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Socio-Economic Impacts of Cocoa Investments in Côte d'Ivoire: a Community-Centered Approach

Ahou Marie Ella Gbla and Ingrid Fromm

School of Agricultural, Forest and Food Sciences (HAFL), Bern University of Applied Sciences (BFH), Laenggasse 85, BE 3052 Zollikofen, Switzerland
Corresponding author: ingrid.fromm@bfh.ch

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Abstract

Côte d'Ivoire's cocoa sector is a cornerstone of its economy, underpinning the livelihoods of rural farming communities. This study evaluates the socio-economic impacts of investments in cocoa farming, adopting a community-centred lens to understand how these interventions improve local livelihoods in the Nawa region, the nation's largest cocoa-producing area. Using data collected from 100 small-scale farmers and qualitative interviews, the analysis explores the effects of financial support, training and infrastructure projects. The results show that while 70% of farmers have benefited from agricultural training, only 30% have benefited from direct financial investment, and many of them report not having sufficient resources to implement sustainable farming practices. Investments in social infrastructure, such as schools and health centres, has had a direct impact on community well-being, but has proved insufficient. The results highlight an unequal distribution of benefits, with producers affiliated to cooperatives faring better than isolated farmers. Policy recommendations include expanding investment programs, promoting social infrastructure development and removing systemic barriers to accessing resources. This research highlights the importance of community-based strategies to ensure equitable and sustainable development of rural cocoa farming systems.

Keywords

cocoa – Côte d'Ivoire – farming communities – socio-economic investments – sustainability

1 Introduction

Côte d'Ivoire is the world's leading producer of cocoa, contributing approximately 40% of global supply (ICF, 2022). Cocoa is not only central to the country's economy but also sustains the livelihoods of millions of smallholder farmers, particularly in rural areas such as the Nawa region. However, the sector is fraught with persistent challenges, including volatile global prices, limited infrastructure, and environmental degradation (Ingram et al., 2017).

Over the past decade, significant investments, both public and private, have been channelled into the cocoa sector to address these challenges. These investments have aimed at enhancing productivity, providing social infrastructure, and promoting sustainable practices (Donovan et Stoian, 2012). Despite these efforts, the outcomes remain mixed. Studies suggest that structural inequalities in access to resources often limit the effectiveness of such interventions, especially for smallholder farmers not integrated into formal cooperative systems (Fountain and Hütz-Adams, 2018; Lemeilleur, 2020).

While several evaluations focus on productivity or environmental outcomes, fewer have addressed how these investments are perceived and experienced at the community level. This study contributes to that gap by

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exploring the socio-economic impacts of cocoa-related investments through a community-centred lens. Focusing on the Nawa region, this research aims to:

(1) Evaluate how investments influence farmers' income, access to infrastructure, and social services.
(2) Analyse disparities in the distribution and utilization of resources.
(3) Provide actionable recommendations to strengthen equity and effectiveness in investment delivery.

By grounding the analysis in local realities, the study contributes to broader debates on rural transformation, inclusive development, and agricultural sustainability in West Africa.

2 Methodology

This study adopted a mixed-methods approach to assess the socio-economic and environmental impacts of cocoa-related investments in the Nawa region, Côte d'Ivoire. The Nawa region, which includes the departments of Soubré, Méagui, Buyo, and Gueyo, is the country's largest cocoa-producing zone and is predominantly composed of smallholder farmers (AIRF, 2021). Despite its contribution to the national economy, the region continues to face serious infrastructural, educational, health, and environmental challenges.

Primary data was collected through structured surveys with 100 cocoa farmers across eight villages. The sample was selected using a non-probabilistic method based on availability and willingness to participate. The questionnaire focused on socio-demographic characteristics, farm conditions, training and financial support, access to services, and farmers' perceptions of investment outcomes. Additionally, semi-structured interviews were conducted with key actors in the cocoa value chain, including representatives from NGOs, cooperatives, public agencies, and private investors.

Quantitative data were analysed using descriptive and comparative statistical techniques. Qualitative interview responses were analysed thematically to identify recurring patterns related to access, equity, and perceived effectiveness of investments.

To synthesize findings, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was conducted to identify systemic drivers and constraints shaping investment impacts. This integrative methodological approach provided a holistic view of how different dimensions economic, social, and environmental interact within the cocoa sector.

3 Results

The findings reveal that cocoa-related investments in the Nawa region have produced significant, yet uneven, socio-economic and environmental impacts. While a majority of farmers reported receiving some form of support, access to financial and technical assistance varied greatly depending on cooperative membership, geographic location, and literacy levels.

3.1 *Financial and Material Support*

While 48% of farmers received direct financial aid, the distribution heavily favoured cooperative-affiliated producers, leaving many smallholders excluded. Financial aid was primarily used for family needs (60%) rather than reinvestment in farming inputs (40%), limiting its potential to enhance productivity. Material support was more widespread, with 70% of farmers receiving agricultural tools and 30% receiving tree seedlings.

3.2 *Impact on Productivity*

Farmers with better access to resources, especially cooperative-affiliated farmers, achieved higher revenues due to training, equipment, and access to sustainable cocoa markets. Larger farms earned significantly more compared to smaller ones (Table 1), underscoring the benefits of scale and market integration. However, unaffiliated smallholders faced barriers to resources, limiting their income growth and perpetuating inequalities in the sector. Social investments, though impactful, remain insufficient in meeting the needs of rural communities.

3.3 *Infrastructure Development*

Investments in schools, clinics, and community centres represented only 10% of total funding. Approximately 43% of farmers reported improvements in living conditions due to these projects, while 48% identified them

TABLE 1 Relationship between farm size, yield, and revenue

Farm size (ha)	Yield	Revenue (EUR)	Farmers (%)
Small farm (< 0.5)	Less than 1 ton	397	1
Medium farm (0.5–6.5)	Between 1 and 6 tons	2855	73
Large farm (6.5–12.5)	Between 6 and 11 tons	6479	26

as contributors to village development. However, 9% viewed them as underutilized or poorly managed.

3.4 *Training Programs*

Training initiatives accounted for 40% of social investments, focusing on sustainable farming practices. Farmers who participated reported enhanced technical skills and higher productivity. However, access challenges for isolated or less-educated farmers perpetuate inequality. Environmental impacts, efforts to promote sustainable practices have yet to produce widespread results.

3.5 *Adoption of Sustainable Practices*

Only 34% of farmers adopted practices such as agroforestry, citing financial and technical barriers. The majority (66%) reported minimal environmental changes, underscoring the need for better-targeted interventions.

3.6 *Challenges in Environmental Sustainability*

Persistent deforestation and diseases such as swollen shoot virus continue to undermine environmental and economic stability. Limited funding for reforestation and disease-resistant varieties exacerbates these issues.

The economic, social, and environmental dimensions are interdependent, and comprehensive support across these areas leads to better outcomes. Farmers receiving both financial and social support (e.g., access to training and infrastructure) achieved higher productivity and well-being. However, marginalized farmers, lacking access to comprehensive investments, remain vulnerable, highlighting a critical gap in current strategies.

4 Discussion

The findings of this study offer valuable insights to guide public policies toward a more inclusive and sustainable cocoa sector. Reducing barriers to finance for smallholder farmers is essential, particularly through the implementation of guarantee funds, targeted subsidies, and the promotion of public-private partnerships to mobilize additional resources.

The analysis reveals that while cocoa investments have brought measurable benefits to some farmers in the Nawa region, these gains remain unequally distributed. This is consistent with findings by (Fountain and Hütz-Adams, 2018), who argue that structural inequalities, particularly in cooperative access and service delivery, continue to marginalize many smallholder farmers in Côte d'Ivoire.

One key limitation of current investment programs is the lack of tailored financial instruments. Although a significant number of producers receive cash transfers, these are often redirected toward household expenses rather than reinvestment, a pattern observed in other West African agricultural contexts (Donovan and Stoian, 2012). Designing more flexible and inclusive credit schemes, such as microcredit or weather-indexed micro-insurance, could mitigate financial insecurity and improve resilience (Donovan and Stoian, 2012).

Social infrastructure also remains a critical gap. As Ingram et al. (2017) highlight, sustainable development in rural areas requires simultaneous investment in education, health, and mobility. In this study, only 43% of farmers reported improved living conditions, and infrastructure was concentrated in more accessible areas. Expanding public investment in rural schools and clinics is essential to unlock long-term productivity and well-being.

Moreover, training programs need better targeting and coverage. Although they reached 70% of respondents, their geographic concentration limits their reach to the most remote and vulnerable communities. Lemeilleur et al. (2015) stated that cooperative governance and management capacity is crucial to improve delivery, equity, and participation. Training should also include financial literacy, risk management, and sustainable practices to address both socio-economic and environmental challenges.

On the environmental front, adoption of sustainable farming practices remains low. Only 34% of farmers reported meaningful changes, reflecting the absence of strong technical support and economic incentives. As shown in agroecological transition literature, direct payments for ecosystem services or price premiums for sustainable cocoa can be effective levers (Barrett et al. 2022). Increased investment in agroforestry education and community demonstration plots may also foster long-term behaviour change.

Finally, a lack of coordination among actor's public agencies, private companies, and NGOs undermines the efficiency of investment efforts. Multi-stakeholder dialogue platforms, as recommended by (Grindle, 2007), are needed to align goals, share resources, and ensure that interventions are grounded in local priorities.

Based on interviews with various financial actors, this section presents an analysis of investments in the cocoa sector, cocoa producers, and other relevant stakeholders. The analysis highlights key trends, roles of different stakeholders, challenges, opportunities, and recommendations for improving investments.

TABLE 2 Stakeholder contributions and challenges in the cocoa value chain

Stakeholders	Roles	Funding sources	Key investments	Expected impacts
Government institutions	Mobilize public funds	Public funds	Agricultural research	Increased productivity
	Facilitate public-private partnerships	Grants	Strengthening cooperatives	Modernized production
	Manage national programs	Research and development funds	Infrastructure development	Sustainable growth
International organizations, NGOs	Provide technical/financial support	Low-interest financing	Pilot sustainability projects	Ecosystem conservation
	Promote sustainability	Green financing (e.g., reforestation)	Producer support programs	Increased producer incomes
	Lead multi-sector programs	International partnerships	Income-generating programs	Climate resilience
Private structures and cooperatives	Provide long-term financing	Private investments	Strengthening buyer-producer relations	Secured supply chains
	Invest in sustainable supply chains	Partnerships with international financial institutions	Training on productivity & quality	Higher producer incomes
Bilateral/multilateral partners	Promote sustainable practices	Bilateral funding	Social infrastructure projects	Improved living conditions
	Support social infrastructure	International contributions	Initiatives against child labour	Strengthened social infrastructure

Investments in the cocoa sector come from both public and private initiatives. Public investments are primarily directed towards infrastructure (roads, health centers) and long-term agricultural research, while private investments emphasize financial solutions, innovation, and sustainable supply chains. NGOs are also crucial in providing farmers with training, cooperative formation, and local development initiatives. However, several barriers persist, notably regarding access to finance, training, and infrastructure.

Despite efforts to improve technical capacities, access to services remains uneven, especially in remote areas. Microcredit and insurance programs face challenges in rural areas due to limited banking infrastructure and logistical barriers. Fragmented coordination among stakeholders further complicates progress, resulting in inefficiency and duplication of efforts.

Table 2 outlines the roles of various stakeholders in the cocoa value chain, highlighting both their contributions and challenges.

5 Conclusion

Investments in the Ivorian agricultural sector, particularly in cocoa, are pivotal for the country's economic and social development (OECD, 2007; Yomb, 2015). This study has analysed the impacts of both public and private investments, offering recommendations to maximize benefits for producers and ensure sector sustainability.

The findings highlight mixed results: while significant progress has been made in improving farmers' incomes and social infrastructure access, direct economic benefits for most farmers remain limited (Oxfam, 2008). Adoption of sustainable farming practices is also slow, emphasizing the need for a more systematic approach to promote ecological sustainability and resilience (Singh and Srivastava, 2022).

Key recommendations include improving access to finance for smallholders by simplifying eligibility criteria and creating microcredit mechanisms, particularly those tailored to agroforestry and diversified production systems (Zahm et al., 2019). Strengthening rural

infrastructure, such as roads and healthcare, is also essential to enhance producers' quality of life and market access (Pinstrup-Andersen and Shimokawa, 2007). Cooperatives should focus on improving internal management and transparency, while continuous training in modern agricultural techniques and risk management is needed to ensure long-term sustainability.

Private investors and NGOs must also play a proactive role in incentivizing sustainable practices and ensuring fair value distribution across the supply chain (IDH, GISCO, C-lever 2021). The future of cocoa in Côte d'Ivoire depends on collaboration among all stakeholders to create an ecosystem where productivity, environmental sustainability, and social equity align.

By addressing these challenges collectively, Côte d'Ivoire can strengthen its position as a global cocoa leader while ensuring a prosperous and sustainable future for its producers. This study contributes to understanding the socio-economic dynamics in the cocoa value chain and offers concrete steps for enhancing investment design and environmental performance, especially through the pivotal role of cooperatives. In conclusion, integrated public and private investments are needed to maximize socio-economic and ecological benefits, making the cocoa sector a resilient and inclusive driver of rural development.

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