, reflecting deeply rooted social norms that continue to determine gendered roles among smallholder farming communities. GROW Liberia found that while women were widely accepted as being worthy educators in communities, some female village coordinators (VCs) felt unhappy if they had to work without the support of their male counterparts, because they felt that male farmers did not respect or listen to them ("*some men can't understand a woman speaking to them*"), while one young female VC felt that her age was a factor affecting her ability to form a constructive working relationship with male farmers (GROW Liberia, 2020).

Access to financial services is also a particular barrier for women. Most male farmers are dependent on pre-finance offered by cooperatives and some traders/buyers, while women are more likely to be dependent on informal, small-scale, community savings and loans groups such as *susu* clubs and VSLAs. The prevalence of credit unions and village saving and loan associations has grown significantly to fill this gap in financial services in rural areas (PAR, 2018). The COVADEP baseline (2021) found that 15 percent of farmers reported receiving a loan from a *Susu* club 15%, with friends (2 percent) and family (1 percent). The baseline reported that 42 percent of the money received from VSLAs was re-invested in the cocoa farm, and the rest went on other expenses (food, healthcare, education, etc).

[7] https://businessfightspoverty.org/wp-content/uploads/2022/03/How-Data-Fuelled-GROW-Liberias-Gender-Journey.pdf

Improvements in relation to women's land rights are taking place largely due to the work of projects helping to raise awareness and build capacity. Traditionally, women could not acquire or purchase land in their own names, requiring instead a man to act on their behalf. They can now buy land where land is for sale. Within communities that are organizing to secure their customary land rights, with the assistance from civil society groups, there is an increasing acceptance of women being allocated land and being part of land related decision making. However, many women and youths continue to have limited decision-making power and control over how land is managed or used in areas that are not currently supported.

The right to land is regulated either by the formal legal system or through customary law. Both of which can prevent as well as promote the land rights of women and rural communities, despite good intentions. The formal legal system in Liberia grants equal benefits and gender equality in access, use, ownership to land. However, discrimination still exists within many of the laws for marriage, benefit sharing, community governance, divorce and inheritance that contradicts the ambition of the 2018 Land Act. Customary systems can also discriminate or have failed to recognise gender equality in land rights. Customary governance practices have been criticised for not being aligned with contemporary ideals of gender equality, which has caused tensions [52].

Another area where women may be disadvantaged is in the way the Land Act describes 'equal representation of men, women and youths' in the CLDMCs, which leaves the possibility of women only making up one third of the committee if the youth representatives are all men. The more thorough provisions in the Land Policy on women's participation and rights are not carried as convincingly into the Land Rights Act. There is also a lack of a clear commitment to affirmative actions in the policy and the act to advance women's land and related rights in a context where gendered power disparities continue to marginalize women in relation to land. The closest to that commitment in the Act is in the purpose statement which refers to "ensuring equal access and equal protection", which could perhaps be drawn on to argue the regulations and programs need to take more affirmative actions to ensure equal outcomes.

5.3.3 Decision making

In the southeast, none of the VCA4D survey respondents were members of a cooperative, compared to 30 percent of all respondents from Bomi, Lofa and Nimba. Women represented 31.5 percent of those who said they were a cooperative member.

On the whole, women have smaller farms than men, as was found in the southeast during the COVADEP baseline survey. Traditionally, women could not acquire or purchase land in their own names. Although this is now changing, and there is more acceptance of women being allocated land and being part of land related decision making, many women and youths continue to have limited decision-making power and control over how land is managed or used in areas that are not currently supported. Customary governance practices have been criticised for not being aligned with contemporary ideals of equality. A study carried out by Mercy Corps in 2017, found that both male and female youth recognized the distinct disadvantage women faced in terms of long-term land tenure given local inheritance norms which prioritize males. Female youths also mentioned that they do not make decisions on their own regarding how land was used in their

family, thus limiting the possibility to diversify crops and buffer against shocks. Male youths, on the other hand, were more likely to be able to inherit land and may have more agency over land use and planning as they are expected to hold this land in the future.

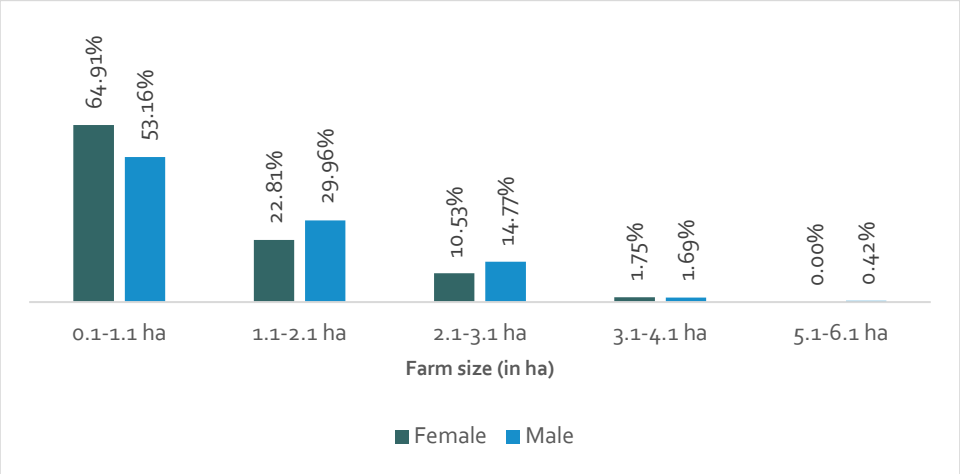


FIGURE 5-4 PERCENT DISTRIBUTION OF FARM SIZE (IN HECTARE) BY GENDER IN SOUTHEAST.
Source: COVADEP 2021

The COVADEP baseline in southeast Liberia found that both man and woman were involved in decisions on what type of crop to grow on a plot. But while both men and women might be involved in decisions about how the produce might be used, it was the women who led on decisions about the quantity and variety to be consumed, stored, sold or to give away, while it was the men who dominated (and managed) the income from any crops sold. Women had greater control over subsistence crops (vegetables and staples).

The baseline survey carried out for the Food for Progress Livelihood Improvement for Farming Enterprises (LIFE) III programme in 2015 (ACDI/VOCA, 2017), found that for cocoa farming, women were mainly involved in pod breaking and drying. Of those farms managed by women, 49 percent were solely owned by them; 45 percent are jointly owned with their husband while 6 percent of the farms that were managed by women, actually belong to their husbands. Women made decision on 18 percent of the income and expenditure; 9 percent of the decisions were made by their husband while 65 percent were made jointly. The proportion of women to men in the producer groups was 3:1 and female participation was low. They found that their participation was generally overshadowed by men during group meetings, however the situation was reversed when it came to VSLAs and *susu* groups.

5.3.4 Leadership and empowerment

The limited ability of many female village coordinators (VCs) and cooperative members to track and keep records, due in part to literacy and influence of traditional gender norms, reduces the effectiveness of information flows between farmers and their cooperatives. GROW Liberia found that the gender gap in literacy affected the fair distribution of incentives by cooperatives if these rely on recordkeeping (GROW, 2020). They also found instances where female VCs did not have access to a phone, so communications between the VCs and the cooperative were channelled

through the male VCs. It became easier for male cooperative members to claim the achievements of women members as their own.

5.3.5 Hardship and division of labour

As in food crop production, cocoa production and harvesting tasks can show a gender and age-related bias. Most often, cocoa is harvested by men, the pods are broken by women and both sexes are involved in carrying everything back to the homestead. Where post-harvest processing is taking place, it is women who are more likely to be involved in fermenting and drying of the beans. In general, men are more visible in cocoa production and marketing and exert more control at the household and farmer organization level. Fermentation, clearing, and brushing are also tasks typically assigned to male household members (the latter because they are more physically demanding). Other household members, primarily youth and women (although also children in some cases), contribute to harvest and post-harvest activities including breaking the cocoa pods, bean preparation, transportation and drying. Women and female youths are also expected to take on duties for *kuu* groups including fetching water and cooking. As the CVC develops, so will the prevalence of harvesting and post-harvest processing, and consequently women's workload is most likely to increase. Although, in one study, the perception of cocoa as a way to improve socioeconomic status means that women expressed their capacity and desire for greater involvement in commercial processing opportunities and technologies (Mercy Corps, 2017). While FHH can also benefit from improved cocoa production, they are more disadvantaged than other households because of their labour capacity and spending power. They are more likely to need to hire male labour to clear and brush their cocoa farms. Men are more often members of labour rotation groups (*kuu*) and can therefore access labour without paying for it.

Women divide their time among a greater number of activities (farm and off-farm activities) along with household responsibilities (childcare and daily well-being), which puts greater pressure on women's workload. The poor condition of basic infrastructure in rural areas (access to safe drinking water and transport) adds to women's time burden. For example, collecting and transporting water, a task carried out mainly by women and children, can make it more difficult for them to engage in other productive activities for the household.

5.4 Food and Nutrition Security

Liberia experiences high levels of food insecurity, particularly in rural areas. In the 2024 Global Hunger Index (GHI), Liberia ranks 120th out of the 127 countries and was given a score of 31.9, which is considered 'serious'. For rural populations, factors such as poor infrastructure (roads, safe water & sanitation, education and healthcare), an inefficient and underdeveloped agricultural sector and high levels of rural poverty contribute to this picture, along with Liberia's vulnerability to shocks such as health crises (e.g. Ebola and Covid-19), conflict, climate and changes in global supply chains. Levels of food insecurity have fluctuated in response. For example, in 2020, the FAO estimated that 83.6 percent of households were affected by moderate to severe food insecurity because of economic disruption caused by the Covid-19 pandemic (European Commission, 2024). In August 2022, a Rapid Food Security, Nutrition, Livelihoods and Markets Assessment (RFSNLMA) found 47 percent of households were food insecure. In addition, while rates of chronic and acute undernutrition in children have decreased in the past six years, almost

one-third of children under five remain stunted. The prevalence of micronutrient deficiencies are high, indicating they receive a poor quality diet. Malnutrition rates in children under 5 years of age were found to be 22.4 percent in Bomi County (ranked 2nd highest in the country), and 22.2 percent in Grand Cape Mount (3rd highest).

There is a significant and worrying correlation between areas with high levels of food insecurity, poverty and stunting and cocoa production (see Annex 9.2: Geography of Food Insecurity). According to the 2018 Comprehensive Food Security and Nutrition Survey (CFSNS) the average household bought around 81 percent of its food requirements from the market and was only able to provide 11 percent from their own production. In 2023 the World Bank estimated that 67 percent of average household spending goes on food purchases. This increases to 74 percent for the lowest socioeconomic groups.

Cash represents an important resource for rural households in managing food insecurity. As a result, they are highly sensitive to anything that impacts their purchasing power and to increases in the price of food, energy and inputs. This is of particular concern for the cocoa sector due to the dominance of smallholder producers in the value chain. Cocoa offers those involved in the value chain a means of earning cash that can help them manage periods of food insecurity, access medical treatment, pay school fees as well as re-invest in farming and other economic activities [from the VCA4D survey] in the face of few alternatives. The "Roadmap to a Sustainable Cocoa Sector, 2019" acknowledged the role of cocoa as part of a smallholder household's agricultural portfolio, and the importance of supporting diversification to reduce the risk of impact on food security.

5.4.1 Geography

There is a significant geographic disparity in terms of vulnerability to food insecurity, poverty, and the importance of cocoa as part of a household's livelihood strategies. The last FEWS-NET assessment (2017) identified areas where cocoa was a particularly critical livelihood activity (FIGURE 5-5). All are relatively isolated from Monrovia and closer to markets in neighbouring Cote d'Ivoire, Sierra Leone and Guinea.

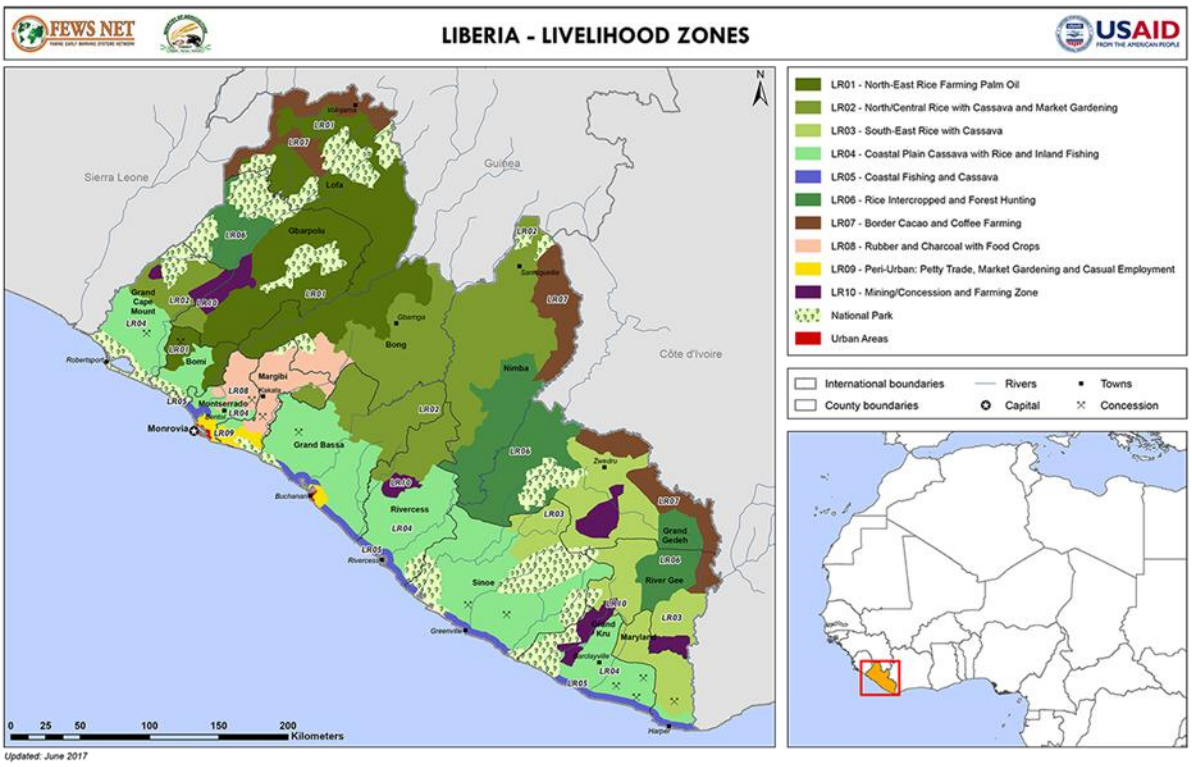


FIGURE 5-5 LIVELIHOOD ZONATION MAP OF LIBERIA SHOWING AREAS WHERE COCOA PRODUCTION WAS A KEY LIVELIHOOD ACTIVITY FOR MANAGING FOOD INSECURITY (SHADED BROWN).

Source: FEWS-NET 2017

The RFSLNMA (2022) identified the cocoa growing counties in the northern (Lofa and Bong) and west (Grand Cape Mount) had the highest incidence of food insecurity (*Figure 0-7*). In the south-east, Maryland had the highest incidence, with Grand Bassa and River Gee exhibiting slightly lower rates (More information can be found in Economic Analysis Annexes p 138).

5.4.2 Stability

Despite the country's considerable agricultural potential, Liberia has to import a significant proportion of its food needs (estimated to be between 50 – 70 percent in 2022). For example, rice makes up around 50 percent of all calories consumed in Liberia. Domestic production can only satisfy 40 percent (270,000 tons) of current consumption. In order to meet demand, 300,000 tons is imported at an estimated cost of around $200million a year.

According to the Central Bank of Liberia the cost of food increased 11.59 percent in June of 2024 over the same month in the previous year. The overall inflation rate for the same period was only 6.15 percent. Food Inflation averaged 12.11 percent from 2007 until 2024, reaching an all-time high of 39.24 percent in August of 2008 and a record low of -7.05 percent in December of 2021. Based on a year-on-year comparison, the World Food Programme found that the price of imported rice had increased by 21 percent in March 2024 with the largest increase to be found in Pleebo, Maryland (31 percent) and Fish Town, River Gee (28 percent). They anticipate that the purchasing power of poorer households would be weakened by the 10.7 percent inflation rate, plus a 21 percent depreciation in local currency and thus restrict their food access. A 13 percent increase in gasoline prices would exacerbate this situation.

Imported rice showed an increase all 24 markets monitored by WFP across the country (Annex 9.2, Figure 0-3). The national average price for a 25Kg bag of rice in March 2024 was LRD 3,700, an increase of 21% percent compared to the same period last year. The biggest increases were recorded in south-eastern markets of Barclayville, Grand Kru (34 percent), Pleebo, Maryland (31 percent) and Fish Town, River Gee County. Markets at a distance from Monrovia recorded consistently higher prices. The price of a 25Kg bag of rice sold for LRD 3,400 in Duala market in Monrovia but was 30 percent more expensive in Barclayville market in Grand Kru. WFP concluded that the high demand coupled with currency depreciation, plus high transport costs due to poor road infrastructure were considered to be the main drivers of observed price increases.

In contrast, the price for a 25Kg bag of cassava has only increased by 3 percent on average from LRD 1,190 to LRD 1,220 respectively between March 2023 and March 2024. Significant price increases were observed in Greenville (93 percent), Foya (90 percent) and Cestos (71 percent) when compared to the same period a year ago (Figure 0-4). This was attributed to higher than usual demand coupled with limited supply to these markets. Red Light, Duala, Gbarnga, Ganta and Cestos City markets are notably expensive areas to purchase cassava because these are populous, urban centres with high demand. Saclepea market in Nimba County and Barclayville in Grand Kru County were the cheapest areas to purchase cassava.

5.4.3 Availability and accessibility

FIGURE 5-6 COMPARISON OF MEALS EATEN PER DAY AT THE TIME OF THE VCA4D SURVEY BY SAMPLE.
Source: Authors

It is estimated that 90 percent of subsistence farming households in Liberia will at some point, compromise on food quantity, quality and variety, skip meals, or go without food. Among VCA4D survey respondents in the southeast (Grand Gedeh and River Gee) and central area (Bong, Nimba and Bomi), 73 percent had eaten two meals the previous day, but overall, farmers in the southeast ate fewer meals compared to the central area (

FIGURE *5-6*). Overall, it would appear that farmers in the central region enjoy greater food security than those from the Southeast, with the exception of the months of November and December.

These coping strategies show a distinct seasonal pattern linked to the long rainy season. The FEWS-NET study (2017) identified June to September as the main aggregate 'lean' period across the country. However, there are regional variations. In SE Liberia, the rainy season is longer than in other parts of the country with two peak periods– first in May/June and then again in Sept/Oct. In the north-west of the country, the rice harvest (the main staple) takes place in November or December, while it is September/October in the south-east. As a result, the 'lean season' in the south-east tends to start earlier and extends from April to September, while in the north-west it is slightly shorter (from June-September). This was confirmed by the consumption patterns identified during the VCA4D survey:

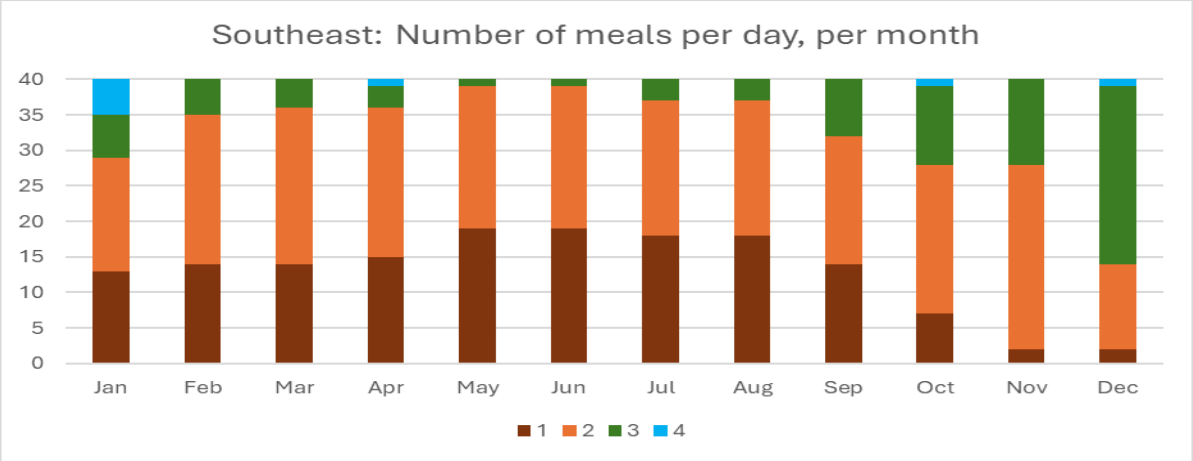


FIGURE 5-7 CONSUMPTION PATTERN REPORTED BY VCA4D SURVEY RESPONDENTS FROM THE SOUTH-EAST

SOURCE: AUTHORS

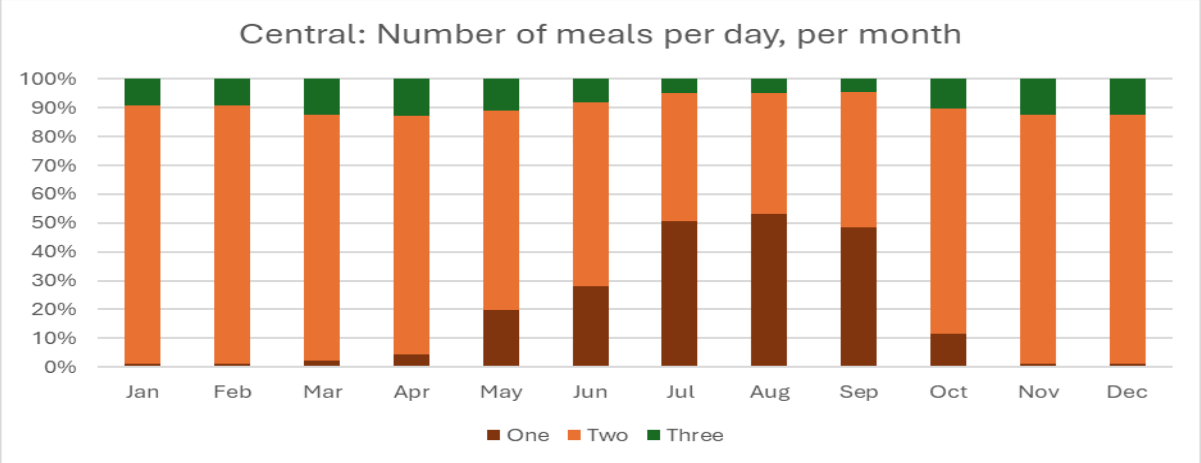


FIGURE 5-8 CONSUMPTION PATTERN REPORTED BY SURVEY RESPONDENTS IN THE NORTHERN COUNTIES

SOURCE: VCA4D SURVEY (2024)

While cassava can be harvested throughout the year, the main harvest is reported to take place during July and August. Most subsistence farmers sell their surplus immediately after harvest in order to pay off debts. Selling surplus straight away is also driven by the lack of reliable storage and the knowledge that it is very difficult to access markets to sell crops during the lean season when the rains are heaviest, and the roads become impassable [*confirmed through FGD and key informant interviews carried out as part of the VCA4D study*]. Unfortunately, it is precisely at this time (when road conditions become challenging) that more vulnerable households become

increasingly reliant on being able to access markets in order to buy food to meet their needs. At the same time, prices rise in response to the increased demand – for example, in Lofa County (which is considered self-sufficient in rice) the price of rice was higher during the lean season, and then fell in December after the harvest.

Female-headed households (FHH) are particularly vulnerable to food insecurity (Kemboi, 2024). A recent study (2024) found 90 percent of FHH expressed concerns about not having enough to eat, 93.7 percent did not have access to nutritious food, 95.5 percent only consume a limited range of foods, and 89.2 percent skipped meals altogether due to financial constraints. As well as skipping meals, other coping strategies included borrowing money, selling assets, and reducing health expenses. The way in which households coped with food insecurity was influenced by socioeconomic factors such as gender, education and marital status.

The VCA4D study found evidence that cocoa farming households were reducing the number of meals consumed during the 'lean season' (FIGURE 5-7 and FIGURE 5-8) and were modifying their management strategy and sale of cocoa beans as part of managing their household needs and potential vulnerability. For example, the VCA4C study found evidence that some cocoa farming households were reducing their use of hired labour and relying more on household labour capacity in order to reduce costs. There was also anecdotal evidence that coco farmers would use their cocoa crop as collateral to borrow money (mainly reported to be borrowing from traders), and then side selling or spot selling harvested beans at a lower rate in order to get cash-in-hand to satisfy an immediate need (e.g. for unexpected health expenses or school fees). Food purchases were one of the cited uses of cash income from cocoa sales, which is not surprising given that 86 percent of households are reported to rely on cash to access food.

The south-east is particularly vulnerable to food insecurity. The COVADEP Baseline Survey (2021) in the south-east of the country found that 66.4 percent of cocoa farming households reported food shortages in the preceding 12 months. Nearly seven in ten households indicated they cut the size of their food, ate less food than they should have eaten, and were hungry but did not eat. *Table 0-2* provides additional detail.

5.4.4 Utilisation and nutritional adequacy

The 2022 Rapid Food Security, Livelihoods, Nutrition and Markets Assessment found 28 percent of all households exhibited low dietary diversity[8]. The rate was much higher among rural households (37.8 percent). The counties with the lowest dietary diversity were Sinoe (61 percent), Maryland (52 percent), River Gee and Grand Kru (41 percent). Of households in Grand Bassa and River Gee, 7 and 5 percent respectively, were found to have eaten a diet of only staples and fats in the week prior to the survey. Along with limited diversity, a significant proportion of surveyed households also reported eating a very unbalanced diet that was calorie deficient, lacked a significant source of animal protein and was mainly based on staples, especially rice. This was confirmed during the COVADEP baseline survey in 2021 among households in the southeast of

[8] Households who recalled eating four or fewer of the seven recommended food groups over the preceding seven days, were classified as having low dietary diversity

the country (Table 6.4)[9]. Again, the incidence of poor diet was highest in rural area. The FEWS-Net (2017) mapped the incidence of poor dietary quality across the country, showing Bong, Nimba and Lofa to be among the worst affected at that time (FIGURE 5-9).

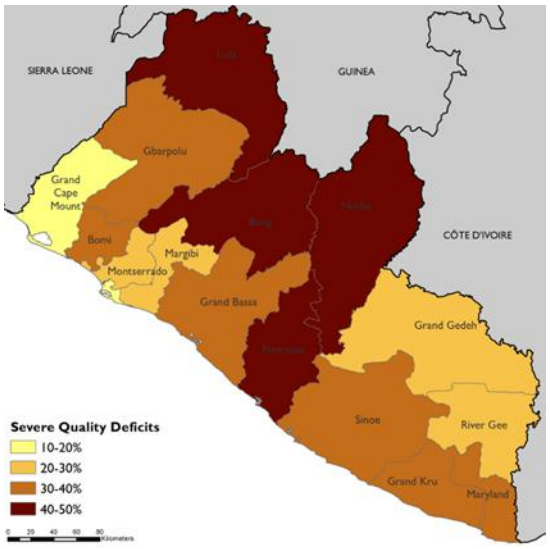


FIGURE 5-9 PROPORTION OF HOUSEHOLDS FACING SEVER QUALITY DEFICITS OF LEVEL 3 AND 4 BY COUNTY
source: FEWS-NET (2017)

Food access is thought to be the main driver for poor dietary quality due to the heavy reliance on buying food on the market, difficulties accessing markets due to poor infrastructure and factors that impact household purchasing power.

5.5 Social capital

5.5.1 Strength of producer organisations

Formal and informal farmer groups, including cooperatives and associations, have been a feature of the Liberian agriculture sector (and cocoa in particular) for many years. These organisations were severely disrupted by the civil war, and many became defunct as a result. Since then, there has been substantial investment in the rehabilitation of farmer organisations and smallholder farms for high value tree crops such as cocoa, as well as for rice, casava and other crops. One of the acknowledged challenges for the CVC is that, despite investment, most smallholder cooperatives still lack sufficient capacity to independently increase the productivity of their members' farms.

Efforts to develop the capacity of farmer organisations have largely been funded by donors and implemented by NGOs and Government. It is likely that the majority of cocoa cooperatives operating at the time of writing this report (particularly those in Bong, Nimba and Lofa) will have had some engagement with one or more of these donos funded projects, and the actors who implement them. They have certainly made a difference to the cooperative landscape. In 2001,

[9] The reference period used in the baseline survey to determine the diversity of household dietary intake was 12 months which is a longer period than the recommended recall period of 24 hours.

the total number of registered cocoa cooperatives was reported to be 224, of which 116 were dormant and 108 were active. By late 2013 there were 313 (or 319 – figures differ) reactivated and new cooperatives registered by the Cooperative Development Agency (CDA), while 50 more were awaiting registration. This represents an increase of 139 cooperatives during that time (Skoog, 2016). The VCA4D study was not able to verify the number of cooperatives and associations engaged with the CVC at the time of writing this report.

The VCA4D survey found a marked geographic difference in cooperative membership rates with none of the 40 respondents from the Southeast survey (Grand Gedeh and River Gee) said they were members of a cooperative, while in Lofa, Nimba and Bomi, 30 percent of respondents were cooperative members. However, the rate of participation in kuu (the traditional, informal and self-organized, social organization that farms cooperatively on the lands of its members and their families, and in some cases, sells their collective labor to farmers outside the group) for farm activities was far higher. In the south-east, just under half of respondents (19) take part in or receive kuu for their farm activities, compared to 66% of respondents from the other. By necessity, the level of trust among kuu members will be far higher than a more formal cooperative group or farmer association, and these local cooperative structures provide valuable safety nets and a source of social and financial capital that should protected. There is also evidence that susu (informal savings clubs) are a common form of local collaboration among coco farming communities (ACET, 2024), along with Village Savings and Loan Associations (VSLA), many of them run by women. A study carried out for AIFO Liberia (Associazione Amici di Raoul Follereau) in 2018 confirmed that small, self-organized self-help groups were the most common form of collaboration (57 percent) for social development in the three counties included, followed by NGOs (11 percent). Cooperatives and mutual societies represented only 8 percent, and no coops were identified through the study in Grand Gedeh (south-east).

The ACET study (2024) in Bong, Nimba and Lofa – where most cooperatives are likely to be found – concluded that farmer organisations were weak, as only a third of the farmers surveyed said they belonged to one. The study felt that cooperatives did not have much bargaining power, did not add value and often offered lower prices. Governance issues and lack of transparency were also issues raised during the study. Implementing agencies promote representation, inclusion and gender sensitivity among the farmer organisations they work. As a result, most cooperatives show a gender balance in their membership.

5.5.2 Information and confidence

LACRAs visibility among smallholder farmers was found to be low, particularly in more remote areas. Overall, farmers' knowledge of the cocoa sector regulatory and policy framework is limited, and much of the information available to them comes from other sources. For example, the Coco Value Chain Development Programme (COVADEP) Baseline (2021), which surveyed 794 households in River Gee and Grand Gedeh Counties, found that only about 20 per cent were aware of the relevant policies and regulations. Their primary sources of information were the Ministry of Agriculture (3.4 per cent), cooperatives (3.1 per cent), workshops (3 per cent) and buyers (1.8 per cent). NGOs, friends, family and the media made up the most frequently cited sources of information (9 per cent). The ACET study (2024) in Bong, Nimba and Lofa found that word of

mouth and traders were the primary sources of information for those surveyed. The Poverty Assessment (2024) acknowledges that access to extension services is also limited, with less than 5 percent of farming households receiving any type of extension nationwide. Access to credit is also uncommon with less than 5 percent of farming households having accessed credit for their agricultural activities.

Evidence suggests that farmers confidence in cooperatives has been very mixed, with some very positive stories and others less so (see Box 6.3). Regardless of the potential benefits of being a cooperative member such as access to higher prices and services, many cocoa farmers appear to deliberately choose to remain independent in order to take advantage of other marketing routes and the ability to spot-sell when required. Side-selling has reported as an issue throughout the VCA4D study. Farmers often underreport their yield to the cooperatives, so that they can continue to sell some produce to middlemen in order to get cash in hand, while selling the remainder of their cocoa to the cooperative and continue to access the benefits of membership. They make a conscious decision to maintain the flexibility to mobilise their cocoa income in a way that works more effectively for their immediate and any unexpected household needs (see Sections X and X). For a farmer in no immediate need of cash, selling to a cooperative – where payment is delayed and verified through a warehouse receipt – may be an attractive option in order to receive a higher price, even though it requires more time, effort and cost to produce high quality cocoa and payment is delayed. The ACET Study (2024) found that the analysis, farmers capture less value (8 percent) when they sell through cooperatives. They almost double their margins (15 percent) when selling through spot markets to traders or middlemen.

The relationship between the farmer and the trader or middleman seems to be the most crucial one for the CVC. During key informant interviews and focus group discussions, the VCA4D study found that, not only are traders a key source of information for smallholder cocoa farmers, the relationship between them is also built on trust. The IDEF Report (2024) on cocoa trade in the south-east found that a lot of buyers were well known to the community, even though they were coming from across the border.

Another area where the VCA4D study has found the potential for conflict, if trust and confidence break down, is in securing the [currently] informal agreements between Burkinabe migrants and landowners in south-east Liberia. These are reported to be based on a verbal agreement - "*Je suis arrivé en 2020. Je suis venu faire cacao. On m'a dit que si je fais 10 hectares, je prendre 4 ha et le propriétaire de la terre va prendre 6 ha*" [I arrived in 2020. I came to make cocoa. I was told that if I make 10 hectares, I will take 4 ha and the owner of the land will take 6 ha] - Testimony of a young producer, of Burkinabè origin. Source: IDEF, 2024. These agreements are reported to be open to misunderstanding, as the culture of, and experience of, sharecropping-type arrangements are very different in Cote d'Ivoire and Liberia [pers com].

5.5.3 Social involvement

The principal way in which communities can participate in decisions that impact their livelihoods, and through which traditional resources and knowledge are respected, is through the process of customary land rights formalization under the Land Reform Act, 2018 and the Community Land

Development and Management Committees (CLDMC). The act expressly requires these groups to have equal representation of women, youths, minority groups and men from the community. Since the Act came into force, a number of CLDMCs have been established, with the support of civil society organizations, Liberia Land Authority (LLA), local authorities and non-governmental institutions.

Through the CLDM and formalisation of community land title, communities now have a legal framework through which to negotiate the terms of any lease agreement with an outside investor. In principle, this sets the stage for communities to challenge exploitation of the natural resources they rely on. How effectively this will work is still being tested. Unless already under the auspices of one of the many donor funded land rights projects, communities are recommended to get support from either a trusted NGO or a legal expert, and ensure the whole community is consulted, before signing any agreement. Entrenched traditional attitudes towards women and youth, and the ability of elites to dominate resources, decision making and control at a community level will continue to be a powerful influence in these negotiations.

5.6 Living Conditions

The most critical living conditions that affect smallholder cocoa farmers in the five key cocoa-producing counties identified in the National Agriculture Development Plan 2024-2030 (NADP) - Bong, Nimba, Lofa, Grand Gedeh, River Gee and River Cess – relate to mobility, education and communication. Housing quality, access to safe water, sanitation and healthcare provide an indicator of socioeconomic status. To summarise:

5.6.1 Transport and Mobility

Main road in Nimba County. Photo credit: Lucinda Rouse, 2021

Difficulties with transportation pose a significant limiting factor for the CVC. Despite considerable investment in the rehabilitation of main highways and feeder roads since the end of the civil war, much of Liberia's rural road network is still in very poor condition. As per January 2024, only 1.140 kilometres of paved road exist, which represents 8.7 percent of the estimated 13,000 km of road network needed. Paved roads mainly exist in three corridors: (1) Monrovia – Ganta, (2) Monrovia - border to Sierra Leone, and (3) Monrovia – Buchanan. Most of the road network of Liberia was built in the 1970s and early 1980s. The World Bank financed most of these projects. The main causes of deterioration on highways are heavy and prolonged rains, lack of maintenance and overloaded trucks. Out of the 10,600 km roads in Liberia, less than a quarter are classified as all-weather roads. A georeferenced assessment of road conditions carried out in 2016, found that nearly 60 percent of unpaved roads surveyed were in poor or very poor condition (FIGURE 5-10), along with half of all bridges, and a quarter of all culverts. It concluded that nearly 2.3 million people were not connected to a decent road network (42 percent), with many rural areas being significantly disadvantaged in terms of lack of connectivity. Lofa and in the south-east being particularly disadvantaged. Even during the

dry season, it can take a substantial amount of time to travel between major towns and Monrovia, as shown in (see Economic Analysis Annexes p 138 Figure 0-5).

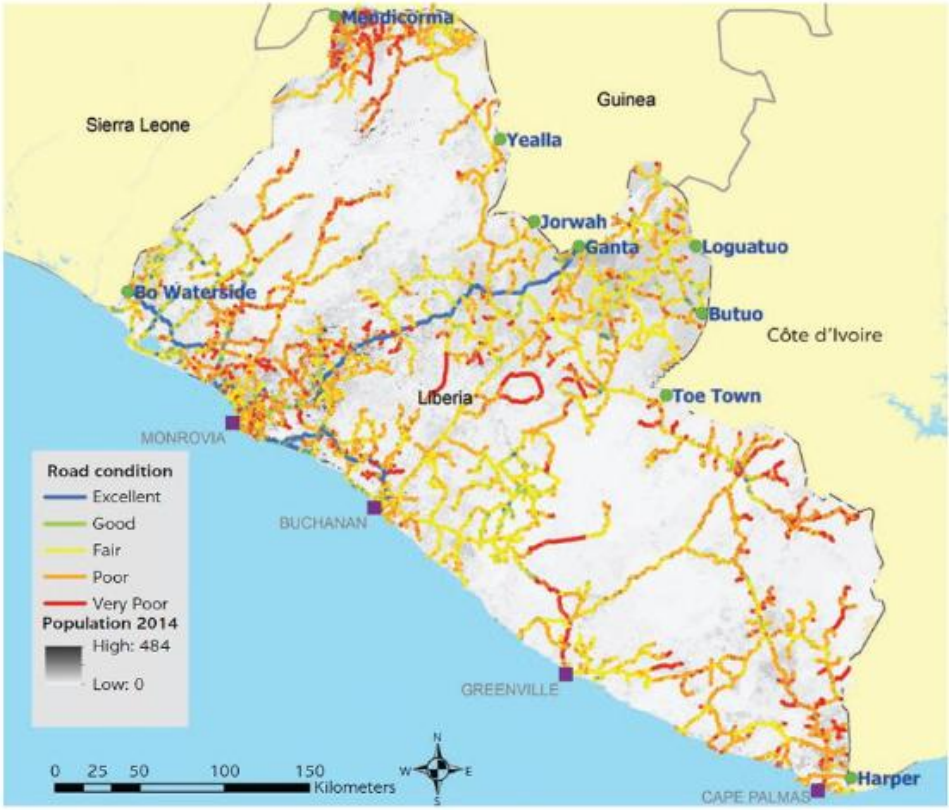


FIGURE 5-10 SURVEY OF THE CONDITION OF 11, 423 KM OF ROADS IN LIBERIA CARRIED OUT IN 2016
Source: WFP Logistics Capacity Assessment for Liberia (2024)

	Monrovia	Tubmanburg	Gbarnga	Voinjama	Sanniquellie	Zwedru	Fishtown	Greenville
Monrovia		2.04	7.2	18.5	11.46	20	28.75	15.33
Tubmanburg			9.2	2.54	13.37	22.16	30.8	17.38
Gbarnga				11.33	14.3	13	21.6	21
Voinjama					15.53	24.25	33	32.5
Sanniquellie						14	22.5	32.5
Zwedru							8.6	34
Fishtown								42.6
Greenville								

TABLE 5-2 ESTIMATED TIME TO TRAVEL FROM MONROVIA TO SOME OF THE MAJOR TOWNS CLOSE TO COCOA GROWING AREAS (IN DAYS).
Source: Adapted from WFP Logistics Capacity Assessment for Liberia, 2024

In many parts of rural Liberia, movement becomes almost impossible during the rainy season, which restricts access to markets and services, increases the cost of transportation and contributes to food insecurity (see Section 5.5) and other aspects of rural development. As a result, market integration between rural and urban areas remains weak, and for many cocoa farmers in areas remote from Monrovia, especially those close to the border, their nearest markets for food, inputs and cocoa sales are in the neighbouring countries (FIGURE 5-5). Poor roads increase the cost of transporting cocoa (e.g. additional fuel, damage to/maintenance of vehicles) and has a knock-

on effect on the price offered to farmers by traders. Poor quality roads which are impassable for several months of the year, mean motorcycles are often the only viable means of motorised transport which limits what can be carried in terms of weight and bulk. Moving on foot and 'head-carrying' goods can sometimes be the only practical option at certain times of the year. The VCA4D survey team had first-hand experience of these challenges as they attempted to move around the survey sites in Grand Gedeh and River Gee in 2024 (FIGURE 5-11). In some instances, having to resort to traditional pirogues (dugout canoes).

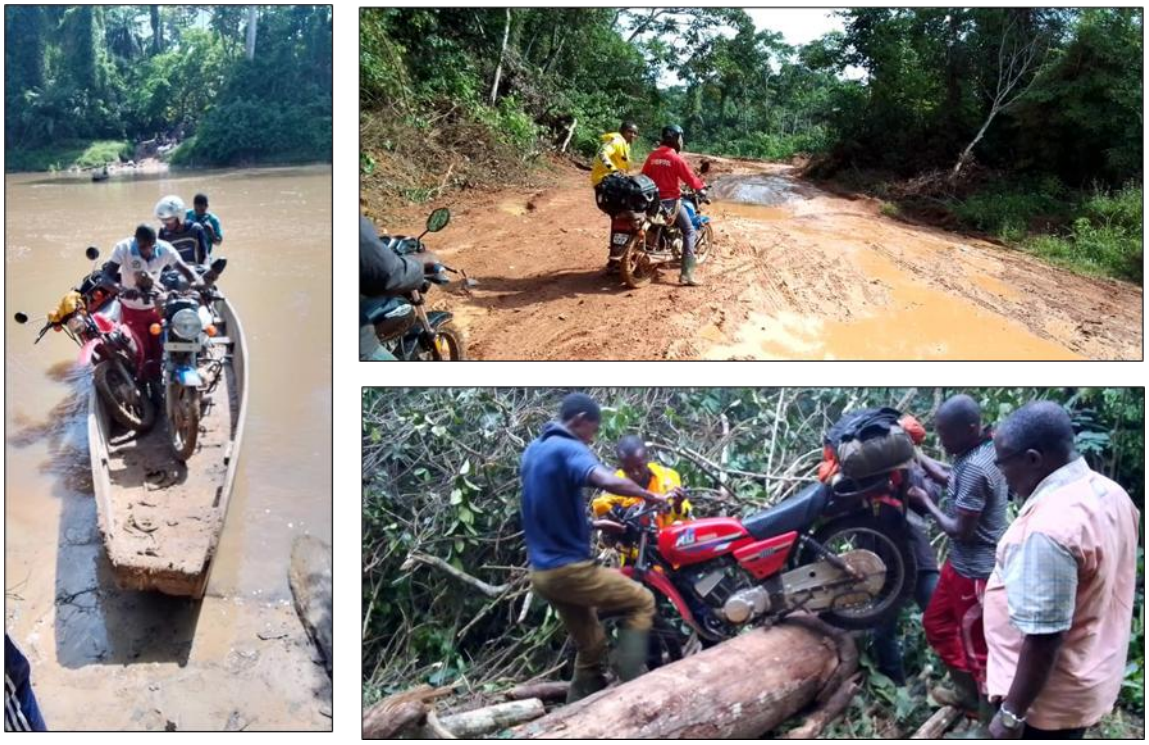


FIGURE 5-11: MONTAGE OF PHOTOS TAKEN BY THE VCA4D FIELD TEAM DURING THE SURVEY IN GRAND GEDEH AND RIVER GEE COUNTIES, 2024

Source: Photo credit: Abelle Galo, SE Field Team Leader

The African Report published an article in 2021 which gives a snapshot of how much of a challenge poor transport infrastructure can be for cocoa trade (Rouse, 2021). The article follows a farmer transporting cocoa from his farm in Nimba to Monrovia. The Alert on the Supply of Cocoa from Liberia (IDEF, 2024) study in SE Liberia confirmed the lack of road infrastructure as the main reason why cocoa farmers sold their cocoa over the border. During stakeholder consultative meetings in Lofa County, carried out as part of preparations for the forthcoming World Bank funded Smallholder Agriculture Transformation and Agribusiness Revitalization Project it was reported that farmers in Faya and Kolahun Districts have to transport their cocoa across the border to Sierra Leone. The VCA4D study was told that the Sierra Leonian government had invested in upgrading road connections close to the boarder to help facilitate better connectivity to Liberia [pers comm].

"*Even if we wanted to, we have no way of selling cocoa from here to Liberia. There are no roads. A long time ago, the Wingo cooperative used to come here to collect cocoa. But the people in charge say they've lost several lorries because of the state of the road. So, they don't come any more. But*

production is increasing all the time. Our only choice is to cross the Cavally River and meet the buyers in Françoikro [Cote d'Ivoire] " Local representative of District 3. Source: IDEF, 2024.

FIGURE 5-12: BRIDGE ON THE MAIN ROAD LINKING THE TARGET ZONE TO THE INTERIOR OF THE COUNTRY, 27 FEBRUARY 2024. Photo credit: IDCocoa

"*if we had the road, we'd be selling our cocoa in Liberia. Because the buyers on the other side don't provide any service. For example, when we ask them for products to treat our plantations, they refuse. The same goes for loans when we're in financial difficulty. This is because we are not recognised. As soon as they buy cocoa, they say it comes from Ivory Coast. And they don't share all the benefits. We're well aware of that. But it's difficult*." Village Chief, Source: IDEF, 2024.

Not only does the poor road network limit access to markets and market integration, it also restricts access to smallholder cocoa farmers by those who might provide support and services to them (e.g. coops, traders, government agencies, NGOs, etc), which further disadvantages certain geographies and communities in their engagement with the CVC, or from fully benefitting from the potential it has to help them improve productivity, their livelihoods and community development. The ACET Study (2024) found that women were particularly disadvantaged, as only a third of the women surveyed had access to their own means of transport compared to half of the men. The ability to access support services (and vice versa) plays an important role in the likelihood of a cocoa farmer taking part in rehabilitation and improved production activities. Distance between the cocoa farm and cooperative is significantly smaller for farmers participating in cocoa rehabilitation (on average 69 minutes travel time) than for farmers not participating in cocoa rehabilitation (on average 81 minutes).

The distance between the homestead and nearest local market is significantly smaller for farmers participating in cocoa rehabilitation. A study in Bong, Nimba and Lofa in 2021 (Tokpah, 2021) found that distance between the cocoa farm and cooperative was significantly smaller for farmers participating in cocoa rehabilitation (on average, 46 minutes travel time) than for farmers not participating in cocoa rehabilitation (56 minutes). The distance between the homestead and nearest district market was significantly smaller for farmers participating in cocoa rehabilitation

(on average 61 minutes travel time) than for farmers not participating in cocoa rehabilitation (on average 72 minutes). The distance between the homestead and nearest tarmac road is significantly smaller for farmers participating in cocoa rehabilitation (on average 501 minutes travel time) than for farmers not participating in cocoa rehabilitation (on average 583 minutes). The distance between the homestead and nearest secondary school is significantly smaller for farmers participating in cocoa rehabilitation (on average 56 minutes travel time) than for farmers not participating in cocoa rehabilitation (on average 71 minutes).

5.6.2 Access to Education, Training and Health

The Human Capital Index estimated that a child born in Liberia in 2020 would only achieve 32 percent of their productive potential when they grew up, compared to what might be possible if they were able to enjoy complete education and full health. This is far below the average for the Sub-Saharan Africa region and Low-income countries and is of great concern when it is viewed in conjunction with the World Bank calculation that in 2021, Liberia's human capital wealth[10] accounted for 42 percent of national wealth.

The relationship between education and agricultural productivity is well documented. There is a positive association between educational attainment and farmers ability to manage and recover from shocks, more use of inputs, new techniques and technologies, better access to financial services and ultimately with improved household socioeconomic status. Liberia spent 12.43 percent of GDP on government education spending in 2022, and education statistics are improving, but rural populations are significantly more disadvantaged showing reduced access to education, lower literacy rates, higher levels of non-attendance and drop out than their urban counterparts. At the time of writing this report, only government primary education was being offered free of charge (although parents would still be responsible for other expenses such as travel, uniforms, materials, etc).

"*Fifty-six percent of our [rural] students drop out by the time they reach 6th Grade*" – Mr. Abba Karnga, Jr., Assistant Minister of Basic and Secondary Education (Source: Front Page Africa, 2024)

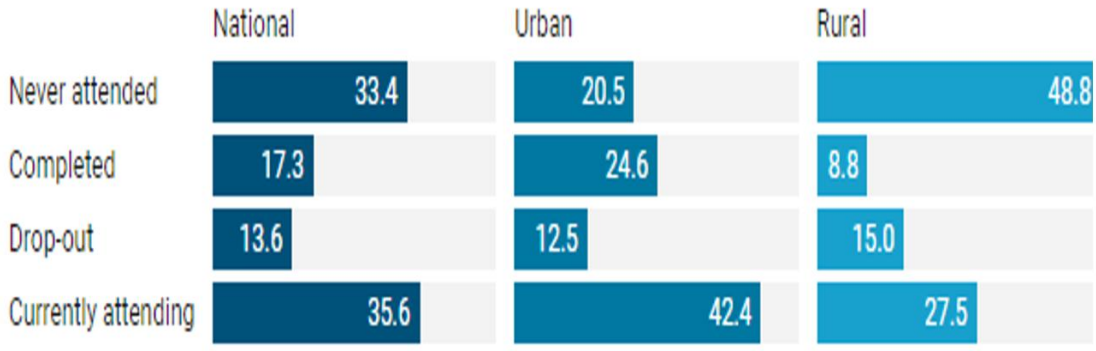


FIGURE 5-13 FIGURE 6.21: SCHOOL ATTENDANCE STATUS OF SCHOOL AGE CHILDREN FROM 3 YEARS AND OLDER.
Source: Liberia Population and Housing Census 2022

[10] The World Bank measures human capital as the present value of the future earnings of the labour force, which in turn depends on the level of educational attainment of the labour force.

In 2022, UNESCO estimated the adult literacy rate for Liberia at 48.3 percent among adults, with the rate in rural areas being only 34 percent. The difference between men and women's literacy was 48.4 percent and 24.1 percent respectively. The 2022 Liberia Population and Housing Census showed that overall, only 27.2 percent of students attend school in rural communities (FIGURE 5-13). Of school age children, girls were more likely to drop out than boys and early parenthood is a common outcome for young girls in rural areas[11], which further limits their educational prospects. In addition, rural students are more likely to be three or more years over-age, suggesting significant economic and physical barriers for age-appropriate enrolment. Over-aged children are more likely to drop out.

County	Never attended	Completed	Drop-out	Currently attending
Bomi	56.7	0.6	1.3	41.5
Bong	74.9	0.9	1.1	23.1
Grand Bassa	77.7	0.5	0.9	20.9
Grand Cape Mount	65.7	0.8	1.1	32.3
Grand Gedeh	57.6	1.2	1.0	40.2
Grand Kru	64.5	0.6	0.7	34.2
Lofa	59.9	0.9	1.1	38.1
Margibi	56.9	1.5	1.6	39.9
Maryland	58.2	0.7	0.9	40.3
Montserrado	37.0	2.2	1.2	59.6
Nimba	60.4	1.0	0.9	37.6
River Cess	77.2	0.2	0.9	21.7
Sinoe	68.3	0.9	1.3	29.5
River Gee	65.6	0.6	1.2	32.7
Gbarpolu	67.3	0.5	1.9	30.3

FIGURE 5-14 SCHOOL ATTENDANCE BY COUNTY, WITH THE FIVE NADP COCOA GROWING COUNTIES HIGHLIGHTED.
Source: Liberia Population and Housing Census 2022

A significant proportion of school age children have to travel an hour or more to get to school each day. Based on findings from the Liberia Population and Housing Census 2022, the proportion of school age children who experience this in the five NADP priority cocoa growing counties are: Bong (18.8 percent), Nimba (7.5 percent), Lofa (12.8 percent), Grand Gedeh (15.7 percent), River Gee (12.8 percent) and River Cess (24.8 percent), clearly demonstrating the educational disadvantage of households in the south-east of the country. In addition, most public schools in rural areas stop at the 6th or 9th grade, preventing many children from going beyond this point in their education.

The condition of schools in rural areas is reported to be poor often lacking a roof, furniture or teaching materials. Along with this, there has been a consistent problem with the recruitment and retention of qualified teachers for rural areas, resulting in high teacher: pupil ratios (one report citing a ratio of 1:100) and some schools having no qualified teacher at all. The Education Sector Strategic Plan (2022 – 2027) acknowledges that only 45 percent of Liberian teachers are formally trained.

[11] Poverty, traditional cultural practices, lack of enforcement of existing laws outlawing marriage under the age of 18 and poor awareness of sexual and reproductive health among young people are key factors leading to the high rate of pregnancy among adolescent girls

The ACET Study (2024) found that among cocoa farmers surveyed in south-east Liberia, most had very low levels of educational attainment. Almost half had not completed primary school education, with 30 percent having no education at all. Only 18 percent had completed secondary school, and almost none had vocational training.

The relatively low levels of literacy among rural adults in cocoa growing counties, along with the challenges experienced by many households in terms of accessing and completing primary education, significantly disadvantages many smallholder farmers when it comes to improving their farm productivity and facilitating their engagement with a value chain that looks set to become more complex due to the need for greater due diligence, which will require more skills and knowledge in order to navigate. NGOs, cooperatives and farmer groups will have an important role to play in helping smallholder farmers adapt to these future challenges.

The ability to access healthcare in response to a health shock are important factors contributing to the socioeconomic and food security status of cocoa farming households. Unfortunately, there was very little information available on how much they spend on health care. During the VCA4D field survey, health care was cited by respondents as one of the most important uses of the income earned from the sale of cocoa. Having access to cash (either through spot sales or more predictable arrangements with traders and coops) will be helping cocoa farming households to manage unexpected, out-of-pocket health expenditure and mitigate against the potentially catastrophic, and long-term impact of accidents and chronic or acute health shocks (e.g. communicable diseases and childbirth). Malaria is the leading cause of morbidity and mortality in Liberia, accounting for 46.9 percent of outpatient consultations and 13.5 percent of deaths.

5.6.3 Communication

Mobile and digital technology will play an important role in the future of traceability and verification systems for the CVC, therefore access to communication is as important as other kinds of basic infrastructure. At the time of writing this report, MTN Liberia (LoneStar), Orange Liberia (Cellcom), Novafone GSM (Comium), LiberCell, JamCell and LTC Mobile were the main providers of mobile voice and data services in Liberia. Data from GSMA Intelligence shows that there were 4.77 million cellular mobile connections in Liberia in January 2024, which is equivalent to 87.1 percent of the total population. However, a 2021 report estimated ***actual*** national penetration to be only 55 percent of the population, which is far below the average for sub-Saharan Africa overall (78 percent) (Marie, 2021). The difference between the number of connections and penetration is due to many people (especially in urban areas) having more than one phone.

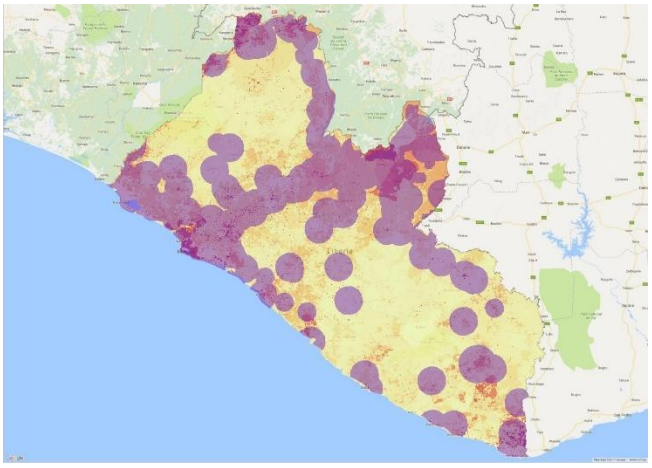


FIGURE 5-15 MAP OF ESTIMATED 2G COVERAGE BASED ON AVAILABLE DATA.
Source: Steve Song, 2017

Although exact data is not available, the rate of mobile penetration in rural areas of Liberia will be considerably below the national average, as there are large areas of the country without any mobile coverage at all (FIGURE 5-14 – although the author notes that this map probably overstates access). The rural-urban digital divide is due to the poor connectivity in many rural areas (a lack of reliable electricity as well as mobile infrastructure), the expense of owning a phone (while costs have fallen in the last 10 years, they are still unaffordable for many poorer households), and the relatively high rates of illiteracy, particularly among older adults.

Mobile connection would also offer an opportunity for rural communities to access services such as banking and heath care (mobiles proved an incredibly valuable tool during the Ebola and Covid-19 health crises). According to the World Bank, the percentage of adults with an account at a financial institution or a mobile money service provider increased from 33.9 percent in 2014 to 38.7 percent in 2017, and adults making digital payments have increased from 23.1 percent to 28.6 percent in the same time period. UN Women reported that around 15 Village Savings and Loan Associations (VSLAs) in Bong and Nimba Counties had recently transitioned from traditional saving methods to using Orange Money and bank accounts for their saving and loan processes. This initiative provides rural women with greater access to finance, allowing them to better manage their businesses and strengthen agricultural value chains.

Among the VCA4D survey respondents, farmers from Bong, Bomi and Nimba (70 percent) were more likely to be using mobile banking than those from the southeast (50 percent). The mobile banking providers being used by those in the southeast included Lonsetar (the most common) plus two respondents who said they had an account with Liberia Bank Development Institute (LBDI)[12].

5.6.4 Housing, water and sanitation

The Liberian Public Health Census for 2022 identified that all counties, except Montserrado, had a substantially hight proportion of housing units constructed of mud, brick or wood for the outer

[12] One respondent said they used both Lonestar and LBDI.

walls, with River Gee (81.6percent) and River Cess (79.7 percent) showing the highest proportion (FIGURE 5-16).

County	MAIN CONSTRUCTION MATERIALS OF HOUSING (OUTER WALLS)								
	Stone Concrete	Cement Blocks	Clay Bricks	Zinc or Iron	Wood or Board	Mud & Bricks	Mud & stakes	Reed Bamboo Grass or mat	Other
Liberia	9.9	31.8	5.2	5.5	0.7	19.2	27.1	0.5	0.1
Bomi	6.6	16.8	7.4	1.3	0.8	16.2	49.8	1.1	0
Bong	6.9	11.7	7.7	0.9	0.5	28.2	43.9	0.1	0.1
Gbarpolu	6.4	2.5	2.5	1.3	0.6	17.9	68.2	0.6	0
Grand Bassa	6.2	22.2	3.3	2.4	0.9	11.8	51.8	1.3	0.2
Grand Cape Mt	7.5	17.8	8.1	3.3	1.4	24.6	35.2	2	0.1
Grand Gedeh	6.1	9.9	4.7	1.2	1	19.8	56.3	0.8	0.3
Grand Kru	4.5	4.4	1.1	0.6	1.4	7.5	79.2	1.3	0.1
Lofa	5.9	7.5	5.3	0.8	1.4	63.7	15	0.3	0
Margibi	8.4	35.2	12.8	7.1	0.8	13.7	21	0.8	0.1
Maryland	6.8	11	1.2	1.5	1	8	70.1	0.2	0.1
Montserrado	14.9	60.8	2.8	11.5	0.3	5.2	4.1	0.1	0.2
Nimba	8.0	11.7	11.4	0.9	0.8	51.3	15.5	0.2	0.2
River Cess	2.8	3.7	1.1	0.7	1	9.4	79.7	1.2	0.6
River Gee	5.3	2.6	0.8	0.2	0.5	8.2	81.6	0.7	0.1
Sinoe	7.6	11.5	2.5	1.9	2.6	10.8	62.1	0.6	0.3

FIGURE 5-16 HOUSING MATERIALS USED FOR DOMESTIC HOUSING BY COUNTY, WITH THE FIVE NADP COCOA GROWING COUNTIES HIGHLIGHTED

Source: LISGIS (2022)

The Liberian Public Health Census for 2022 shows a significant improvement in access to safer water sources for rural households, with 60.4 percent now having access an improved water source (pipe, borehole, bottled water, sachet water), compared to only 42.2 percent in 2008.

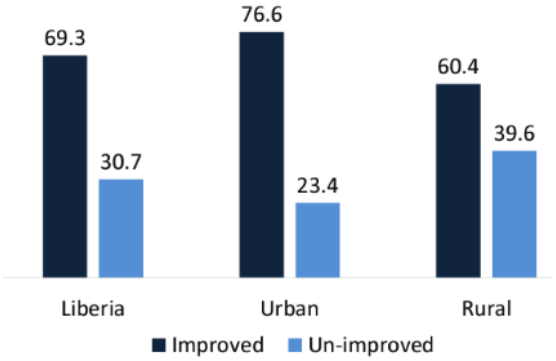


FIGURE 5-17 MAIN SOURCE OF DRINKING WATER FOR HOUSEHOLDS IN 2022.

Source: LISGIS, 2022

A significant proportion of rural households have access to a covered pit latrine (34.8 percent) but equally, 25.6 percent of rural households are still practicing open defecation, which has implications for hygiene and health outcomes. Rural residents are conscious of the benefits of using latrines but are often unable to afford to construct and maintain a latrine. A study carried out by Johns Hopkins Center for Communication Programs in Lofa and Nimba Counties in 2021 found that the majority of those who used the bush (86 percent) would rather build their own toilets, but only five percent stated that they had the resources to build one and more than two thirds did not have the ability to construct one (Desmon, 2021). Open defecation rates will also be higher for people while they are working on their farms, as these are usually located at some distance from their dwelling place.

The USAID Liberian Sanitation Market Assessment Report (2021) identified that there is a great deal of potential to develop locally appropriate, market-based solutions to increase access to improved sanitation in rural areas, but these will require a considerable strategic investment and support (USAID 2021).

5.7 Conclusions

In terms of social sustainability and inclusivity, cocoa provides an important source of income for a significant number of subsistence smallholder farmers across the country. They produce the vast majority of Liberia's annual cocoa output. As well as the direct benefits of selling coco, the CVC also provides important opportunities for local employment. However, there is little reliable data for the sector and the exact number of farmers is not known with any certainty. The current figure being quoted by most stakeholders is thought likely to be an underestimate. Despite the important role played by smallholder farmers, and benefits to the rural economy, the cocoa sector faces a number of challenges that are preventing it from reaching its full potential in terms of social benefits (FIGURE 5-18). A more detailed summary of the VCA4D Social Profile can be found in Economic Analysis Annexes p 138.

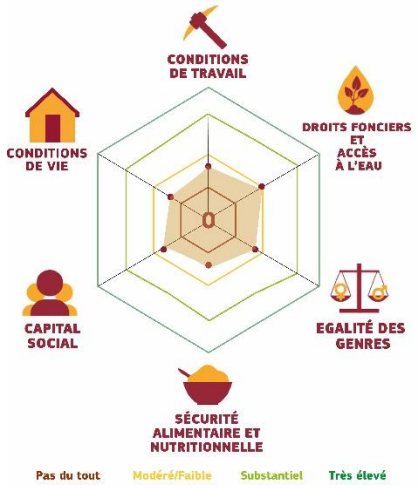


FIGURE 5-18 OVERVIEW OF THE VCA4D SOCIAL ANALYSIS PROFILE SCORE. SOURCE: AUTHORS

Liberia's transport infrastructure represents a significant limiting factor for the CVC. Despite considerable investment in the rehabilitation of main highways and feeder roads since the end of the civil war, much of Liberia's rural road network is still in very poor condition. In many parts of rural Liberia, movement becomes almost impossible during the rainy season, which restricts access to markets and services, increases the cost of transportation and contributes to food insecurity and slows other aspects of rural development. As a result, market integration between rural and urban areas remains weak, and for many cocoa farmers in areas remote from Monrovia, especially those close to the border, their nearest markets for food, inputs and cocoa sales are in the neighbouring countries.

Smallholder households in most cocoa growing counties exhibit high levels of poverty and are vulnerable to seasonal food insecurity. It is estimated that 90 percent of subsistence farming households will at some point, compromise on food quality and variety, skip meals, or go without

food. These coping strategies show a distinct seasonal pattern, linked to the long rainy season (when road conditions become challenging and prices in the market rise). Food access is thought to be the main driver for poor dietary quality due to the heavy reliance on buying food on the market, difficulties accessing markets due to poor infrastructure and factors that impact household purchasing power. Cash income from cocoa, and also earned through informal labour, is an important tool for mitigating against those periods when food prices are high and access to markets become limited. Policy changes that constrain cocoa production could have major consequences for smallholder farmers.

Women from smallholder farmer households are more likely to be involved in off-farm activities and informal labour, than with cocoa farming. And when they do farm cocoa, women and youth face greater challenges (particularly female headed households) in terms of labour capacity, ownership of assets, decision making, access to training and services and participation in farmer groups. Women are more likely to be part of a *susu* group, and yet despite the challenges, there are women successfully making a living from cocoa. Female headed households in particular own fewer and lower value assets. Traditionally, women could not acquire land in their own names. Although this is changing, and there is more acceptance of women being allocated land and being part of land related decision making, many women and youths continue to have limited decision-making power and control over. In general, men are more visible in cocoa production and marketing as a whole and exert more control at the household and farmer organization level.

The vast majority of labour associated with the CVC is informal and at smallholder production level which are not covered by labour laws and are only enforceable in the context of local community grievance processes. At smallholder level, hired labour is based on verbal agreements and paid for in cash and kind. Labour is an important source of income for rural households and is also a barrier to participation in the CVC for households who cannot afford it and do not have enough household labour capacity. Child labour is a significant risk for the CVC. Children often play a significant role in the livelihoods of many poorer and more food insecure households in rural areas where cocoa is grown. Enforcement of child labour laws have not been effective to date. The VCA4D study found evidence of child labour taking place among surveyed households.

Rural populations are significantly more disadvantaged with reduced access to education, lower literacy rates, higher levels of non-attendance and drop out. Girls were more likely to drop out than boys, and rural students are more likely to be three or more years over-age, suggesting significant economic and physical barriers for age-appropriate enrolment. The relatively low levels of literacy among smallholder cocoa farmers significantly disadvantages them when it comes to improving their farm productivity and facilitating their engagement with a value chain. Literacy plays an important role in whether smallholder farmers can access services such as training and mobile banking or take on a leadership role in local farmer groups. There are significantly lower levels of literacy among women in rural areas. Mobile and digital technology will play an important role in the future of traceability and verification systems for the CVC, therefore access to ICT is important. limited mobile infrastructure, the expense of owning a phone and relatively low literacy rates, particularly among older adults.

Despite substantial investment in the rehabilitation of farmer organisations, and cooperatives in particular, most still lack sufficient capacity to independently increase the productivity of their members' farms and are not considered sustainable. Implementing agencies promote representation, inclusion and gender sensitivity among the farmer organisations they work. Cooperatives are not evenly distributed geographically, with areas such as the south-east being underserved. Smallholder farmers are more likely to participate in susu, kuu and other self-help groups, than in cooperatives. Overall, farmers' knowledge of the cocoa sector regulatory and policy framework is limited. Word of mouth and traders are the main sources of information for farmers. Many cocoa farmers are linked to informal traders and take advantage of spot-selling to release capital from their cocoa to meet immediate needs, rather than sell through cooperatives. There are many instances of mistrust between buyers, trader, cooperatives and farmers.

The Land Rights Act 2018 has established a progressive governance framework and a precedence for inclusion, consultation and representation at the community level. Registration of community land is ongoing but progress is slow. Reports of corruption and abuse of power in relation to land tenure are not uncommon.

6. IS THE VALUE CHAIN ENVIRONMENTALLY SUSTAINABLE?

6.1 Environmental indicators

Environmental sustainability is a goal rather than a fixed system state, with no specific thresholds defining sustainability. However, reducing a product's ecological footprint is viewed as progress toward this goal.

Several environmental indicators exist having as main difference what they measure in the cause-effect chain (Figure 6-1). In agri-food systems, simple environmental indicators include field practices like the amount of fertilizer used or nitrogen balance. Assessing the impact of emitted substances on environment is more complex, requiring models that track how emissions spread through air, soil, and water, how they change in the environment, and their effects on living organisms.

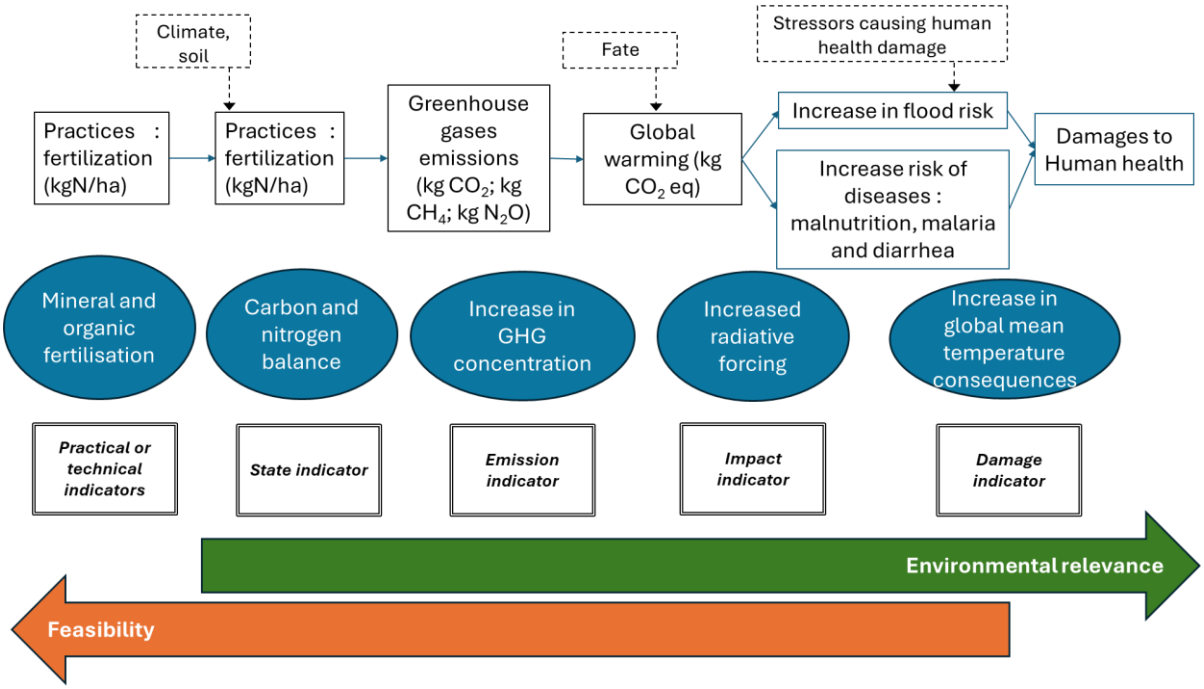


FIGURE 6-1 CAUSE-AND-EFFECT CHAIN FROM GREENHOUSE GAS EMISSIONS TO HUMAN HEALTH DAMAGE
Source : Adapted from Huijbregts et al,. 2016 and Payraudeau and van der Werf, 2005

Life Cycle Assessment (LCA) makes possible to link causes and effects. For example, for greenhouse gases emissions (GHG) and climate change impact, the inventory step details and quantifies practices, resources and emissions (e.g., CO_2, CH_4). The following GHG emissions, impact indicator (Midpoint) estimates temperature increases caused by these emissions using model using global warming potentials (GWPs). Rising temperatures from climate change cause heat stress, expand habitats for disease-carrying organisms, increase food insecurity through crop failures, and worsen respiratory issues due to intensified air pollution. Damage indicator of Human Health (endpoint) quantify these hazards using metrics like Disability-Adjusted Life Years

(DALYs), considering exposure, vulnerability, and adaptation capacity of society combining several models.

Effects of emissions are globally considered because environmental impacts cross geographical boundaries. Pollution, climate change, and resource depletion affect the entire planet, regardless of where emissions occur. By evaluating impacts across all regions, LCA promotes globally responsible environmental management.

In LCA efforts are made to quantify the effects of producing cocoa in Liberia over three final l domains: ecosystems quality, human health, and abiotic resources (mineral and fossil). Climate change and Risks to biodiversity are also addressed as complement.

The results are presented for the impact and damages indicators presented in Table 6-1.

Domains	Description	Indicator and Unit
Mineral and Fossil Resource scarcity	• Stock exhaustion of non-renewable resources depletion • Usage of renewable rate exceeding replenishment	Increased cost of continued resource extraction Unit = US $
Ecosystem Quality	Alteration of functions and structure of natural ecosystems exposed to chemicals emitted and loss of habitat (ex. pH soils change, increase of P and N in water bodies)	Potentially Disappeared Fraction of species over one year Unit = species/year
Human Health	Negative effects on diseases distribution due to chemical emissions (cancer, respiratory and other diseases based on epidemiological studies on human health)	Disability-Adjusted Life Years (DALY) (Reduction in potential healthy life years due to morbidity or premature mortality) Unit = DALY
Climate change	Global Warming Potential (GWP), which represents the additional radiative forcing caused by greenhouse gases over a specific time period.	Unit = kg CO_2 eq per year
Biodiversity loss	The Global Biodiversity Model for Policy Support (GLOBIO) measures the impact of human interventions on ecosystems by indicating the reduction in species numbers compared to a pristine, untouched environment.	Mean Species abundance (MSA) Index Unit= no specific unit but range from 0 to 1

TABLE 6-1 DEFINITION OF STUDIED ENVIRONMENTAL INDICATORS

Source: Authors

6.1.1 Goal and Scope : system boundaries

In this project, the studied system is the cocoa value chain, including all operations of VC actors (Figure 6-2). In Liberia there is no cocoa processing, so the consumption and use of resources necessary for agricultural production and the trading of cocoa beans are considered until arrival at the port of export.

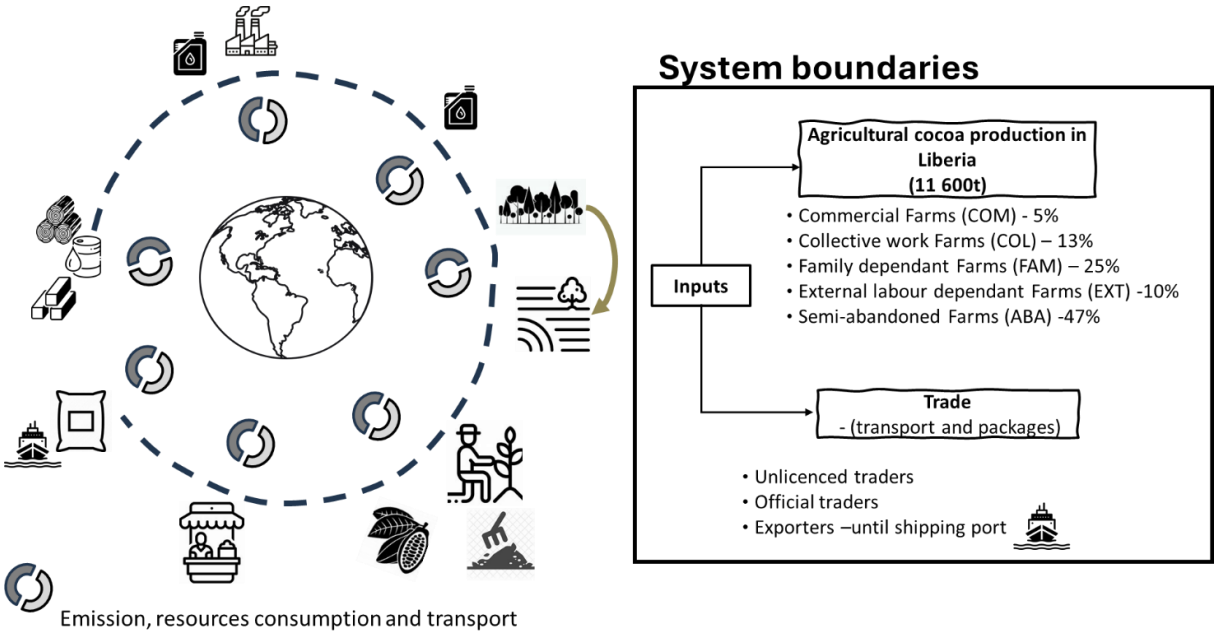


FIGURE 6-2 SCOPE OF THE STUDIED SYSTEM REPRESENTING THE COCOA VC IN LIBERIA

Source: Authors

The data collected represents the reference year 2023 and we consider that it is representative of the last 10 years' practices, as most stakeholders use fairly simple, traditional tools with minimal mechanization.

The results of the LCA are presented and discussed. The detailed hypothesis and data sources are presented in the appendix. This introductory section reviews the main assumptions and data used in the four stages of the Life Cycle Analysis (LCA) (definition and system boundaries, inventory analysis, impact assessment, and interpretation). The environmental analysis was based on the flows and technical coefficients of the sub-sectors and the typology of stakeholders presented in the Functional Analysis (section 2).

6.1.2 Life Cycle Inventories

Functional Unit and Allocation Rules: Expressing results

LCA assesses the environmental consequences of providing a good or service to fulfil a specific function. Functional units are the standardized basis for comparing the environmental impacts or damages of a product. For all stakeholders in a value chain, the primary objective is usually to add value to a specific product and also to generate income. In the case of agricultural production, functions are diverse (providing food, generating income, maximizing land use, among others). Given this diversity of functions, we use multiple functional units to express the environmental efficiency results for cocoa production in Liberia: metric ton, $1,000 of added value computed from economic analysis, and hectare for agricultural production.

In the cocoa VC in Liberia, there are no co-products, so all impacts are allocated to cocoa.

Data Quality

The data used were collected in the field from 95 producers and 12 traders. However, the stakeholders in the value chain generally have very little recorded data on the activities and inputs used. Even data such as yield, area, cocoa tree density, density of associated trees are poorly understood and underreported. To estimate the level of uncertainty of the primary data collected in the field, a qualitative assessment is provided (Table 6-2).

Steps of the VC	Score*	Parameters
Agricultural production in Liberia	4	Yield, density of cocoa trees, total farm area, land use before cocoa, inputs used (fertilizers, pesticides, lime), harvesting and other agricultural practices
	4	Humidity of cocoa beans
	3	Agricultural practices, yields of other crops or productive trees in the same plot
Transports	4	Average distance and type of vehicle
Traders	4	Storage and packaging
Cocoa beans from Ivory Coast and Ghana	2	Data from international database (World Food database) representative for cocoa beans production in Ivory Coast and Ghana used for the export market (Nemecek et al., 2019)

Best score 5: Primary information from records, 4: Primary information with no records, 3: Primary information but no clear knowledge of the interviewed person, 2: Information based on literature, 1: Information not available

TABLE 6-2 QUALITATIVE ESTIMATION OF DATA QUALITY
Source: Authors

Agricultural production

Cocoa producers in Liberia rely on minimal inputs and limited management practices. The farms were classified in five categories according to the existence or not of external support, the farm age, the type of main labor (family or external) and revitalisation of farms; as detailed on functional analysis. The revitalisation involves improving tree productivity through maintenance practices like under-brushing, pruning, removing excess shade, and eliminating diseased pods.

Table 6-3 provide comparative insights into the scale of operations, productivity, and age of plantations across farms per category or type : Semi-abandoned (ABA), Family dependant (FAM), External labour dependent (EXT), Collective work (COL) and Commercial (COM) farms.

The data shows high variability, with an average farm size of 2.5 ha (0.2 to 18 ha), though only part is under production. Cocoa yields are low, averaging from 107 to 194 kg/ha compared to regional averages of yield 300 to 400 kg/ha for traditional smallholder farms in West Africa.

Variables	Cocoa area			Yield/ha			Cocoa tree density/ha			Years since creation		
	Average	Min	Max	Average	Min	Max	Average	Min	Max	Average	Min	Max
Semi-abandoned (ABA)	2,7	0,2	16	180	23	583	1232	56	2601	29	9	73
External labour dependent (EXT)	1,4	0,4	4,5	107	11	225	1059	133	2778	32	6	69
Family dependant (FAM)	2,4	0,4	14	180	56	750	1269	347	3056	20	5	63
Collective work (COL)	2,9	0,9	4,5	162	38	375	951	167	2341	28	11	60
Commercial (COM)	3,4	2,7	4,1	194	138	250	1310	954	1667	7	5	8

TABLE 6-3 DESCRIPTION OF MAIN CHARACTERISTICS OF FARMS AND THEIR VARIABILITY

Source: Authors

Tree density around 1,200 trees/ha, similar to agroforestry systems in West Africa; however, there is an important dispersion of the data. Semi-abandoned systems tree densities range from 56 trees to 2061 trees per hectare. There was very difficult to check with farmers the technical numbers since there are no records nor precise knowledge of the cocoa crop specifically. Most plantations are about 27 years old (maximum of 73 years for ABA farms), excepted commercial farms which are less than 8 years old.

Very low densities are probably linked to complex agroforestry systems and no revitalisation practices. There are few practices of renewal, implying the extension of cocoa over forest or wooden areas and only in COL and COM farms (representing 18% of the total Liberia production in 2023). Most of cocoa crops were planted using older farmland with annual or perennial uses (Table 6-4).

	Years since revitalisation				Land use before cocoa				
Farms	<5	5 to 10	>10 to 20	>20	Forest	Bushes	Perennial crops	Annual crops	Other
Semi-abandoned (ABA)	2	5	14	81	17	11	15	54	3
Family dependant (FAM)	63	37			18	4	21	57	
External labour dependent (EXT)	21	5	17	81	32	3	25	39	3
Collective work (COL)	100				67	17		17	
Commercial (COM)					50			50	

TABLE 6-4 PROPORTION OF YEARS SINCE REVITALISATION AND LAND USE BEFORE COCOA CROPPING

Source: Authors

According to farmers and experts, the level of shading in farms can be divided in tree: low, medium and high. In most of types, including COM farms, the shading level was mainly medium and high. The low levels of management are reflected in the crop and post-harvest residues management were they are mostly left on field (Table 6-5.

Farms	Level of shading in the farm			Crop residues management		Post-harvest residues management	
	Low	Medium	High	Burned	Left on field	Burned	Left on field
Semi-abandoned (ABA)	17	54	29	2	98		
Family dependant (FAM)	21	50	29	0	100	36	64
External labour dependent (EXT)	8	43	39	2	98		
Collective work (COL)	50	50	0	17	83	3	67
Commercial (COM)	0	50	50	0	100	0	100

TABLE 6-5 LEVEL OF SHADING AND RESIDUES MANAGEMENT

Source: Authors

The most significant factors that influence the biogenic carbon balance are i) the burning of pruning residues and post-harvest waste, ii) the replacement of forest with cocoa rather than another crop, iii) the rehabilitation status of the plantation, iv) and the age of the cocoa trees. The quantified results used in the inventories are presented in the Table 6-6. Even if the sample is not statistically representative, the results offer an idea of current trends by county and practices.

Type of farm		n	Counties	Burned pods (t C/ha*y)	C seq in biomass (t C/ha*y)	Biomass residues to soil (t C/ha*y)	SOC turnover (t C/ha*y)	Residues left on field (N) (kgN)
Semi-abandoned (ABA)	*Burned residues*	*4*	*Bomi (1), Lofa (3)*	*0,10*	*14,5*	*57,5*	*0,092*	
	Revitalisation LU_forest	*6*	*Grand gedeh (2), River Gee (4)*		*45,6*	*20,0*	*-0,016*	*14,18*
	Abandoned	*25*	*Bomi (2), Bong (1), Grand Gedeh (3), Lofa (2), Nimba (11), River Gee (6)*		*31,6*	*24,4*	*0,045*	*13,18*
	Average	**35**		**0,01**	**32,0**	**27,4**	**0,040**	**11,85**
Family dependant (FAM)	*Revitalisation LU_forest*	*4*	*Grand Gedeh (4)*		*37,1*	*18,7*	*0,080*	*16,84*
	Revitalisation LU farmland	*10*	*Bomi (3), Bong (1), Lofa (3), Nimba (3)*	*0,04*	*20,2*	*31,0*	*0,069*	*6,39*
	Recent crop	*9*	*Grand Gedeh (5), Nimba (2), River Gee (2)*		*42,2*	*16,6*	*0,032*	*7,97*
	Average	**23**		**0,02**	**31,8**	**23,2**	**0,056**	**8,83**
External labour dependent (EXT)	*Burned residues*	*10*	*Bomi (1), Bong (3), Lofa (6)*	*0,13*	*18,9*	*27,1*	*0,100*	
	Revitalisation LU_forest	*6*	*Grand Gedeh (5), River Gee (1)*		*12,2*	*16,2*	*0,021*	*21,06*
	Abandoned	*6*	*Bomi (3), Grand Gedeh (1), Nimba (2)*		*7,6*	*28,3*	*0,026*	*22,47*
	Revitalisation LU farmland	*6*	*Lofa (4), Nimba (2)*	*0,04*	*13,1*	*27,6*	*0,043*	*3,39*
	Average	**28**		**0,05**	**13,8**	**25,1**	**0,055**	**10,05**
Collective work (COL)	*Revitalisation - LU_forest*	*4*	*River Gee (4)*		*41,8*	*18,7*	*0,031*	*7,80*
	Abandoned	*2*	*Bong (2)*	*0,04*	*3,8*	*11,1*	*-0,018*	
	Average	**6**		**0,04**	**29,1**	**16,1**	**0,014**	**5,20**
Commercial (COM)	*Recent crop - LU_forest*	*1*	*River Gee*	*-*	*48,8*	*21,2*	*0,169*	*6,63*
	Recent crop	*1*	*River Gee*		*81,9*	*31,3*	*0,331*	*8,03*
	Average	**2**			**65,3**	**26,3**	**0,250**	**7,33**

n*: effectifs;** Abandoned: no managed crops from more than 20 years**;** *Burned residues*; Revitalisation - LU farmland: Revitalisation with previous agricultural and farmland use **;** Revitalisation *LU_forest*: Revitalisation with forest or wooden areas previous land use (no differentiation on primary or secondary forest)**;** Recent crop: recent farms.

TABLE 6-6 ELEMENTS OF THE BIOGENIC CARBON BALANCE OF AGRICULTURAL COCOA BEAN PRODUCTION BY TYPE OF FARM

Source: Authors

The burning method is used by 15% of producers mainly from semi-abandoned (ABA) and External labour dependents (EXT) categories in Bomi Bong and Lofa. The land use change from wooden areas is considered as a carbon emission spot when crops are replacing forestland no other farmland uses. All categories include this kind of practice, ranging up to 23% of the total sample. These farms are generally located in Grand Gedeh and River gee counties. The age of cocoa trees

depends also on the rehabilitation or not of farms. In the groups of Family dependent (FAM), Collective work (COL) and EXT, around 19% of farms have been rehabilitated in the last 4 years after almost 40 years of existence. Those farms are located in Bong, Bomi, Lofa and Nimba. There are also 11% of recent farms (FAM and COM) aged in average 6.5 years located in Nimba, Grand Gedeh and River Gee.

In the agricultural production of cocoa Liberian farms, the following potential sources were modelled:

- Inputs : only pesticides are used in minimal doses. It includes:
    - Manufacturing of inputs (some farmers use small quantities of pesticides, in particular insecticides and fungicides) and their transport
    - Emissions of using active molecules (concentration 1%)
- Two possibilities when managing pruning and under-brushing residues and harvest residues :
    - Left on field to be used as organic fertilizer (Nitrogen and Carbon emissions) after the decomposition of residues left on field, or
    - Burning residues which generate carbon dioxide emissions
- Land occupation
- Land Use transformation according to the last 20 years (as international methodologies recommend):
    - From forest or woodland
    - From farmland uses : annual and other permanent crops
- Other biogenic carbon balance items:
    - Biomass carbon sequestration (Above and Below biomass)
    - Soil Organic Carbon turnover linked to land use transformation (rehabilitation or recent crops)

For each damage and impact indicator, the results of the contribution analysis per type of farm or per type of trader are presented.

Trading activities: storage, packaging and transport

The trading stage involves handling operations for storage, packaging, collection of cocoa sun-dried beans in bags of 120kg, transport, and storage. For transportation, only journeys using vehicles were accounted for (animal-drawn carts, bicycles, or walking was not included). The average distance and vehicle capacities (motorbikes, vans, and trucks) were gathered from interviews. It was assumed that vehicles do not return empty. For transport, as well as for machines and packaging, emissions of fine particles, greenhouse gas (GHG), heavy metals, and other emissions related to fuel combustion and the manufacturing and use of trucks were included, based on life cycle inventories (LCIs) available in existing databases adapted to African conditions.

6.2 Results: Environmental Assessment of the Cocoa Value Chain in Liberia

6.2.1 Relative contribution of the Value Chain: Damages and Impacts

Table 6-7 presents the quantitative results of damages and impact

Indicators		Units	Absolute Value (11 600 tons of dried bean cocoa)	% attributed to	
				Agricultural production	Trading
Damages	Human health	DALY	33	97	3
	Ecosystems	species.yr	10	99.9	0.1
	Resources	USD2013	257 307	30	70
Impact	Climate Change	t $CO_{2\ eq}$	3 403	78	22

TABLE 6-7 RELATIVE CONTRIBUTION TO ENVIRONMENTAL DAMAGES AND IMPACT BY STEP FOR 11 600T COCOA VALUE CHAIN IN LIBERIA

For the 11,600 tons of cocoa beans produced and exported from farms in Liberia, agricultural production is the major contributor to damage to ecosystems (99%), human health (97%), and the impacts of climate change (78%). Trading step accounts per 70% of resource depletion damages (mainly due to the use of fossil energy). LCA is a comparison tool used to reduce the environmental impact of value chains. It helps identify where most emissions and resource use occur, guiding efforts to reduce them. In Figure 6-3, results are shown as proportions, highlighting where to focus attention for each environmental goal.

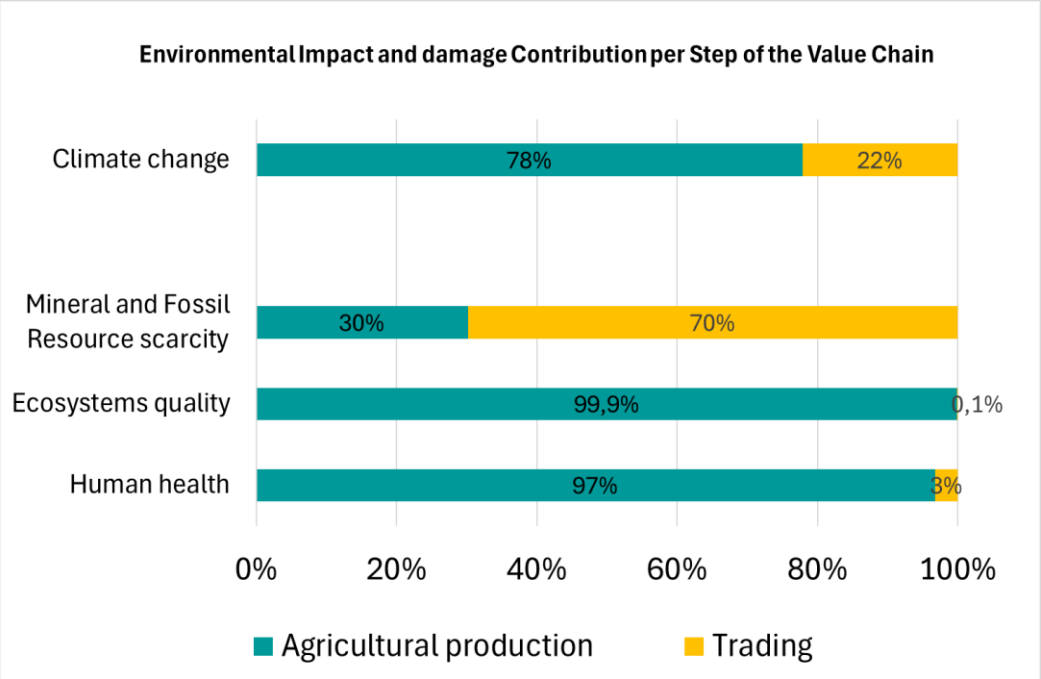


FIGURE 6-3 RELATIVE ENVIRONMENTAL CONTRIBUTION PER STEP OF THE VC FOR 11 600 T OF COCOA

Source: Authors

This relative contribution is useful to deep each environmental domain and link effects and causes. However, as explained in the methodological section, environmental efficiency is measured based on a specific function. In agricultural value chains, efficiency can be linked to a product (metric

tons) or to the creation of added value ($). Using the added value calculated in the economic analysis for each stakeholder, it is possible to express the impacts in relation to a monetary unit and trade-off between growth and environmental impact.

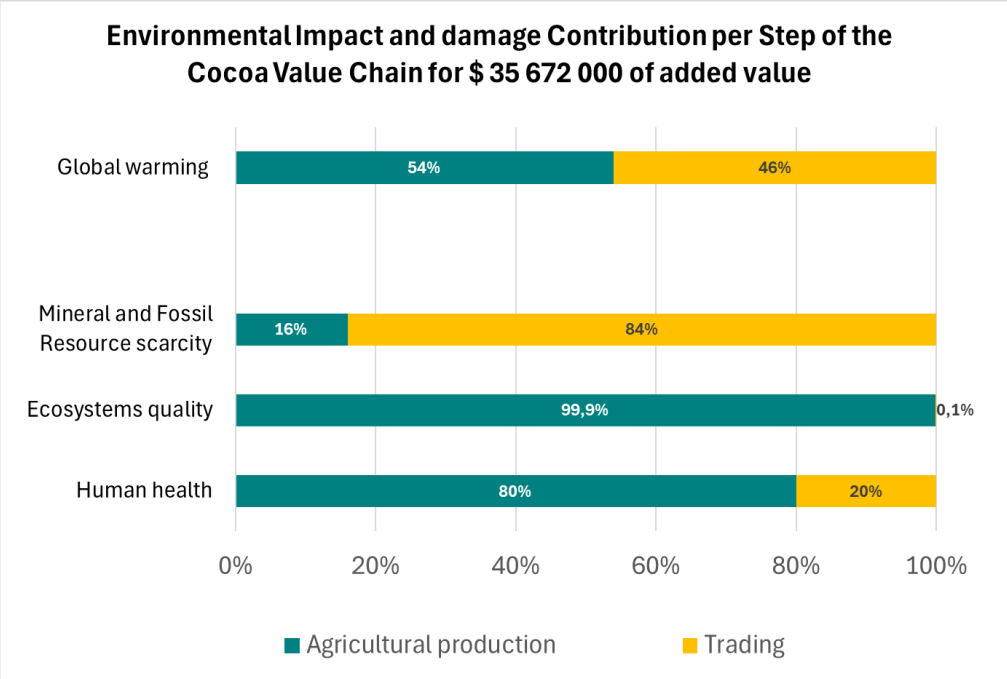


FIGURE 6-4 RELATIVE CONTRIBUTION TO ENVIRONMENTAL DAMAGES AND IMPACT BY STEP BY TOTAL ADDED VALUE (USD$ 35 672 000) COCOA NATIONAL VALUE CHAIN IN LIBERIA

Source: Authors

The key message of Figure 6-4 is that agricultural production seems more efficient than trading since the contribution of the trading step is higher for human health, mineral and fossil resources and climate change indicators compared to results per metric tons. Different functional units offer insights into various lifecycle stages, helping to understand how changes in one stage impact overall performance. Based on these relative results, we can examine each environmental target to identify the main sources of impact for each type of stakeholder.

6.3 Sources of potential damages per Area of Protection

6.3.1 Potential damages of the VC on human health

The damages on human health and ecosystem areas of protection are mainly originated in the agricultural stage. Burning of pruning and post-harvest residue is the main driver of the VC impact on human health by fine particles emissions (93% of total damages).

The contribution of the cocoa value chain in Liberia over human health damages is quite low compared to the national burden of disease estimations (Ilesanmi, 2018), about 0.06% compared to the total of 57,207 disability-adjusted life-years (DALYs), with a 95% uncertainty interval ranging from 35,893 to 79,052, in Liberia in 2016.

To maintain or improve such as low level of damages on health, the burning practices should be avoided or better regulated. Even if less than 23% of farms use those practices (pruning and post-harvest residues burning), those emissions represent the majority of damages in human health. (Figure 6-5). The second source of emissions affecting human health are related to pesticides manufacturing and transports although very low quantities are used. Developing local phytosanitary products is a interesting way to limit this contributor.

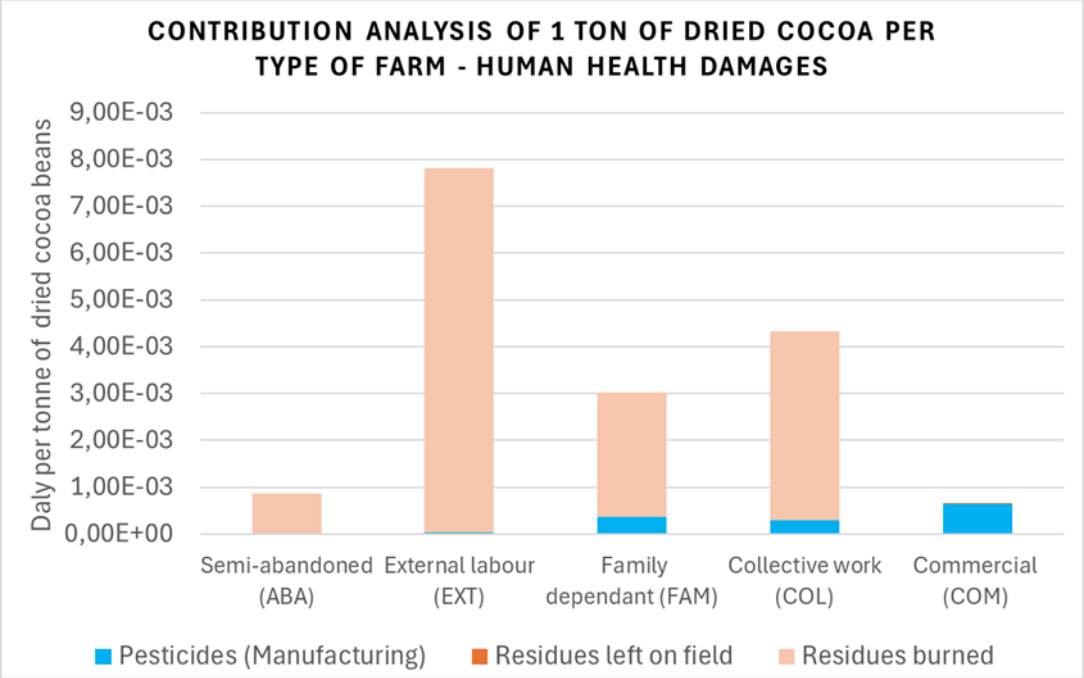


FIGURE 6-5 CONTRIBUTION ANALYSES PER 1 TON OF DRIED COCOA BEANS, HEALTH DAMAGES

Source: Authors

The trading operations represent 20% of damages on health for the national cocoa beans and this proportion reduces to 1% when informal cocoa is included. Most of damages are originated by transport combustion emissions.

6.3.2 Potential damages of the VC on ecosystem quality

The impact pathway of land use, involves two main effects on terrestrial species: changes in land cover, which directly alter habitats and species composition, and the actual use of the land, such as agricultural and urban activities, which make the land unsuitable for many species.

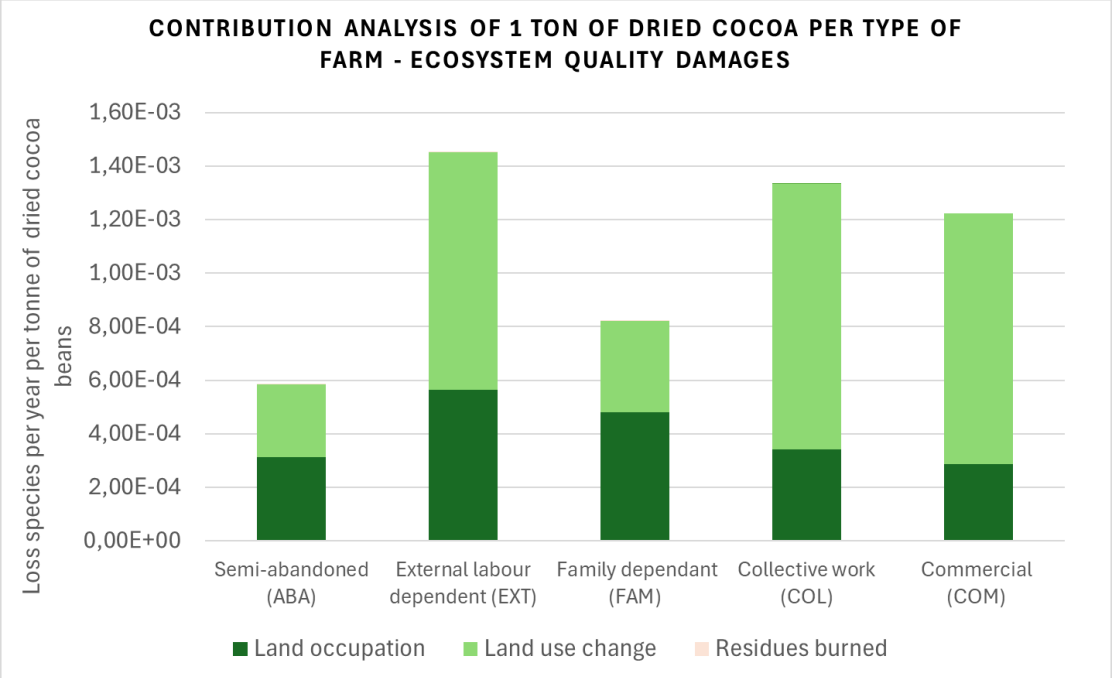


FIGURE 6-6 CONTRIBUTION ANALYSIS OF 1 TON OF LIBERIAN COCOA ON ECOSYSTEM QUALITY DAMAGES

Source: Authors

The type of land used before cocoa plantations has significant consequences. A key goal is to revitalize and renew plantations on farmland rather than clearing vegetation and forests. The land occupation is linked to the agricultural use of the land. Land use change includes the change of land use over the last 20 years, transformation from farmland (perennial and annual crops), recovering vegetation (bushes and woodland) and forest. ABA, FAM and EXT land use change from woodland or forest represent less than 20% of farms but the land use change represent more than 40% of ecosystem quality damages (Figure 6-6). According to data collected, in COL an COM farms, the previous land use was at least 50% of woodland and forest, but it represents more than 74% of the damages.

6.3.3 Potential damages of the VC on resource depletion

The endpoint indicator Resource Depletion evaluates the long-term impact of resource extraction and consumption on the availability of mineral and fossil resources. It quantifies the potential depletion and the cost of new extractions. At the national VC scale, 99% of damages are on fossil resources due to trading operations. The fuel resources are mainly used in the pesticides manufacturing (72%) and 21% in trading operations of these informal cocoa beans.

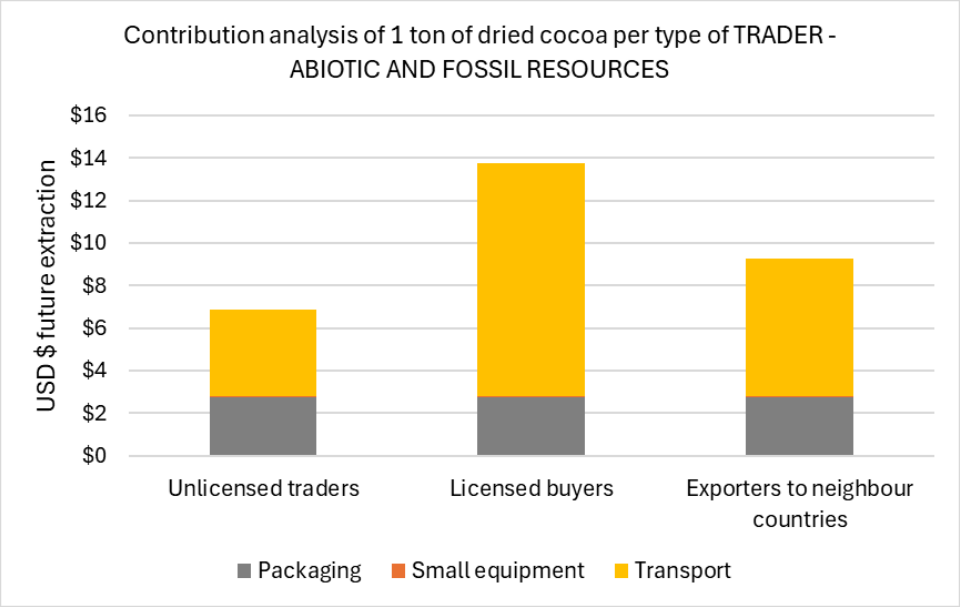


FIGURE 6-7 CONTRIBUTION OF 1 TON OF DRIED COCOA PER TYPE OF TRADING ACTORS ON MINERAL AND FOSSIL RESOURCES

Source: Authors

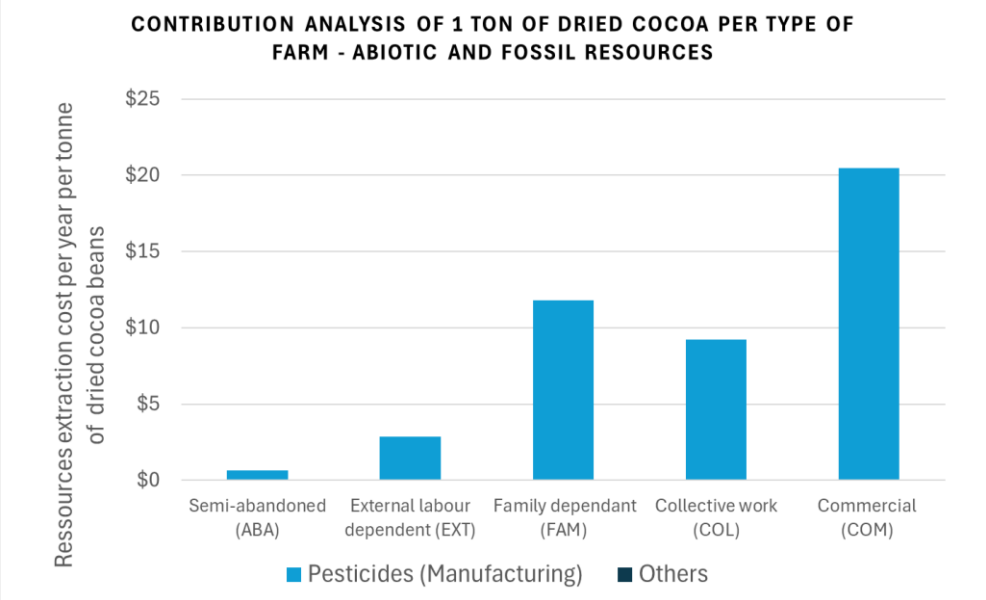


FIGURE 6-8CONTRIBUTION OF 1 TON OF DRIED COCOA PER TYPE FOR MINERAL AND FOSSIL RESOURCES

Source: Authors

Cocoa transportation in Liberia faces significant challenges due to underdeveloped infrastructure and logistical inefficiencies. The sector was severely impacted by years of civil conflict, leading to a shortage of modern equipment, poor road networks, and limited processing capabilities. High operational costs and outdated facilities further hamper efficient transport and market entry, making Liberian cocoa less competitive internationally (ACET, 2023). Additionally, issues like

limited access to agricultural inputs exacerbate these logistical challenges[13]. The quality of roads and the kind of vehicles are modelled in LCA. Thus, inefficient transport consumes more fuel, additives and have a lower useful life

6.3.4 Potential impact of the VC on climate change

The main source of GHG emissions in the VC is agricultural production which is consistent with the dominant weight of production in the total VC activities. The greenhouse gas (GHG) emissions from traditional farms in Liberia are relatively low due to agricultural practices and low inputs use. Burning residues and land use change contributes to Climate change. Agricultural production accounts for approximately 64% to 78% in the chain of total emissions following the functional unit, while the remainder is attributable to transportation during the trading process.

Recent estimates place the total GHG emissions from Liberia's national cocoa value chain at around 5.5 million [14] tons of CO_{2eq} per year (EPA, 2020), excluding land use changes and biogenic carbon balances. Including Land use change, the total GHG emissions are significantly larger. In 2021, they were about 19.21million tons of CO_{2eq} (Jones et al., 2024).

The Land Use Change is a major contributor to GHG in Liberia. However, cocoa contributes at very reduced level with traditional systems closer to agroforest complex systems. The results of the Cocoa VC in Liberia represent 0.006% of the country's total GHG emissions. Current trends of deforestation to plant cocoa might have a significant impact on Climate change.

The Table 6-8 presents the quantified emissions of kg CO2eq for three different functional units per type of farm. The traditional cocoa production systems emissions per kilogram of dried cocoa beans are estimated at 161 grams of CO_2 equivalent. These results are very low compared to international databases (WFLDB, Nemecek et al., 2019) where cocoa beans of different countries are quantified based on national statistics and specific agricultural practices per country. GHG emission of cocoa beans dried at farm have important variability from 1.6 kg CO2 eq to 28.7 kg CO2 eq..

Functional unit	Semi-aban (ABA)	External labour (EXT)	Family (FAM)	Collective work (COL)	Commercial (COM)
1 ton	*42,8*	**362**	236	271	204
1 hectare	*6,8*	32	33	39,5	**35,4**
1000USD	*20,5*	596	116	210	**74,5**

TABLE 6-8 EMISSIONS OF GHG IN KG CO2 EQ PER TYPE OF FARMS AND FUNCTIONAL UNITS

Source: Authors

The environmental efficiency of cocoa production at farms is presented for the three functional units (to show if there are trade-off between efficiencies and functional units. ABA farms have the

[13] THE REPUBLIC OF LIBERIA NATIONAL EXPORT STRATEGY - COCOA EXPORT STRATEGY 2014-2018 - https://www.public.moci.gov.lr/doc/Liberia_National_Cocoa_Export_Strategy2014_2018.pdf

[14] 5.990GgCO2eq 2017 GHG inventory (EPA, 2020)

lowest carbon footprint by ton of cocoa, per hectare and per 1000$ of added value. These farms have almost no inputs and no management practices, being close to a natural harvesting. Per ton of cocoa, the EXT farms have the highest impact levels since they have the lowest yields which seems counterintuitive since they invest in external labour and revitalisation practices. Probably, they have other associated crops but technical practices and producer strategies needs to be better characterised. Per hectare and added value, COM farms have the highest impacts, due to the recent plantation of these systems, the use of some inputs such as pesticides.

The Figure 6-9 show the contribution analysis of farms. Burning practices and manufacturing of pesticides are the most important sources of GHG emissions. Land use change is not visible because here the results are an average by type of farm and only 23% of farms have a land use change from forest, most of which older than 20 years. However, it is possible to show the impact of land use change compared to burning residues making a sensitivity analysis using data of specific farms practices.

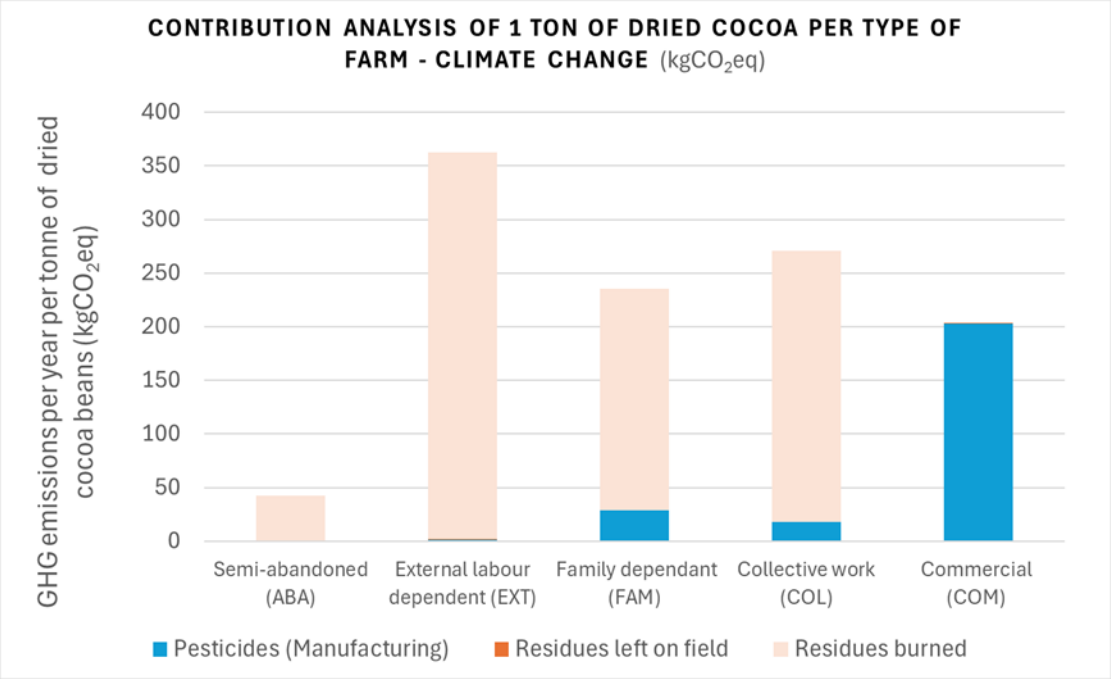


FIGURE 6-9 CONTRIBUTION ANALYSIS TO CLIMATE CHANGE POTENTIAL PER TYPE OF FARM IN LIBERIA

Source: Authors

At present, Liberian cocoa farms have very little management, most of famers have different activities. There is an important fraction of farmers that are picking cocoa from very old plantations (almost 30 years) having almost no environmental consequences at farm level. Comparing these systems with intensive conventional systems in the near producing countries (Ivory Coast and Ghana) is possible, using our results and data from international data bases of cocoa production at farm in different countries (World Food LCA Database[15]). Data of this databases represent agricultural practices of at least 10 years statistics. The system covers cradle-to-gate processes, including planting, harvesting, fertilization, and emissions from crop residues. Agroforestry

[15] https://quantis.com/who-we-guide/our-impact/sustainability-initiatives/wfldb-food/

systems are implemented including both native and planted shade trees. Conventional production is also available for Sun dried cocoa beans with statistical data from FAO.

These results are compared referring to the system that have highest level of emission (conventional practice for cocoa production in Ghana Figure 6-10).Accordingly 1 ton of cocoa produced in Liberia has almost no impact compared to 1 ton of cocoa from conventional systems of Ivory Coast or Ghana, even comparing to agroforest systems in the case of Ghana. This is a very interesting opportunity if the value of the Liberia's cocoa is increased (sorting, processing) without promoting more input intensives production practices Otherwise, if the strategy to develop cocoa rely on the promotion of intensive practices the impact on climate change and probably in other damages would increase dramatically.

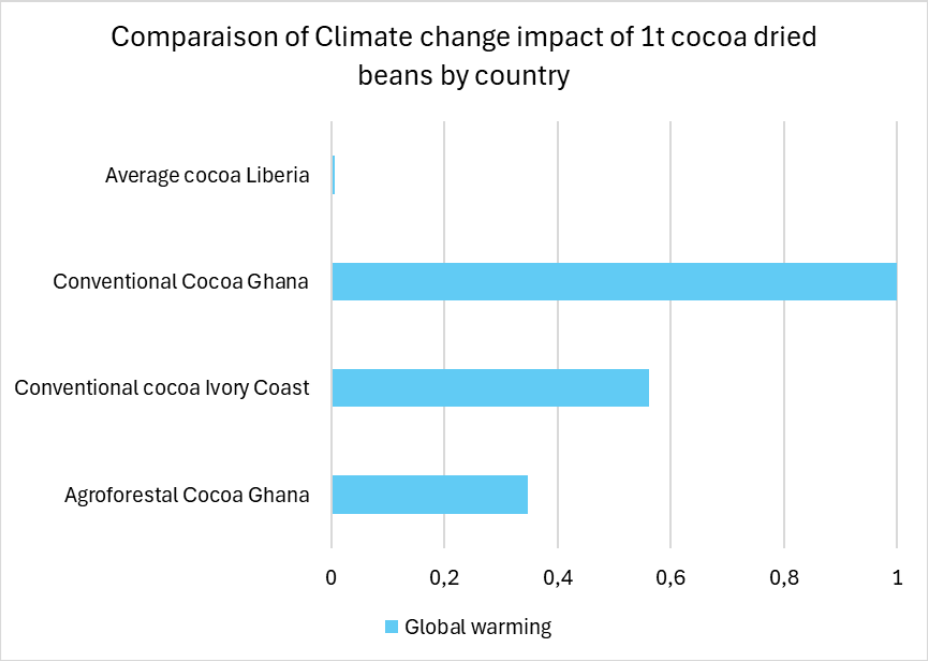


FIGURE 6-10 COMPARISON OF 1 TON OF COCOA GHG EMISSIONS PER TYPE OF COCOA

Source: Authors

6.3.5 Sensitivity analysis of main sources of damages and impacts

Using as example the ABA farm type with the lowest GHG emissions and damages on health and on ecosystems, we can estimate the relative importance of key practices variability over results: burning residues and land use change from forest. Here we use individual data from farms, not an average per category. (Figure 6-11). The most sensitive practice to a source damage set the benchmark (100%), against which the other practices are compared.

The yields are closed between these farms (146kg/ha, 150kg/ha and 180kg/ha). The sensitivity results compare the gap between the practice with the highest impact (100%) the other practices. The average ABA farm GHG impacts increase from 5 to 10 times per hectare when including Land use change ("ABA LUC forest") and burning emissions ("ABA residues burned"), respectively. These practices also affect the damage indicators. Human health damage is multiplied by 9 when residues are burned and ecosystem damages per 3,4 times when forest is replaced by cocoa crops.

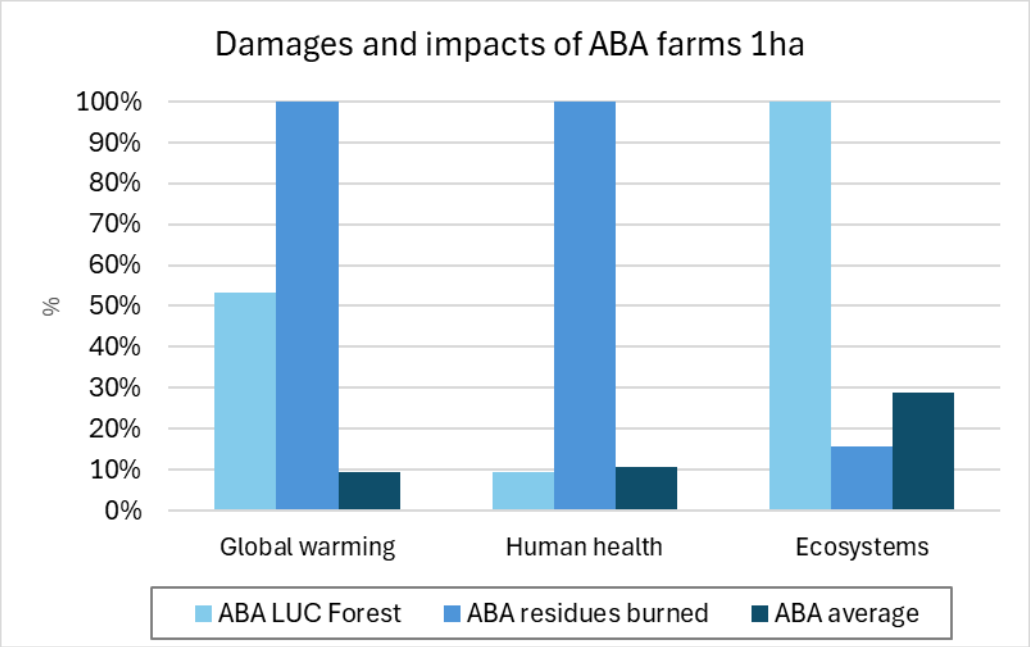


FIGURE 6-11 QUANTIFIED EMISSIONS OF GHG FOR SEMI-ABANDONED FARMS INCLUDING LAND USE CHANGE FROM FOREST, RESIDUES BURNED AND THE AVERAGE FARM VALUE

Source: Authors

6.3.6 Risk on Biodiversity

As a complementary approach the indicator MSA (Mean Species Abundance) is presented. MSA is a metric used in the GLOBIO model to assess biodiversity. It represents the average abundance of species in a given area compared to their abundance in undisturbed ecosystems. An MSA value of 1 indicates an ecosystem where biodiversity is intact and unaffected by human activity, while an MSA value close to 0 suggests severe biodiversity loss (Figure 6-12). The GLOBIO model uses various data on human activities, such as land use, climate change, and pollution, to predict their impact on ecosystems and calculate the MSA as a measure of the overall state of biodiversity.

For Liberia, the data highlights significant land use changes, with agriculture occupying over 53% of the area and forest cover at 33%. The mean MSA is relatively low at 0.44, indicating substantial biodiversity loss (Figure 6-12). Cocoa production is located mostly in 6 counties: Bong, Bomi, Nimba, River Gee, Lofa and Grand Gedeh. In the survey, farms with land use change from forest to cocoa are located in 3 counties: Nimba, River Gee and Grand Gedeh. In these counties de MSA is 0.52. Recent farms (FAM, COM and SCH) aged on average 6.5 years.

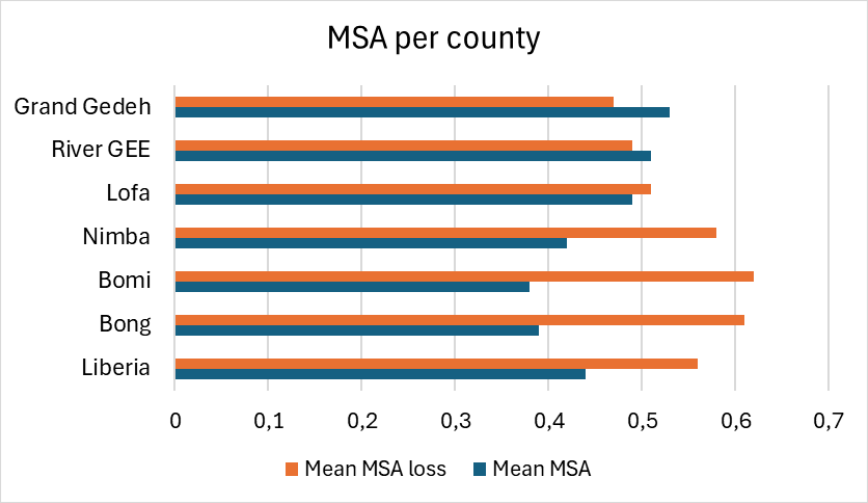


FIGURE 6-12 MEAN SPECIES ABUNDANCE PER COUNTY WITH COCOA PRODUCTION IN LIBERIA
Source: Authors

Pressures from land use, human encroachment, and climate change are major contributors to this decline, particularly affecting plants. Despite protected areas covering 11% of Liberia (Figure 6-12), the overall environmental impact remains concerning. In the productive counties of Nimba, River Gee and Grand Gadeh, the natural and forest land cover are still preserved. New plantations threaten biodiversity by causing deforestation and habitat fragmentation, leading to species decline and ecosystem disruption. This expansion also heightens greenhouse gas emissions and weakens ecosystem resilience.

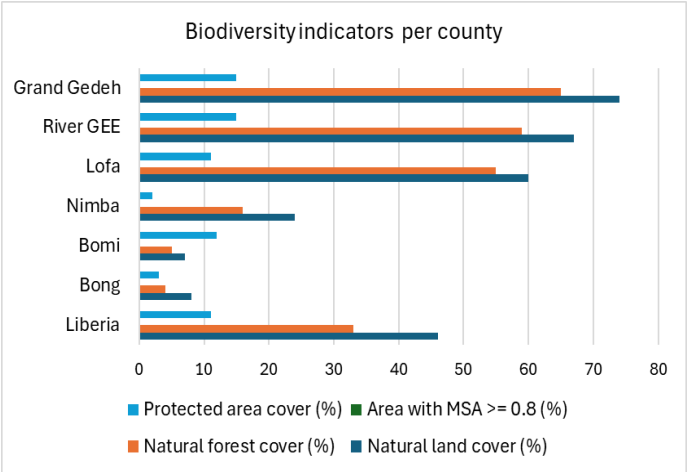


FIGURE 6-13 BIODIVERSITY INDICATORS OF GLOBIO COVER AREA
Source: Authors

When analysing biodiversity in Liberia, the current trends of deforestation are the main important driver to consider in the VC. According to the data presented by the Global Forest Watch (2024), between 2001 and 2023, Liberia experienced a loss of 2.36 million hectares of tree cover, representing a 25% reduction in its tree cover since 2000 (Figure 6-13). For Masolele et al. (2024), African forests face significant decline due to land-use conversion, primarily for small-scale cropland and commodity crops like cocoa, oil palm, and rubber. Liberia, just after Ghana and Ivory Coast, experience the highest rates of forest conversion. These authors estimate to 15% of

deforestation in Liberia as caused by cocoa sector. These areas are part of a broader trend of commodity crop expansion in western and central Africa, contributing to forest loss. Additionally, Liberia shows hotspots for roads and settlements, indicating human encroachment and infrastructure development (Figure 6-14). The findings underscore the urgent need for targeted conservation strategies and policy interventions to mitigate future forest loss in the region. The spatial approach of these indicators and the complex systems make difficult to isolate the direct pressure of cocoa over the forest and biodiversity.

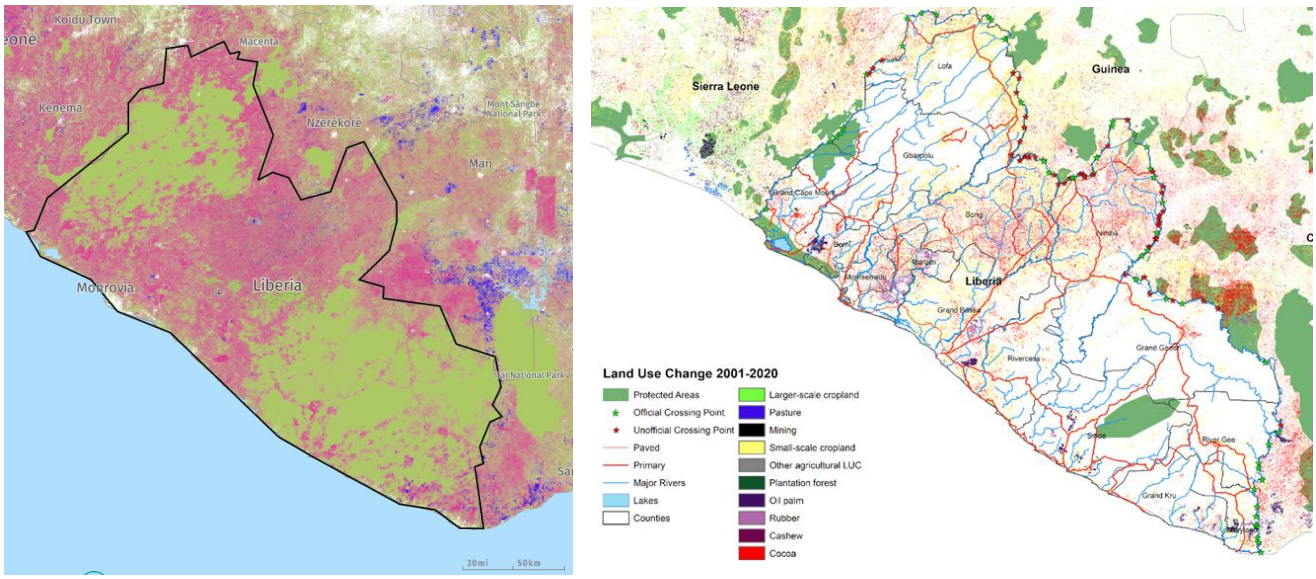


FIGURE 6-14 TREE LOST COVER FROM 2001 TO 2023 AND AND LAND USE CHANGE FROM 2001 TO 2020
Sources: Global Forest Watch (2024) and Masolele et al. (2024)

Sassen et al. (2022) emphasized that in countries like Liberia and Cameroon, where large areas of suitable forests for cocoa exist, adaptation strategies to prevent biodiversity loss are needed. Identifying regions with high biodiversity and ecosystem service values across the region to create land use planning development could be a promising option.

6.4 Environmental challenges of the cocoa VC in Liberia

The quantified damages and impacts of cocoa production in Liberia are low compared to literature and inventories of cocoa production in neighbouring countries (Ghana and Ivory Coast). However, this is mainly because most of the farms from which data was collected use very few inputs. The main environmental hotspots in the agricultural production are the burning practices of pruning residues, the manufacturing of pesticides used and the land use changes when recent.

The results indicate that the agricultural production stage is the largest contributor to environmental harm, particularly in terms of human health, ecosystem damage, and climate change. Improving sustainability in Liberia's cocoa sector requires addressing key hotspots such as land-use change, residue burning, and inefficiencies in the trading process. Land-use changes,

from wooden surfaces or forest in recent farms, might have long-term ecological impacts, while residue burning contributes to human health issues. This is a promising opportunity if current traditional systems are enhanced, especially avoiding burning practices (mist of farm don't used), producing phytosanitary products locally and revitalising land with previous agricultural uses (annual or perennial crops). However, if the strategy to develop cocoa involves adopting intensive practices from highly productive countries, the impact on climate change and other environmental damages could increase significantly.

The practice of burning crop residues significantly contributes to particulate emissions, which can affect health and increase greenhouse gas emissions. Yet, this method is often used to prevent pest and disease issues. This topic needs to be deepened as well as post-harvest processes which are a barrier to a better quality of cocoa beans to access more exigent markets
The current cocoa plantation expansion in southeastern region at the expense of forest is a major threat for the Liberian cocoa VC environmental impact. These new farms are not yet productive so excluded from the reference year. However, these farms represent a critical threat for cocoa sustainability for the Liberian cocoa VC.

7. LESSONS LEARNED AND CHALLENGES

7.1 Overarching insights

The Government of Liberia considers agriculture as a key priority for economic growth and development. Agriculture remains the mainstay for 60%-70% of the population, mainly in the form of smallholder production and associated, informal labour opportunities. Liberia is vulnerable to global food price volatility and food insecurity. Cocoa is being grown in many parts of the country, and almost exclusively by smallholder farmers and is a source of informal employment for other members of the community and represents the second most important agricultural exports for the country. For some time, the cocoa sector has been operating with little or no enforcement of regulations or coordination between stakeholders. Liberian cocoa is currently characterised by low quality and low yields (far below its potential), and impacted by the Ivoirian Cocoa VC dynamics (area expansion in the southeast and informal trade flows). Poor transport infrastructure, lack of market integration, limited access to inputs and services and inefficient farming practices contribute to this picture.

The cocoa VC in Liberia is fairly straightforward in terms of levels of organisation and interactions between players, but it is very poorly documented, mainly because it is largely based on informal practices. The study contributes to a deeper understanding of the VC feature through the formulation of a small holder typology, differentiating potential services and developing strategies associated to those farms. For instance, it considers so called abandoned farms, which actually continues to supply cocoa even after 30 years of planting. Even if the income generated is below the potential revenue from cocoa have an important function in households. The study focused on cocoa production and did not investigate the whole farming systems. It is important to keep in mind that most farms, even commercial ones, have several species associated that probably are also sold or contributing to food security.

From an economic perspective, the cocoa VC generates low value added because of the low average productivity, of low productive cocoa cropping systems, and while informal trade flows from Côte d'Ivoire generate limited value added.

However, profit rates are high for most types of producers, mainly because production costs are very low, based on rudimentary equipment and unpaid family labour. A large proportion of national production is more akin to picking pods than to running a farming system. This activity generates only a modest income, around USD 400 per year per household (with an average of around 6-7 people), whereas the average per capita income is around USD 650. The small sums earned from cocoa production by the majority of farmers mean that they are unable to invest in this activity to increase their yields. The same is true of most unlicensed traders, who are unable to improve the quality of their service to small farmers. A large part of the CVC is therefore stuck in a low-intensity exploitation and marketing model.

This situation, in which national production has plateaued for at least ten years, will be challenged in the medium term by the expansion in cocoa production by small scale farmers taking place in

the south-eastern counties of Liberia. This area is likely to become the next main cocoa production basin, despite the fact that it is poorly connected to Monrovia and is developing in an informal manner, to the detriment of natural areas. The future impact of this activity on macro-economic aggregates remains difficult to assess.

From a social perspective, the predominance of smallholder producers represents a significant opportunity but also a challenge. Cocoa offers an important source of cash income. The value of the cocoa can be realised through different trading routes, giving smallholders the option of quick access to their investment through spot-selling or getting higher prices through agreements with buyers and cooperatives. Cocoa, along with other tree crops, is seen as one route for socioeconomic improvement. However, there are distinct geographic differences in farmers' ability to access markets and support services, both at the macro and micro level. Overlain with this, are differences in terms of food security, childhood malnutrition, educational attainment and provision of infrastructure, which make certain geographies more vulnerable to changes in the CVC that will impact on household income.

Liberian cocoa comes from very old plantations, with little management and inputs used. These farms are having low potential in terms of environmental damages and impacts compared to other production systems in the region. Rehabilitating old farms where the land use has been changed three decades ago seems to be an interesting perspective. However, the development of new cocoa farms in South-eastern counties through deforestation is a big threat, The burning practices and induced particular matter emission affect also the environment, with respect to health damage in particular. Trading also causes environmental impacts, in particular during transport. However, the fist need is to improve roads to make the market accessible and reduce the time of travelling.

In terms of cocoa VC functional impact over human health, ecosystem quality and GHG emissions are mainly originated in farms. The variability in estimated potential damages across farm categories provides insight into the need for differentiated actions to support growth and development. Additionally, gaps and missing data present a significant risk to the reliability of LCA assumptions and results, which are critical for informed decision-making.

The VCA4D study encountered a major constraint that is significantly impacting the cocoa value chain – the lack of reliable and up to date data. As a result, the current level of knowledge about the CVC is based on assumptions that cannot be challenged. Based on an analysis of secondary information and the primary data of these surveys, the VCA4D study has concluded that over the last ten years, the level of cocoa exported seems to be far higher than the generally accepted level of domestic production. However, without better data to unpack and understand what is going on across different parts of the country (in terms of level of production, area cultivated and harvested, yields, practices, etc) it is not possible to conclude to what extent this difference is the result of informal flows coming into Liberia from other countries, how the global price of cocoa might be contributing to this, or whether there is greater domestic production than previously thought.

At present, Liberia does not have in place national land use maps, information systems and traceability systems, or an active platform for effective coordination among cocoa sector stakeholders. Meanwhile, international projects and initiatives such as UNEP/GRID, EU (JRC-DOPA) and other institutions (e.g. Global Forest Watch) are monitoring patterns of deforestation and forest degradation in Liberia. Although data is scarce, it is a generally accepted pattern that new farms are being established in the more environmentally sensitive southeast of the country, while old farms senesce in the traditional cocoa 'heartlands' (Bong, Nimba and Lofa).

7.2 Challenges faced by the current CVC in Liberia

Important decisions will need to be made in order for the Government of Liberia to achieve its ambitions for the cocoa sector in the context of imminent changes to regulations for the European market. Cocoa sector stakeholders will need to set realistic goals by understanding market conditions, farmer behaviour (both incentives and capabilities) and geographic differences. A few subsequent challenges are detailed below.

7.2.1 A minor and unregulated value chain

Little has changed in the cocoa sector over the last fifteen years in institutional, technical or socio-economic terms, while national GDP has grown significantly. The absence of reliable statistical data makes it difficult to assess the changes that may have taken place in this sector since the end of the civil war, but the same estimates of 80-90 000 ha of cocoa plantations, 40 000 producers, mediocre yields and poor beans quality are what we have been reading and hearing for at least ten years. All in all, when we attempt to quantify the contribution of the cocoa value chain to the national economy, it is currently less than 0.1% of GDP, far from being a major source of export earnings, as we still often read and hear.

Many national and international public organisations claim to support the sector, but the resources deployed on the ground are very limited, since only a small minority of producers actually benefit from them and these benefits have historically been directed towards particular counties (e.g. Bong, Nimba and Lofa). This shortfall is due, on the one hand, to the limited resources of public organisations to be active on the ground and, on the other, to the small number of cooperatives and producers that each of the support projects can assist.

We can only confirm the previous gloomy diagnoses of highly fragmented and costly supply chain, senescent growing stock, very low use of agro-chemicals, imperfect (if any) post-harvest handling and processing, difficult access to roads and markets, low economic viability, lack of attractive livelihoods to younger workers. All these shortcomings make the cocoa value chain in Liberia very little attractive to investment and are major obstacles to moving the sector towards sustainability and zero deforestation.

However, this stagnation in production in Liberia's historic cocoa-growing regions is offset by two more recent phenomena which are opening up new prospects for the cocoa value chain.

7.2.2 Sub-chains to increase national production and exports

Three cocoa sub-chains in Liberia deserve to be distinguished as they follow different dynamics:

- Small national producers market their beans (sometimes with the support of cooperatives) to licensed or informal traders and then to exporters based in Monrovia. These stakeholders are now in the minority in the value chain, accounting for only 33% of the volume of cocoa exported by Liberia.

  - Small national producers market their beans to informal traders for export to Liberia's neighbouring countries. These commercial outlets are much easier to reach for many producers than evacuation via Monrovia. This sub-chain currently accounts for 15% of the volume exported by Liberia. This share could rapidly increase in the direction of the Côte d'Ivoire when cocoa farms in the south-eastern counties come into production.
  - Licensed traders import large volumes of Côte d'Ivoire beans for resale to Monrovia exporters. This sub-sector is now in the majority, accounting for 52% of Liberia's cocoa exports.

Each of these sub-sectors is now profitable from a financial point of view, except in the case of cooperatives and EXT-type producers, which together account for only 10% of total production volume. It is crucial to recognise that there are clear economic, environmental, social and political implications for which sub-chains are targeted to increase production and/or export.

7.2.3 Key role of commercial intermediaries

Whatever the development strategy adopted for cocoa in Liberia, the role of commercial intermediaries is crucial in influencing farmers' practices and decisions. As Gokowski (2012) pointed out, we need to avoid the 'chicken and egg' dilemma by tackling in parallel the on-farm issues of low yield and quality and the market issues to facilitate trustful and efficient commercial relationships. The cocoa trade is currently characterised by fierce and often unfair competition between informal and formal traders. Such a situation is hardly compatible with the increased production or improved quality of beans expected from primary producers.

Informal traders, through whom most of the national production passes, have been the blind spot of virtually all cocoa sector support projects over the past ten years. Exporting companies do not want them to be replaced by licensed traders, mainly for financial and logistical reasons, or it is not financially viable to replace them with cooperatives in the absence of subsidies. These informal traders therefore offer unique performances in terms of geographical deployment and flexibility of operating methods. We therefore need to think about ways of upgrading small traders to provide logistics and a range of services and support farmers on quality control. For example, innovations for the first-mile transport are key and innovations around the motorbike platform, a common mode of transport, are needed (ACET 2023). Strengthening their administrative and financial skills is also likely to improve the overall operation of the CVC. Initiatives to support these stakeholders are therefore needed by public authorities or projects, because the current level of profit made by unlicensed traders will not enable them to improve their marketing system and their involvement with producers on their own.

7.2.4 Increase in sustainable production

Achieving an increase in cocoa sustainable production in Liberia requires balancing growth potential with environmental considerations. Currently, there is a need for better alignment among value chain actors to manage Liberia's cocoa production expansion while mitigating the

environmental risks of unchecked growth. Key decisions include whether to focus on improving production efficiency—through farm rehabilitation, agroforestry practices, and other sustainable approaches—or to expand into new areas, such as fallow land, which may have environmental and regulatory implications, especially with the EUDR. Lessons from neighbouring countries like Côte d'Ivoire, which have faced similar challenges, should guide Liberia's approach to expansion to avoid repeating the same environmental impacts. Additionally, a deeper understanding of agroforestry systems could highlight the benefits of diversified cocoa systems, such as enhanced food security and alternative income sources from other crops. Finally, any transformation within the CVC will likely have a ripple effect on the local labour market, potentially affecting gendered labour distribution and posing risks around child labour.

Semi-abandoned farms which seem uncompetitive and outdated, have a high environmental efficiency and cocoa production despite their low productivity. They occupy 42% of the estimated area and 46% of the national production. The interesting results of the environmental analysis for semi-abandoned farms raise questions about possible strategies for integrating them into productivity development plans beyond rehabilitation. However, a thorough understanding of the complexity inherent in agroforestry systems is essential for all farm categories.

7.2.5 Labour market

In the cocoa belt, intensifying production means relying on family labour, some of which is constraint, or extending the use of agricultural wage workers, the availability of which is not well known. The excessive expenditure incurred by EXT-type producers in attracting temporary workers seems to show that it is not easy to mobilise paid workers in rural areas. This situation will not change much at least in the medium term - unless the sharp rise in cocoa prices since 2024 durably strengthen cocoa production attractiveness. In these counties of northern Liberia, a massive increase in cocoa production would probably face a labour constraint and would have to rely more on a major increase in the use of chemical inputs. Farmers' access to and proper use of chemical products cannot be achieved without improving the effectiveness of support systems in the field, either through public extension services, projects or the services offered by unlicensed traders.

In the south-east areas, the issues are completely different, since most of the labour comes from the migrant, with possibly shifting gender-related workload and risk of child labour.

7.2.6 Supporting the establishment of traceability systems

A well-functioning traceability system is essential for Liberia's cocoa sector at least to comply with the EUDR, but the current lack of public funds and of a coordination platform due to funding shortages has prevented collective planning efforts. Effective decision-making in traceability requires foundational data — such as farm size and individual records of producers — that is currently unavailable, and progress on land registration remains slow. Without a functioning platform to bring together stakeholders from government, the private sector, and NGOs, establishing a reliable traceability system will be very challenging.

In contrast to the situation in other producing countries, private certification and traceability initiatives are virtually non-existent in Liberia and do not offer an alternative - at least in the medium term - to a public system for tracing cocoa beans.

7.3 Areas requiring further attention

7.3.1 A better description of the diversity of cocoa production systems

There are still too few field studies in Liberia to accurately describe the existing cocoa farms and the various ways in which they are created and managed. Most of the current reports on the cocoa sector reefer mainly to cocoa cropping model under revitalization with external support , as they are the direct and indirect outcome of projects supporting such efforts. Recently, the sharecropping system, which has already been widely studied in Côte d'Ivoire, has also been the subject of interest, as it is developing rapidly in the south-eastern counties, but is still poorly described in quantitative terms.

In 2023, the vast majority of Liberian cocoa farmers follow neither of these two cropping models. They manage their cocoa farms without external support for objectives that are not well explained and according to economic or social dynamics that are not well understood. This study is probably the first attempt to propose a more detailed typology of cocoa production methods in Liberia, but our interview surveys did not enable us to cover a large sample of districts, observe the real state of cocoa farms or thoroughly understand the place of this activity in the rural household economy. A more comprehensive and in-depth typology of cocoa producers and cocoa farms therefore remains to be done in order to fully consider the diversity of the dynamics at work and, thus, to propose means of action that are adapted to each type of producer in order to maximise their impact. This typology stage is also required to document the possible emergence of a Liberian cocoa of excellence on the world market,.

7.3.2 Document (and then act on) cocoa flows with neighbouring countries

No statistics are available to estimate the flow of cocoa between Liberia and neighbouring countries, even though the volumes traded could be substantial and variable. It will be difficult to implement a national public policy without better knowledge and control of these flows.

As indicated in section 2.4.2, three sets of variables have a major influence on the size and direction of these flows: (1) the cocoa price differential between neighbouring countries and Liberia; (2) the cost of transporting cocoa to Monrovia compared to other evacuation routes, depending on where and when it is produced; (3) the various facilities offered by traders to producers in terms of financing and equipment.

It would be useful to further assess the sensitivity of these flows to different drivers. in order to understand how they are likely to impact on the implementation of any public policy in the medium term. This knowledge could facilitate the formulation and implementation of a range of economic, social, governance institutions, infrastructure measures could be taken to influence the size and direction of these cocoa volumes, and maximise the formal contribution to GDP.

7.3.3 A hybrid governance of the cocoa VC

The distribution of support services between public and private actors in the cocoa sector reveals significant gaps, especially in certain regions of the country. Currently, government support is heavily concentrated in central regions, leaving south-eastern areas—which are more isolated and vulnerable—largely without assistance. The ACET (2023) report highlights the need to provide a range of services to producers and cooperatives, yet it raises the question of who will actually take on these responsibilities.

The lack of a functioning coordination platform further complicates the situation. The existing cocoa sector coordination platform is inactive due to funding shortages, depriving stakeholders (government, private sector, NGOs, etc.) of a forum to plan and organise joint initiatives. This shortfall is due to both the limited resources of public organisations to work on the ground and the small number of cooperatives and producers that each support project can assist.

On the private sector side, exporting companies and their networks of licensed traders have not established alternative mechanisms to fill these gaps. Common tools such as certification, promotion of good practices, incentive premiums, and traceability—often used to structure supply chains—are lacking. As a result, producers, especially those in underserved regions, are left without the resources needed to improve their production and meet international market standards.

7.3.4 Coordination with land and forest regulations

Regulations on land and forests have recently changed in Liberia (Terea 2024) and will have an impact on farming practices, particularly cocoa production, which should be studied further. The Land Act 2018 and associated policy framework offers the opportunity to support communities to register their land and agree land use plans through the Community Land Development and Management Committees. This could provide a foundation for establishing, reviving or improving the operation of collective production groups, and could constitute a more solid basis for cooperatives than the dependence on external funding that characterises them today.

These regulations also make it possible to study options for combining collective and individual rights on land and resources, for example by promoting support for individual production activities within a framework of Community Ownership of Customary Land.

7.3.5 Developing context-specific strategies

The diversity of Liberia's regions means that a one-size-fits-all approach to cocoa production will not be effective. The central counties, for example, are characterized by significant amounts of degraded or fallow land, while the south-eastern counties are poorer, more remote, and contain ecologically sensitive forests. Patterns of poverty and food insecurity also vary between regions, highlighting the relative vulnerability of smallholder farmers to anything that might impact on their livelihood systems, and the limited options available to them. This regional variation requires strategies that are tailored to each area's unique socio-economic and environmental conditions. Government support has so far been concentrated in the central areas, leaving the south-eastern regions with limited assistance despite emerging cocoa production activity. Some regions may be

better suited to biodiverse systems, while others could support more intensive production methods. However, these strategic decisions require robust data on local conditions, which is currently lacking. In the short term, stakeholders will need to make decisions based on incomplete information, underscoring the need for improved data systems, sector-wide coordination, and effective data-sharing mechanisms.

7.4 Possible development pathways

After several decades of stagnation, the Liberian cocoa value chain benefits from a renewed interest from public and private actors in the recent years, materialized in the launching of support programs and the development of more productive cultural practices. However, the cocoa VC is still characterized by a low productivity and is impacted by the structural constraints of the Liberian agriculture (accessibility and transport cost, low attractiveness of the agricultural activity, low investment…). Furthermore, the Liberian cocoa VC is also impacted by the dynamic of the neighbouring Ivoirian cocoa sector which provide for the Liberian exporters, depending upon price differential, a significant source of cocoa through informal imports that are reexported at Monrovia. The expansion of the Ivoirian cocoa production area is also overflowing to the south-eastern Liberian counties based on land deforestations by migrant farmers, establishing new cocoa plantation under sharecropping arrangements with local landholder. This complex setting is further exacerbated by the forthcoming enforcement of the EUDR which will control access to the major cocoa export destination trough the implementation of a comprehensive traceability system. Eventually the cocoa VC provide income and job opportunities in several rural areas where income sources are limited and is a valuable candidate for promoting an inclusive growth. Thus, the Liberia CVC is at the crossroad facing several challenges and opportunities.

A first option is to let the dynamics in South-eastern regions, uncontrolled, emulating the deforestation based cocoa expansion model, which will translate into a high reputational risk for Liberia, jeopardizing it access to a major cocoa market. Although, this approach could result in a significant increase in cocoa exports under the strong assumptions that South-eastern counties could be cost effectively connected to Monrovia and that less demanding markets in Asia notably could absorb this increasing volume. In this pathway's quality, sustainability, zero-deforestation are secondary concerns. Although the impact on trade and growth of this pathways is uncertain, it will certainly undermine, if not annihilate, any effort and expected benefit from supporting the recovery of the current cocoa VC.

A second pathway target the historical cocoa production areas, particularly those near Monrovia, and the adoption of sustainable practices. In this model, the primary cocoa-producing counties — Nimba, Bong, and Lofa — would focus on complying with the EUDR to access European markets. Cocoa yields are low for managers of agroforestry plantations in the cocoa belt counties. Promoting a few good practices among farmers could easily double productivity, without major environmental impact and without expanding the area under cultivation. Technical support would be useful to revitalise old plantations. Beyond the usual training scripts, stringent monitoring and evaluation must be included to observe farmers work on their farms and to promote the use and benefit of good practices (LICSIP 2019). In the targeted counties, upgrade traders to provide

logistics and a range of services and support farmers on quality control. Innovations for the first-mile transport are key and innovations around the motorcycle platform, a common mode of transport, are needed (ACET 2023).

The implementation of the EUDR, required coordinating both public and private sector initiatives, focusing on creating a legal and traceable cocoa supply chain. A handful of cooperatives are in the process of being certified for sustainability and for their chain of custody. Several international donors are prepared to invest significant sums to support this scenario. A roadmap for free-deforestation cocoa in Liberia has been validated in 2020 (IDH 2021) but the relevant legal requirements applicable to Liberian cocoa as well as the identification of legality verifiers are to be identified (EFI 2024). It would also help to encourage the classification of forest areas for greater legal clarity and more sustainable land-use planning (EFI 2024)

This desirable pathway faces several challenges. A risk of fragmentation of the sector that could create inequalities in development and market access, with some regions advancing while others remain outside regulatory frameworks, leading to potential trade imbalances and challenges in enforcing national sustainability standards. There is also potential difficulty in scaling this approach across the entire country, especially considering the need for robust cooperatives, proper geo-location of production plots, and significant investment from international donors. Failure to establish the required infrastructure or overcome logistical and governance challenges could result in the failure to meet EUDR standards, potentially excluding Liberia from European markets and reducing its competitiveness globally. Additionally, the resources required to implement such a system may place pressure on an already strained governance structure.

A macro-economic simulation of each of these pathways would provide major elements for discussion before any political choices are made for the cocoa VC. Similarly, the future of cocoa VC in Liberia needs to be seen in the context of investment in transport infrastructure, which plays a decisive role in linking (or not) current and future production areas to the port of Monrovia.

8. References

ACET (2023) Regional Collaboration on Overcoming Binding Constraints on the Growth of Liberia'S Cocoa Value Chain. Accra: African Center for Economic Transformation (ACET)

Afele JT, Dawoe E, Abunyewa AA (2021) Carbon Storage in Cocoa Growing Systems Across Different Agroecological Zones in Ghana. 37:32–49. https://doi.org/10.22302/iccri.jur.pelitaperkebunan.v37i1.395

Anti-Slavery International (2004) The Cocoa Industry in West Africa: A history of exploitation

Antwi E, Engler N, Narra S, et al (2019) Environmental effect of cocoa pods disposal in 3 West African Countries. In: 13th Rostock bioenergy forum. Proceedings. pp 365–373

Asigbaase M, Dawoe E, Lomax BH, Sjogersten S (2021) Biomass and carbon stocks of organic and conventional cocoa agroforests, Ghana. Agric Ecosyst Environ 306:107192. https://doi.org/10.1016/j.agee.2020.107192

Biard Y, Basset-Mens C, Bessou C, et al (2011) LCA-CIRAD Platform: Life Cycle Assessment of Tropical Agricultural Products

Chéron-Bessou C., Rigal C., Payen S., Avadí A., Demenois J. 2023, Review on green coffee carbon footprint. Expert analysis for ISIC. Cirad, Report n°2971, Montpellier, France, 108 p.)

COVADEP (2021). Coco Value Chain Development Programme (COVADEP) Baseline Survey.

Dahn AA (2023) COVADEP Liberia outcome survey (2020-2022). Cocoa Value Chain Development Programme (COVADEP)

David P. Tokpah, Charles F. King, Youssef Kassem, Huseyin Gokcekus, Quaqua S. Mulbah, Zipporah Page, N. Robert Geninyan, and Isaac M. Gono (2022). Assessment of cocoa farms and rehabilitation techniques in Bong, Lofa and Nimba countries (Liberia). World Journal of Advanced Research and Reviews.

Dawoe E, Asante W, Acheampong E, Bosu P (2016) Shade tree diversity and aboveground carbon stocks in Theobroma cacao agroforestry systems: Implications for REDD+ implementation in a West African cacao landscape. Carbon Balance Manag 11:1–13. https://doi.org/10.1186/s13021-016-0061-x

de Sousa C, Fatoyinbo L, Honzák M, et al (2023) Two decades of land cover change and forest fragmentation in Liberia: Consequences for the contribution of nature to people. Conserv Sci Pract 5:1–17. https://doi.org/10.1111/csp2.12933

EC-JRC (2010) General guide for Life Cycle Assessment -- Detailed guidance. European Commission - Joint Research Centre - Institute for Environment and Sustainability

EPA, 2020. Liberia's First Biennial Update Report to UNFCCC. Liberia Government submission to the United Nations Framework Convention on Climate Change UN and GEF. October 2020. 123p URL: https://unfccc.int/sites/default/files/resource/BUR1.pdf

Fabre P, Dabat M-H, Orlandoni O (2021) Methodological brief for agri-based value chain analysis. Frame and Tools – Key features. Version 2. Brussels, VCA4D

Fairtrade International 2024. West Africa Cocoa Programme Monitoring Report. Fourth Edition, Abidjan, RCI.

FAOSTAT (2024) Data. https://www.fao.org/faostat/en/#data

Garbarino S., Mardoe Gizea , Lucinda Rouse, Mark Wallace, Kim Beevers (2020). Boosting Yields and Income: The Business Case for Supporting Female Cocoa Farmers in Liberia (A Case Study). June 2020 GROW Liberia.

Global Forest Watch (2024). Open data portal: https://data.globalforestwatch.org/ accessed on november 2024

Goedkoop M, Heijungs R, De Schryver A, et al (2013) ReCiPe 2008. A LCIA method which comprises harmonised category indicators at the midpoint and the endpoint level. Characterisation. Den Haag: Ministerie van VROM

GROW (2016) Cocoa Market Systems Analysis

GROW (2019) Informal cross-border trade: Why it's happening and how it harms Liberia's cocoa sector
GROW (2021) Recommandations for Liberia's cocoa sector governance. Report of Equipoise, Adam Smith International, and GROW.
Hughes D., Kerry Muir, Eric Nelson and Boima Rogers (1989). Liberia Agricultural Market Study. Undertaken for USAID/Liberia by Robet R. Nathan Associates Inc. June 1989
Huijbregts M, Steinmann ZJN, Elshout PMF, et al (2016) ReCiPe 2016 A harmonized life cycle impact assessment method at midpoint and endpoint level. Report I: Characterization. Department of Environmental Science, Radboud University Nijmegen
IDEF (2024) Alert on the supply of cacao from Liberia. How do a combination of factors and players encourage the presence of Liberian cacao in the Ivory Coast supply chain? Abidjan: Initiatives for Community Development and Forest Conservation
IDH (2021) Roadmap to a Sustainable Cocoa Sector in Liberia. Lib Natl Cocoa Public-Private Partnersh Platf 1–22
IGC (2017) The realities of trade from Sierra Leone to other Mano River countries. Centre for Economic Research and Capacity Building
ISO (2006) ISO 14040 Environmental management — Life cycle assessment — Principles and framework. The International Standards Organisation
ITC (2014) The Republic of Liberia. National export strategy - Cocoa export strategy. International Trade Centre report, Geneva, Switzerland, 77p.
ITC (2022) Agricultural Exports in Liberia: Opportunities for Export Growth and Diversification. Geneva, International Trade Centre
Jones, M., Glen W., Peters P., Gasser R., Andrew R., Schwingshackl, Gütschow, A. Houghton, Friedlingstein, Pongratz, and Le Quéré. (2024) National Contributions to Climate Change Due to Historical Emissions of Carbon Dioxide, Methane and Nitrous Oxide. Scientific Data. Zenodo, March 19, 2024. https://doi.org/10.5281/zenodo.10839859.
LFDA (2019) Liberia's Forest Reference Emission Level Submission to the UNFCCC. Forestry Development Authority
Masolele RN, Marcos D, De Sy V, et al (2024) Mapping the diversity of land uses following deforestation across Africa. Sci Rep 14:1–16. https://doi.org/10.1038/s41598-024-52138-9
Miehlbradt A, Prasad R (2022) Tackling Impact Assessment of Business Enabling Environment Interventions: A case study from GROW Liberia's cocoa sector work
MoA (2024) Liberians Feed Yourselves Agenda: National Agriculture Development Plan 2024-2030. The Ministry of Agriculture of the Republic of Liberia
MOA (2022) Value Chain Analysis in Liberia: Cocoa. Ministry of Agriculture Liberia
Nemecek T., Bengoa X., Lansche J., Roesch A., Faist-Emmenegger M., Rossi V. & Humbert S. (2019) Methodological Guidelines for the Life Cycle Inventory of Agricultural Products. Version 3.5, December 2019. World Food LCA Database (WFLDB). Quantis and Agroscope, Lausanne and Zurich, Switzerland.
Niether W, Jacobi J, Blaser WJ, et al (2020) Cocoa agroforestry systems versus monocultures: A multi-dimensional meta-analysis. Environ Res Lett 15:. https://doi.org/10.1088/1748-9326/abb053
Oke D, Olatiilu A (2011) Carbon Storage in Agroecosystems: A Case Study of the Cocoa Based Agroforestry in Ogbese Forest Reserve, Ekiti State, Nigeria. J Environ Prot (Irvine, Calif) 02:1069–1075. https://doi.org/10.4236/jep.2011.28123
PAPFor (2023) Vade-mecum Etat des lieux des initiatives et outils favorisant la coexistence de la conservation des forêts et le développement respectueux de l'environnement du cacao en Afrique de l'Ouest
Rahim I, Jumardin J, Suherman S, Nasruddin A (2019) Biodegradation of Cocoa Pod Husk Waste used Rot Fungi Consortium at Various Storage Times. ICOST 2019, May 02-03, Makassar, Indones. https://doi.org/10.4108/eai.2-5-2019.2284691

Ruf F (2021) Les standards dits durables appauvrissent-ils les planteurs de cacao ? Interactions entre déforestation en Côte d'Ivoire et au Libéria, crédit à l'achat d'engrais et baisse des cours. Cah Agric 30:38. https://doi.org/10.1051/cagri/2021024

Ruf F (2024) De la Côte d'Ivoire au Liberia : la boucle du cacao se déplace. Rev. Sesame 1–7

Ruf F, Galo A (2025) Le boom du cacao au Liberia, répétition de quatre siècles de migrations. La « déforestation importée » face à l ' histoire

Sanial E, Ruf F, Louppe D, et al (2023) Local farmers shape ecosystem service provisioning in West African cocoa agroforests. Agrofor Syst 97:401–414. https://doi.org/10.1007/s10457-021-00723-6

Schipper AM, Hilbers JP, Meijer JR, et al (2020) Projecting terrestrial biodiversity intactness with GLOBIO 4. Glob Chang Biol 26:760–771. https://doi.org/10.1111/gcb.14848

Schroth G, Läderach P, Martínez-Valle AI, Bunn C. (2015). Climate vulnerability and adaptation of the smallholder cocoa and coffee value chains in Liberia. Working Paper No. 134. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS); International Fund for Agricultural Development (IFAD). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org

Skoog G.E., 2015. The Role of Institutions for Inclusive Development of Agricultural Markets: The Case of Cocoa in Post-Conflict Liberia. Report of the Nordic African Institute, Stockholm, Sweden.

Taplah G, Philips FW (2020) Training Manual. Ministry of Agriculture

TEREA (2024) Feasibility study for the creation of a "Sustainable Forest Management Entity" in Liberia. EU FLGET VPA report 2024-033F, Marseille, France

Tschora H, Cherubini F (2020) Co-benefits and trade-offs of agroforestry for climate change mitigation and other sustainability goals in West Africa. Glob Ecol Conserv 22:. https://doi.org/10.1016/j.gecco.2020.e00919

USAID/ACET (2023) Regional Collaboration on overcoming binding constraints on the growth of Liberia's cocoa value chain.

USAID (2017) Value Chain Gap Analysis of Targeted Agricultural Product Value Chains in Liberia. Final Report. Prepared for the Forest Incomes for Environmental Sustainability (FIFES) Project

USAID (2018) Liberia cross border trade assessment

Wernet G, Bauer C, Steubing B, et al (2016) The ecoinvent database version 3 (part I): overview and methodology. Int J Life Cycle Assess 21:1218–1230. https://doi.org/10.1007/s11367-016-1087-8

Wilcox M.M., 2012. Reforming cocoa and coffee marketing in Liberia. Powerpoint presentation, IITA-STCP, Yaounde, Cameroon, 33p.

Willer Helga., Trávníček J., Schlatter B. (Eds.) (2024): The World of Organic Agriculture. Statistics and Emerging Trends 2024. Research Institute of Organic Agriculture FiBL, Frick, and IFOAM – Organics International, Bonn.)

Winrock (2016) Development of iLiberia's REDD+ Reference Level

World Bank (2024). Liberia Poverty Assessment - Toward a More Inclusive Liberia (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099032124150035378/P17739418373d30c419ffb1cd3dd5dfb684

9. ANNEXES

9.1 Economic Analysis Annexes

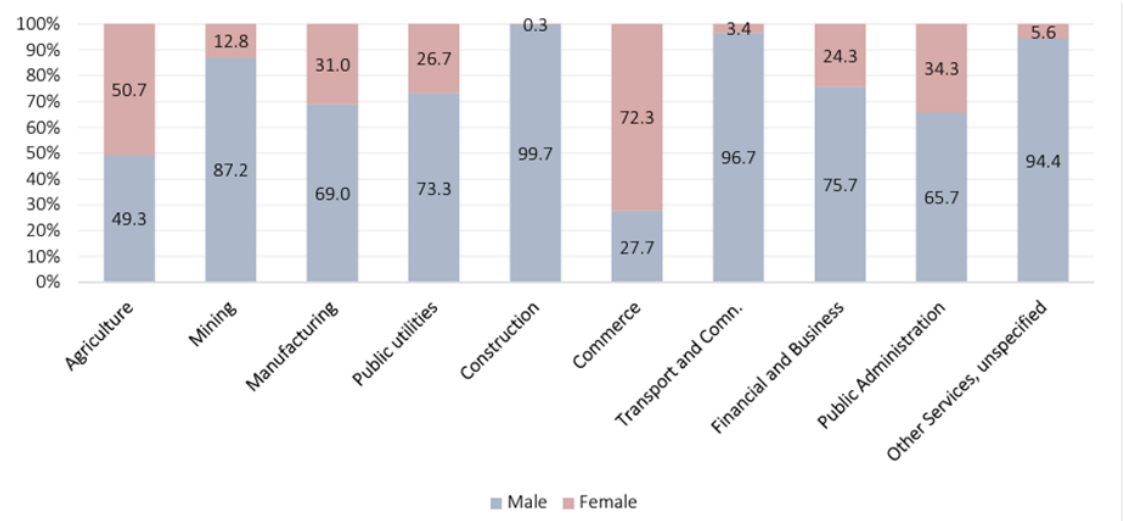
Individual Actors Account and Financial Indicators									
Actor	Production	Subsidy	IGS	Wages	Taxes	Interest on loan	Depreciation	Net Operating Profit	Return on turnover
ProdCOM	1 080	34	70	204	16	0	0	824	76%
ProdCOL	626	0	61	156	13	13	0	382	61%
ProdFAM	523	0	44	121	13	0	0	345	66%
ProdEXT	140	0	38	135	11	0	0	-43	-31%
ProdABA	625	0	41	163	17	1	0	403	65%
ProdRCI	23 580 900	0	23 580 900	0	0	0	0	0	0%
TCOOP	34 500	99 054	37 750	27 804	2 422	360	8 983	56 235	163%
TUnlic	12 246	0	9 576	246	61	0	514	1 849	15%
TLic	608 009	200	510 236	7 059	2 411	60	2 158	86 285	14%
ExpWW	7 446 102	12 000	6 349 965	171 002	403 677	74 251	44 596	414 612	6%
VALUE CHAIN	1 808	233	854	265	114	19	56	734	41%

9.2 Social Analysis Annexes

Figures and Tables

Table 0-1 Details of the most relevant Labour Standards signed into force in Liberia

Forced Labour	C029 (Forced Labour) was ratified in 1931, and C105 (abolition of forced labour) in 1962
Discrimination	C111 (Discrimination in employment and occupation) was ratified in 1959, and remains in force C100 (Equal Remuneration) was ratified
Freedom of Association	C087 (Freedom of Association and Protection of the Right to Organize) was ratified in 1962
Collective Bargaining	C098 (Right to Organise and Collective Bargaining) was ratified in 1962
Child Labour	C182 (Worst forms of child labour) was ratified in 2003. ILO Convention C138 (Minium Age Convention, 1973) was ratified in June 2022, specifying a minimum age of 15 years[5]
Plantations	C110 (Plantations) denounced in 1959



Source: WB staff calculations, HIES (2016).

Figure 0-1 Gender distribution by sector of employment for 15-64 years old in 2016.
Source: World Bank (2020)

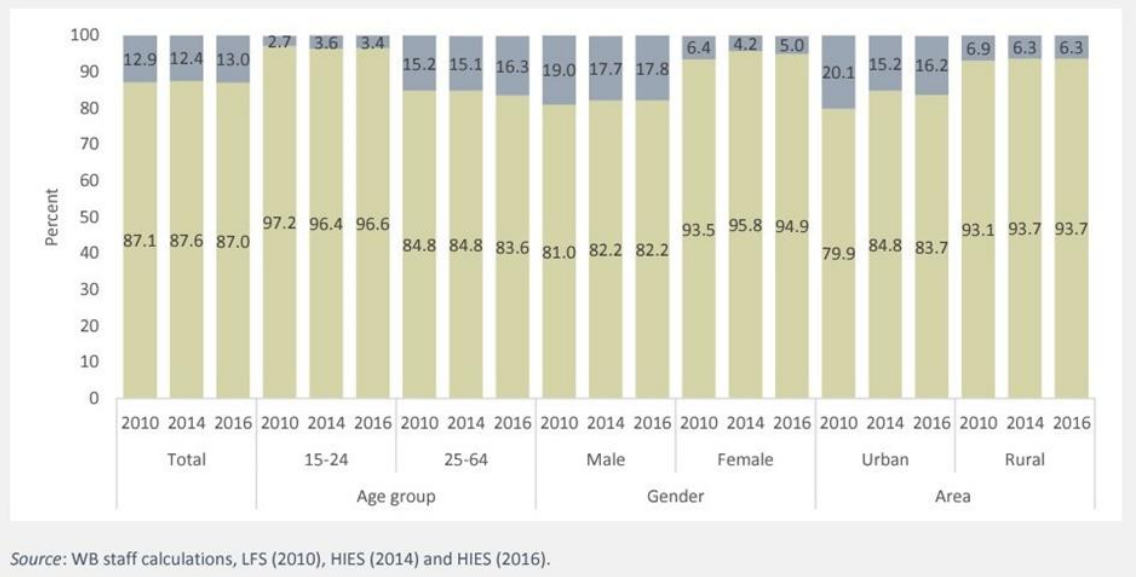


Figure 0-2 Informal sector employment by age group, gender and area of residence of workers. Source: World Bank (2020)

Table 0-X Overview of Health and Safety Risks Associated With Cocoa Production

Cross-cutting hazards associated with all agricultural activities: T· Open defecation while working · Lack of potable water while working · Blade injuries and puncture wounds from machetes, axes, knives, sharp stumps/branches and trash · Snake and insect bites · Alcohol intoxication		
Hazards associated with different basic agricultural tasks:		
Clearing land, hauling logs, fencing, brushing	Preparing land for planting, planting and weeding	Pest control and harvesting
· Being crushed/killed by falling trees and rolling logs · Being trapped in fires used to burn brush after clearing · Musculoskeletal problems associated with carrying heavy logs · Possible herbicide exposure	· Musculoskeletal problems with bending over all day · Possible fertilizer exposure	· Injuries from slingshot rocks used to scare birds · Loss of fingers due to rodent traps · Ingesting chemicals in food crops due to improper use · Possible pesticide exposure · Musculoskeletal problems from carrying heavy loads · Collapse of crop storage facilities
Additional specific hazards associated with the CVC: · Exposure to Salmonella due to improper fermentation processes · Falling cocoa pods		

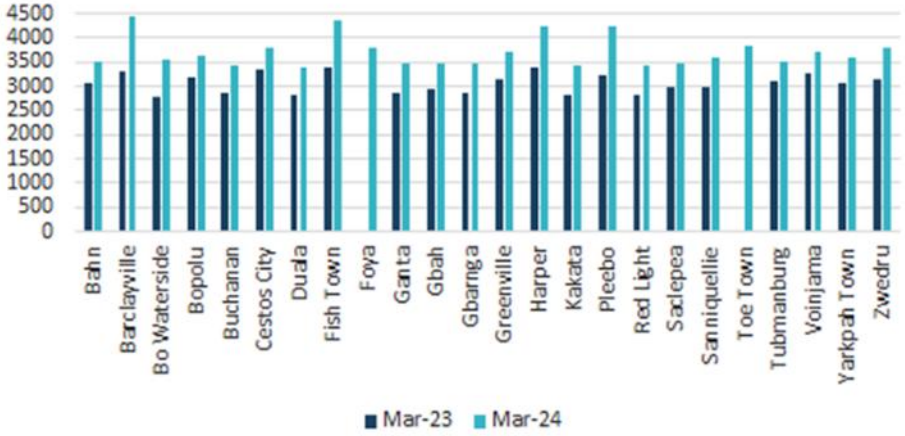


Figure 0-3 Comparison of the price of a 25kg bag of imported rice in different markets across Liberia (in LRD) between March 2023 and March 2024
Source: WFP Market Monitoring Bulletin (2024)

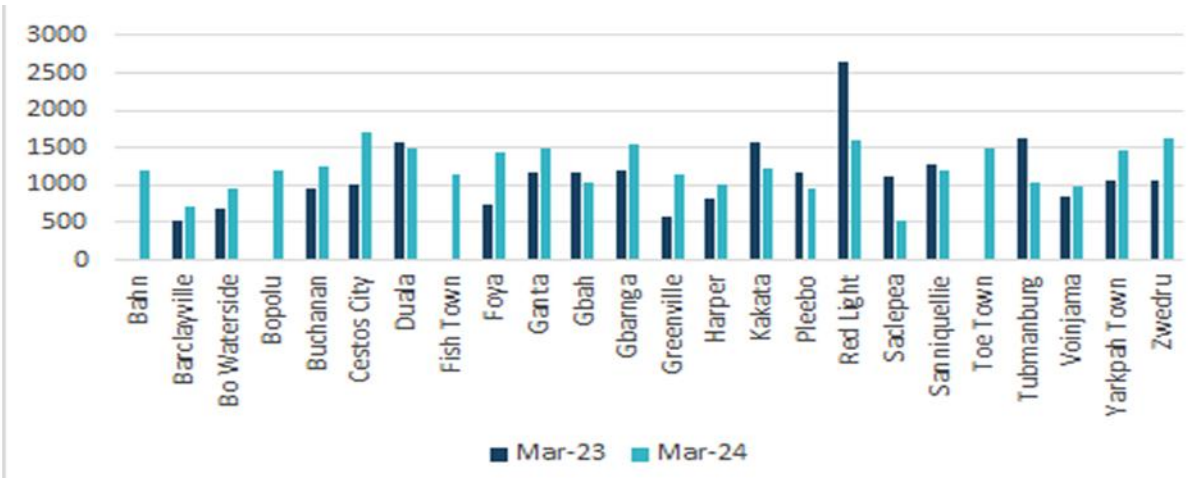


Figure 0-4 Comparison of the price of a 25kg bag of cassava in different markets across Liberia (in LRD) between March 2023 and March 2024
Source: WFP Market Monitoring Bulletin (2024

Degree of Food Shortage Experienced By Households In Baseline Survey	Female		Male		Total	
	Yes	%	Yes	%	Yes	%
Grand Gedeh (n=464)						
In the last 12 months, did your household ever cut the size of your meal or skip meals because there was not enough money for food?	105	23%	285	61%	390	84%
In the last 12 months, did you ever eat less than you felt you should because there was not enough money for food?	105	23%	291	63%	396	85%
In the last 12 months, were you ever hungry but did not eat because there wasn't enough money for food?	82	18%	200	43%	282	61%
In the last 12 months, did your household ever not eat for a whole day because there was not enough money for food?	46	10%	86	19%	132	28%
River Gee (n=336)						
In the last 12 months, did your household ever cut the size of your meal or skip meals because there was not enough money for food?	86	26%	215	64%	301	90%
In the last 12 months, did you ever eat less than you felt you should because there was not enough money for food?	89	26%	223	66%	312	93%
In the last 12 months, were you ever hungry but did not eat because there wasn't enough money for food?	65	19%	150	45%	215	64%
In the last 12 months, did your household ever not eat for a whole day because there wasn't enough money for food?	34	10%	62	18%	96	29%
Average						**66.4%**

Table 0-2 Four Dimensions of Household Food Shortage in Last 12 Months (source: COVADEP2021)

Figure 0-5 Map showing the Rural Access Index for Liberia in 2016 (the share of the rural population that lives within 2km of a road in good condition, expressed as a percentage).
Source: World Bank Spatial Analysis of Liberia's Transport Connectivity and Potential Growth

Annex - History of Liberia's Land Rights

Liberia's land tenure system is complex, with a history of insecurity and challenges. This stems from the need to address the human and land rights issues that characterised concessions (mainly for mining, rubber, oil palm and logging) allocated in the decade prior to the Act coming into force. It was estimated that up to 75 percent of all land had been promised to investors through concession contracts, often without the knowledge of the communities who lived there. Traditional, customary tenure systems were not recognised and grievances related to land were left unresolved. In response, Liberia has undergone a very purposeful and socially significant land rights reform process.

The Land Commission, established in 2009, began the process of reforming land right and after national consultations, cross-country studies, and consideration of recognised land governance frameworks, the Land Rights Policy[32] was signed into effect in 2013. It distinguished between private, customary, government, and public land ownership categories for the first time. All land administration functions were merged into the Liberian Land Authority (LLA) in 2016. Then in 2018 the progressive Land Rights Act[33] (which was modelled on the Land Rights Policy) was brought into effect. It provided legal recognition and protection of customary tenure as well as safeguard women's and youth's rights within communities and the law.

Example 1: The Idrissa Mansaray Cocoa Investment Company has established a 2000-ha farm in Grand Cape Mount County, called Hard Work Farm. Prior to Covid-19, the farm reportedly employed 1000 workers and had planted a significant area with cocoa trees. A lot of the workforce came from neighbouring Siera Leone. The farm lies very close to the border. The pandemic stopped the movement of labour, and as a result, only 500-ha of cocoa were being managed at the time of the visit by the VCA4D Social Expert in June 2024. More cocoa had been planted but the trees had to be left unbrushed and pruned as a result of labour shortages during Covid-19. The cocoa trees were still relatively young and so the first full harvest had not yet been made. The farm is also close to the Gola National Peace Park, and it was reported that Park officials were concerned that the farm represented a threat to the park.

Example 2: EJ Legacy Redemption Enterprises is a Liberian company that reportedly owns more than 200-ha of farmland in Gorlu, Lofa County. Cocoa production is a significant proportion of the business. They specialise in organic cocoa and market their produce under the **EJ Flomo Cocoa** brand[35]. In 2020 they reported farming 120,000 cocoa trees and were establishing a nursery with a view to expanding production in the near future. Processed cocoa is being exported to Canada[36] and USA.

Example 3: The start-up Liberian Organic Cocoa and Agriculture Company[37] reportedly acquired and registered a 50-acre farm in Bong County, about 15 miles from Gbarnga in 2020-2021. According to their operational plan, cocoa seedlings were planted in 2022. The status of the company and farm are unknown, and it is understood that their CEO and co-founder had passed.

Other larger cocoa farms that are known to exist include the 78-ha farm owned by the Liberia Agriculture Commodity Regulatory Authority (LACRA) in Grand Bassa County. In July 2024, it was reported to have begun producing cocoa from three of the five farm partitions, as part of the institution's Extensional Agro Project, after extensive rehabilitation of the farm. It was also reported that LACRA planned to extend the Project to other parts of the country, although details of what this would entail were not available.

Although the Liberian Land Authority is developing an interactive land registry portal[41], it is not yet comprehensive. This along with patchy record keeping at the local level, means land tenure administration does not yet conform fully to the best practices outlined in the VGGT. This also means that there is limited transparency in the land market and potentially weak procedures for the transfer of land title and land-use rights.

The impact of insecure land tenure and poor governance on perceptions of land tenure security at the community and individual levels[42] can be seen in the results of the 2018 Prindex survey[43] which found that 43 percent of Liberian respondents (N=959) felt insecure about their rights. This was the second highest proportion (after Burkina Faso at 44 percent) out of 38 African countries sampled. Those in the poorest 40 percent of the sample felt more insecure than those in the top 40 percent, with Burkina Faso and Liberia showing the greatest differences. The most common reason for insecurity in Liberia was disputes with family or relatives (33 percent), closely followed by the insecure nature of arrangements made with the owner or renter of the land (29 percent).

The limited access to adjudication made it difficult to resolve disagreements over overlapping or contradictory informal, traditional and formal tenure arrangements[44][45]. Of the Liberian sample, 45 percent said they 'owned the land' and 19 percent rented. Of the rest, 25 percent were staying on the land with the permission of the landowner (the type of agreement was not recorded), and the remaining proportion said they were on the land without permission. In this context, heritance on the death of a spouse or parent was an important concern and led to both male and female respondents being equally concerned about what would happen in this event. However, it was young Liberian adults (defined by the study as 18 – 24-year-olds) who felt the most insecure (by 18 percentage points) compared to 55+ year olds. This was the highest difference of all 38 countries sampled.

Annex - Summary of the social analysis

Working conditions		
Respect of labour rights	Workers' rights in the formal sector are covered by a legal framework that upholds most international standards, including the right of freedom of association and laws on discrimination. However, monitoring and enforcement have been weak and human rights abuses do occur in the business sector. The vast majority of labour associated with the CVC is informal and at smallholder production level which are not covered by labour laws and are only enforceable in the context of local community grievance processes. Access to legal processes is expensive. At smallholder level, hired labour is based on verbal agreements and paid for in cash and kind. Labour is an important source of income for rural households and is also a barrier to participation in the CVC for households who cannot afford it and do not have enough household labour capacity.	**Low**
Child labour	Children under the age of 15 are not legally allowed to do more than 2 hours of "light work" a day. All work is prohibited for children under the age of 12 years. Child labour is a significant risk for the CVC, and child labour in agriculture is still widely practiced. Children often play a significant role in the livelihoods of many poorer and more food insecure households in rural areas where cocoa is grown. Enforcement of child labour laws have not been effective to date. School attendance and drop-out rates in rural Liberia are low in many rural areas (see Living Conditions), which makes them more vulnerable to labouring. **The VCA4D study found evidence of child labour taking place among surveyed households.**	**Low**
Job safety	Very little data is available on the incidence and impact injuries, morbidity and mortality caused by hazards associated with the CVC, although farmers are well aware of what these are. Smallholder agricultural practices are characterised by the limited adoption of innovations that might reduce some of these risks. PPE is available to buy but is often unaffordable. The study also identified certain behaviours that increase the risk of injury. These include intoxication, sleep deprivation, hunger, worry and depression. Injuries and illnesses can cause long term disability and sometimes death are quite common with serious economic and psychosocial costs due to lost labour productivity, income, and capacity to care for children. Households with members who are injured, experience a higher rate of poverty, food insecurity, and lower social status within their communities.	**Low**
Attractiveness	Cocoa and other tree crops are considered a means of socioeconomic advancement by many smallholder households and youths, although there are factors such as labour capacity, access to land and knowledge that create a barrier for entry to many. At the community level cocoa is associated with positive development and prosperity.	**Substantial**

Land and Water Rights		
Adherence to VGGT	The Land Rights Act 2018 has established a progressive governance framework that largely conforms to the principles and guidelines of the VGGT. It presents a framework that would enable communities to hold future investors in the CVC to account, although the CVC is not currently characterised by extensive landholdings. However, the potential expansion of smallholder production and impact of international regulations will make land rights an important issue and proper implementation of the legal and governance framework can help with this.	**Substantial**
Transparency, consultation and participation	Land rights framework establishes a precedence for inclusion, consultation and representation at the community level through the CLDMCs. Registration of community land is ongoing but progress is slow. Reports of corruption and abuse of power in relation to land tenure are not uncommon. The dual tenure systems (customary and legal), lag in implementation of legislation and constrained access to effective dispute resolution can allow the interests of investors and elites to override local people's rights. A land registry is being established, but records are patchy at the local level, which means there is limited transparency in the land market and potentially weak procedures for the transfer of land title and land-use rights.	**Moderate / Substantial**
Equity, compensation and justice	There have been improvements related to women's land rights. There is increasing acceptance of women being allocated land and being part of land related decision making. However, discrimination still exists within many of the laws for marriage, benefit sharing, community governance, divorce and inheritance which contradicts the 2018 Land Act. Customary systems can also discriminate or have failed to recognise gender equality in land rights. Communities find it difficult to get cases through the justice system leaving the VGGT principals of rule of law and accountability not fully achieved in practice, but with great potential to do so.	**Moderate / Substantial**

Gender Equality		
Economic activities	Women from smallholder farmer households are more likely to be involved in off-farm activities and informal labour, than with cocoa farming. And when they do farm cocoa, women and youth face greater challenges (particularly female headed households) in terms of labour capacity, ownership of assets, decision making, access to training and services, participation in farmer groups. However, women are more likely to be part of a VSLA or *susu* group, and despite the challenges, there are women making a living from cocoa.	**Moderate / Low**
Access to resources and services	Literacy plays an important role in enabling smallholder farmers to access services such as training, mobile banking and taking an active role in cocoa development projects. There are lower levels of literacy among women in rural areas. Women often have to prioritise short-term earning activities such as petty market trading, and household responsibilities. Young women often do not given access to land to farm because they will leave the household once they are married. Female headed households in particular own fewer and lower value assets.	**Moderate / Low**
Decision making	Traditionally, women could not acquire land in their own names. Although this is changing, and there is more acceptance of women being allocated land and being part of land related decision making, many women and youths continue to have limited decision-making power and control over. While both men and women are involved in decisions about how produce is used, it was the women who led on decisions about the quantity and variety to be consumed, stored, sold or to give away, while it was the men who dominated (and managed) the income from any crops sold. Women had greater control over subsistence crops (vegetables and staples).	**Moderate / Low**
Leadership and empowerment	While donor funded cocoa projects promote gender equity and support gender sensitivity, traditional attitudes, literacy, and the limited ability of many women to keep records, and cooperative members to track and keep records, reduces the effectiveness of information flows between farmers and cooperatives.	**Moderate / Low**
Hardship and division of labour	In general, men are more visible in cocoa production and marketing as a whole and exert more control at the household and farmer organization level. Cocoa production and harvesting tasks show gender and age-related bias. Clearing, and brushing farms are tasks typically assigned to men. Primarily youth and women (although also children in some cases), contribute to harvest and post-harvest activities including breaking the cocoa pods, bean preparation, transportation and drying. Women are more likely to be involved in fermenting and drying beans. Women and female youths are also expected to take on duties for *kuu* groups including fetching water and cooking.	**Moderate / Low**

Food and Nutrition Security		
Stability	The Central Bank of Liberia estimated food price inflation in June to be 11.59 percent compared to last year, which is higher than the overall inflation rate. Food Inflation averaged 12.11 percent from 2007 until 2024, reaching an all-time high of 39.24 percent in August of 2008 and a record low of -7.05 percent in December of 2021. The price of imported rice (an important staple) had increased by 21 percent in March 2024. Prices of goods vary in different markets based on the cost of transport and demand. The purchasing power of poorer households will be affected by inflation, depreciation and increased transport costs.	**Moderate / Low**
Availability and accessibility	It is estimated that 90 percent of subsistence farming households in Liberia will at some point, compromise on food quality and variety, skip meals, or go without food. These coping strategies show a distinct seasonal pattern, and geographic variation in prevalence, linked to the long rainy season. Most subsistence farmers sell their surplus immediately after harvest in order to pay off debts and because storing is difficult. They are not able to access markets during the rainy/lean season due to poor road infrastructure. Unfortunately, it is precisely at this time (when road conditions become challenging) that more vulnerable households become increasingly reliant on access to markets in order to buy food to meet their needs. At the same time, prices rise in response to the increased demand. Cash income from cocoa can help mitigate this to some extent, but difficulties in accessing markets is a key issue.	**Moderate / Low**
Utilisation and nutritional adequacy	Various studies report that a significant proportion of all households exhibited low dietary diversity, particularly in rural areas. Many households are limited to a diet of only staples and fats along with diets that were unbalanced and calorie deficient. A lack of animal protein is a key feature. Food access is thought to be the main driver for poor dietary quality due to the heavy reliance on buying food on the market, difficulties accessing markets due to poor infrastructure and factors that impact household purchasing power. Cash income from cocoa has a role to play in improving access.	**Moderate / Low**

Social capital		
Strength of producer organisations	Formal and informal farmer groups, including cooperatives and associations, are a feature of the agriculture sector (and cocoa in particular). There has been substantial investment in the rehabilitation of farmer organisations and smallholder cocoa farms. Implementing agencies promote representation, inclusion and gender sensitivity among the farmer organisations they work. Despite this, most cooperatives still lack sufficient capacity to independently increase the productivity of their members' farms. This comes in the context of also needing to support and strengthen other key actors – such as licenced buying agents, public agencies (Ministry of Agriculture, LACRA, CDA and CARI) and other service providers. Cooperatives are not evenly distributed geographically, with areas such as the south-east being underserved. Smallholder farmers are more likely to participate in *susu*, *kuu* and other self-help groups, than in cooperatives. Farmers did not appear to have much faith in cooperatives.	**Moderate /Low**
Information and confidence	LACRAs visibility among smallholder farmers was found to be low, particularly in more remote areas. Overall, farmers' knowledge of the cocoa sector regulatory and policy framework is limited. Word of mouth and traders are the main sources of information for farmers. Many cocoa farmers are linked to informal traders and take advantage of spot-selling to release capital from their cocoa to meet immediate needs, rather than sell through cooperatives. There are many instances of mistrust between buyers, trader, cooperatives and farmers.	**Moderate /Low**
Social involvement	Through the Land Reform Act 2018, communities now have a legal framework that will support them to play the lead role in decisions about the natural resources they rely on, and respect traditional customary land rights. Implementation is slow and concerns have been raised about the overlap between Community Land Rights Development Committees (under the Land Rights Act, 2018) and the Community Forest Development Committees (under the Community Rights Law, 2009) in terms of community decision making over development of land and forest resources. Entrenched traditional attitudes towards women and youth, and the ability of elites to dominate resources, decision making and control at a community level are likely to be a powerful influence, although for many communities who have registered their land, these are changing.	**Moderate /Low**

Living Conditions		
Transport and Mobility	Difficulties with transportation pose a significant limiting factor for the CVC. Despite considerable investment in the rehabilitation of main highways and feeder roads since the end of the civil war, much of Liberia's rural road network is still in very poor condition. As per January 2024, there are only 1,140 km of paved road, which represents 8.7 percent of the estimated 13,000 km of road network needed. Less than a quarter are classified as all-weather roads and of unpaved roads surveyed in 2016, nearly 60 percent were found to be in poor or very poor condition, along with half of all bridges, and a quarter of all culverts. In many parts of rural Liberia, movement becomes almost impossible during the rainy season, which restricts access to markets and services, increases the cost of transportation and contributes to food insecurity and slows other aspects of rural development. As a result, market integration between rural and urban areas remains weak, and for many cocoa farmers in areas remote from Monrovia, especially those close to the border, their nearest markets for food, inputs and cocoa sales are in the neighbouring countries.	**Moderate /Low**
Access to Education, Training and Health	The Human Capital Index estimated that a child born in Liberia in 2020 would only achieve 32 percent of their productive potential when they grew up, compared to what might be possible if they were able to enjoy complete education and full health. Liberia spent 12.43 percent of GDP on government education spending in 2022, and education statistics are improving, but rural populations are significantly more disadvantaged with reduced access to education, lower literacy rates, higher levels of non-attendance and drop out (only 27.2 percent attend school in rural communities). Girls were more likely to drop out than boys, and rural students are more likely to be three or more years over-age, suggesting significant economic and physical barriers for age-appropriate enrolment. A significant proportion of school age children have to travel an hour or more to get to school each day and most public schools in rural areas stop at the 6th or 9th grade, preventing many children from going beyond this point in their education. The relatively low levels of literacy among smallholder cocoa farmers significantly disadvantages them when it comes to improving their farm productivity and facilitating their engagement with a value chain. Having cash income from cocoa (either through spot sales or more predictable arrangements with traders and coops) will be helping cocoa farming households to manage unexpected, out-of-pocket health expenditure and mitigate against the potentially catastrophic, and long-term impact of health shocks. The incidence of not seeking healthcare at all is particularly prevalent for rural households, indicating the joint impact of having few or no healthcare providers available and not being able to afford these out-of-pocket expenses. In 2018, it was estimated that 29 percent of the population lived more than 5 km from the nearest health facility and provision in rural areas is still limited.	**Moderate /Low**
Communication	Mobile and digital technology will play an important role in the future of traceability and verification systems for the CVC, therefore access to ICT is important. The national penetration for mobile coverage was estimated to be only 55 percent in 2021, with penetration in rural areas likely to be significantly below the national average, as there are large areas of the country without any mobile coverage at all. The rural-urban digital divide is the result of poor electricity supply, limited mobile infrastructure, the expense of owning a phone and relatively low literacy rates, particularly among older adults.	**Moderate /Low**

Housing, Water and Sanitation	The quality of housing, access to safe drinking water and sanitation has improved over the last 10 years, but quality and provision in rural areas would benefit from significant improvement.	**Moderate /Low**

Annex - Geography of food insecurity and poverty

There is a significant geographic disparity in terms of vulnerability to food insecurity, and the importance of cocoa as part of a household's livelihood strategies. The last FEWS-NET assessment (2017) identified areas where cocoa was a particularly critical livelihood activity (*FIGURE 5-5*). All are isolated from Monrovia and closer to markets in neighbouring Cote d'Ivoire, Sierra Leone and Guinea.

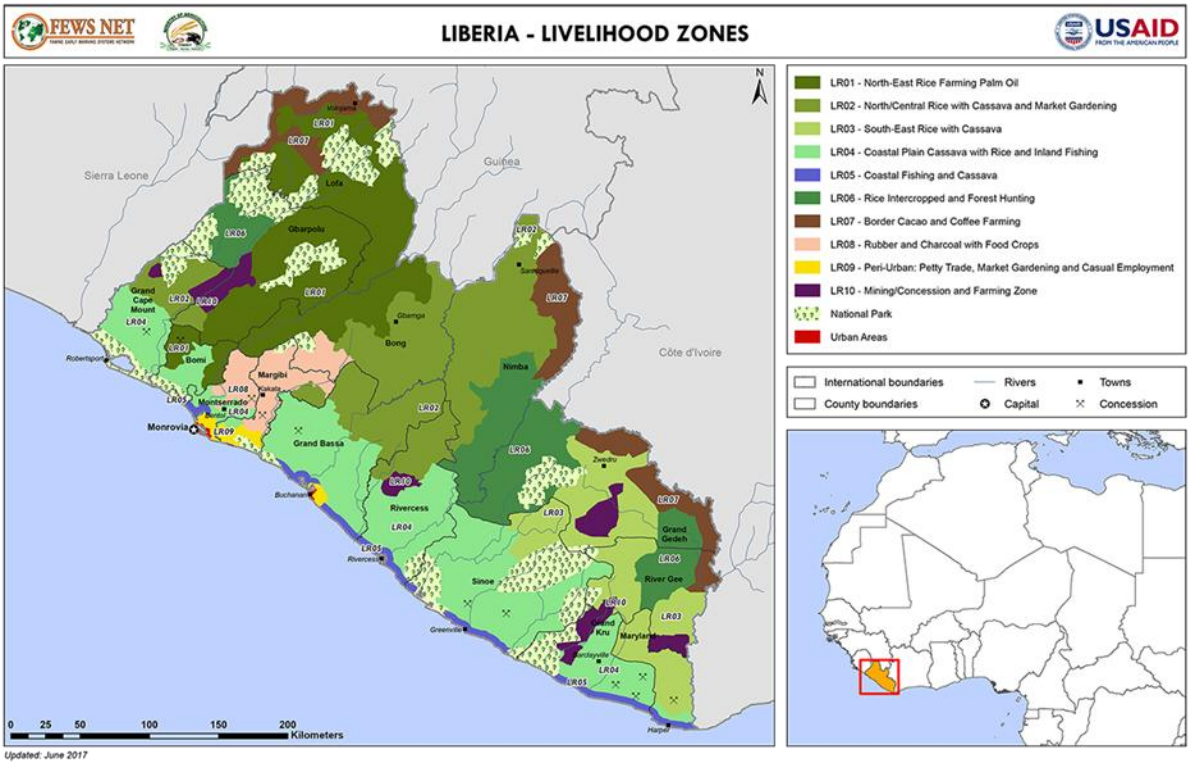


Figure 0-6 Livelihood zonation map of Liberia showing areas where cocoa production was a key livelihood activity for managing food insecurity (shaded brown).
Source: FEWS-NET 2017

The RFSLNMA (2022) identified the cocoa growing counties in the northern (Lofa and Bong) and west (Grand Cape Mount) had the highest incidence of food insecurity (*Figure 0-7*). In the south-east, Maryland had the highest incidence, with Grand Bassa and River Gee exhibiting slightly lower rates.

Figure 0-7 Percentage rate of food insecurity
Source: RFSLNMA (2022)

Of the five key cocoa-producing counties identified by the National Agriculture Development Plan 2024-2030 (NADP) - Bong, Nimba, Lofa, Grand Gedeh, River Gee and River Cess – the findings of the RFSLNMA (2022) clearly shows Bong, Lofa and River Gee have a higher level of food insecurity than the national average (*Figure 0-8*). Only Nimba has a lower incidence of food security than the national average.

Stunting in children, caused by chronic malnutrition, is a strong indicator of chronic food insecurity. The Comprehensive Food Security and Nutrition Survey (2012) confirmed that, in all counties except Grand Bassa Montserrado, stunting prevalence was higher in boys (43.17 percent) than girls (46.77 percent), peaking at around 50 percent in Nimba and River Gee Counties. The difference was found to be particularly evident in the 18–29-month-old age bracket.

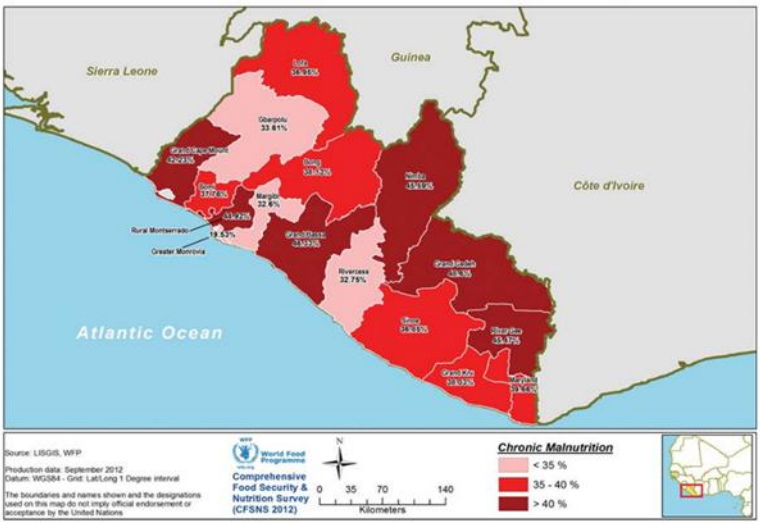


Figure 0-8 Prevalence of chronic malnutrition among children
Source: CFSNS (2012)

Despite being a relatively food secure county, Bong showed high levels of stunting. Boys were more likely to be stunted than girls (51 percent compared to 30 percent. The county had the highest percentage of women with low body mass index (BMI) and their babies were more likely to have low birth weight. The CFSNS 2012 found that just 5 percent of 6–23-month-old boys received the minimum dietary diversity compared with 8 percent of girls against a national average of 28 percent.

Food insecurity and poverty are highly correlated. Although this picture will have changed somewhat, the Household Income and Expenditure Survey for 2016 identified the south-east (River Gee) and Bong Counties as having particularly high poverty rates.

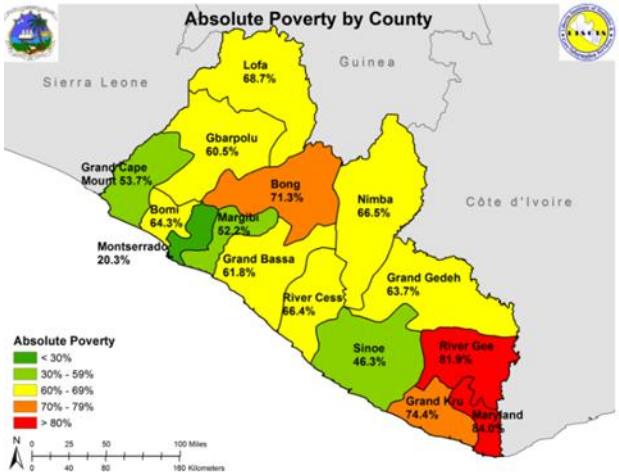


Figure 0-9 Figure 6.9: Absolute poverty rates by county
Source: (HIES 2016)