

From Producing Cocoa to Sustaining Producers:

An Eight-Point Agenda for a Cocoa Producer-Focused Climate Policy and Investment Framework for Ghana



EXECUTIVE SUMMARY

Climate change is no longer a future threat to Ghana's cocoa sector. It is already reshaping the realities of cocoa production. This policy brief presents findings from a study examining the impacts of climate change on cocoa production, farmer livelihoods, health, and adaptation responses in Ghana. Evidence from cocoa-growing communities shows that rising temperatures, prolonged droughts, erratic rainfall, declining yields, rising production costs, labour shortages, and worsening physical exhaustion are undermining not only cocoa productivity but also the health, resilience, and adaptive capacity of cocoa producers.

Based on the research findings, this policy brief suggest that policies focused primarily on productivity, prices, and environmental compliance are no longer sufficient. Even interventions such as the Living Income Differential (LID) are being weakened by climate-related production losses. Securing Ghana's cocoa future requires strengthening the resilience of cocoa producers alongside cocoa production systems. Consequently, an eight-point agenda for a cocoa producer-focused climate policy has been proposed help secure Ghana's cocoa future while strengthening national development, export earnings, rural livelihoods, and climate resilience. The brief calls for a fundamental shift from: (i) a yield-centred approach to a producer-centred resilience model, that recognise that productive farms depend on healthy and resilient farmers; (ii) price-centric interventions to integrated income and adaptation support, as higher prices alone cannot offset climate-induced production losses; (iii) reactive drought responses to climate-smart water management systems; (iv) short-term input distribution programmes to sustained investments in irrigation, resilient planting materials, shade systems, and water infrastructure; (v) a focus on tree survival to a broader emphasis on human wellbeing, health, and labour productivity; (vi) information delivery to adaptation financing that enables farmers to act on climate knowledge; (vii) top-down interventions to trust-based partnerships that strengthen farmer participation, transparency, accountability, and programme effectiveness; and (viii) viewing cocoa solely as a sectoral issue to recognizing it as a national economic resilience strategy. Together, these shifts provide a pathway for sustaining Ghana's cocoa economy under climate change. The central lesson is clear: a climate-resilient cocoa sector requires climate-resilient cocoa producers.



Introduction

For decades, climate change discussions in the cocoa sector have focused primarily on trees, yields, pests, and deforestation (e.g. Ruf et al., 2015; Läderach et al., 2013; Schroth et al., 2016; IPCC, 2023; Zinsstag et al., 2022, etc.). Yet cocoa production ultimately depends on human labour, and there is growing evidence that climate change is increasingly affecting the health, productivity, and wellbeing of cocoa producers themselves (van Vliet et al., 2021). Across West Africa, rising temperatures, erratic rainfall, and prolonged droughts are exposing farmers to heat stress, dehydration, illness, and declining labour capacity, creating risks not only for agricultural production but also for rural development and national economic growth (Ruf et al., 2015; Abdulai et al. 2018). Understanding these human dimensions of climate change is therefore critical for achieving the Sustainable Development Goals and securing the future of Ghana's cocoa economy. The findings presented in this policy brief are based on a mixed-methods study conducted across ten cocoa-growing communities in the Ashanti, Eastern, and Western Regions of Ghana. The research engaged 220 cocoa-producing households through a quantitative survey, facilitated nine focus group discussions involving approximately 120 farmers, 95 in-depth interviews with cocoa producers, and implemented five participatory research activities involving about 100 farmers, which provided rich evidence base grounded in farmers' lived experiences and realities.

Why cocoa producer-focused climate policy now?

For decades, climate responses in the cocoa sector have focused primarily on protecting cocoa farms through improved seedlings, pest control, disease management, productivity enhancement, and more recently, forest conservation and carbon-related interventions. These investments remain important. However, the findings from this study suggest that the greatest climate vulnerability in Ghana's cocoa sector is no longer confined to cocoa trees and farm ecosystems. It is increasingly concentrated in the farmers whose labour sustains production. The evidence from this research reveals that climate change is simultaneously reducing cocoa productivity, labour productivity, household resilience, and adaptation capacity. Farmers are working fewer hours due to heat stress, experiencing greater physical exhaustion, facing growing health risks, and struggling to maintain production under increasingly unpredictable climatic conditions.



Specifically, findings from our research show that:

1. Observed climatic conditions for cocoa production are becoming unpredictable

- 97.9% of cocoa farmers reported rising temperatures.
 - 97.1% reported increasing drought conditions.
 - 92.3% indicated that changing rainfall patterns have reduced cocoa yields.
 - 93.6% identified prolonged drought as a major production challenge.
-

2. Climate stress is becoming a labour and health crisis too

- 67.3% reported fatigue and dehydration caused by extreme heat.
 - 70.8% reported increased physical exhaustion during farm work.
 - 75.8% reported working fewer hours because of heat stress.
 - 58.2% reported stress and anxiety about the future of cocoa farming.
 - 59.1% reported observing declining soil fertility over the past 5 years.
 - 48.2% (50.7% men, 43.8% women) have considered abandoning cocoa farming.
-

3. Farmers are adapting, but a large adaptation gap exists

- Farmers are already planting shade trees, adjusting planting schedules, experimenting with climate-smart practices, adopting drought-tolerant varieties.
 - More than 90% identify financial constraints as the major barrier to adaptation.
 - Water management and irrigation remain inaccessible to many farmers.
 - High input costs continue to undermine resilience investments
 - Extension support remains inadequate relative to emerging climate challenges.
 - The challenge is no longer awareness, but the lack of resources and institutional support needed to implement adaptation at scale.
-



4. Price-based and income interventions alone cannot deliver farmer resilience

- Although cocoa prices have increased through initiatives such as the Living Income Differentials (LID) more than 93% of farmers are unaware of how the Living Income Differential (LID) works.
 - Only 3% report that cocoa income comfortably meets household needs.
 - More than 60% report either financial struggles or serious economic hardship despite recent price increases.
-

5. Farmers have limited voice in cocoa governance and decision making

- In focus group discussions and in-depth interviews, farmers consistently expressed concerns about their limited involvement in cocoa policy design and decision-making, despite being the primary stakeholders affected by sector policies and interventions.
 - Many called for stronger representation in policy dialogue, planning, and monitoring processes to ensure that interventions better reflect local realities and priorities.
-

6. Cocoa sector interventions are perceived as partial, uneven, and short-term

- Although farmers value interventions such as extension services, mass spraying, seedling distribution, Village Savings and Loan Associations, child labour reduction and input support, many believe their impacts are constrained by uneven implementation, inadequate coverage, weak follow-up, and limited long-term sustainability.
-



What do these findings mean for the future of cocoa in Ghana?

a. The Biggest Climate Impact Is Not on Cocoa Trees. It Is on Cocoa Producers.

Climate change is affecting the human foundations of cocoa production. Farmers increasingly report: Heat exhaustion, fatigue, dehydration, reduced work hours, stress and anxiety, and reduced physical capacity. A cocoa tree can recover after rainfall. A farmer experiencing chronic heat stress becomes progressively less productive. Future cocoa policy must therefore move beyond a farm-centred approach toward a producer-centred resilience approach.

“Over the last five years, my yield has dropped by almost half. Before, I could harvest between 10 to 12 bags in a season, but now I get only about 5 or 6 bags. The weather is no longer reliable.” *(Akwasiase Farmer)*

b. Ghana May Face a Cocoa Labour Crisis Before a Cocoa Production Crisis.

“When we were young, we could work till evening. Now the heat makes you dizzy; your head spins and you have to sit down. These days by eleven o’clock you cannot stand on the farm again. The sun burns like fire, and you feel your chest tightening.” *(Edwinase Farmer)*

The evidence suggests that labour capacity is declining alongside productivity. Farmers increasingly report: Greater physical exhaustion, reduced working hours, difficulty securing labour and youth disengagement from cocoa farming. The real threat is not only fewer cocoa pods. The real threat is fewer people willing and able to produce cocoa.

c. The Adaptation Challenge Is Not a Knowledge Gap. It Is an Investment Gap.

Farmers understand climate change. They already know: Rainfall patterns are changing. Temperatures are increasing. Shade trees matter. Water management matters. Planting calendars are shifting. The problem is not awareness. The problem is inadequate access to finance, irrigation, climate-resilient technologies, infrastructure, and risk protection.

“You can follow all the good agricultural practices, but when it does not rain at the expected time, you still get nothing.” *(Akwasiase Farmer)*

What do these findings mean for the future of cocoa in Ghana?

d. Price Reforms Alone Cannot Deliver Living Incomes.

The introduction of the Living Income Differential (LID), a premium of US\$400 per metric tonne of cocoa jointly introduced by the governments of Ghana and Côte d'Ivoire in the 2020/21 cocoa season, represented an important effort to improve cocoa farmer incomes and livelihoods. The underlying logic is straightforward: higher farm-gate prices should translate into higher incomes, which in turn should improve household wellbeing and reduce poverty among cocoa-producing households. However, the findings suggest that price reforms alone are insufficient to secure living incomes under changing climatic conditions. First, awareness and understanding of the LID remain extremely low. Second, climate-related yield losses are increasingly weakening the link between higher prices and improved livelihoods. Farmers consistently emphasized that while price increases are welcome, they generate only limited benefits when droughts, erratic rainfall, pests, diseases, and declining productivity reduce the volume of cocoa available for sale. The evidence therefore suggests that climate adaptation has become a prerequisite for achieving living incomes. Price support mechanisms such as the LID remain important, but their effectiveness will increasingly depend on complementary investments that protect farmer productivity, resilience, and adaptive capacity in the face of climate change.

e. Producer Vulnerability Has Become a National Economic Risk

Climate vulnerability among cocoa farmers now poses risks beyond agriculture. Reduced productivity translates into lower cocoa exports, reduced foreign exchange earnings, lower government revenues, reduced rural incomes, and weaker local economies. Producer resilience is therefore no longer only an agricultural issue. It is a national economic priority.

“

“Good prices and living income efforts are great, but they become more useful only when there is cocoa to sell.”

(Edwinase Focus Group Participant)

”

“

“Cocoa does not adapt to climate change, cocoa producers do. So, it is important that the producer becomes very central on climate change efforts.” *(Nkatenkwan Farmer)*

”

The case for a cocoa producer-focused climate policy

A cocoa producer-focused climate policy is urgently needed. What we mean by a cocoa producer-focused climate policy is one that places cocoa farmers, not just cocoa production, at the centre of climate action. A cocoa producer-focused climate policy places the health, wellbeing, productivity, resilience, and adaptive capacity of cocoa farmers at the centre of climate adaptation and sustainability investments. It recognizes that sustaining cocoa production requires sustaining cocoa producers. The objective is not simply to protect cocoa trees from climate change. The objective is to ensure that cocoa producers remain healthy, productive, resilient, and economically viable under changing climatic conditions. Such a policy prioritizes investments that strengthen farmers' ability to adapt, remain productive, and sustain dignified livelihoods in the face of increasing climatic uncertainty. As current interventions remain largely focused on increasing yields, distributing inputs, and improving prices, these approaches are proving insufficient in the face of growing climate risks, declining labour capacity, and rising farmer vulnerability.



Eight strategic shifts required towards a cocoa producer-focused climate policy

The future competitiveness of Ghana's cocoa sector will depend on a strategic shift from a cocoa production-centred approach to a cocoa producer-centred resilience model. These would require a shift in current orientation towards eight main issues.

	Current Approach	Required Paradigm Shift
1	Yield-centred policy	Producer-centred resilience
2	Price-only interventions	Income and adaptation support
3	Reactive drought response	Climate-smart water management
4	Input distribution	Adaptation investment
5	Tree survival focus	Human wellbeing focus
6	Information delivery	Adaptation financing
7	Top-down interventions	Trust-based partnerships
8	Cocoa sector policy	National economic resilience strategy

Eight strategic shifts required towards a cocoa producer-focused climate policy

Strategic Shift 1: From Yield-Centred Policy to Producer-Centred Resilience.

Current policies primarily target farm productivity, yet climate change is increasingly affecting the health, wellbeing, and work capacity of farmers themselves. More than three-quarters of farmers reported working fewer hours because of heat stress, while over 70% reported increasing physical exhaustion. Investing in farmer resilience can improve labour productivity, reduce farm abandonment, and sustain long-term cocoa production.

Strategic Shift 2: From Yield-Focused Adaptation to Labour Productivity Adaptation.

Current adaptation efforts largely focus on production support or price incentives. The health of the people who manage and produce the cocoa tree are often overlooked. For example, 67% of respondents reported increased fatigue and dehydration and 76% reported working fewer hours because of heat stress. Nearly half of farmers reported considering leaving cocoa farming due to climatic and economic pressures. Farmers are not simply losing cocoa; they are losing the physical capacity to produce it. As a result, farmer health and labour productivity should be recognized as critical components of cocoa sector resilience. Future adaptation strategies must, therefore, address heat exposure, occupational health, safe water access, and labour conditions to safeguard the sector's human resource base.

Strategic Shift 3: From Price-Centric Solutions to Integrated Income and Adaptation Support.

Higher cocoa prices cannot compensate fully for declining yields caused by climate change. Farmers repeatedly stressed that income gains matter only when there is cocoa to sell. Integrating price support with adaptation investments will strengthen the effectiveness of initiatives such as the Living Income Differential and improve household welfare.

Strategic Shift 4: From Reactive Drought Response to Climate-Smart Water Management.

Unpredictable rainfall and prolonged drought have become major threats to cocoa production. The research shows that climate adaptation is constrained primarily by lack of finance. More than 90% of cocoa farmers identified financial constraints as the biggest barrier to adapting to climate change. Farmers are aware of adaptation options but often lack the resources to implement them. Greater investment in irrigation, water harvesting, and local water storage systems can reduce climate vulnerability, stabilize yields, and improve production reliability.

Eight strategic shifts required towards a cocoa producer-focused climate policy

Strategic Shift 5: From Input Distribution to Long-Term Adaptation Investments.

Farmers consistently linked increasing temperatures to loss of shade trees, deforestation, declining soil moisture, and rising plant stress. Farmers repeatedly reported drought-related flower abortion, pod loss, reduced bean sizes, and declining yields. While subsidized inputs remain important, farmers increasingly require climate-resilient planting materials, agroforestry, shade systems, irrigation infrastructure, and water management technologies. Such investments offer stronger long-term returns through improved resilience and sustained productivity growth. Without more resilient planting materials, climate impacts will continue to undermine production regardless of other interventions.

Strategic Shift 6. From Tree Survival to Human-Centred Sustainability.

Current sustainability frameworks being pursued, for example under EUDR, focus heavily on forests, traceability, and compliance. However, farmers are increasingly concerned about heat stress, illness, water access, and livelihood security. Incorporating farmer wellbeing into these sustainability investments can improve health, productivity, adaptive capacity, and intergenerational sustainability.

Strategic Shift 7: From Climate Information Delivery to Adaptation Financing and Trust-Based Partnerships.

Despite being the primary actors responsible for cocoa production, most farmers reported limited understanding of major sector policies and little influence over decisions that affect their livelihoods. Farmers also generally understand climate risks but lack the financial resources to respond effectively. At the same time, while trust in extension officers remains high, concerns persist regarding input quality, transparency, and programme effectiveness. Climate adaptation interventions are often less effective because they are designed from the top down rather than informed by farmers' lived experiences. Greater access to adaptation finance, combined with stronger farmer participation and accountability, can accelerate the adoption of climate-resilient practices and improve programme outcomes.

Eight strategic shifts required towards a cocoa producer-focused climate policy

Strategic Shift 8: From Cocoa Sector Policy to a National Economic Resilience Strategy.

Cocoa remains central to Ghana's export earnings, foreign exchange generation, employment, and rural development. Strengthening producer resilience is therefore not only a sectoral priority but also an economic imperative. Protecting cocoa farmers from climate risks will help safeguard national revenues, strengthen rural economies, and enhance Ghana's long-term economic resilience. Climate adaptation is not merely an environmental issue. It is an economic imperative. Without significant adaptation investments, national cocoa production may continue to decline, export earnings will remain vulnerable, rural poverty may deepen, youth disengagement from cocoa farming may accelerate and Ghana's competitiveness in global cocoa markets may weaken. Protecting cocoa producers is therefore not only a social responsibility but an economic strategy for safeguarding one of Ghana's most important export sectors.

Note: This agenda does not require COCOBOD to become a health provider, water utility, or social welfare agency. Rather, it supports the Government's ongoing efforts to refocus COCOBOD on its core cocoa mandate. The proposed approach emphasizes: (i) strategic coordination rather than direct delivery service per se; (ii) Partnerships with relevant ministries and agencies; (iii) Leveraging climate finance and private sector investments and (iv) Improving productivity through resilience rather than expanding bureaucracy. COCOBOD's role should be to convene, coordinate, and catalyze investments that sustain cocoa production under climate change.



Operationalising the agenda: Priority actions for the next five years

Over the next five years, Ghana should prioritize:

Immediate Actions

- Establish a Cocoa Producer Resilience Initiative within COCOBOD.
- Integrate climate adaptation into all cocoa sector programmes.
- Expand access to climate-resilient cocoa varieties.
- Scale up community-based water harvesting and irrigation systems.
- Improve climate information and early warning services.

Medium-Term Actions

- Expand producer health and occupational safety programmes.
- Strengthen farmer participation in policy design and implementation.
- Improve transparency around cocoa pricing and LID benefits.

Long-Term Actions

- Develop a national Cocoa Producer Resilience Framework.
- Position producer resilience as a core pillar of Ghana's climate adaptation strategy.
- Mobilize climate finance to support farmer-centred adaptation investments.

Final message to decision makers

Climate change is no longer a future threat. It is already reshaping the everyday realities of cocoa production. The future competitiveness of Ghana's cocoa sector depends less on producing more cocoa under current conditions and more on strengthening the resilience of cocoa producers under changing climatic conditions. Ghana's cocoa future will not be secured by price reforms alone. It will be secured by protecting the health, productivity, resilience, and adaptive capacity of cocoa producers who are increasingly working under conditions of extreme heat, erratic rainfall, rising production costs, labour shortages, and declining yields.

Specific recommendations for key stakeholders

Government of Ghana and COCOBOD

- Reposition cocoa producer resilience as a core pillar of cocoa sector transformation.
- Integrate climate adaptation, farmer health, water management, and labour productivity into cocoa sector planning, while enabling COCOBOD to focus on its core mandate of productivity, quality assurance, extension, market development, and climate resilience coordination.

Parliament of Ghana

- Treat cocoa producer resilience as a national economic priority.
- Support investment in climate adaptation infrastructure, strengthen oversight of producer welfare and climate finance utilization, and ensure that climate and agricultural policies are aligned with cocoa sector competitiveness objectives

Cocoa industry and international buyers

- Move beyond compliance-driven sustainability investments.
- Complement traceability, certification, and EUDR compliance efforts with direct investments in climate adaptation, water management, climate-resilient farms, and producer wellbeing to secure future cocoa supply.

Development partners and climate finance institutions

- Shift from project-based support to long-term resilience financing.
- Prioritize blended finance mechanisms that support irrigation, climate-smart technologies, climate-resilient planting materials, insurance, and community adaptation infrastructure at scale.

Civil society and farmer-based organizations

- Strengthen producer voice and accountability mechanisms.
- Facilitate meaningful farmer participation in cocoa policy processes and monitor the effectiveness, transparency, and equity of cocoa sector interventions.

Researchers, universities, and think tanks

- Generate evidence for next-generation cocoa policy.
- Advance research on climate-health-productivity linkages, labour dynamics, adaptation economics, and the effectiveness of resilience investments to inform evidence-based policymaking.

Financial sector and impact investors

- Develop innovative adaptation finance products for cocoa producers.
- Expand access to affordable credit, weather-index insurance, adaptation loans.
- Expand blended finance instruments that enable farmers to invest in resilience rather than merely cope with climate shocks.

References

IPCC. (2023). Climate change 2023: Synthesis report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva: Intergovernmental Panel on Climate Change.

Läderach, P., Martinez-Valle, A., Schroth, G., & Castro, N. (2013). Predicting the future climatic suitability for cocoa farming of the world's leading producer countries, Ghana and Côte d'Ivoire. *Climatic Change*, 119(3-4), 841-854. <https://doi.org/10.1007/s10584-013-0774-8>

Ruf, F., Schroth, G., & Doffangui, K. (2015). Climate change, cocoa migrations and deforestation in West Africa: What does the past tell us about the future? *Sustainability Science*, 10(1), 101-111. <https://doi.org/10.1007/s11625-014-0282-4>

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

Zinsstag, J., Schelling, E., Waltner-Toews, D., Crump, L., Whittaker, M., Tanner, M., & Wyss, K. (2022). *One Health: The theory and practice of integrated health approaches* (2nd ed.). Wallingford, UK: CABI Publishing.

Abdulai, I., Vaast, P., Hoffmann, M. P., Asare, R., Jassogne, L., Van Asten, P., & Graefe, S. (2018). Cocoa agroforestry is less resilient to sub-optimal and extreme climate than cocoa in full sun. *Global Change Biology*, 24(1), 273-286.

van Vliet, J. A., Slingerland, M., Waarts, Y., & Giller, K. E. (2021). A living income for cocoa producers in Côte d'Ivoire and Ghana? *Frontiers in Sustainable Food Systems*, 5, 732829.

Note

This policy brief presents key findings and policy implications from the broader research project, “Towards a Cocoa Producer-Focused Climate Policy in Côte d’Ivoire and Ghana.” The study is being implemented in Ghana and Côte d’Ivoire with support from the Harvard University Center for African Studies through the Motsepe Presidential Research Accelerator Fund for Africa. The research seeks to generate evidence to inform more resilient, inclusive, and producer-centred climate policies for the cocoa sector in West Africa.

For further information contact: Dr Albert Arhin* and Dr Carla D. Martin.**

*Institute for Rural Development and Innovation Studies (IRDIS), Kwame Nkrumah University of Science and Technology (KNUST), Ghana. Email: aaarhin@knust.edu.gh; Tel: +233555939173.

**Institute for Cacao and Chocolate Research and Harvard University, United States. Email: carla@chocolateinstitute.org

Research team: Dr Carla D. Martin (Harvard University/Institute for Cacao and Chocolate Research), Dr Albert Arhin (Kwame Nkrumah University of Science and Technology), Dr Jean-Luc Kouassi (Institut National Polytechnique Félix Houphouët-Boigny), José López Ganem (Institute for Cocoa and Chocolate Research), Dr Michael Ehis Odijie (University of Oxford), Dr Amanda Berlan (Leicester University), and Richard Tetteh (KNUST).

The views expressed in this policy brief are the authors' own and do not necessarily reflect the views of the institutions involved.

With gratitude to our research and funding partners:



HARVARD UNIVERSITY
CENTER FOR AFRICAN STUDIES



INSTITUTE FOR CACAO
AND CHOCOLATE RESEARCH



Institut National Polytechnique
Félix HOUPHOUËT-BOIGNY



KNUST
KWAME NKUMAH UNIVERSITY
OF SCIENCE AND TECHNOLOGY

AGRIFORLAND

