



## PALM-TREES

### A Pan African and Transdisciplinary Lens on the Margins: Tackling the Risks of Extreme Events (PALM-TREES)

# STRENGTHENING CLIMATE RISK GOVERNANCE AND EARLY WARNING SYSTEMS IN KWARA STATE

POLICY BRIEF

NO. 1, JUNE, 2026, ISSN 0189-4668

#### EXECUTIVE SUMMARY

Climate risk governance in Kwara State faces significant challenges, including weak institutional coordination, limited access to early warning information, and inadequate integration of climate data into planning processes. Evidence from the PALM-TREES (Pan-African and Transdisciplinary Lens on the Margins) project highlights the increasing exposure of rural communities to drought, flooding, and compound climate risks, alongside critical gaps in governance and response systems. The study shows that only a small proportion of rural populations receive climate information, while flood risks are exacerbated by poor coordination in dam water releases. These challenges point to the need for a transition from reactive disaster response to proactive, integrated climate risk governance. This policy brief synthesizes evidence from the PALM-TREES study and relevant literature to provide actionable recommendations for strengthening climate risk governance and early warning systems in Kwara State.



#### Key Recommendations

1. Kwara State, through the Ministry of Environment, should establish a central Climate Coordination Unit (CCU) housed within either the Ministry of Environment or the Ministry of Planning and Economic Development. This unit will serve as the technical and institutional hub for all climate-related activities across the state. A major gap in Kwara's climate governance system is the overlap and ambiguity of institutional mandates. The State should develop a Climate Governance Framework Document that clearly delineates roles across MDAs.

2. Flooding in Kwara is significantly influenced by upstream dam releases. The State should establish formal communication protocols with dam management authorities (e.g., Kainji and Jebba dams). Key actions will include advance notification (e.g., 48–72 hours) before water releases and joint risk assessments and scenario planning. To address the “last mile” communication gap,

the Ministry of Environment should deploy multi-channel communication systems, including Community Radio, SMS Alerts, Extension Networks, and Religious and Traditional Institutions.



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## Methodology

This policy brief is based primarily on findings from the PALM-TREES research project conducted in Kwara State, which applied a mixed-methods and transdisciplinary approach to understanding climate risks and vulnerabilities in rural communities. The study

combined methods from the physical and social sciences. Physical climate analysis included satellite data (e.g., Sentinel-1, Landsat, MODIS), drought indices (SPI, SPEI, SMI), hydrological data, and climate projections to assess patterns of flood and drought risk. On the social science side,

the study engaged over 900 participants across more than 500 communities in 94 wards, using quantitative surveys, focus group discussions, community needs assessments, and participatory engagement processes. This policy brief draws directly on these empirical findings.

## Policy Context Of Climate Risk Governance And Early Warning Systems In Kwara State

Climate risk governance in Kwara State remains insufficiently institutionalized despite increasing exposure to extreme weather events. While Nigeria has developed national frameworks for climate change adaptation and disaster risk reduction, including the National Climate Change Policy, their translation into subnational systems in Kwara state remains weak (Federal Ministry of Environment [FME], 2021). In Kwara State, responsibilities for climate-related issues are dispersed across multiple ministries—Environment, Agriculture, Water Resources, and Emergency Management—without a clearly

defined coordination mechanism. This fragmentation limits policy coherence and undermines effective planning and response.

At the operational level, disaster management systems are predominantly reactive, focusing on post-event relief rather than anticipatory risk reduction. This pattern is consistent with broader institutional challenges in Nigeria, where disaster risk reduction systems are still evolving (NEMA, 2020). However, this reactive posture is increasingly untenable given the growing frequency and intensity of droughts and floods associated with climate change (IPCC, 2022).

Another key limitation is the weak integration of climate data into policy and planning processes. Although national agencies such as NiMet generate climate data, these are not effectively translated into actionable insights at the local level. This reflects a broader gap between knowledge production and policy utilization (World Bank, 2021). The PALM-TREE findings further highlight the absence of decentralized climate information systems and the limited reach of communication infrastructure, both of which restrict the flow of climate information to vulnerable communities.

## Key Issues And Evidence From Palm Tree Project

The PALM-TREES study reveals that Kwara State is highly exposed to both drought and flooding, with approximately 40% of the state experiencing high to very high

drought risk. Flooding is driven by seasonal river dynamics and upstream dam releases. A critical finding is the extremely low level of access to climate information, with only about 8% of respondents

reporting receipt of early warning alerts. This reflects a major breakdown in the chain of climate information dissemination

. According to the World Meteorological Organization (WMO, 2022), effective early warning systems require not only data generation but also timely and accessible dissemination to end-

drought, flooding, soil degradation, and pest outbreaks. These overlapping risks amplify vulnerability and require integrated management approaches.

warning systems that are accessible and locally relevant. The extremely low access to climate information in Kwara highlights the urgency of strengthening last-mile delivery systems.



Second, improved coordination between state and federal agencies is essential, particularly in managing flood risks linked to dam operations. Establishing formal communication protocols will enhance preparedness and reduce uncertainty.

Third, climate risk must be mainstreamed into sectoral policies, ensuring that planning in agriculture, water, and infrastructure is informed by climate data.

Finally, strengthening local government capacity is critical for decentralised risk governance and effective community-level adaptation.

users. The study also highlights the role of uncoordinated dam releases in exacerbating flood risks, particularly in downstream LGAs such as Edu and Patigi. Similar challenges have been documented in other parts of Nigeria, where weak institutional coordination increases disaster risk (Adelekan, 2016). Additionally, communities face compound risks, including

### Policy Implications

The PALM-TREE findings underscore the need for a shift from reactive disaster management to proactive, integrated climate risk governance. This aligns with global frameworks that emphasize risk prevention and resilience-building (IPCC, 2022).

First, there is a need to institutionalize multi-hazard early

### Priority Policy Recommendations

#### 1. Establish a State Climate Risk Governance Framework

##### Specific Actions (0–3 months)

- Mandate the Ministry of Planning & Economic Development (with the Ministry of Environment) to develop a State Climate Risk Governance Framework (2026–2030).
- Constitute a State Climate Risk Steering Committee chaired by the Commissioner for Environment, with membership from ministries of

Agriculture, Water Resources, Works & Infrastructure, Finance, SEMA, and Local Government Affairs

#### 2. Create a Climate Coordination Unit (CCU)

Establish CCU within the Ministry of Environment as a central hub for Climate data integration, early warning coordination and policy tracking and reporting

#### 3. Develop and Deploy Early Warning Systems

##### Partner with NiMet and NIHSA

Kwara State should formalize partnerships with the Nigerian Meteorological Agency and the Nigeria Hydrological Services Agency through Memoranda of Understanding (MoUs). These partnerships should focus on Real-time access to weather forecasts and flood alerts, downscaling national data to state and LGA-specific forecasts, joint development of seasonal climate outlooks tailored

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warning systems, disaster preparedness and response, and community engagement and communication. Training should be continuous and supported with practical tools.

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to Kwara and capacity building for state officials in interpreting climate data. The state should also establish a Climate Data Integration Platform that consolidates data from these agencies for decision-making.

## 4. Strengthen Federal–State Coordination

### Establish Dam Release Communication Protocols

Flooding in Kwara is significantly influenced by upstream dam releases. The State should establish formal communication protocols with dam management authorities (e.g., Kainji and Jebba dams). Key actions will include advance notification (e.g., 48–72 hours) before water releases and joint risk assessments and scenario planning. To address the “last mile” communication gap, the Ministry of Environment should deploy multi-channel communication systems,

including Community Radio, SMS Alerts, Extension Networks, and Religious and Traditional Institutions.

## 5. Mainstream Climate Risk into Planning Integrate Risk Assessments into Sector Policies

All sectoral policies, especially in agriculture, water, infrastructure, and health, should incorporate climate risk assessments.

## 6. Build Local Government Capacity for Risk Management Train Local Government (LGA) Officials

Local governments are critical for implementation but often lack capacity. The State should implement a structured capacity-building programme for LGA officials. Training areas should include climate risk assessment and mapping, interpretation of early