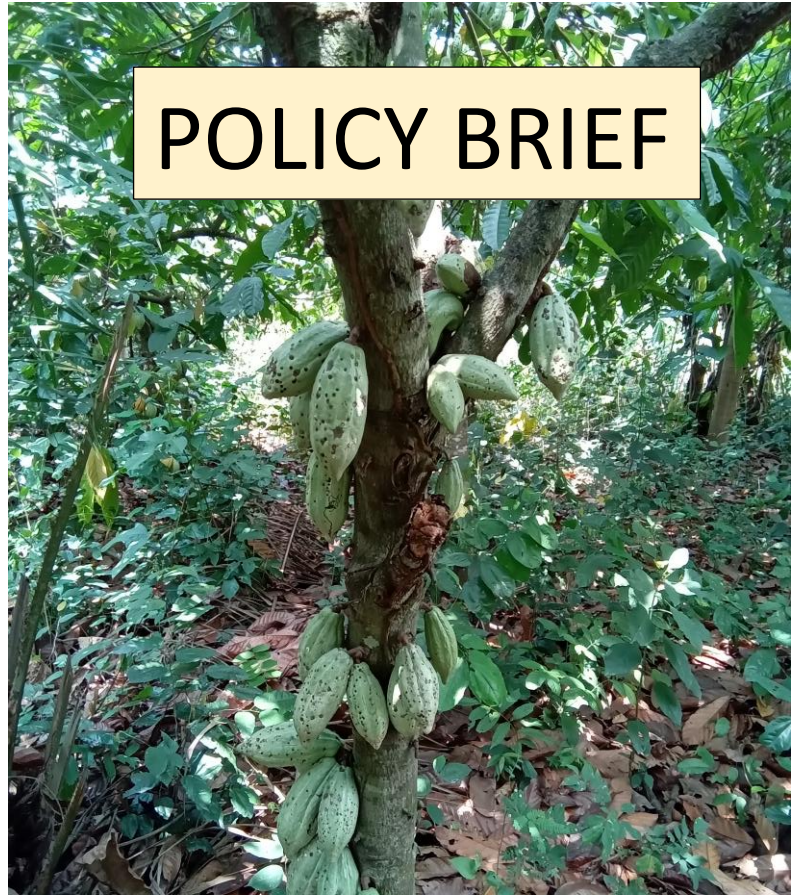
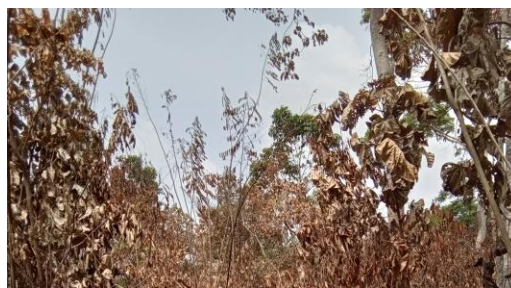




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POLICY BRIEF



*Theobroma cacao L., Source of Livelihood
for Millions of Smallholder Farmers in
Ghana and Togo Need to be Rescued
from Drought*

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KEY MESSAGES

- Drought occurrences limit cocoa yield potentiality in Ghana and Togo;
- More than five thousand livelihoods are threatened;
- There is a risk of economic losses for Ghana and Togo;
- Cocoa farms risk losing suitability and being converted to other farmlands.

INTRODUCTION

- Cocoa production is a vital part of West African economies, particularly in Ghana and Togo, which contribute significantly to employment, income generation, and export earnings (Voora et al., 2019).
- These countries are part of the West African cocoa belt, producing a significant share of the world's cocoa supply (Bermudez et al., 2022).
- Cocoa farming also provides ecosystem services like carbon sequestration, biodiversity conservation, and soil fertility enhancement (Asare et al., 2019; Mbow et al., 2014).
- However, the sector faces growing challenges from climate change, particularly droughts, which reduce soil moisture availability, disrupt plant processes, and lower cocoa yields, potentially impacting livelihoods (Black et al., 2021; Läderach et al., 2013; Schroth et al., 2016).

Addressing these challenges becomes urgent and requires a holistic approach that integrates sustainable farming practices and policy interventions.

APPROACH OF THE RESEARCH

The study used 16 indicators to assess drought vulnerability of cocoa agroforestry systems, using the IPCC's formula,(IPCC, 2022)

- Vulnerability is determined by exposure, sensitivity, and adaptive capacity.
 - Exposure was assessed using SPEI12 (Standardized Precipitation Evapotranspiration Index at 12 months) features like duration, severity and interarrival time;
 - Sensitivity through land use, elevation, slope, and water capacity, and
 - Adaptive Capacity was evaluated through drought emergency responses, seedling watering, access to agroclimatic information, financial aid, and farm size assessments.
- Cocoa production data from 1981- 2020 was regressed over drought indices and soil moisture anomalies to determine the relationship between cocoa yield and drought, using the binary logistic regression.

FINDINGS

EVIDENCE 1

- A weakened cocoa agroforestry system is found and sensitive to the adverse effect of drought.
- Critical drought-vulnerable areas are located on the northern side; and vulnerable zones cover more than 50%.

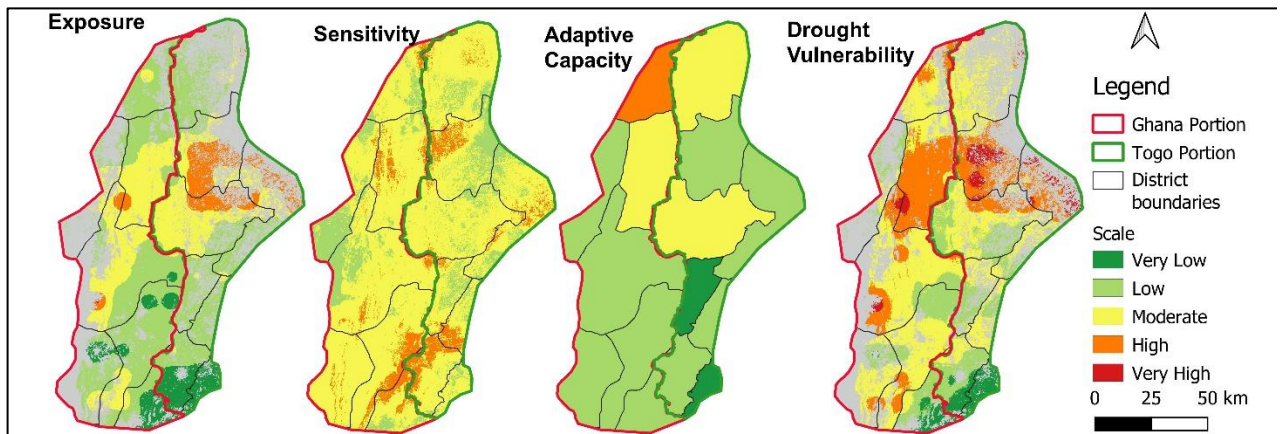


Fig1: Drought Vulnerability Status

FINDINGS

EVIDENCE 2

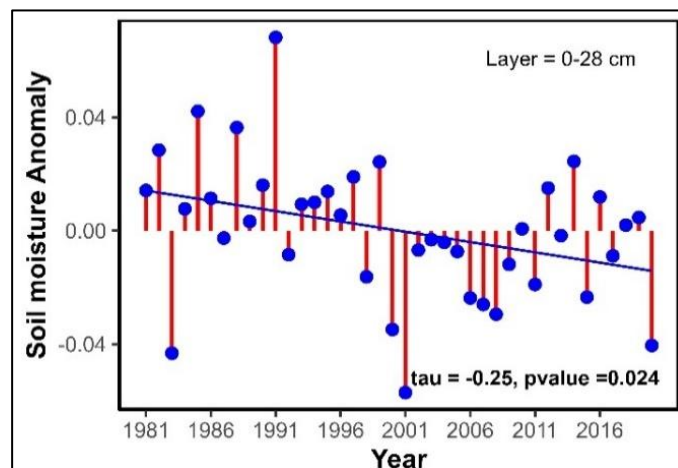


Fig2: Drought evidence from Soil moisture

- Reduced Soil moisture over the past 40 years (1981-2020)
- Short-term drought is significantly associated with negative cocoa yield with a reduction of 17% in occurrence;
- A reduction of 30 and 51% in cocoa yield is expected when Soil moisture respectively for the top and middle soil layers show drying

CONCLUSION AND IMPLICATION OF THE RESEARCH

Drought poses a significant and growing threat to cocoa production compromising the livelihoods of thousands of people.

Evidence from the study shows that:

- ❖ Drought occurrence is evident and constitutes a key challenge for cocoa production in the study area
- ❖ Cocoa is vulnerable to drought, showing a considerable impact of drought on more than 50 % of the study area; and
- ❖ The short-term drought has a negative contribution in the cocoa yield decline.

If left unaddressed:

- ❖ The continued impact of drought could render cocoa farming, leading to unsustainable land use and economic instability.
- ❖ Significant socioeconomic and environmental challenges will persist as cocoa production may not be able to meet the increased demand globally.
- ❖ Furthermore, the sustainability of cocoa farms may be compromised by extended droughts, pests and diseases, and existing socio-economic and governance challenges which may result in cocoa disappearance.

This policy emphasizes on:

- ❖ The necessity of immediate investments in developing and promoting drought adaptive strategies along the cocoa value chain.
- ❖ Drought-tolerant cocoa varieties, Water management techniques, optimized agroforestry practices, crop diversification, and financial incentives integration into policy are highly encouraged.

The implementation of these measures will not only support cocoa yields and livelihoods but also guarantee the economic resilience of cocoa farming communities and countries.

Addressing drought challenges specifically helps in achieving the Sustainable Development Goal (SDG) 13 (climate action) and also aligns with the SDGs 15 (Life on Land), 1(No poverty), and 5 (Gender equality).

POLICY RECOMMENDATIONS

I. Investment in Climate-Resilient Cocoa Farming Practices

Governments and cocoa value chain stakeholders need to promote and invest in optimistic agroforestry practices, drought-tolerant cocoa varieties, and water management systems.

II. Strengthening Adaptive Capacity and Livelihood Diversification

- Policymakers should implement programs to diversify income sources for cocoa farmers and support alternative livelihoods.
- Capacity-building initiatives, financial incentives, and access to credit for farmers to transition to resilient practices should also be prioritized.
- Develop national strategies to integrate drought resilience into cocoa sector policies.
- Support research for dedicated data collection to monitor climate impacts to inform evidence-based policymaking.

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